Department of English
B.A. English Literature
Regulations of B.A. English Literature

(Effective from the Academic Year 2019-2020 onwards)

Introduction:

The Department of English has been inducted and flourished since the inception of VLB JANAKIAMMAL College of Arts and Science as a supportive Department for imparting communicative abilities of the students. The Department has been uplifted to the UG stream with the sanction of BA English Literature in the year 2015.

Objective:

The Department holds the vision of improving the communicative ability of students' community.

Eligibility: UG Programme

A candidate who has passed in Higher Secondary Examination with any Academic stream or Vocational stream as one of the subject under Higher Secondary Board of Examination, Tamil Nadu as per the norms set by the Government of Tamil Nadu or an Examination accepted as equivalent thereto by the Academic Council, subject to such conditions as may be prescribed there to are permitted to appear and qualify for the **Bachelor of Arts English Literature Degree Examination** of this College after the programme of study of three academic years.

Duration of UG Programme

The course will extend over a period of three years comprising of six semesters, with two semesters per year. There will not be less than ninety instructional days during each semester. Examination will be conducted at the end of each semester for the respective subject.

Vision:

The vision of the Department is to be the center of excellence for the teaching of English Language and Literature.

Mission:

1. To develop the communication skills of the students.

2. To enhance the ability of the students to learn English Language through Literary studies.

3. To enrich the knowledge of Literature with its proficiency.

4. To strengthen the link between theory and practice in research.

5. To achieve the academic excellence in the educational endeavors.

Programme Outcomes:
After completion of the Programme the graduates will be able to

PO1: Students should be familiar with representative literary and cultural texts within a significant number of historical, geographical, and cultural contexts

PO2: Students should be able to apply critical and theoretical approaches to the reading and analysis of literary and cultural texts in multiple genres.

PO3: Students should be able to identify, analyze, interpret and describe the critical ideas, values, and themes that appear in literary and cultural texts and understand the way these ideas, values, and themes inform and impact culture and society, both now and in the past.

PO4: Students should be able to ethically gather, understand, evaluate and synthesize information from a variety of written and electronic sources.

PO5: Students should be able to understand the process of communicating and interpreting human experiences through literary representation using historical contexts and disciplinary methodologies.

Programme Specific Outcomes:

PSO1: Develop intellectual, personal and professional abilities through effective communicative skills; ensuring behavioral attitude through literary subjects and shaping the students to become socially responsible citizens and critically analyzing the literary works.

PSO2: Educate students in both the artistry and utility of the English language through the study of literature and other contemporary forms of culture studying literature at the college level encourages all to view the reading of challenging and imaginative texts as an essential and rewarding part of a life-long commitment to learning and growth.

PSO3: Assist students in the development of intellectual flexibility, creativity, and cultural literacy so that they may engage in life-long learning and provide academic environment to fit in a job.

BACHELOR OF ARTS – B.A. ENGLISH LITERATURE

Scheme of Examination (CBCS and OBE Pattern)

For the Candidates admitted during the academic year 2019-2020 onwards

Common Scheme for UG - Language Papers [4 Semesters]

Part	Sub Code	Subject Title	Ins.Hrs/Week	Dur. Hrs.	CIA	CE	Total	Credit
				Examination				
SEMESTER I								
I	19LATA01 19LAH101 19LAMY01 19LAFR01	Language -I Hindi-I Malayalam -I French -I	5	3	30	70	100	3
II	19ENG001	English –I	5	3	30	70	100	3
III	19BAE101	Core 1- Prose	6	3	30	70	100	4
III	19BAE102	Core 2 -Fiction	6	3	30	70	100	4
III	19BAEID1	IDC 1- Social History of England	6	3	30	70	100	4
IV	19UFCA01	Foundation Course I : EVS #	2	**2**			50	2
		Total	**30**				**550**	**20**
SEMESTER II								
I	19LATA02 19LAH102 19LAMY02 19LAFR02	Language –II Hindi-II Malayalam-II French-II	5	3	30	70	100	3
II	19ENG002	English – II	5	3	30	70	100	3
III	19BAE201	Core 3- Poetry-I	6	3	30	70	100	4
III	19BAE202	Core 4- English Grammar and Usage	6	3	30	70	100	4

III	19BAEID2	IDC 2 –Literary Forms	6	3	30	70	100	4
IV	19UFCA02	Foundation Course II: Value Education #	2	**2**	-		50	50	2
		Total	**30**					**550**	**20**

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<tr><td colspan="10" align="center">SEMESTER III</td></tr>
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I	19LATA03 19LAH103 19LAMY03 19LAFR03	Language – III Hindi-III Malayalam-III French-III	5	3	30	70	100	3
II	19ENG003	English – III	5	3	30	70	100	3
III	19BAE301	Core 5 -Poetry-II	5	3	30	70	100	4
III	19BAE302	Core 6- Drama	5	3	30	70	100	4
III	19BAEID3	IDC 3 – History of English Literature	5	3	30	70	100	4
IV	19BAESB1/ 19BAESB2	Skill Based Course I – Personality Development / Translation Tasks#	3	3	-		75	75	3
IV	19BTA001/ 19ATA001/ 19BAEED1	EDC 1:BT 1 / AT 1/PC Software #	2	2	-		50	50	2
		Total	**30**					**625**	**23**

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I	19LATA04 19LAH104 19LAMY04 19LAFR04	Language –IV Hindi-IV Malayalam-IV French-IV	5	3	30	70	100	3
II	19ENG004	English – IV	5	3	30	70	100	3
III	19BAE401	Core 7 -Elements of Phonetics	5	3	30	70	100	4

III	19BAE402	Core 8 - Indian Writing in English	5	3	30	70	100	4
III	19BAEID4	IDC 4-Literary Criticism	5	3	30	70	100	4
IV	19BAESB3/ 19BAESB4	Skill Based Course II: - Developing Communicative Skills/Technical English#	3	3	-	75	75	3
IV	19BTA002/ 19ATA002/ 19BAEED2	EDC 2 :BT 2/AT 2/ Introduction to Information security #	2	2	-	50	50	2
V	19NCC001/ 19NSS001/ 19SPT001 / 19EXT001	NCC/NSS/Sports /Extension Activities @			50		50	2
		Total	30				675	25

SEMESTER V

III	19BAE501	Core 9-Shakespeare	5	3	30	70	100	4
III	19BAE502	Core 10- American Literature	5	3	30	70	100	4
III	19BAE503	Core 11-Children Literature in English	4	3	30	70	100	4
III	19BAE504	Core 12-New Literatures	4	3	30	70	100	4
III	19BAE505	Core 13- English Language Teaching	6	3	30	70	100	5
III	19BAEE01/ 19BAEE02/ 19BAEE03	Elective I :	6	3	30	70	100	5
		Total	30				600	26

SEMESTER VI

III	19BAE601	Core 14- Journalism and Mass Communication	5	3	30	70	100	4
III	19BAE602	Core 15- Ethics in English Literature	5	3	30	70	100	4
III	19BAE603	Core 16-World Literature in English Translation	6	3	30	70	100	4
III	19BAE604	Core 17- Project – Creative Writing	4	3	50	50	100	5

III	19BAEE04/ 19BAEE05/ 19BAEE06	Elective II :	6	3	30	70	100	5
III	19BAEE07/ 19BAEE08/ 19BAEE09	Elective III :	4	3	30	70	100	4
		Total	**30**				**600**	**26**
		Total					**3600**	**140**

For Candidates admitted from the Academic year 2019 - 2020 onwards

\# No Continuous Internal Assessment (CIA) only Comprehensive Examination (CE)

@ No Continuous Internal Assessment (CIA) and Comprehensive Examination (CE)

IDC- Inter disciplinary Course, EDC – Extra Disciplinary Course, SBC – Skill Based Courses

List of Skill Based Courses

S.No	Sem	Code	Subject Title	Credits
1	III	19BAESB1	Personality Development	3
2	III	19BAESB2	Translation Tasks	3
3	IV	19BAESB3	Developing Communicative Skills	3
4	IV	19BAESB4	Technical English	3

List of Elective Courses

S.No	Sem	Code	Subject Title	Credits
ELECTIVE I				
1	V	19BAEE01	English for Specific Purpose	5
2	V	19BAEE02	Introduction to MS Office and Internet Research Skills	5
3	V	19BAEE03	Study of Indian Theatre	5
ELECTIVE II				
4	VI	19BAEE04	Comparative Literature	5
5	VI	19BAEE05	English for Competitive Exams	5
6	VI	19BAEE06	Creative Writing	5
ELECTIVE III				
7	VI	19BAEE07	Intensive Study of an Author- Rabindranath Tagore	4
8	VI	19BAEE08	Critical Approaches to Literature	4
9	VI	19BAEE09	Inspiring Speeches	4

Lit of Extra Disciplinary Courses

S.no	Sem	Code	Subject Title	Credits
1	III	19BTA001	Basic Tamil I	2
2	III	19ATA001	Advanced Tamil I	2
3	III	19BAEED1	PC Software	2
4	IV	19BTA002	Basic Tamil 2	2
5	IV	19ATA002	Advanced Tamil 2	2
6	IV	19BAEED2	Introduction to Information Security	2

List of Additional Credit Courses

S.no	Sem	Code	Subject Title	Credits
1	III	19BAEAC1	Professional Communication	2
2	IV	19BAEAC2	Writing for Corporate Secretary ship	2
3	V	19BAEAC3	Theatrical Arts	2

Summary of the Programme

Part	No of Papers	Total Credits	Total Marks
I - Language	4	12	400
II- English	4	12	400
III –Core	17	69	1700
III – Allied - IDC	4	16	400
III – Elective	3	15	300
IV –Foundation Course	2	4	100
IV – EDC	2	4	100
IV – Skill Based Course	2	6	150
V -NSS/NCC/SPORTS /Extension Activities	-	2	50
Total	**38**	**140**	**3600**

Regulations for B.A English Literature

For Candidates admitted from the academic year 2019- 2020 onwards
(Effective from the Academic Year 2019-2020 onwards)

1. Submission of Record Note Books for practical examinations

Candidates appearing for practical examinations should submit Bonafide Record Note Books prescribed for practical examinations, Otherwise the candidate shall not be permitted to appear for the Practical Examinations.

2. Ratio of Comprehensive Examination, Pre- Model and Model Examinations Marks for UG and PG Courses

Part	Internal Assessment	External Assessment	Total Marks
I (Languages)	30	70	100
II (English)	30	70	100
III(Core, IDC)	30	70	100
IV (AOC)	-	75	75
IV (EDC/Foundation Course)	-	50	50
V (NCC/NSS/Sports/Ext. Activity)	50	-	50

3. Project Work Mark Distribution

Particulars	IA	CE	Total
Project Work (UG)	50	50	100
Project Work (PG)	100	100	200
Project Work(M.Sc(CS)/M.Sc(ECS)	150	100	250
Project Work (M.Com/MIB)	50	100	150

4. Practical Mark Distribution for all UG and PG Courses

Internal -40 External-60 Total Marks -100

5. Break up for Internal Marks

S. No	Internal Marks	Distribution of Marks
1	Pre Model Examination	70
2	Model Examination	70
3	Seminar	30
4	Attendance	10
Total		**180/6=30**

6. Seminar Split up

S.NO	Seminar split up	Marks
1	Content	10
2	Flow of the presentation	10
3	Stage management and Body language	10
	Total	**30**

7. Attendance Break up

S.NO	Attendance split up	Marks
1	65% to 74%	4
2	75% - 80%	6
3	81% - 90%	8
4	91% - 100%	10

8. Internal and External Marks for Project Work

S.No	Internal Marks	Distribution of Marks
1	**INTERNAL** Review –I Review –II Documentation & Final Review	 10 10 30 **Total (50)**
2	**EXTERNAL** Presentation Viva	 30 20 **Total (50)**
	Total	**100**

The distribution of Marks among the various components for IA and CE for Theory, Practical and Project Work is given in detail in the respective Schemes of Examination and Regulation of the different UG and PG Courses, duly passed in their respective Board of Study.

9. Pattern of Question Paper

For Pre model Test, Model and Comprehensive Examination under – Graduate and Post-Graduate Courses.

Maximum Marks : 70 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×4=20)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 75 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×5=25)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 50 / Time 2 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×3=15)	Each question carries four marks	Internal Choice
Section – C	(5×5=25)	Each question carries eight marks	Internal Choice
Maximum Marks : 70 / Time 3 Hrs (MBA)			
Section – A	(10×2=20)	Each question carries two mark	Short Answers
Section – B	(5×7=35)	Each question carries seven mark	Internal Choice
Section – C	(1×15=15)	Each question carries fifteen mark	Compulsory Question

Note:

1. The questions should be numbered sequentially, running through the Sections A, B and C.

2. The maximum marks are 70/75.

Note:

1. The questions should be numbered continuously running through the Sections A, B and C.

2. Questions should be evenly distributed among the unit in the syllabus in all the sections of the Question paper

3. While framing questions with internal choice the questions must be identified as (a) or (b). (e.g. 11. a or b). Further, the internal choice must be from the same unit.

4. The Controller of the Examinations shall arrange for the setting of question papers on the basis the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies.

10. Certificate Course

In the academic year 2019-2020, we are introducing certificate course for III and IV semesters as an interdisciplinary course. The Course titles are as follows

List of Certificate Courses

S.No	Sem	Subject Title
1		Professional Proficiency in English
2	III	Professional Writing
3		Play Writing
4		Spoken English
5	IV	Soft Skills
6		Psychology

BA/B.SC/BBA/B.COM/BCA Degree Examination- Syllabus for Candidates admitted from the academic year 2019- 2020 onwards
FIRST SEMESTER
Part II - English -I

Maximum CIA- 30
Maximum CE-70
Total Hours – 72

Course Objective:
To familiarize the learner with LSRW skills for the best acquisition of skills to accommodate in social, academic, business and literary contexts.

Unit- I: Poetry   (15 Hours)

William Shakespeare	- All The World's A Stage
Percy Bysshe Shelly	- Ozymandias
Sir Walter Scott	- Lockinvar

Unit - II: Prose   (15 Hours)

R.K Narayan	-Fifteen Years
Pearl S Buck	-India Through A Travellers' Eye
Sir C.V Raman	-Water-The Elixir of Life

Unit – III: One Act Play   (14 Hours)

Kenneth Sawyer Goodman	-The Game Of Chess
J.B Priestly	-Mother's Day

Unit- IV: Short Stories   (14 Hours)

Ruskin Bond	-Tiger In The Tunnel
Oscar Wilde	-The Model Millionaire
Stephen Leacock	-The Conjuror's Revenge

Unit - V: Grammar   (14 Hours)
One word substitution
Reading comprehension
Foreign words and phrases
Transformation of sentences

Course outcomes:
- Identify a variety of forms and genres of poetry from diverse cultures and historic periods, such as haiku, sonnets, ballads, dramatic monologues, free verse, etc.
- Relate the literary effect and content.
- Evaluate a theatrical performance for its effective use of music, dance, or visual arts.
- Analyze a variety of short fiction at college level.
- Apply sentence structure and a variety of sentences.

Text Book - Designed by the Department, VLBJCAS

BA/B.SC/BBA/B.COM/BCA Degree Examination- Syllabus for Candidates admitted from the academic year 2019- 2020 onwards
SECOND SEMESTER
Part II - English - II

Maximum CIA- 30
Maximum CE-70
Total Hours – 72

Course Objective:
To enrich the language competences of the students through functional English, make them aware of various themes and styles.

Unit- I: Poetry		(15 Hours)
William Shakespeare	-Shall I compare thee to a summer's day?	
John Milton	-On His Blindness	
Judith Wright	-The Harp and The King	

Unit- I: Poetry   (15 Hours)
    William Shakespeare   -Shall I compare thee to a summer's day?
    John Milton   -On His Blindness
    Judith Wright   -The Harp and The King
Unit - II: Prose   (15 Hours)
    Desmond Morris   -A Little Bit of What You Fancy
    Sir Arthur H.Rostron   -Loss of Titanic
    S.Radhakrishnan   -Character is Destiny
Unit – III: One Act Play   (14 Hours)
    W.W Jacobs   -The Monkey's Paw
    Anton Chekhov   -The Proposal
Unit- IV: Short Stories   (14 Hours)
    O' Henry   -After 20 Years
    Rabindranath Tagore   -My Lord The Baby
    George Orwell   - Shooting An Elephant
Unit - V: Grammar   (14 Hours)
    Hints development
    Completion of story
    Spot the error
    Advertisement writing
    Degrees of comparison

Course outcome:
  • Recognize the rhythms, metrics and other musical aspects of poetry.
  • Apply active and passive vocabulary.
  • Make use of role plays after studying the one act plays with its strategies.
  • Categorize culture, author bibliographic, and historic context of each story.
  • Identify and revise fragments.

Text Book - Designed by the Department, VLBJCAS

Bachelor of Arts (English Literature) Degree Examination-Syllabus- for the Candidates admitted from the academic year 2018-2019 onwards

FIRST SEMESTER
Part-III- Core-1 Prose

Maximum CIA- 30
Maximum CE-70
Total Hours – 72

Course Objective:

To enable students to identify themes, styles, and techniques of writers and to provide

students a scope for creative writing by modeling on these writers

Unit-I   (15 Hours)

Francis Bacon	- Of Studies
Francis Bacon	- Of Fame
Sir Richard Steele	- The Trumpet Club

Unit – II   (15 Hours)

Joseph Addison	- Sir Roger At The Theatre
Oliver Goldsmith	- The Man in Black
Daniel Defoe	- Description of a Quack Doctor

Unit-III   (14 Hours)

Charles Lamb	-A Dissertation upon a Roasted Pig
Charles Lamb	-Dream Children- A Reverie
William Hazlitt	- The Fight

Unit -IV   (14 Hours)

Aldous Huxley	- English Snobbery
G K Chesterton	- The Worship of the Wealthy
J B Priestly	- Travel by Train

Unit – V   (14 Hours)

A G Gardiner	- A Fellow Traveller
A J Cronin	- The Best Investment I Ever Made
Pele With RL Fish	- Pele's Thousandth goal

Course Outcome:

- Interpret Bacon's essays and Sir Richard Steele in prose form.
- Identify Eighteenth Century Collaborative Journalism is learnt by the students.
- Compare Prose Romanticism through Lamb and Hazlitt.
- Apply Theological, Paradoxical theories.
- Make use of Prose writers.

Text Books:
1. MG Nayar, A Galaxy of English Essayists, Trinity, 2014.
2. Vimala Ramarao, Current prose for Better Learning, Macmillan, 2009.
3. DK.Sebastian and AG.Xavier, Prose &Poetry for the Young Reader, Trinity, 2014.

Reference Book:
1. Dr.S.Sen, Essays of Elia, unique Publishers, 2014.

Bachelor of Arts (English Literature) Degree Examination -Syllabus- for the Candidates admitted from the academic year 2018-2019 onwards

FIRST SEMESTER
Part-III-Core 2 Fiction

Maximum CIA- 30
Maximum CE-70
Total Hours – 72

Course Objective:
To make the students understand the fictional writings.

Unit - I   (15 Hours)
            Jane Austen – Emma

Unit – II   (15 Hours)
            George Eliot – Mill on the Floss

Unit – III   (14 Hours)
            Charles Dickens – Great Expectations

Unit – IV   (14 Hours)
            Wilkie Collins – The Moonstone

Unit – V   (14 Hours)
            F. Scott Fitzgerald -The Great Gatsby

Course Outcome:
- Infer Eighteenth Century life of woman.
- Outline moralistic views of the Victorian Age.
- Relate social reform of the Nineteenth Century.
- Identify the elements of Detective Novel.
- Interpret the fictional writings of the various ages.

Text Books:
1. Austen, Jane. *Emma*, Fingerprint Publishing, 2014.
2. Eliot , George. *Mill on the Floss*, Maple Press, 2014.
3. Dickens, Charles. *Great Expectations*, Penguins Revised Edition, 2014.
4. Collins, Wilkie. *The Moonstone*, Maple Press, 2010.
5. Fitzgerald, Scott. *The Great Gatsby*, Fingerprint Publishing, 2014.

Reference Books:
1. *Byrne, Paula, Jane Austen's Emma: A Sourcebook. Routledge ed. (2004).*
2. Byatt, A.S. Introduction to the Penguin Classics Edition, 1985.
3. *John Forster (1872–1874), The Life of Charles Dickens, London: J. M. Dent & Sons*, edited   by J. W. T. Ley, 1928.
4. Hall, Sharon K (1979). Twentieth century literary criticism. p.531. University of Michigan.
5. *Randall, Mónica. The Mansions of Long Island's Gold Coast. Rizzoli., 2003.*

Bachelor of Arts (English Literature) Degree Examination-Syllabus- for the Candidates admitted from the academic year 2018-2019 onwards

FIRST SEMESTER
Part-III- IDC – 1 Social History of England

Maximum CIA- 30
Maximum CE-70
Total Hours – 72

Course Objective:
To introduce the historical and social background of England.

Unit – I	The Renaissance The Reformation The Tudor navy and Armada	(15 Hours)
Unit – II	The East India Company Colonial Expansion Civil War and its social significance	(15 Hours)
Unit – III	Puritanism Restoration in England The Origin & Growth of Political Parties in England	(14 Hours)
Unit – IV	Age of Queen Anne Agrarian Revolution Industrial Revolution	(14 Hours)
Unit – V	Effects of French Revolution The Victorian Age World wars & social security	(14 Hours)

Course Outcome:
- Compare between the Renaissance and Reformation period and the development in learning.
- Relate the consequences of colonization and the significance of the Civil War.
- Identify the political reformation in England.
- Analyze the effects of Industrial and Agrarian Revolution that led to changes in learning.
- Relate French Revolution, World Wars and the consequences.

Text Book:
  1. Xavier.A.G. *Introduction to the Social History of England*, Viswanathan Printers and Publishers, 2009.
Reference Books:
  1. Thailambal.P. *Social History of England*, Ennes Punblications, 1996.
  2. Johri.A.N. *A Social History of England*, Doaba House, 1994.
  3. Travelyon.G.M. *English Social History*, Surjeet Publications, 2011.

UG Degree Examination- Syllabus for Candidates admitted from the academic year 2018-2019 Onwards.

FIRST SEMESTER
Part- IV- Foundation Course I- Environmental Studies

Total Hours: 24

Course Objective:
To acquaint the learners based on ethical, cross-cultural, and historical context of environmental issues and the links between human and natural systems.

Unit I   (5 Hours)
          Introduction and Scope of Environmental Studies
          Conservation of Energy

Unit II   (5 Hours)

          Ecosystem

Unit III   (5 Hours)
          Biodiversity

Unit IV   (5 Hours)
          Water Pollution
          Noise Pollution
          Solid Waste Management

Unit V   (4 Hours)
          Social Issues and Environment

Course Outcome:

- Explain conservation and management of natural resources like forest, water, air, mineral, etc.
- Analyze interrelationships between living organisms and the environments in which they live.
- Apply knowledge and understanding of theories in the field of Biodiversity.
- Interpret the effects on water due to organic materials, plant nutrients and toxic, physical and biological pollutants.
- Utilize natural curiosity and creativity for the immediate surroundings.

Text Book:
 1. Arumugam N & Kumaresan V.*Environmental Studies*, Saras Publication, Nagercoil, 2018.

Reference Book:
1. Narayanan Sriman Badri P.Dr. & Kannan R.Dr. *Environmental Studies*, Rukmani Offset Printers, 2015.

Bachelor of Arts (English Literature) Degree Examination-Syllabus- for the Candidates admitted from the academic year 2018-2019 onwards

SECOND SEMESTER
Part - III - Core 3 Poetry – I

Maximum CIA- 30
Maximum CE-70
Total Hours – 72

Course Objective:

To familiarize learners about the diverse schools of poetry, trends, individual traits of poets and to identify poetic devices and strategies and how to interpret a poem.

Unit - I & II   (28 Hours)

Edmund Spenser	- Prologue to the Faerie Queene
John Milton	- Paradise Lost Book IX

Unit – III   (14 Hours)

John Donne	- A Valediction: Forbidding Mourning
Andrew Marvell	-To His Coy Mistress
John Dryden	- Macflecknoe

Unit – IV   (15 Hours)

Alexander Pope	- From Essay on man
Thomas Gray	- Elegy Written in a Country Churchyard
Oliver Goldsmith	-The Village Schoolmaster

Unit – V   (15 Hours)

William Collins	- Ode to Evening
William Blake	- The Tyger
Dante Gabriel Rossetti	- The Blessed Damozel

Course Outcome:
- Interpret various types of poetry beginning with Epic poems.
- Relate the Metaphysical poets and their revolutionary ideas.
- Identify poems with the reasons and wit.
- Explain the modern forms of poetry.

Text Books:
1. Green David, *Winged Words,* Macmillan, India: 1997.
2. Milton John. *Paradise Lost Book IX,* Macmillan, India: 2013.

Reference Book:
1. Blaney Justin, Wh*ispers Willow,* Inkliss, 2017.

B.A (English- Literature) Degree Examination-Syllabus- For the Candidates admitted from the academic year 2018-2019 onwards
SECOND SEMESTER
Part-III-Core 4 Grammar and Usage

Maximum CIA- 30
Maximum CE-70
Total Hours – 72

Course Objective:
To train the Learner to make use of Grammar in sentence construction and to enhance the Learner to use traditional and Modern Grammar

Unit – I   (15 Hours)
Part-I Grammar and Usage
The Sentence- Parts of Speech- Nouns-I- Nouns-II- Adjectives-
Comparison of Adjectives- Articles-Pronouns-Demonstrative, Indefinite,
Interrogative, Distributive and Reciprocal Pronouns- Relative Pronouns-
Verbs- Verbs -Mood and Tense-Concord or Agreement of the Verb with the
Subject- Non-Finite Verbs - Strong and Weak Verbs-The Auxiliaries-
Modal Auxiliaries- Anomalous Finites-Adverbs- Prepositions-
Conjunctions- Interjections

Unit – II   (15 Hours)
Part II Sentence Structure-A
Simple, Compound, Complex and Compound-Complex Sentences
Analysis of Simple Sentences- Clauses- Analysis of Complex Sentences
Analysis of Compound Sentences and Compound-Complex Sentences

Unit – III   (15 Hours)
Part II Sentence Structure-B
Synthesis of Sentences-Transformation of Sentences-I-Transformation of
Sentences-II-Sequence of Tenses and Direct and Indirect Speech- Punctuation
and Capitals

Unit – IV   (15 Hours)
Part III Structures, Literary and Conversational
Verb Patterns and Structures-I-Verb Patterns and Structures-II-Verb
Patterns and Structures-III-Verb Patterns and Structures (Mainly Conversational)

Unit – V   (12 Hours)
Part IV Vocabulary and Composition
Word-Formation-The Use of Prefixes- Word-Formation-The Use of Suffixes
Word-Formation-Compound Words- Synonyms and Antonyms
One-Word Substitutes for Phrases and Clauses- Words Often Confused
Words with Appropriate Prepositions- Writing Stories from Outlines

Course Outcome:
* Categorize Parts of Speech.
* Analyze the types of sentences.
* Utilize transformations of sentences are concentrated inclusive of punctuation.
* Organize structures and patterns.
* Identify word formation - enlargement of vocabulary.

Text Book:
1. Green David. *Contemporary English Structure and Composition*, Trinity, 2015.

Reference Book:
1. N. Krishnaswamy. *Modern English* (A book of Grammar Usage and Composition), Trinity, 2017.

Bachelor of Arts (English Literature) Degree Examination-Syllabus- for the Candidates admitted from the academic year 2018-2019 onwards
SECOND SEMESTER
Part-III-IDC- 2 Literary Forms

Maximum CIA- 30
Maximum CE-70
Total Hours -72

Course Objective:
To provide a thorough knowledge of the literary genres and the significant literary movements in the field of English literature.

Unit - I   (15 Hours)
            Subjective and Objective poetry
            Poetical types
            Stanza Forms- The Heroic Couplet and The Spenserian Stanza

Unit-II   (14 Hours)
            The Metaphysical School of Poets
            The Classical Movement
            The Romantic Revival
Unit-III   (14 Hours)

            The Dramatic Art
            Dramatic Types
            Dramatic Devices
Unit -IV   (14 Hours)
            Origin of the English Drama
            Origin of the English Theatre
            The Essay
Unit-V   (15 Hours)
            The Novel
            The Short Story
            Biography and Autobiography
Course Outcome:
   • Compare poetic types and stanza forms.
   • Relate various school of poetry.
   • Outline the features of Drama and its life.
   • Interpret the origin of English Drama and Essay.
   • Utilize various genres like the Novel, Short story, Biography and Autobiography.

Text Book:
1. Prasad. B *A Background to the Study of English Literature,* Macmillan, 2013.

Reference Book:
1. Abrams M.H. *A Glossary of Literary Terms*, Cengage Learning. 2015.

B.A (English- Literature) Degree Examination-Syllabus- For the Candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PART-III CORE 5 POETRY-II

Maximum CIA: 30
Maximum CE:70
Total Hours:60

Course Objective:
To familiarize learners about the diverse schools of poetry, trends, individual traits of poets and to identify poetic devices and strategies and how to interpret a poem.

Unit I   (12 Hours)
    William Wordsworth   Resolution and Independence
    S.T.Coleridge   Kubla Khan
    P.B.Shelley   Ode to Skylark
Unit II   (12 Hours)
    John Keats   Ode on a Grecian Urn
    Lord Byron   Epitaph to a Dog
    Sir Walter Scott   The Truth of Woman
Unit III   (12 Hours)
    Alfred Lord Tennyson   Tithonus
    Alfred Lord Tennyson   Lotus Eaters
    Robert Browning   My Last Duchess
Unit IV   (12 Hours)
    Mathew Arnold   Scholar Gypsy
    W.B.Yeats   Easter 1916
    T.S.Eliot   The Hollow Men
Unit V   (12 Hours)
    W.H.Auden   The Shield of Achilles
    Wilfred Owen   Strange Meeting
    LoisMacniece   Prayer before Birth

Course Outcome:

CO1: Appreciate the nuances of poetic language and poetic devices.
CO2: Differentiate the different kinds of poetry – lyric, ode, ballad, elegy and
dramatic monologue.
CO3: Analyze the poems critically.
CO4: Understand and get acquainted with the creative imagination and techniques of poetry.
CO5: Understand and appreciate poetry as a literary art form.

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		L					L	
CO 2			H					M
CO 3	M					M		
CO 4			L				L	
CO 5					M			M

Text Books
1. Ed. Robert Burns. *Spectrum of Verse*, McMillan Publication, 1991.
2. Compiled by Prof. Lalitha Natarajan. *English for Excellence Poetry*, Anuradha Publications, Chennai, 2013.

Reference Book
1. Green, David. *The Winged Word*, Laxmi publications, 2006.

B.A (English- Literature) Degree Examination-Syllabus- For the Candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PART-III CORE 6 - DRAMA

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To enable the students to have knowledge about the dramatic devices used in the prescribed plays and facilitate the students to appreciate drama.

Unit I   (12 Hours)
Christopher Marlowe   Dr. Faustus

Unit II   (12Hours)
John Dryden   All for Love

Unit III   (12 Hours)
Henrik Ibsen   Doll's House

Unit IV   (12 Hours)
George Bernard Shaw   Arms and the Man

Unit V   (12 Hours)
Oscar Wilde   The Importance of Being Earnest

Course Outcome:

CO1: Understand the structure of a play and learn the dramatic devices used in writing a play.
CO2: Gain knowledge in the development of English drama.
CO3: Conceptualize various types of drama viz. Tragedy, Comedy, Farce, Melodrama, Historical Plays.
CO4: Interpret literary texts in English by nurturing and utilizing their ability to understand drama in a skilled, knowledgeable, and ethical manner.
CO5: Develop reading, writing and analytical skills and communicate their ideas critically and Creatively.

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M						L	
CO 2		L				L		
CO 3				H				L
CO 4		L			L		M	
CO 5				L				M

Text Books
1. Marlowe Christopher, *Doctor Faustus*. New Mermaids, Paperback, 2014.
2. Dryde John n *All for Love.* New Mermaids, Paperback, 2014.
3. Ibsen Henrik, *Doll's House*, Dover Thrift Edition, Dover Publication, 2017.
4. Shaw Bernard, *Arms and the Man*. Maple Classics, 2013.
5. Wilde Oscar, *The Importance of Being Earnest*, Dover Thrift Edition, Dover Publication, 2016.

Reference Book
1. George Bernard Shaw's – Arms and The Man, A Complete Study by YashRampal,Paramvir publications.

B.A (English- Literature) Degree Examination-Syllabus- For the Candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PART-III IDC- 3 HISTORY OF ENGLISH LITERATURE

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To make the students aware and understand growth and development of English literature.

Unit I   (12 Hours)
    Age of Chaucer

Unit II   (12 Hours)
    The Age of Elizabeth

Unit III   (12 Hours)
    The Puritan Age

Unit IV   (12 Hours)
    The Romantic Age

Unit V   (12 Hours)
    20th Century Literature

Course Outcome:

CO1: Perceive a chronological survey of the major writers and their writings that have contributed to the development of English literature.
CO2: Chronologically fix authors, texts, movements' ideologies and literary practices.
CO3: Acquire knowledge about the three basic genres of literature namely poetry, prose and drama.
CO4: Develop a view of how English literature has evolved through the centuries, establishing a perception of its Literary History.
CO5: Understand texts in their cultural and historical contexts.

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		M					M	
CO 2			H			L		
CO 3	L							L
CO 4				M		M		
CO 5			L				L	

Text Book
1. Hudson W.H.*An Outline History of English Literature,* B.I.Publications.

Reference Books
1. Shanmugakani.A. *History of English Literature*, Vasans Publications, 2006.
2. Albert, Edward. *History of English Literature*, Oxford UP, 1979.
3. Hudson.W.H. *An Introduction to the study of English Literature*, Surjeet Publications

B.A (English- Literature) Degree Examination-Syllabus- For the Candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PART – IV SBC – I PERSONALITY DEVELOPMENT

Maximum CE: 75
Total Hours: 36

Course Objective:
To enhance the holistic development of students and improve their employability skills and personality.

Unit I
Interpersonal Skills   (7 Hours)
>   Gratitude-Understanding the relationship between Leadership Networking & Team work-Interpersonal Skills Situation description of Interpersonal Skill-Necessity of Team Work Personally, Socially and Educationally.

Unit II   (7 hours)
>   Leadership
>   Skills for a good Leader, Assessment of Leadership Skills

Unit III   (7 Hours)
>   Stress Management
>   Causes of Stress and its impact, how to manage & distress,
>   Circle of control, Stress Busters, Emotional Intelligence
>   What is Emotional Intelligence, emotional quotient why Emotional Intelligence matters, Emotion Scales. Managing Emotions.

Unit IV   (7 Hours)
Conflict Resolution
>   Conflicts in Human Relations-Reasons Case Studies, Approaches to conflict resolution.

Unit V   (8 Hours)
>   Decision Making
>   Importance and necessity of Decision Making, Process and
>   Practical way of Decision Making, Weighing Positives & Negatives.
>   Technical Topic Presentation
Course Outcome:

CO1: Develop Communication Skills as well as Positive Personality Traits.
CO2: Acquire the Language Suitable for Technical Communication.
CO3: Inculcate the Habit of Regular Reading and Writing.
CO4: Acquaint students with the major practices in effective personality development.
CO5: Experience the language to co-relate their classroom learning with their outside work.

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		L						L
CO 2			M			M		
CO 3	H						M	
CO 4				L		L		
CO 5					M			M

Text Book
1. Soft Skills, *Career Development Centre*, Green Pearl Publications. 2015.

Reference Books
1. Covey,Sean,*Seven Habit of Highly Effective Teens*, New York, Fireside Publishers:1998.
2. Carnegie Dale, *How to win Friends and Influence People*, New York: Simon &Schuster: 1998.
3. Thomas A Harris,*I am ok, You are ok*, New York,Harper and Row: 1972.
4. Daniel Coleman, *Emotional Intelligence*, Bantam Book: 2006.

B.A (English- Literature) Degree Examination-Syllabus- For the Candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PART – IV SBC I- TRANSLATION TASK

Maximum CE: 75
Total Hours: 36

Course Objective:
 To familiarize the basic theories related to Translation by giving a practical exposure to various forms of Translations.

Unit I   (6Hours)
        History of Translation
        The Concept of Translation, Definition, Theories.

Unit II
                                                                                          (8Hours)
        Kinds of Translation and Methods,
        Specific Problems of Translation, Translation Procedures

Unit III   (6Hours)
        Bible Translation, poetry Translation

Unit IV   (8Hours)
        Translation of Statements, Proverbs, Headlines
        Translation of Paragraphs

Unit V   (8Hours)
        Translation of Official Letter, Articles – Editorials

Course Outcome:

CO1: Understand and appreciate aesthetic, moral and cultural trends of literatures in the English language.
CO2: Compare and discuss important similarities and differences between the various literary forms, periods, and histories.
CO3: To provide students with opportunities to generate high-quality specialized translated texts.
CO4: To acquaint students with translation theory so to enable them to obtain a detailed understanding of the process of translation.
CO5: To provide students with a comprehensive understanding of the professional world of the translator and thereby to prepare them for entry into that employment sector.

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	H						H	
CO 2		L				L		
CO 3			M					M
CO 4				M		M		
CO 5					L		L	

Text Book

1. S.Kanagaraj and Samuel Kirubakar-*The Anatomy of Translation*, Madurai, Prem Publishers, 1995.

Reference Books

1. Bassnett Susan: *Translation Studies*, Psychology Press, 2002.
2. Newmark Peter: *Approaches to Translation*, Prentice Hall, 1988
3. Bassnett Susan &Lefevere Andre: *Translation, History and Culture*, Pinter Publishers, 1990.
4. Bassnett Susan &Lefevere Andre: *Constructing Cultures:Essays on Literary Translation.*

B.A (English- Literature) Degree Examination-Syllabus- For the Candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
PART-III CORE-7 ELEMENTS OF PHONETICS

Maximum CIA: 30
Maximum CE:70
Total Hours:60

Course Objective:
To enhance the students the broad areas of phonetics inclusive of Consonants, Vowel sounds, Phonology and use of language in context.

Unit I   (12 Hours)
                    Phonetics: The Articulation of Speech Sounds
                    Classification of Speech Sounds
                    Classification and Description of consonants
                    Classification and Description of Vowels
Unit II   (12 Hours)
                    Phonology: Phonemes and Allophones
                    The Syllable
Unit III   (12 Hours)
                    The Pure Vowels and Diphthongs of English
The Consonants of English
                    Consonant clusters in English
Unit IV   (12 Hours)
                    Word Accent in English
                    Accent and Rhythm in Connected speech
Unit V   (12 Hours)
                    Intonation
                    Assimilation and Elision
Course Outcome:

CO1: Comprehend the production and perception of speech sounds.
CO2: Understand model of language structures.
CO3: Identify and familiarize the concepts in Phonetics and linguistics.
CO4: Analyse the system of language.
CO5: Apply the intonation of speech through practical usage.

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L							L
CO 2		M				M		
CO 3				H			H	
CO 4			L					L
CO 5					M	M		

Text Book

1. Balasubramanian.T, *A Textbook of English Phonetics for Indian Students*, Trinity Press, 2014.

Reference Book

1. Roach, Peter. *Phonetics (Oxford Introduction to Language Study ELT)*, Oxford University Press India, 2012.

B.A (English- Literature) Degree Examination-Syllabus- For the Candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
PART-III CORE-8 INDIAN WRITING IN ENGLISH

Maximum CIA: 30
Maximum CE: 70
Total Hours:60

Course Objective:
To acquaint the learners toward the various phases of evolution in Indian Writing in English.

Unit IProse   (12 Hours)
     Dr.S.Radhakrishnan   Character is Destiny
     Dr.APJ.AbdulKalam   My Visions for India
     C.Rajagopalachari   The Tree Speaks

Unit II Poetry   (12 Hours)
     Toru Dutt   Our Casurina Tree
     Nissim Ezekiel   Very Indian Poem in Indian English
     Sarojini Naidu   Coromandel Fishers

Unit III   Drama   (12 Hours)
     BadalSircar   Evam Indrajit

Unit IV   Fiction   (12 Hours)
     Mulk Raj Anand   Coolie

Unit V Short Stories   (12 Hours)
     R.K.Narayan   Snake in the Grass
     Manoj Das   A Substitute for the Sitar
     Kushwant Singh   Karma

Course Outcome:

CO1: Appreciate the language and thought process of Indian writers.
masteryand skill over the different periods of time.
CO2: Analyse and interpret the masterpieces of Indian Writing in English.
CO3: Understand the rich cultural diversity and aesthetics in Indian Literature.
CO4: Interpret the diverse texts and distinguish their salient features.
CO5: Highlights the glory of Indian writings in English.

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L					L		
CO 2		L						L
CO 3					H	H		
CO 4				M		M		
CO 5			L					L

Text Books
1. Compiled by Prof.Lalitha Natarajan. *English For Excellence Pose*, Anuradha Publications, Chennai, 2013.
2. Ed. Dr.S.Kanitha, *An Anthology of English Verse by Women*, ArivuPathipagam, 2009.
3. Compiled by Prof. Lalitha Natarajan. *English for Excellence Poetry*, Anuradha Publications, Chennai, 2013.*Vintage Wine,* NCBH, 2007.
4. EvamIndrajit: *Three-act Play Paperback*, OUP, 9 Jan 1975.
5. Mulk Raj Anand :*Coolie Unique Publisher(I)*Pvt Ltd; 2 edition (2014).
6. Ed. Prof. K.G.Seshadri, *Twelve Tales*. Anuradha Publications, Chennai, 2015.

Reference Books
1. Ed. By Dr.K.Gunasekaran. *English Prose Selections*, NCBH, 2011.
2. Dr. P.N.Ramani. *Vignettes,* NCBH, 2007.

B.A (English- Literature) Degree Examination-Syllabus- For the Candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
PART-III-IDC 4- LITERARY CRITICISM

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To enhance the basic concepts and methods of criticism and the ability of understanding literature through it.

Unit I   (12 Hours)
        The Background of English Criticism
        The Greek Masters – Plato, Aristotle

Unit II   (12 Hours)

        The Battle of Tastes – Sir Philip Sidney
        The Triumph of Classicism – John Dryden

Unit III   (12 Hours)

        William Wordsworth
        S.T.Coleridge

Unit IV   (12 Hours)

        Mathew Arnold
        Walter Pater

Unit V   (12 Hours)
        T.S.Eliot
        I.A.Richards

Course Outcome:

CO1: Outline the literary views of criticism.
CO2: Identify the role of writers responsible for the Triumph of Classicism.
CO3: Compare the critical aspects of writers belonging to the period of Romantic Revolt.
CO4: Demonstrate the period of Victorian compromise and writers belonging to this period.
CO5: Illustrate the importance of the age of interrogation.

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L							L
CO 2			H			H		
CO 3				M				M
CO 4		L					L	
CO 5					L			L

Text Book
1. Prasad, Birjadish. *An Introduction to English Criticism*, Macmillan Publishers India Ltd., 2011.

Reference Book
1. Nagarajan.M.S*, English Literary Criticism and Theory*, Orient Blackswan, 2006.

B.A (English- Literature) Degree Examination-Syllabus- For the Candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
PART-III- SBC II DEVELOPING COMMUNICATIVE SKILLS

Maximum CE: 75
Total Hours: 36

Course Objective:

 To impart LSRW Skills, in social, academic, business and literary contexts.

Unit I   (4 Hours)
                        Education Word Grid
                        Reading Problems and Solutions
UnitII   (8 Hours)

                        Syllabification
                        Forms for Expressing Quality
                        Expressing Comparison
                        Monosyllabic Comparison
Unit III   (8 Hours)
                        Di/Polysyllabic Comparison
                        The Best Monosyllabic Comparison
                        The Best Di/Polysyllabic Comparison
                        Practising Quality Words
Unit IV   (8 Hours)
                        Wh Words
                        Yes/No Recollection
                        Unscramble Wh Questions
                        Wh Practice

Unit V   (8 Hours)
                        Education and the Poor
                        Controlled Role Play
                        Debate on Education
                        Education in the Future
Course Outcome:

CO1: Make the students communicate effectively.
CO2: Enable them to Speak Impromtu.
CO3: Develop internal and external communications.
CO4: Enhance LSRW Skills.
CO5: Reply optimistically in written form.

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M					M		
CO 2		L					L	
CO 3					L			L
CO 4				H		H		
CO 5			M					M

Text Book

1. John Love Joy & Francis M.Peter, *Let's Communicate* 2. Trinity Press, 2015.

Reference Books
1. The Secrets of Successful Communication: *A Simple Guide to Effective Encounters in Business* (Big Brain vs. Little Brain Communication) Paperback – September 1, 2011.
2. John Love Joy & Francis M.Peter, *Let's Communicate 1*. Trinity Press, 2015.

B.A (English- Literature) Degree Examination-Syllabus- For the Candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
PART-IV-SBC II -TECHNICAL ENGLISH

Maximum CE: 75
Total Hours: 36

Course Objective:
To train the Learner to make use of Technical English and strengthen the LSRW Skills in English Language.

Unit I Fundamentals   (4 Hours)
Nature of Technical Communication

Unit II Listening Comprehension   (8 Hours)
        The Listening Process

Unit III Speaking Strategies   (8 Hours)
        The Speech Process
        Speaking Techniques

Unit IV Reading and Language Comprehension   (8 Hours)
        The Reading Process
        Reading Strategies

Unit V Professional Writing   (8 Hours)
        Resume and Job Application
        E-mail Messages

Course Outcome:

CO1: Practice the unique qualities of professional rhetoric and writing style.
CO2: Exploredifferent formats of technically using the language.
CO3: Make the students communicate effectively.
CO4: Use variety of reading strategies to foster comprehension
CO5: Demonstrate the ability to revise and to discover errors and correct them.

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L						L	
CO 2		H				H		
CO 3					M			M
CO 4			L			L		
CO 5				M			M	

Text Book
1. RixwiM.Ashraf, *Effective Technical Communication,* (1ˢᵗEdition, Tata McGraw Hill), 2005.

Reference Books

1. Sharon J.Gerson, *Technical writing- Process and Product*. Steven M. Greson (3ʳᵈ Edition, Pearson Education(Singapore) Pvt.Ltd) 2004.
2. Hari Mohan Prasad & Uma Ram Sinha, *Objective English for Competitive Examinations*, Tata McGraw Hill, 2005.

B.A (English- Literature) Degree Examination-Syllabus- For the Candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PART IV-EDC- COMMUNICATIVE ENGLISH

Maximum CE: 50
Total Hours: 24

Course Objective:
To help the learners to maximize their understanding and to develop their proficiency in English.

Unit I   (5Hours)

Communication and Language Functions
Communication Skills
Basic Soft Skills

Unit II   (5 Hours)

Hearing and Listening
Advantages of Listening
Listening – Speaking: Do's and Don'ts

Unit III   (5 Hours)

Speaking English
Functional Spoken English

Unit IV   (4 Hours)
Purpose of Reading
Reading Comprehension: Types of Text

Unit V   (5 Hours)
Importance of Writing
Formal and Informal Writing

Course Outcome:

CO1: Enhance the learner's communication skills.
CO2: Help the learners to develop their listening skill.
CO3: Steer conversations and influence people.
CO4: Enable the learners to identify the barrier in his thought process and rectify them.
CO5: Improves the writing skill of the students.

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L					L		
CO 2					H		L	
CO 3				M		M		
CO 4		L					L	
CO 5			M					M

Text Book
   1.   Soundararaj, Francis. *Basics of Communication in English*, Trinity Press: 2012.

Reference Book
   1.   Joy J. John Love & Francis M. Peter. S.J *Lets' Communicate*, Trinity Press: 2015.

B.A, B.Sc (Maths &Viscom) Degree Examination- Syllabus for Candidates admitted from the academic year 2019- 2020 onwards

THIRD SEMESTER
PART II - ENGLISH - III

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To familiarize the works of William Shakespeare and R.K.Narayan and to train the students for effective writing.

Unit I & II   (24 Hours)

William Shakespeare   The Merchant of Venice (Abridged Version)
                             Othello(Abridged Version)

Unit III & IV   (24 Hours)
R.K. Narayan   (Swami & Friends)
                             Father's Room
                             A Friend in Need
                             A New Arrival
                             Before the Examination

Unit V   (12 Hours)

                             Verbs
                             Tenses
                             Preposition

Course Outcome:

CO 1: Analyze the critical judgments about Shakespeare's works and develop a
literary interpretation.
CO 2: Understand the textual analyses of one of the greatest tragedies of Shakespeare
CO 3: Analyse and interpret the masterpieces of R.K.Narayan
CO 4: Interpret the diverse texts and distinguish their salient features.
CO 5: Apply sentence structure and a variety of sentences.

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		M						L
CO 2				L		H		
CO 3	L						L	
CO 4					M			L
CO 5			H				M	

Text Books

1. Shakespeare, William. *The Merchant of Venice*, Createspace Independent Publishers, 2015.
2. Shakespeare, William. *Othello*, Maple Press, 2018.
3. R.K.Narayanan,*Swami & Friends*, Indian Thought Publications, 2008.
4. Raymond Murphy, *English Grammar in Use*,Cambridge University, 2012.

Reference Books
1. Green David. *Contemporary English Structure and Composition*, Trinity, 2015.
2. N. Krishnaswamy. *Modern English* (A book of Grammar Usage and Composition), Trinity, 2017.
3. Shakespeare, William. *The Complete Works of William Shakespeare*. Wilco Publishing House.2011.

B.A, B.Sc(Maths &Viscom) Degree Examination- Syllabus for Candidates admitted from the academic year 2019- 2020 onwards
FOURTH SEMESTER
PART II - ENGLISH - IV

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To familiarize the works of William Shakespeare and R.K.Narayan and to train the students for effective writing.

UNIT I & II   (24 Hours)

William Shakespeare   Twelfth Night (Abridged Version)
                               King Lear(Abridged Version)

UNIT III & IV   (24 Hours)

R.K.Narayan   (Swami & Friends)
                               Monday Morning(The Exposition)
                               Rajam& Mani
                               Swami's Grandmother
                               What is a Tail?

UNIT V   (12 Hours)

                               Words often confused
                               Spot the Errors
                               Vocabulary building

Course Outcome:

CO 1: Analyze the critical judgments about Shakespeare's works and develop a
literary interpretation.
CO 2: Understand the textual analyses of one of the greatest tragedies of Shakespeare.
CO 3: Analyse and interpret the masterpieces of R.K.Narayan.
CO 4: Interpret the diverse texts and distinguish their salient features.
CO 5: Apply sentence structure and a variety of sentences.

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		M						L
CO 2				L		H		
CO 3	L						L	
CO 4					M			L
CO 5			H				M	

Text Books

1. Shakespeare, William. *King Lear*, Penguin Black Classics, 2015.
2. Shakespeare, William. *Twelfth Night*,Wonder House Books; First edition, 2019.
3. R.K.Narayanan. *Swami & Friends*, Indian Thought Publications, 2008.
4. K.M Prabhu, *Shades of Life* , Cambridge University, 2008.

Reference Books
1. Green David. *Contemporary English Structure and Composition*, Trinity, 2015.
2. N. Krishnaswamy. *Modern English* (A book of Grammar Usage and Composition), Trinity, 2017.
3. Shakespeare, William. *The Complete Works of William Shakespeare*. Wilco Publishing House.2011.

Bachelor of Business Administration

Regulation for BBA

(Effective from the academic year 2019-2020 onwards)

Introduction:

The Department of Management (UG) started the UG Programme in 1992. The UG Programme is BBA.

Objective:

➢ Provide the fundamental concepts and theory of business practice and specialized study in a business discipline.

➢ Develop an understanding of the ethical and social issues that are a concern to the business. Community;

➢ Prepare students to become responsible and contributing members of the community.

Eligibility: UG Programme

Candidate for admission to the first year of the Bachelor of Business Administration degree course shall be required to have passed the higher secondary examination (Academic or Vocational) conducted by the Govt. of Tamil Nadu or other examinations accepted as equivalent thereto by the Syndicate, subject to such other conditions as may be prescribed therefore.

Duration of UG Programme

The course shall extend over a period of three years comprising of six semesters with two semesters in one academic year. There shall not be less than 90 working days for each semester. Examinations shall be conducted at the end of every semester for the respective subjects.

Vision:

To be a world leader in business education, research and engagement, helping to create a better knowledge society.

Mission:

In the current global context, we believe in developing the aspiring leaders and entrepreneurs who manage and create powerful organizations in the emerging corporate landscape. BBA Department aims at creating highly intellect business mindset, promote best business practices and innovative techniques to attain desired organization goal and contribute to nation's economy at large.

Program Outcome

After completion of the Programme the graduates will be able to

P01: Develop the knowledge, skill and attitude to creatively and systematically to solve the management problems and work effectively in modern business organizations.

P02: Demonstrate the critical thinking mindset and the ability to identify and formulate research and to provide valid conclusions and contextual approaches across a variety of subject matter.

P03: Function effectively as an individual and as a member or leader in teams, and in multidisciplinary settings by demonstrating life skills, coping skills and human values.

P04: Develop fundamental in-depth knowledge and understanding of the principles, concepts, values, substantive rules and development of the core areas of business suchas finance, accounting, marketing, HR, operations along with the tools such as Tally, MS Excel, MS Office, etc.

P05: Graduate will recognize the need for adapting to change and have the aptitude and ability to engage in independent and life – long learning in the broadest context of socioeconomic, technological and global change.

Program Specific Outcome

PSO1: Graduates will be capable of making a positive contribution to business, trade and industry in the national and global context.

PSO2: Graduates will be able to apply frameworks and tools to arrive at informed decisions in profession and practice, striking a balance between business and social dimensions.

PSO3: Graduates with flair of self-employment will be able to initiate and build upon entrepreneurial ventures or demonstrate Intraprenuership for their employer organizations.

BOARD - BBA

Scheme of Examination (CBCS & OBE Pattern)Programme BBA

For the Candidates admitted from the Academic Year 2019-2020 Onwards)

Part	Sub Code	Subject Title	Ins.Hrs/Week	Dur. Hrs.	CIA	CE	Total	Credit
					Examination			
SEMESTER I								
I	19LATA01/ 19LAHI01/ 19LAMY01/ 19LAFR01	Language – I	5	3	30	70	100	3
II	19ENG001	English –I	5	3	30	70	100	3
III	19BBA101	Core1Principles of Management	6	3	30	70	100	4
III	19BBA102	Core 2 Financial Accounting	6	3	30	70	100	4
III	19BBAID1	IDC 1 Business Mathematics and Statistics	6	3	30	70	100	4
IV	19UFCA01	Foundation Course I : EVS #	2	2	-	50	50	2
		Total	**30**				**550**	**20**
SEMESTER II								
I	19LATA02/ 19LAHI02/ 19LAMY02/ 19LAFR02	Language –II	5	3	30	70	100	3
II	19ENG002	English – II	5	3	30	70	100	3
III	19BBA201	Core 3 Organizational Behavior	6	3	40	60	100	4
III	19BBA202/	Core 4 Business Economics	6	3	30	70	100	4
III	19BBAID2	IDC 2 Operations Research	6	3	30	70	100	4
IV	19UFCA02	Foundation Course II:Value Education #	2	2	-	50	50	2
		Total	**30**				**550**	**20**
SEMESTER III								
III	19BBA301	Core 5 Marketing Management	5	3	30	70	100	4
III	19BBA302	Core 6 Production & Operations Management	5	3	30	70	100	4

III	19BBA303	Core 7 Management Information System	5	3	30	70	100	4
III	19BBA304	Core 8 Cost Accounting	5	3	30	70	100	4
III	19BBAID3	IDC 3 Business Taxation	5	3	30	70	100	4
IV	19BBASB1/ 19BBASB2	**SBC 1** PC-Software Lab/ Customer Relationship Management #	3	3	-	75	75	3
IV	19BTA001/ 19ATA001/ 19BBAED1	**EDC 1** **ED 2:** BT I / AT I / Multimedia and its Applications	2	2	-	50	50	2
		Total	**30**				**625**	**25**
SEMESTER IV								
III	19BBA401	Core 9 Human Resource Management	5	3	30	70	100	4
III	19BBA402	Core 10 Research Methods for Management	5	3	30	70	100	4
III	19BBA403	Core 11 Management Accounting	5	3	30	70	100	4
III	19BBA404	Core 12 Consumer Behavior	5	3	30	70	100	4
III	19BBAID4	IDC 4Legal Aspects of Business	5	3	30	70	100	4
IV	19BBASB3/ 19BBASB4	**SBC 2** Business Communication / Modern Office Management #	3	3	-	75	75	3
IV	19BTA002/ 19ATA002/ 19BBAED2	BTII /ATII / Communicative English#	2	2	-	50	50	2
V	19NCC001/ 19NSS001/ 19SPT001/ 19EXT001	NCC/NSS/SPORTS/Extension Activity @	-	-	50	-	50	2
		Total	**30**				**675**	**27**
SEMESTER V								
III	19BBA501	Core 13 Financial Management	5	3	30	70	100	4
III	19BBA502	Core 14 Brands and Business	5	3	30	70	100	4
III	19BBA503	Core15 Entrepreneurship and Project Management	5	3	30	70	100	4
III	19BBA504	Core 16 Business Ethics and Corporate Governance	5	3	30	70	100	4
III	19BBAE01/ 19BBAE02/ 19BBAE03	Elective I Advertising & Sales Promotion/ Banking Law & Practices/ Labour Welfare & Industrial Relations	5	3	30	70	100	4
III	19BBAPR1	Project Viva Voce	5	3	50	50	100	4

		Total	30				600	24

		SEMESTER VI						
III	19BBA601	Core 17 International Business Management	5	3	30	70	100	4
III	19BBA602	Core 18 Industrial Law	5	3	30	70	100	4
III	19BBA603	Core 19 Insurance for Business Process	5	3	30	70	100	4
III	19BBA604	Core 20 E- Commerce	5	3	30	70	100	4
III	19BBAE04/ 19BBAE05/ 19BBAE06	**Elective II** Event Marketing/ Financial Services/ Human Resource Development	5	3	30	70	100	4
III	19BBAE07/ 19BBAE08/ 19BBAE09	**Elective III** Supply Chain & Logistic/ Stock Exchange Practices/ Training & Development	5	3	30	70	100	4
		Total	30				600	24
		Total					3600	140

\# No Continuous Internal Assessment (CIA) , only Comprehensive Examination (CE)

@ No Continuous Internal Assessment (CIA) , No Comprehensive Examination (CE)

IDC- Inter disciplinary Course , EDC – Extra disciplinary Course , SBC –Skill Based Course

List of Skill Based Courses

Sem	Code	Subject Title	Credits
III	19BBASB1	PC-Software Lab	75
III	19BBASB2	Customer Relationship Management	75
IV	19BBASB3	Business Communication	75
IV	19BBASB4	Modern Office Management	75

List of Elective Courses

Sem	Elective	Subject Code	Subject Title
V	Elective I	19BBAE01	Advertisement and Sales Promotion
		19BBAE02	Banking Law and Practices
		19BBAE03	Labour Welfare and Industrial Relations
VI	Elective II	19BBAE04	Event Marketing
		19BBAE05	Financial Services

		19BBAE06	Human Resource Development
VI	Elective II	19BBAE07	Supply Chain & Logistics
		19BBAE08	Stock Exchange and Practices
		19BBAE09	Training and Development

List of Extra Disciplinary Courses

Sem	Code	Subject Title	Credits
III	19BTA001	Basic Tamil-I	2
III	19ATA002	Advanced Tamil-I	2
III	19EDC002	Communicative English	2
IV	19BTA002	Basic Tamil-II	2
IV	19ATA002	Advanced Tamil-II	2
IV	19BBAED1	Multimedia and its applications	2

List of Additional Credit Courses

Sem	Code	Subject Title	Credits
III	19BBAAC1	Retail Management	2
IV	19BBAAC2	Institutional Training	2
V	19BBAAC3	Banking Technology	2

Summary

Part	No of Papers	Total Credits	Total Marks
I	2	6	200
II	2	6	200
III –Core	20	80	2000
III – IDC	4	16	400
III – Elective	3	12	300
III –Project	1	4	100
IV –Foundation Course	2	4	100
IV – EDC	2	4	100
IV – SkillBased Course	2	6	150
V Extension Activities	-	2	50
Total	**38**	**140**	**3600**

REGULATIONS FOR BOARD OF MANAGEMENTBBA

(Effective from the academic year 2019-2020 onwards)

1.Project and Viva Voce :

Each student in the UG final year shall compulsorily undergo Project Work in the 6th semester. Projects shall be done individually. Project Coordinators shall allocate the project title and the guide for each group. Project work shall be done only in the lab provided by the college, including Project Record Preparation. Project Reviews shall be conducted thrice in which the progress of project work shall be strictly evaluated by respective Project Guides and Project Coordinators. Viva-Voce shall be conducted only in the presence of Industrialists or academicians. Out of the Total of 100 marks, 50% of mark shall be allocated for CIA and 50% for CE VIVA VOCE.

2. Submission of Record Note Books for practical examinations

Candidates appearing for practical examinations shall submit bonafide Record Note Books prescribed for practical examinations. If not the candidate has to submit a bonafide certificate issued by the concerned subject in charge duly signed by the Head of the department. In such case, the record marks will not be provided.

3. Distribution of marks

The following are the distribution of marks for Comprehensive Examinations and CIA for Theory and Practical and Project.

Category	Max Marks	Comprehensive Examination		Internal Marks	Overall passing minimum (Internal + CE)
		Max Marks	Passing Minimum		
Theory Paper	100	70	28	30	40
	75	75	30	-	30
	50	50	20	-	20
Practical Paper	100	60	24	40	40
	75	75	30	-	30
Project	100	50	20	50	40

4. Distribution of Internal Mark for Theory

(No Passing Minimum for CIA)

S.No	CIA	Distribution of Marks
1	Pre Model Examination	70
2	Model Examination	70
3	Seminar	30
4	Attendance	10
	Total	180/6 (months)=30

Seminar

S.No	Seminar Split Up	Marks
1	Content	10
2	Flow of the presentation	10
3	Stage management and Body language	10
	Total	30

Breakup for Attendance

65%-74%   -4 Marks

75%-80%   -6 Marks

81%-90%   -8 Marks

91%-100%   -10 Marks

5. Distribution of Internal Mark for Practical:

MAXIMUM MARKS : 40		
S No	CIA	Distribution of Marks
1	For Completion of the Practical List	20
2	Test –I	10
3	Test –II	10
	Total	40

6. Distribution of Comprehensive Exam Mark for Practical:

MAXIMUM MARKS : 60		
S. No	**Comprehensive Examination**	**Distribution of Marks**
1	Record	10
2	Program – I Algorithm Coding Execution	5 10 10 TOTAL (25)
3	Program – II Algorithm Coding Execution	5 10 10 TOTAL (25)
	Total	60

7. Distribution of Mark for Project VIVA-VOCE:

S.No	CIA	Distribution of Marks
1	**Internal** Review –I Review –II Documentation & Final Review	10 10 30 **Total (50)**
2	**External *** Presentation Viva	30 20 **Total (50)**
	Total	100

*Marks to be awarded by both External and Internal Examiners.

The distribution of marks among the various components for CIA and CE for theory, practical and project work is given in detail in the respective schemes of examination and regulation of the UG programme, duly passed in their respective board.

8. Pattern of Question Paper

For Pre model, Model and Comprehensive Examination under – Graduate Courses.

Maximum Marks : 100 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×8=40)	Each question carries eight marks	Internal Choice
Section – C	(5×10=50)	Each question carries ten marks	Internal Choice
Maximum Marks : 70 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×4=20)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 75 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×5=25)	Each question carries five marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 50 / Time 2 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×3=15)	Each question carries three marks	Internal Choice
Section – C	(5×5=25)	Each question carries five marks	Internal Choice

Note:

1. The questions should be numbered sequentially and continuously running through the Sections A, B and C. The maximum external marks for theory are 70/75.

2. Questions should be evenly distributed among the unit in the syllabus in all the sections of the Question paper.

3.   While framing questions with internal choice the questions must be identified as (a) or (b). (e.g 11. a or b). Further, the internal choice must be from the same unit.

4. The Controller of the Examinations shall arrange for the setting of question papers on the basis of the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies.

9. Conduct of Practical Examination

Practical Examination shall be conduct with one Internal Examiner and one External examiner. The question paper for practical examination shall be set by both Internal and External examiner.

10. **Industrial Training**

The student has to go for Industrial Training to specified in the syllabus for a minimum period of 15 days at the end of the II and IV Semester and has to submit the Report during the III and V Semester and the Report is adjudicate with External examiners. The results are given as Complete or Incomplete.

11. **Certificate Course**

In the academic year 2019-2020 we are introducing certificate course on III and IV semester as an interdisciplinary course. The course title is as follows.

S.No	Sem	Subject Title
1	III	Security Management
2		Office Administration
3		Business Excellence
4	IV	Insurance Management
5		Oral Communication in Business
6		Practical Accounting

Bachelor of Business Administration Degree Examination– Syllabus for Candidates admitted from the academic year 2019 - 2020 Onwards

FIRST SEMESTER
PART – III – CORE-1 PRINCIPLES OF MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective: On the Successful completion of this paper, the students should have acquired knowledge of the nature and types of business organizations, Principles and functions of Management Process, decision making, Modern trends in management process

Unit –I   (15 Hours)
Nature and evolution of management – Meaning and definition of management – Contributions of Taylor, Fayol, Mayo and Drucker – Functions of management – management: Art, Science and Profession – Administration Vs management – Functional areas of management – Managerial skills: Levels of management-Social responsibility and Ethics.

Unit –II   (15 Hours)
Planning: Nature and purpose of planning - steps in planning - types of planning- Objectives and strategies-Policies - Decision making: Process of Decision making - types of Decisions, MBO-Definition and concept-process-merits and demerits.

Unit –III   (13 Hours)
Organising: Meaning, definition and Principles, Formal and Informal Organisation – Organisation structure – Line and staff organization – Types of Groups – Formal and Informal Groups – Merits and Demerits of the groups

Unit –IV   (14 Hours)
Directing: Definition and principles of Directing – Motivation: Meaning, nature and importance – Maslow, Mc Gregor, Herzberg Mc Cleland, and Alderfer theories of motivation– Delegation of Authority – Centralization and decentralization – Merits and Demerits.: Co-ordination: Meaning need and features – Techniques – Problems in coordination.

Unit – V   (15 Hours)
Staffing: Meaning and importance of staffing – Recruitment, Selection, Training of staff. Controlling: Meaning, definition and need – Principles of controlling – Controlling techniques.

Course Outcome:

- To learn and acquire the knowledge of the nature and type of business organization.
- To make an effective planning and what are all the strategies and policies to be followed for successful organization.
- The purpose of this study is to learn about the formal and informal organization structure and the achievement of organizational goals.
- The students will acquire the knowledge about directing, motivating towards the growth of the organization.
- The students will learn about the various techniques involved in staffing and controlling.

Text Books:

1. P. C. Tripathy, P.N.Reddy, Principles of Management, 3rd Edition, Tata MC Graw hill publishing Company ltd, New Delhi, 2007.
2. Principles of Management – Dr.G.Venkatesan, R.K.Sharma & Shashi K.Gupta

Reference Books:

1. Bhushan Y.K, Business Organization, 4th Edition, Tata MC Graw hill publishing, New Delhi, 2006
2. L.M.Prasad, Principles of Management, 5th Edition, Himalaya publication, Mumbai - 2006

Bachelor of Business Administration Degree Examination– Syllabus for Candidates admitted from the academic year 2019-2020 Onwards

FIRST SEMESTER
PART – III – CORE-2 FINANCIAL ACCOUNTING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective: On the Successful completion of this paper, the students should have acquired knowledge of the basic accounting concepts

Unit – I   (15 Hours)
 Introduction to Accounting: Need for accounting-Definition of accounting-Advantages and disadvantages of accounting-Methods of accounting: Single and Double Entry book keeping-Types of accounts- Basic accounting concepts - Journal-Ledger.

Unit – II   (12 Hours)
Subsidiary books-Trial balance [problems] - Errors-types of errors-Rectification of errors [excluding suspense account]

Unit – III   (15 Hours)
Final accounts of trading concerns [with simple adjustment only]-Depreciation accounting-Meaning-Causes -Methods of providing depreciation- Straight Line Method -Written Down Value method.

Unit – IV   (16 Hours)
Branch accounting-Meaning-merits-demerits-Departmental accounting- Meaning of departments and departmental accounting –Need for departmental accounting-advantages-Difference between branch and departmental accounts-Methods and techniques of departmental accounting [simple problems only]

Unit – V   (14 Hours)
Preparation of accounts from incomplete records [Theory and Problems] - Accounting for non-trading institutions. [Theory and problems may be in the ratio of 20% and 80%respectively]

Course Outcome:

- Preparing financial statements in accordance with appropriate standards.
- Explain the purpose Subsidiary books, Trial balance to understanding the accounting system properly. Preparation of rectification errors.
- Prepare ledger accounts using double entry bookkeeping and record journal entries accordingly
- Preparing accounting information for Branch and Departmental and for the Techniques of accounting.
- Accounts from incomplete records and Accounting for non-trading institutions.

Text Books:

1. S.P.Jain, K.L.Narang, Financial Accounting and analysis, 6th Edition-Kalyani Publishers, 2012, Mumbai
2. Dr.S.N.Maheshwari, Financial Accounting, 1st Edition- Sultan Chand and Sons, 2014, New Delhi

Reference Books:
1. Dr. P.C.Tulsian, Financial Accounting, 4th Edition, Tata MC Graw Hill, 2011, Delhi
2. V.K.Gupta, Financial Accounting, 5th Edition- Sultan Chand and Sons, 2010, New Delhi.

Bachelor of Business Administration Degree Examination - Syllabus for Candidates admitted from the academic year 2019-20 Onwards.

SECOND SEMESTER
PART - III – CORE - 3 –ORGANIZATIONAL BEHAVIOUR

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective: On successful completion of this paper, the students should have acquired knowledge in the organizational behavior.

Unit-I   (14 Hours)
Organization Behavior – Meaning and Definition – Fundamental concepts of Organizational Behavior – Contributing disciplines to the Organization Behavior – Learning - Theories.

Unit-II   (15 Hours)
Personality – Determinants of Personality –Theories of Personality – Pscho – Analytical , Social Learning , Job-fit and Trait Theories. Attitudes – Types – Function.

Unit-III   (15 Hours)
Perception – Factors influencing – Selective perception – Attribution Theory – Frequently Used shortcuts in judging others – Perceptual process – Organization Error of perception – values – Types – Groups – Stages of Group – Development – Group Norms – Group Cohesiveness.

Unit-IV   (14 Hours)
Conflict – Meaning – Sources of Conflict – Functional Vs Dysfunctional conflict – Levels of conflict – Conflict Management – Stress – Causes of stress – Effects of Occupational Stress – Causes of Stress – Coping Strategies for stress.

Unit-V   (14 Hours)
Organizational Climate – Concept – Organizational Effectiveness – Concept – Organizational Development – Meaning – Process - Merits And Demerits – Counseling & Guidance – Types Of Counseling - Information Needed For Counseling.

Course Outcome:
- To raise the student's awareness of the centrality of organisational behaviour to understanding organisational functioning on the individual and group/team level.
- To understand human behaviour in organisations via the disciplinary bases of psychology, sociology and anthropology.
- To discuss organisational processes from the perspectives of individuals and organisations.
- To discuss group dynamics, formations, concepts and Team development.
- To discuss organisational processes from different theoretical perspectives.

Text Books:
1. Santhosh Sharma & Shivi Saxena ," Organizational Behaviour" ,
   Thakur Publishers ,2016, Chennai.
2. L.M.Prasad," Organizational Behaviour" Mc Graw Hill,7th Edition 2006, New Delhi
3. Fred Luthans," Organizational Behaviour", Mc Graw Hill,7th Edition 2006, USA

Reference Books:
1. Stephen P. Robbins "Organizational Behaviour", P H I, 5th Edition ,2007, NewDelhi
2. Robbins , ," Organizational Behaviour" Mc Graw Hill,7th Edition 2006, New Delhi

Bachelor of business administration degree Examination — Syllabus for Candidates admitted from the academic year 2019 — 2020 Onwards

SECOND SEMESTER
PART – III - CORE - 4 - BUSINESS ECONOMICS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective: On the successful completion of this paper the students should have acquired knowledge of Profit Maximization, Demand Analysis, Elasticity of Demand, Cost, Pricing Government and Business.

Unit –I   (14 Hours)
Objectives of business firm: Definition - Nature and scope of Economics - Objectives - Profit maximization - Social responsibility of business - demand analysis - Law of demand, Demand curve and Demand forecasting.

Unit- II   (14 Hours)
Elasticity of demand: Types of elasticity - price elasticity of demand, income elasticity of demand and cross elasticity of demand -factors of influencing elasticity of demand - Basic Economic Problems - Market forces in solving economic problems.

Unit- III   (15 Hours)
Production function: factor of production - types of production function- Isoquant Curves - law of production - law of diminishing returns law of variable proportion - Theories of Profit- Law of returns to scale.

Unit- IV   (15 Hours)
Cost and Revenue :Cost - Average, Marginal, fixed & total cost, Relation between production & cost, - opportunity cost - revenue analysis - total, average & marginal Revenue - break even analysis - Break Even point, Managerial use of B.E.P. and its limitation.

Unit- V   (14 Hours)

Product pricing and firms: marketing structure - Characteristics - equilibrium under perfect, imperfect competition and monopoly - determination under monopolistic competition - oligopoly - duopoly. Government and business - performance of public enterprises in India price policy in public utilities, government measures to control monopoly in India - MRTP Act.

Course Outcome:

- Apply the concept of opportunity cost
- Employ marginal analysis for decision making
- Analyze operations of markets under varying competitive conditions
- Analyze causes and consequences of unemployment, inflation and economic growth
- Use critical thinking skills in business situations and to apply an ethical understanding and perspective to business situations.

Text Books:

l. S. Sankaran, Business Economics, 4th edition, Margham Publication, 2014, Chennai.
2. P.L. Mehta, Managerial Economics, 12th edition, sultan chand and sons, 2006 New Delhi.

Reference Books:

1. B.L Varshney and K.L Mageswari, Business Economics, 19th Edition, Sulthanchand and Sons, 2005, New Delhi.
2. S. Sankaran, Indian Economy, 4th edition, Margham Publication, 2008, Chennai.Edwin Mansfield, Managerial economics 2nd Edition, Nortan Company, New Yor

Bachelor of Business Administration Degree Examination-Syllabus for Candidates admitted from the Academic Year 2019-2020 Onwards

THIRD SEMESTER
PART III - CORE 5 - MARKETING MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
On the successful completion of this paper, the students should have acquired knowledge in Principles of Marketing Management, Market Segmentation, Product Life Cycle, Pricing, and Branding.

Unit- I   (10 Hours)
Definition of Marketing - Marketing Management- Marketing Concept – Meaning Importance of Marketing in Developing Countries - Functions of Marketing – Concept of Holistic Marketing Orientation, Customer Value-Changing Marketing Practices

Unit- II   (15 Hours)
Buyer Behavior - Buying Motives - Market Segmentation of Different Bases – Market Positioning – Market Targeting - Marketing Strategy - Branding Decisions: Brand-Brand Image, Brand Identity-Brand Personality –Brands Equity

Unit- III   (10 Hours)
The Product- Types of Product - Product Policy - Product Life Cycle [PLC] - Product Mix - Modification and Elimination – Packing – New Product Development – Strategies

Unit- IV   (15 Hours)
Definition and Types of Channel - Channel Selection and Problems- Middle Man: Wholesaler - Retailer- Agent Middleman Price Decision-Concept, and Meaning of Price and Pricing-Significance of Pricing Decision- Factors Affecting Price Determination; Pricing Methods and Techniques.

Unit- V   (10 Hours)
Advertisement Media- Radio-T.V-Newspaper- Merits and Demerits of Advertisement – Sales Promotion – Publicity – Personal Selling.

Course Outcome:
CO 1: To learn and understand Concepts of marketing
CO 2: To understand about the Marketing Strategies
CO 3: To Design and develop various Marketing Strategies and pricing
CO 4: The students will acquire the knowledge about various Pricing Methods and Techniques.
CO 5: The students will learn about to develop Business Strategies

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	H						M	
CO 2		H				M		
CO 3			L		M			
CO 4				H			L	
CO 5			M					L

Text Books:

1.Philip Kotler and Kevin Lane Keller, Marketing Management, 14th Edition, 2012, Prentice Hall of India, New Delhi.

2. KS Chandrasekar, Marketing Management-Text and Cases, First Edition, 2010, Tata McGraw Hill.

Reference Books:

1. Paul Baines, Chris Fill and Kelly Page, Marketing, 2nd Edition, 2011, Oxford University Press.

2.Philip Kotler, Marketing Management, 2nd Edition, 2010, McGraw Hill, New Delhi.

Bachelor of Business Administration Degree Examination - Syllabus for Candidates admitted from the Academic Year 2019-2020 Onwards

THIRD SEMESTER
PART III - CORE 6 - PRODUCTION AND OPERATIONS MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hours:60

Course Objective:
On the Successful completion of this paper, the students should have acquired knowledge of Principles and Process of Production Management.

Unit-I   (12 Hours)
Production Management - Functions - Scope - Plant Location - Factors - Site Location -Plant Layout - Principles - Process - Product Layout For Production Planning and Control -Principles - Information Flow - Routing - Scheduling - Dispatching – Control.

Unit-II   (12 Hours)
 Materials Requirement Planning (MRP) – Evolution of MRP into MRP II – JIT- Difference between JIT and MRP - Maintenance - Types - Breakdown - Preventive - Routine - Methods Study –Work Study-Time Study - Definition - Motion Study - Principles – Work Measurement.

Unit-III   (12 Hours)
Purchasing – Procedure - Principles - Import Substitution and Import Purchase Procedure - Value Analysis / Value Engineering – Steps - Vendor Rating - Vendor Development – ERP – Business Engineering – BPR.

Unit-IV   (12 Hours)
Function of Inventory - Importance - Tools - ABC, VED, FSN Analysis - EOQ – Reorder Point - Safety Stock - Lead Time Analysis - Store Keeping - Objectives - Functions – Store Keeper - Duties - Responsibilities - Location of Store - Stores Ledger - Bin card – KAIZEN

Unit-V   (12 Hours)
Inspection and Quality Control - Types of Inspection. TQM: Meaning -Objectives - Elements - Benefits - Bench Marking: Meaning - Objectives - Advantages -ISO: Features - Advantages - Procedure for Obtaining ISO- AGMARK-ISI- Six Sigma Concept- Acceptance Sampling.

Course Outcome:
 CO 1: To understand Principles and Process of Production Management.
 CO 2: To understand about the techniques in Production.
 CO 3: To learn about theImport Purchase Procedure.
CO 4: The students will acquire the knowledge about Quality Control.
CO 5: The students will learn about concepts in sampling in production.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	H						M	
CO 2		H				M		
CO 3			L		M			
CO 4				H			L	
CO 5			M					L

Text Books:

1. Pannerselvam, Production and Operation Management, 5th Edition, March 2012, Prentice Hall of India, New Delhi.
2. SwapnilRupaye, Production and Operations Management 12th Edition, April 2015, OUP Australia and New Zealand.

Reference Books:

1. S.K.Anil Kumar and N.Suresh, Production and Operations Management, Revised Edition, 2012, New Age International Publishers.
2. Elwood.S.Buffa and Rakesh.Sarin, Modern Production Operation Management, 8th Edition, 2010, John Wiley and Sons, USA.

Bachelor of Business Administration Degree Examination - Syllabus for Candidates admitted from the Academic Year 2019-2020 Onwards

THIRDSEMESTER
PART III - CORE 7 - MANAGEMENT INFORMATION SYSTEM

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
On the Successful completion of this paper, the students should have acquired knowledge in Management Information System.

Unit-I   (10 Hours)
MIS - Evolution of MIS - Growth of MIS - Characteristics of MIS - Subsystem of MIS-Executive Information System - Information Resource Management - Role of MIS - Concepts of Information: Data of Information - Business Data Processing.

Unit-II   (12 Hours)
Features of Information - Types of Information - Quality of Information – Value - Management Information System - System Concepts: Characteristics of System - Types of System - Control in System - System Concepts Applied to MIS - Structure of MIS: Organizational Function and Information Required-Level of Management.

Unit -III   (12 Hours)
Transaction Processing System – Cycle – Features - Transaction Document - Transaction Processing Models - Decision Support System – Types – Characteristics – Components - Tools-Capabilities - Group DSS - Expert System.

Unit – IV   (12 Hours)
Planning for MIS - System Development Model - System Design: Input Design - Procedure Design - File Design - DB design – DBMS – DBA - Design Document - Program Development: Techniques of Program Development - System Implementation Steps.

Unit- V   (14 Hours)
 Data Communication System – Networking – Types - Electronic Communication - History of Internet-WWW-Navigation Tools - Security on Internet - Types of Electronic Commerce - EDI .

Course Outcome:

CO 1: To describe the role of information technology and decision support systems in business and record the current issues with those of the firm to solve business problems.

CO 2: To introduce the fundamental principles of computer-based information systems analysis and design and develop an understanding of the principles and techniques used.

CO 3: To enable students understand the various knowledge representation methods and different expert system structures

CO 4: To enable the students to use information to assess the impact of the Internet and Internet technology on electronic commerce and electronic business

CO 5: To provide the theoretical models used in database management systems to answer business questions.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L			H			M	
CO 2			M					
CO 3		H				M		L
CO 4		H						
CO 5	H			L				L

Text Books:

1. P. Mohan, Management Information System, 9th Edition, 2012, Himalayan Publishing House.
2. A.K.Gupta, Management Information System, 3rd Edition, 2010, Sultan Chand and Sons, New Delhi.

Reference Books:

1. Gordon.B.Davis, Margrethe.H.Olson, Management Information System- Conceptual Foundation, Structure and Development, 2nd Edition, 2011, Tata McGraw Hill, New Delhi.
2. Laudon and Laudon, Management Information System, 8th Edition, 2011, Pearson Education, South Asia.

Bachelor of Business Administration Degree Examination - Syllabus for Candidates admitted from the Academic Year 2019-2020 Onwards
THIRD SEMESTER
PART III - CORE 8 – COST ACCOUNTING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To enable the student to have a thorough knowledge on the Cost Accounting Principles and the Methods of Accounting for Cost.

Unit- I   (13 Hours)
(Theory & Problem)
Cost Accounting – Definition – Meaning and Scope – Concept and Classification – Costing an aid to Management — Types and Methods of Cost – Preparation of Cost Sheet – Cost Accounting vs. Financial Accounting

Unit - II   (12 Hours)
Material Control: Need for Material Control – Levels of Material Control [Maximum, Minimum and Reorder Level] – Economic Order Quantity. Purchase and Stores Control, Methods of Valuing Material Issue [FIFO, LIFO and Weighted Average Method].

Unit - III   (12 Hours)
(Problems only)
Labour: Systems of Wage Payment [Piece Rate, Time Rate, Taylor's & Merrick Differential Piece Rate System, Halsey Plan and Rowan's Plan] – Idle Time – Control Over Idle Time – Labour Turnover.

Unit - IV   (12 Hours)
(Theory & Problem)
Process Costing – Features of Process Costing – Process Losses, Wastage, Scrap, Normal Process Loss – Abnormal Loss, Abnormal Gain. (Excluding Inter Process Profit).

Unit -V   (11 Hours)
(Theory only)Marginal Costing – Meaning, Definition, Benefits and Limitations of Marginal Costing – Absorption and profit analysis -Break Even Analysis – Application of Marginal Costing in Business Decision Making.

NOTE : Theory and Problems in the Ratio of 40% and 60% respectively.

Course Outcome:

CO 1: To understand and apply cost accounting concepts.

CO 2: To Identify and determine cost behavior

CO 3: To learn about labour and wage payment turnover

CO 4: The students will acquire the knowledge of process costing

CO 5: To learn and analyze marginal costing and costing in business decision making.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L				H		M	
CO 2		H				L		
CO 3			M					
CO 4				H			L	
CO 5			M			M		L

Text Books:

1. Jain.S.P and Narang.K.L, Cost Accounting, Revised Edition, 2012, Kalyani Publishers, New Delhi.

2. T.S.Reddy and Y.Hari Prasad Reddy, Cost Accounting, 10th Edition, 2010, Margha Publications, Chennai.

Reference Books:

1. Pillai.R.S.N and Bagavathi.V, Cost Accounting, 9th Edition, 2011, S. Chand and Company.

2. M.Y.Khan and P.K.Jain, Cost Accounting, 8th Edition, 2010, Tata McGraw-Hill Education.

Bachelor of Business Administration Degree Examination – Syllabus for Candidates admitted from the Academic Year 2019-20 onwards
THIRD SEMESTER
PART III-IDC 3–BUSINESS TAXATION

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
On the successful completion of this paper, the students should have acquired knowledge in Business Taxation.

Unit- I   (12 Hours)
Direct tax- Meaning –Merits –Demerits- Income –Features-Types -Assessment Year - Previous year- Assesses - Types of Assesses - Residential status of Person - Exempted Income.

Unit- II   (12 Hours)
Heads of Income- Income from Salaries – Characteristics of Salary - Treatment of Provident Fund – Allowances – Types of Allowances- Perquisites- Taxability of Perquisites - Valuation of Rent free Accommodation - Gratuity – Pension –Leave Encashment - Calculation of Income from Salary.

Unit -III   (12 Hours)
Income from House Property – Annual Value - Different Types of Rental Value – Determination – Deduction U/S 24 – Calculation of Income from House Property. Profits   and Gains of Business or Profession – Computation of Income from Business or Profession.

Unit- IV   (12 Hours)
Capital Gains- Types –Exemption - Determination of Cost of Acquisition –Treatment of Capital Loss - Set-off and Carry Forward of Losses – Income from Other Sources –Tax treatment of Gift - Deduction of Tax at Source .

Unit -V   (12 Hours)
Deductions to be made from Total Income –Assessment of Individuals - Computation of Tax Liability –   E-Filing – Procedure.

Note: Distribution of marks: Theory 40% and Problems 60%

Course Outcome:

CO 1: Should have acquired knowledge about Tax

CO 2: To know about heads of income

CO 3: To Know about calculation of incomes from house property and business profession

CO 4: To know the Determination of Cost of Acquisition and Deduction of Tax Source.

CO 5: To analyse the Computation of Tax Liability, deductions, E-Filing & its Procedures.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		M		H			M	
CO 2				M				L
CO 3			H		M			
CO 4	M					L		
CO 5		H			H	M		

Text Books:

1. Gaur.V.P and Narang.D.B, Puja Gahai,RajeevPuri , Income Tax Law and Practice ,44th edition, Kalyani Publishers , 2016, New Delhi.

2. Hariharan.N, Income Tax, 12th edition, Tata McGraw hill, 2018, New Delhi.

Reference Books:

1. Hariharan.N, Income Tax, 10th edition, Tata McGraw hill, 2016, New Delhi.

2. T.S.Reddy and Y.Hari Prasad Reddy, Income Tax Law and Practice, 16th Edition, Margam Publication, Chennai

Bachelor of Business Administration Degree Examination-Syllabus for Candidates Admitted from the Academic Year 2019-2020 Onwards

THIRD SEMESTER
PART – IV – SBC - I - PC SOFTWARE LAB

Maximum CE: 75
Total Hours: 36

Course Objective:
Imparting Professional skills in Personal Computer software.

MS WORD

1. Type the Text and Perform the Following:

    (i) Bullets and Numbering   (ii) Align the Text to Left, Right, Justify, and Centre

2. Prepare a Job Application Letter enclosing Detailed Resume.

3. Create a Call Letter for Interview by using Mail Merge.

MS EXCEL

4. Prepare a Student Mark List [Minimum of 5 Subjects] and Perform Sorting Operation.

5. Prepare Statement of Bank Customer's Account Showing Simple and Compound Interest
   Calculations for 10 Different Customers Using Mathematical and Logical Functions.

6. Prepare a Result Analysis Chart with Subject Details, Staff details and Pass percentage details.

MS ACCESS

7. Generate a Payroll for Employee Database of an Organization with the Following   Details:
   Employee Id- Employee Name- Date of Birth- Department and Designation- Date of
   Appointment- Basic Pay- Dearness Allowance- and House Rent Allowance and Other
   Deductions. Perform Queries for Different Categories.

8. Prepare a Report Based on Invoice details such as Product Number, Quantity, Price for Five
    Products.

MS POWER POINT

9. Draw an Organization Chart for Courses Offered in College with Minimum Three Hierarchical
   Levels.

10. Design an Advertisement Campaign with Minimum Three Slides.

INTERNET

11. Search Information from Bharathiar University Website.

12. Create an Email account, Compose and Send mail by using CC and BCC Options with
    Attachments.

Course Outcome:

CO 1: To know about computer basic knowledge.

CO 2: To know about Internet knowledge and its features.

CO 3: The students know how toapply logical skills in programming languages.

CO 4: To know basic understanding of computer hardware and software.

CO 5: To Demonstrate basic understanding of network principles.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		M		H			L	
CO 2	H			H				M
CO 3			H		M			L
CO 4	M		H			L		
CO 5		H			H	M		

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THIRD SEMESTER
PART IV- SBC- I–CUSTOMERRELATIONSHIP MANAGEMENT

Maximum CE: 75
Total Hours: 36

Course Objective:

On the Successful completion of this paper, the students should have acquired knowledge of Relationship Marketing.

Unit–I   (8 Hours)

Customer Relationship Management- Fundamentals- Evolution of Relationship Marketing-Stages of Relationship- Issues of Relationship- Purpose of Relationship Marketing- CRM Definitions, Emergence of CRM Practice:, CRM Cycle, Types of CRM .

Unit –II   (7 Hours)

CRM – Overview and Evolution of the Concept – CRM and Relationship Marketing – CRM Strategy – Importance of Customer Divisibility in CRM

Unit –III   (7 Hours)

Sales Force Automation – Contact Management – Concept – Enterprise Marketing Management – Core Beliefs – CRM Practices in Retail Industry- Hospitality Industry- Banking Industry- Telecom Industry-Aviation Industry

Unit –IV   (7 Hours)

Value Chain – Concept – Integration Business Management – Benchmarks and Metrics – Culture Change – Alignment with Customer Eco System – Vendor Selection

Unit – V   (7 Hours)

Database Marketing – Prospect Database – Data Warehouse and Data Mining – Analysis of Customer Relationship Technologies – Best Practices in Marketing Technology.

Course Outcome:

CO 1: To know how to develop a plan for implementing effective customer care
CO 2: To understand how you, as a leader, can help to develop a 'customer focused' team.
CO 3: To understand the components of successful customer care
CO 4: To identify customer service barriers within your organization
CO 5:To understand why customers, complain, and how to deal professionally with complaints.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M			L			M	
CO 2		H				H		
CO 3			M				M	
CO 4				H			M	
CO 5			M			M		H

Text Books:
1. S. Shajahan, Relationship Marketing, 5th Edition, 2010, McGraw Hill, New Delhi.
2. Paul Green Berg, CRM, 5th Edition, 2011, Tata McGraw Hill, New Delhi.

Reference Books:
1. Philip Kotler, Marketing Management, Revised Edition, 2012, Prentice Hall of India.
2. Barry Berman and Joel R Evans, Retail Management, A Strategic Approach, 12th Edition, 2011, Prentice Hall of India.

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THIRD SEMESTER
PART IV – ED1- MULTIMEDIA AND ITS APPLICATIONS

Maximum CE: 50
Total Hours: 24

Course Objective:
On the successful completion of the course, the students should have understood the concept of Multimedia is the combined use of text, graphics, sound, animation, and video.

Unit-I   (4 Hours)
Introduction: multimedia presentation and production –characteristics of multimedia presentation – multiple media –utilities of sensory perception –hardware and software requirement. Digital representation: analog representation –waves –digital representation-need for digital representation.

Unit-II   (5 Hours)
Text: types of text –Unicode standard –font –insertion of text –text compression –file formats.

Unit-III   (5 Hours)
Image: Image type –seeing color-color modals –basis steps for image processing-scanner-digital camera –interface standards –specification of digital images.

Unit-IV   (5 Hours)
Audio: Introduction –acoustics –nature of sound wave –fundamental characteristics of sound – microphone-amplifier-loudspeakers –audio mixer-digital audio

Unit-V   (5 Hours)
Video: Analog video camera –transmission of video signals-video signal formats –PC video –video recording formats and systems –video file formats.

Course Outcome:
 CO 1: To learn and understand technical aspect of Multimedia Systems.
 CO 2: To understand the standards available for different audio, video and text applications.
 CO 3: To Design and develop various Multimedia Systems applicable in real time.
 CO 4: The students will acquire the knowledge about various multimedia authoring systems.
 CO 5: The students will learn about to develop multimedia application and analyze the performance of the same.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		L					H	
CO 2	M			H		M		
CO 3					L		L	
CO 4		M		L		H		M
CO 5			L				M	

Text Books:
1. Tay Vaughan, "Multimedia: Making It Work", 9th Edition, Osborne/McGraw-Hill, 2017.
Principles of Multimedia –Ranjan Parekh, 2014, TMH.
2. Multimedia: making it work –tay Vaughan,9th edition , 2018,TMH.

Reference Books:
1. Ralf Steinmetz &KlaraNahrstedt - "Multimedia Computing, Communication & Applications", Pearson Education, 2015.
2. Multimedia: making it work –tay Vaughan,7th edition , 2016,TMH.

Bachelor of Business Administration Degree Examination-Syllabus for Candidates Admitted from the Academic Year 2019-2020 Onwards
FOURTH SEMESTER
PART III - CORE 9 - HUMAN RESOURCE MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
On the successful completion of this paper, the students should have acquired knowledge in Role of a HR Manager, Job Description and Job Analysis.

Unit-I   (12 Hours)
Human Resource Management - Definition - Objectives - Functions - Scope - Importance - HRM in India - Evolution of HRM - Computer Application in Human Resource Management - Quality of a Good Human Resource Managers - Human Resource Planning - Job Analysis, Job Description and Job Specification.

Unit-II   (12 Hours)
Recruitment and Selection - Sources of Recruitment - Selection Process - Test Types - Interview Types - Career Planning vs. Man Power Planning and Succession Planning - Career Planning - Process - Career Development - Placement and Induction.

Unit-III   (12 Hours)
Training - Methods of Training - Executive Development - Performance Appraisal - Methods of Performance Appraisal - Transfers - Promotion - Wage & Salary Administration - Wage Boards and Pay Commission - Wage Incentive - Fringe Benefits - Employees Welfare - Safety and Health Measures - Grievance Procedures - Redressal of Grievances.

Unit-IV   (12 Hours)
Industrial Relations - Meaning & Characteristics Industrial Relations - Parties to Industrial Relations - Nature of Trade Unions - Problems of Trade Union - Measures to Strengthen Trade Union Movement in India - Causes for Industrial Disputes - Settlement of Industrial Disputes.

Unit-V   (12 Hours)
Collective Bargaining - Features - Pre-requisite of Collective Bargaining - Agreement at Different Levels - Workers Participation in Management - Objectives for Successful Participation.

Course Outcome:
CO 1:To know Strategic importance of human resources management
CO 2: To understand Orientation, training, development and career planning
CO 3:To understand various functions of human resource management relationship in
         workplace
CO4: To Identify and predict human resource management trends in the automotive
         industry
CO 5: To understand Union-management framework.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M			L		M		
CO 2		H	L			H		
CO 3			L		,M			L
CO 4	M			H			M	
CO 5			H			L		H

Text Books:

1. Dr. C.B. Gupta, Human Resource Management, Revised Edition, 2014, Sultan and Sons.
2. K. Aswathappa, Human Resource and Personnel Management, Revised Edition, 2013, Tata McGraw Hill Publishing Co. Ltd.

Reference Books:

1. C.S. VenkataRathnam& B.K. Srivastava, Personnel Management & Human Resources, Revised Edition, 2011, TMPL.
2. Dr. C.B. Memoria, Dr. SatishMemoria& S.V. Gankar, Dynamics of Industrial Relations, Revised Edition, 2009, Himalaya Publishing House.

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FOURTH SEMESTER
PART III - CORE 10 - RESEARCH METHODS FOR MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:

On the Successful completion of this paper, The aim of the course is to provide student with an introduction to research methods and report writing and basic awareness of data analysis-and hypothesis testing procedures.

Unit-I   (12 Hours)
Research - Meaning - Scope and Significance - Types of Research - Research Process - Problems in Research – Characteristics of Good Research - Research in an evolutionary perspective – the role of theory in research.

Unit-II   (12 Hours)
Research Design - Sources - Types - Formulation Research Design - Types – Features of Good Design - Measurement - Meaning - Need Errors in Measurement - Tests of Sound Measurement - Techniques of Measurement - Scaling Techniques - Meaning - Types of Scales - Scale Construction Techniques.

Unit-III   (12 Hours)
Sampling Design: Meaning - Concepts - Steps in Sampling - Criteria for Good Sample Design - Types of Sample Designs - Probability and Non-Probability Samples. Data Collection: Types of Data - Sources - Tools for Data Collection- Methods of Data Collection - Construction of questionnaire and instrument- Pilot Study - Case Study .Data processing: Coding – Editing and Tabulation of Data - Application of statistical software for data analysis.

Unit-IV   (12 Hours)
Hypothesis - Formulation of Research Hypotheses -Central Limit Theorem - Test of Significance- Assumptions about Parametric and Non-Parametric Tests. Parametric Test - T Test, F Test, Chi-Square Test and Z Test - Non Parametric Test [No Problems] - U Test, Kruskal Wallis Test, Sign Test.

Unit-V   (12 Hours)
Interpretation - Meaning - Techniques of Interpretation - Report Writing:- Significance - Steps in Report Writing - Layout of Report - Types of Reports – Oral Presentation - Executive Summary - Mechanics of Writing Research Report – Precautions for Writing Report - Norms for using Tables, Charts Diagrams, Index, Appendix, and Bibliography – Application of SPSS.

Note: Theory and Problems in the Ratio of 80% and 20% respectively

Course Outcome:

CO 1: The students can understand the concept of research and they can develop basic knowledge on qualitative research techniques.

CO 2: To enable the students in conducting research work and formulating research synopsis and report.

CO 3: To impart knowledge for enabling students to develop data analytics skills and meaningful interpretation to the data sets so as to solve the business/Research problem.

CO 4: Develop understanding on various kinds of research, objectives of doing research, research process, research designs and sampling.

C0 5: Students can adequate knowledge on measurement & scaling techniques as well as the quantitative data analysis.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	H					L		
CO 2	M					M		
CO 3					M		L	
CO 4		M		M		H		M
CO 5			M				M	

Text Books:

1. Business Research Methods,Dr.Shraddha. M. Bhome- Research supervisor-[JJT university]-Rajasthan
2. S.S.VinodChandra,S.AnandHareendran, Research Methodology,2017

Reference Books:

1. Dr.Swati.S Desai –Associate Professor-PralhadDalmia College of Commerce and Economics,Malad.
2. R.Pannerselvam, Research Methodology, Revised Edition, 2014, PHI Learning, New Delhi.

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FOURTH SEMESTER
PART III - CORE 11 - MANAGEMENT ACCOUNTING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To enable the student to have a thorough knowledge on the Management Accounting Principles and the Methods of Accounting for Managers.

Unit -I   (12 Hours)
(Theory Only)
Management Accounting: Introduction - Meaning – Objectives and Scope – Merits- Features - Difference between Management Accounting, Cost Accounting and Financial Accounting.

Unit –II   (12 Hours)
(Problems Only)
Ratio Analysis – Analysis of Liquidity – Solvency and Profitability – Construction of Balance Sheet.

Unit- III   (12 Hours)
(Problems Only)
Financial Statement Analysis – Comparative Statement – Common Size – Trend Analysis.

Unit -IV   (12 Hours)
(Theory & Problems)
Budgeting and Budgetary control – Definition - Importance – Classification of Budgets – Master Budget – Preparation of Cash budget, Sales Budget, Purchase Budget, Material Budget, Flexible Budget.

Unit -V (Theory & Problems)   (12 Hours)
Fund Flow Analysis and Cash Flow Analysis (As per new accounting standards) – Concept of fund , working capital.

Note: Theory and Problems in the Ratio of 40% and 60% respectively.

Course Outcome:
CO 1: To Evaluate and prepare managerial accounting statements.
CO 2: Enable the students to understand Ratio Analysis concept.
CO 3: To impart knowledge in preparing managerial accounting statements.
CO 4: To compute necessary managerial accounting information.
CO 5: Students can adequate knowledge in overhead cost in product manufacturing.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		H				L		L
CO 2				M		M		
CO 3					M		L	
CO 4		H		M				M
CO 5			M				H	

Text Books:
1. Sharma and S.K.Gupta, Management Accounting, Revised Edition 2014, Kalyani Publishers, New Delhi.
2. Dr. S.N. Maheshwari, Management Accounting, Revised Edition 2014, Sultan Chand & Sons, New Delhi.

Reference Books:
1. S.P. Jain and KL. Narang, Cost and Management Accounting, 11th Edition, 2012, Kalyani Publishers, New Delhi.
2. T.S.Reddy and Dr.Hariprasad Reddy, Management Accounting, Revised Edition, 2010, Margham Publications.

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FOURTH SEMESTER
PART III - CORE 12 - CONSUMER BEHAVIOUR

Maximum CIA: 30   Maximum CE: 70
Total Hours: 60

Course Objective:
On the Successful completion of the course the students should have acquired knowledge in Behavior of Consumer, Consumer Motivation and Perception.

Unit- I   (12 Hours)
Consumer Behavior-Meaning- Factors- Scope and Application Consumer Needs and Motivation- Concepts of Needs- Goals and Motives - Dynamic nature of motivation- Motivational Research.

Unit- II   (12 Hours)
Consumer as An Individual -Consumer Motivation: Rational vs. Emotional Motives, Dynamics of Motivation, Hierarchy of Needs Model; Consumer Perception: Elements and Dynamics; Consumer Imagery; Consumer Learning: Elements of Learning, Behavioral and Cognitive Theories of Learning; Consumer Attitude: Tri-Component Model, Multi-Attribute Model, Theory of Trying-to-Consume Models.

Unit- III   (12 Hours)
Group Dynamics- Meaning- Nature- Types of Groups- Social Class- Meaning- Different Social Classes in India- Impact- Behaviour of Different Classes.

Unit- IV   (12 Hours)
Family-Role and Functions - Life Style of Family - Role of Family in Decision Making - Consumer Involvement and Decision Making- Meaning - Low Involvement Decision Making - Strategy – Culture- Meaning- Characteristics- Indian Core Values- Different Sub-Cultures

Unit- V   (12 Hours)
Rural Consumer Behavior - Socio-Cultural Factors; Gender Mainstreaming; Economic Factors; Political Factors; Buyer Characteristics: Age, Occupation, Economic Situation, Lifestyle, Personality and Psychological Factors of Rural Consumers.

Course Outcome:
CO 1: To demonstrate how knowledge of consumer behavior can be applied to marketing.
CO 2: To Deliver an oral presentation in a professional and engaging manner
CO 3: To identify and explain factors which influence consumer behavior;
CO 4: To understand the importance of consumer approaches.
CO 5: The students can understand how to prepare a professional, logical and coherent report on consumer behavior.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M			H		M		
CO 2		H	L			L		
CO 3		H	H				L	
CO 4		H		H		H		M
CO 5			M			L	M	

Text Books:

1. Dr.Jain.P.C and Monika Bhatt, Consumer Behaviour in Indian Context, 2nd Edition, 2015, S. Chand and Company Ltd, New Delhi.
2. Michael.R.Solomon, Consumer Behavior, 10th Edition, 2015, Prentice Hall of India.

Reference Books:

1. RamanujMajumdar, Consumer Behaviour, Revised Edition, 2014, PHI Learning, New Delhi.
2. Philip Kotler, Marketing Management, 14th Edition, 2014, Prentice Hall of India.

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FOURTH SEMESTER
PART III - IDC 4 – LEGAL ASPECTS OF BUSINESS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
On the Successful completion of this paper the students should have acquired knowledge of Law of Contract and Agencies, Sales of Goods, Companies Act, and Negotiable Act.

Unit-I   (12 Hours)
Law of Contract-Definition-Nature of Contract- Essential Elements of Contract-Classification of Contract-Agreements-Void-Voidable-Illegal Contract- Offer and Acceptance-Communication of Offer-Acceptance and Revocation- Free Consent- Contingent Contract-Quasi Contract-Performance of Contract-Discharge of Contract-Remedies for Breach of Contract

Unit- II   (12 Hours)
Law of Agencies-Essentials-Kinds of Agent-Rights and Duties of Agent- Negotiable Instrument Act 1881-Definition- Concepts, and Negotiation-Characteristic-Promissory Note-Bill of Exchange-Types-Crossing of Cheques-Type of Crossing- Bearer and Order Instruments- Accommodation Bill.

Unit- III   (12 Hours)
Sales of Good Act-Classification of Goods - Conditions and Warranties-Transfer of Property-Rights of Unpaid Seller.

Unit- IV   (12 Hours)
Companies Act-Definition-Type-Characteristic-Kinds of Company-Formation of Company - Memorandum of Association-Articles of Association and Prospectus

Unit V   (12 Hours)
Types of Meeting-Auditor Appointment- Rights and Liabilities of Auditors- Winding up of a Company - Modes of Winding up of a Company-Case Study

Course Outcome:
CO 1: To provide important laws that have a bearing on the conduct of business in India
CO 2: To understand various modes of dispute resolution in business transactions
CO 3: To identify the various legal forms that a business entity;
CO 4: To understand the importance of legal aspects of business.
CO 5: To examine relative advantages and disadvantages of each of these forms.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L			H		M		
CO 2		M				L		H
CO 3		H		M			L	
CO 4		H		H				M
CO 5			M	H		L	M	

Text Books:
1. N.D.Kapoor, Business Law, Revised 12thEdition, 2012, Sultan Chand and Sons, New Delhi.
2. Ewan Macintyre, Essentials of Business Law, 5th Edition April 2015, Pearson Publishers.

Reference Books:
1. N.D.Kapoor, Business Law, Revised Edition, 2010, Sultan Chand and Sons, New Delhi.
2. M.C.Shukla, Mercantile Law, 13th Edition, 2007, Sultan Chand and Sons, New Delhi.

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FOURTH SEMESTER
PART IV- SBC- II - BUSINESS COMMUNICATION

Maximum CE: 75
Total Hours: 36

Course Objective:
On the successful completion of this course, the students should have understood Methods of Communication, Types of Communication and Barriers of Communication.

Unit-I   (6 Hours)
 Define Communication- Importance-Objectives-Types-Barriers-Principles.

Unit-II   (10 Hours)
Written Communication-Essentials of an Effective Business Letter-The Layout-Enquiries and Replies-Orders and Their Execution-Collection Letters-Circular Letters-Sales Letters-Bank Correspondence-Application Letters.

Unit-III   (8 Hours)
Correspondence of Company Secretary with Shareholders, Directors-Agenda-Minutes of Meeting-Group Discussion and Interviews-Seminar-Conference -Press Releases.

Unit-IV   (6 Hours)
Communication through Reports: Essentials-Importance-Contents-Reports by Individuals-Committees-Annual Report-Application for Appointment-Reference and Appointment Orders.

Unit-V   (6 Hours)
Internal Communication-Short Speeches-Memo Circulars-Notices-Explanations to Superiors-Precise Writing-Communication Media-Merits of Various Devices-Intercom, Telex and Telephone-Fax-Internet.

Course Outcome:
CO 1: To developing and delivering effective presentations
CO 2: To develop knowledge and high level skills in business writing.
CO 3: Students undertake the role of a new graduate employee in the workplace and develop responses to a range of current and emerging business issues.
CO 4: To provide students with the skills and knowledge of communication in the business environment.
CO 5: To develops the student's communication skills and knowledge in a supportive peer group environment through ideas exchange and argument.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		H		M		H		
CO 2	M			L			M	
CO 3		M				L		H
CO 4			H	M		H		M
CO 5		M						M

Text Books:
1. Rajendra Pal Korahalli, Essentials of Business Communication, 13th Edition 2015, Sultan Chand & Sons, New Delhi.
2. Ramesh, MS, & C.C Pattanshetti, Business Communication, R.Chand& Co, Revised Edition 2011, New Delhi.

Reference Books:
1. V.K.Jain& Prakash Biyani, Business Communication, 1st Edition, 2014, Sultan Chand & Sons.
2. C.B.Gupta, Business Communication, Reprint 2014, Sultan Chand & Sons.

Bachelor of Business Administration with Computer Applications Degree Examination–Syllabus for Candidates Admitted from the Academic Year 2019-20 Onwards

FOURTH SEMESTER
PART IV- SBC II - MODERN OFFICE MANAGEMENT

Maximum CE: 75
Total Hours: 36

Course Objective:
On the Successful completion of the course the students should have acquired knowledge regarding Modern Office Management.

Unit I   (8 Hours)
Office Management and Organization: Basic concepts of Office – Importance – Functions – Size of the Office – Office Management – Relations with Other Departments – Scientific Office Management – Office Manager - Principles of Office Organization.

Unit II   (7 Hours)
Office Environment & Communication: Office Location – Characteristics / Qualities of Office Building – Environment – Secrecy – Meaning – Essential features – Classification – Communication Barriers- Secretaries- Meaning –Types of Secretaries-Qualifications -Duties.

Unit III   (7 Hours)
Office Correspondence & Record Management: Centralized Vs Departmental Correspondence – Departmental Typing and Typing Pools – Classification of Records – Principles of Record Keeping – Filling – Methods.

Unit IV   (7 Hours)
Office Systems & Procedures: Systems – Procedure – Advantages – Characteristics of Sound Office System & Procedures – Work Simplification – Principles – Types of Reports.

Unit V   (7 Hours)
Office Personnel Relations: Personnel Management – Definitions – Functions – Office Committees - Employee Morale – Productivity – Employee Welfare – Grievances – Work Measurement – Office Work Control-Office Automation –Routine handling of mail

Course Outcome:
CO 1: To develop a student will help in service-employees to become future managers.
CO 2: The student will be able to understand characteristics of wants and standard of living.
CO 3: To identify consumer surplus and its uses.
CO 4: To understand the importance of the law of diminishing marginal utility.
CO 5: The students can focuses on office management, business communication, business organization and basic knowledge of various types of accounting.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		M		H			M	
CO 2	M		L			M		
CO 3			H				L	
CO 4		H		M		H		M
CO 5			M				H	

Text Books:
1. R.S.N Pillai Bagavathi, Modern Office Management, S Chand, Revised Edition-2018.
2. Dr.R.K Chopra PriyankaGouri, Office Management, Himalaya Publishing House, Second Edition, June 2017.

Reference Books:
1. Dr.I.M.Shahai, Office Management, SahityaBhawanPublications,Revised Edition-2017.
2. S.P Arora, Office Organization and Management, 2nd Edition-2012, Vikas Publishing House Pvt Ltd.

Bachelor of Business Administration Degree Examination - Syllabus for Candidates Admitted from the Academic Year 2019-20 Onwards

THIRD SEMESTER
ADDITIONAL CREDIT - RETAIL MANAGEMENT

Maximum CE: 100

Course Objective:
On the Successful completion of this paper the students should have acquired knowledge of Retail, Pricing, Promotion Strategy, Retail Customer, and Retail in India.

Unit-I
Introduction to Retailing - Meaning - Functions of Retailer - Types of Retailers. Retailing in India- The Evolution of Retail in India - Foreign Direct Investment in Retail - Challenges Ahead for Retailing.

Unit- II
Retail Strategy - Growth Strategy - Value Chain and Ethics.Retail Location - Types - Steps Involved in Selection. Store Design - Principles and Elements – Elements of Store Design.

Unit- III
Retail Franchising - Concept of Franchising - Evolution of Franchising – Types of Franchising – Basic Retail Merchandising - Meaning - Factors Affecting Buying Functions - Role and Responsible of Merchandiser and Buyer.

Unit- IV
Retail Marketing - Role of Marketing in Retail - Retail Marketing Mix - STP Approach - Retail Image - Concept of Retail Branding –Retail Pricing - Retail Pricing Policy.

Unit- V
Retail MIS - Importance of Information Technology in Retail - Factors Affecting the Use of Information Technology - Applications of Technology – E-Tailing - The New Online Retail Categories.

Course Outcome:
CO 1: To develop a student will help in Identify key roles within retail businesses.
CO 2: The student will be able to understand some challenges of working in the retail field.
CO 3: To identify the most valuable skills for a retail manager .
CO 4: To understand the the most valuable skills for a retail manager to

CO 5: The students can focuses Classify the general steps of strategic planning.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		M		H			M	
CO 2	M		L			M		
CO 3			H				L	
CO 4		H		M		H		M
CO 5			M				H	

Text Books:

1.Swapna Pradhan, Retailing Management (Text and Cases), 6th Edition, 2017, Tata McGraw Hill Publishing.

2. Gibson G Vedamani, Retail Management - Functional Principles and Practice, 7th Edition, 2018, Jaico Publishing House.

Reference Books:

1.Barry Berman and Joel R Evans, Retail Management, A strategic Approach, 14th Edition, 2017, Prentice Hall of India.

2. RosemaryVarley, Principles of Retail Management, Revised Edition, 2016, Palgravemalminnan Publishers.

All UG Degree Examination –Syllabus –For the Candidates admitted from the academic year 2019-2020 Onwards

THIRD SEMESTER
CERTIFICATE COURSE -SECURITY MANAGEMENT

Total Hours: 30

Course Objective:
The objective of the course is to introduce the different facets of actual trading. The students will be taught different types of trading strategies, as well as a concrete build-up of positions.

Unit-I
Securities Markets and Performance - Meaning of securities and key function of securities markets participants - Features of equity capital - features of debt capital - factors that influence the choice between equity and debt capital for issuers.

Unit-II
Primary Markets - nature and functions of the primary market - difference between various types of public issues - the categories of issuers - regulatory framework - types of investors - public issue process.

Unit -III
Secondary Markets- role and functions of the secondary markets - market structure and participants in the secondary markets - role of brokers and processes for client acquisition - process of trade execution in the secondary market - process of trade settlement.

Unit- IV
Equities, Fundamental analysis – Revenue, earnings, future growth, return on equity, profit margins – Balance sheet and financial ratio - Technical analysis – Trend - Uptrend, Downtrend, Trading Range – line chart – Bar chart - - Moving average – MACD - RSI – ROC.

Unit-V
Demat Account - Online trading – Advantages and disadvantages –process of online trading –types of orders – traditional trading vs. online trading– players in online trading.

Text Books:
1. Prasanna Chandra, Investment Analysis and Portfolio Management, McGraw Hill Education; Fifth edition 2017.
2. Benjamin Graham and David Dodd, Security Analysis, McGraw Hill Education; 6 edition 2017.

Reference Book:

1. Khushboo Gala and Ankit Gala, Fundamental Analysis Shares : Become An Intelligent Investor - Buzzingstock Publishing House; 1st edition 2019

All UG Degree Examination –Syllabus –For the Candidates admitted from the academic year 2019-2020 Onwards

THIRD SEMESTER
CERTIFICATE COURSE -OFFICE ADMINISTRATION

Total Hours: 30

Course Objective:
On the Successful completion of this paper the students will acquired the knowledge on administration of office management skills and development of management.

Unit-I
Office management – Meaning – Elements of office management – Functions of Office management.

Unit -II
Office organization – Definition, Characteristics and Steps – Types of Organization – Functions of an Office administrator.

Unit -III
Office record management – Importance – Filing essentials –Classification and Arrangement of files-Modern methods of filing-Modern filing devices.

Unit -IV
Office Communication – Correspondence and Report writing –Meaning of office Communication & mailing.

Unit -V
Form letters –Meaning, Principles, and Factors to be considered in designing Office forms – Types of report writing.

Text Books:
1. Heinemann, Business and Office Administration, Heinemann Publications, 2nd Edition, 2016.
2. Macmillan, Office Administration, Macmillan Caribbean Publications, 6th Edition, 2015.

Reference Books:
1. Wiley, Design of Office Administration, Wiley Publication, 1st Edition, 2016.
2. Herbert A. Simon, Administrative Behavior, Royal Academy of Science Publications, 2015.

All UG Degree Examination –Syllabus –For the Candidates admitted from the academic year 2019-2020 Onwards

THIRD SEMESTER
CERTIFICATE COURSE - BUSINESS EXCELLENCE

Total Hours: 30

Course Objective:
On the Successful completion of this paper the students will acquired the knowledge on Managerial approaches/functions, skills and competencies.

Unit-I
Nature and scope of business- Meaning; Scope; Managerial levels and skills-Managerial Roles-Management: Science, Art or Profession.

Unit-II
Function of management: Planning -Organizing-Directing-Staffing-Controlling.

Unit-III
Leadership theories-motivation –communication-leadership styles.

Unit-IV
Organizational behavior (OB) in global context, Boundary less business excellence, Cross-Cultural Management, Managing multicultural teams, communicating across cultures.

Unit-V
Social responsibilities of business - Concept of social responsibility- corporate governance-managing ethical behavior of business.

Text Books:
1. Heinz. W, Mary V Cannice&Koontz.H (2019). Management (13th Edition). Tata McGraw Hill Publications.
2. Prasad, L.M., Principles and practices of management. New Delhi: Sultan Chand & Sons.

Reference Book:
1. Joseph L Massie, Essentials of Management. Prentice-Hall India, New York.

All UG Degree Examination –Syllabus –For the Candidates admitted from the academic year 2019-2020 Onwards

FOURTH SEMESTER
CERTIFICATE COURSE - INSURANCE MANAGEMENT

Total Hours: 30

Course Objective:

On the successful completion of this paper the students will gain the knowledge on Insurance Business and its regulation.

Unit-I

Definition of Insurance – Insurable risk – Principles of insurance – Kinds of insurance – Costs and benefits of insurance – Pooling in insurance – Globalization of Insurance Sector – Reinsurance.

Unit-II

Types of Insurance - Types of general insurance – Fire and Motor Insurance-Health Insurance-Marine Insurance-Automobile Insurance.

Unit-III

Regulation of Insurance in India-Control of Malpractices, Negligence-Loss Assessment and Loss Control, Exclusion of Perils- Computation of Insurance Premium.

Unit-IV

Insurance Business in India – Framework of insurance business – privatization of insurance business – Insurance Regulatory and Development Authority (IRDA) – Government Policy on insurance sector.

Unit-V

Recent developments in Insurance Business sector India – Growth and development.

Text Book:

1. George E. Rejda: Principles of Risk Management & Insurance, New Delhi. 13 Editions, 2016

Refernce Books:

1. NaliniPravaThirupathi and Prabir Pal, Insurance theory and Practice, PHI, 6th Edition, 2005, New Delhi
2. Principle and practice of insurance, Second edition, Himalaya publishing, 2019

FOURTH SEMESTER
CERTIFICATE COURSE - ORAL COMMUNICATION FOR BUSINESS BEHAVIOUR

Total Hours: 30

Course Objective:
On the Successful completion of this paper the students will acquired the knowledge on effective oral communication skills. Students will learn effective oral communication techniques.

Unit-I
Basic Principles of Oral Communication-Understanding Oral Communication - Communication Process- nature of communication. –Communication model.

Unit- II
Constructing the Self through Communication- grammatical constructions in context - Identification of the use of the grammatical devices form different texts like newspapers, poems, stories etc.

Unit- III
Public Communication- concepts of intrapersonal and interpersonal communication -Public speech –Telephonic Conversation etiquette –E-mail etiquette

Unit- IV
Organizing – Organization Structure and Design – Authority- Perception and Learning – Personality and Individual Differences

Unit- V
Model of business behavior-challenges and opportunities for business behavior in communication.

Text Books:
1. An introduction to Professional English and Soft Skills by B. K. Das et al., Cambridge University Press (Facilitated by BPUT)
2. Technical Communication: Principles and Practice, Second Edition by Meenakshi Raman and Sangeeta Sharma, Oxford Publications.

Reference Book:
1. Effective Technical Communication by M Ashraf Rizvi, The McGraw-Hill companies

All UG Degree Examination –Syllabus –For the Candidates admitted from the academic year 2019-2020 Onwards

FOURTH SEMESTER
CERTIFICATE COURSE - PRACTICAL ACCOUNTING

Total Hours: 30

Course Objective:
On the successful completion of this paper the students will gain the knowledge on basic accounting and understanding about recording of business transactions and preparation of financial statements.

Unit-I
Accounting Concepts and Procedures - Introduction to Accounting - Using Financial Information for Decision Making - Introduction to the Accounting System - Understanding Business Transactions - Analyzing and Recording Business Transactions - Recording through Accounting Equation.

Unit-II
Banking Procedures and Control of Cash. Sales and Cash receipts, Purchases and Cash payments - Accounts finalization – closing book of accounts, ledger scrutiny – Prepare financial statement, profit and loss account.

Unit-III
Introduction to the Elements of Balance Sheet: Assets, Liabilities and Equity - Non-current Assets - Current Assets - Non-current Liabilities - Current Liabilities – Equity.

Unit-IV
Financial Statement Analysis - Analyzing the Financial Statements - Horizontal Analysis of Financial Statements - Common Size Analysis of Financial Statements - Ratio Analysis.

Unit-V
Calculating Payroll Taxes and Recording Payroll and Payroll Taxes - TDS act - E-Payment - E-return filing - Income tax computation for individual and a company.

Text Books:
1. S. N .Maheshwari, Suneel K Maheshwari, Sharad K Maheshwari, Financial Accounting, Vikas Publishing House; Sixth edition, 2018
2. R.K.Arora, Financial Accounting: Fundamentals, Analysis and Reporting, Second Edition, Wiley publication, 2018.

Reference Books:
1. Gupta, Financial Accounting for Management, Pearson Education India; Fifth edition 2016
2. R. Narayanaswamy, Financial Accounting: A Managerial Perspective PHI Learning; 6th
    Revised Edition 30 December 2017.

Department of Management (UG)

Bachelor or Business Administration with Computer Application

Regulations for BBA (CA)

(Effective from the academic year 2019-2020 onwards)

Introduction:

The Department was established in 2002 with a sanctioned strength of 110.

Objective:

To produce professional managers with programming capability to meet the growing industrial needs.

Eligibility: UG Programme

Candidate for admission to the first year of the Bachelor of Business Administration & Computer Applications BBA(CA) degree course shall be required to have passed the higher secondary examination (Academic or Vocational) conducted by the Govt. of Tamil Nadu or other examinations accepted as equivalent thereto by the Syndicate, subject to such other conditions as may be prescribed therefore.

Duration of UG Programme:

The course shall extend over a period of three years comprising of six semesters with two semesters in one academic year. There shall not be less than 90 working days for each semester. Examinations shall be conducted at the end of every semester for the respective subjects.

Vision:

To practice advanced management skills in the global context and to offer career management opportunities with professional community service for our students.

Mission:

To provide students with a comprehensive business education through dynamic curriculum and provide managerial skills for the students to achieve success.

Program Outcome:

After completion of the Programme the graduates will be able to

PO1: Become ethically and socially responsible graduates with Computer Application knowledge

PO2: Has an ability to apply knowledge of computing and business application appropriate to the discipline.

PO3: Apply techniques and professional skills to excel in business.

PO4: Evaluate business problem in complex context using Social, Ethical, Economical Regulatory and Global prospective.

PO5: Provide ability to solve problem, decision making in an organization.

Program Specific Outcome:

PSO1: To impart conceptual grounding in computer usage as well as its practical business application will be provided.

PSO2: To provide the basic and essential knowledge regarding various activities undertaken and necessary to run socially responsible business organization.

PSO3: To furnish global view of the several industries and other organizations and their functions which support the business system.

BOARD BBA (CA)
Scheme of Examination (CBCS and OBE Pattern) Programme BBA (CA)
For the Candidates admitted from the Academic Year 2019-2020 Onwards

Part	Sub Code	Subject Title	Ins.Hrs/Week	Dur. Hrs.	CIA	CE	Total	Credit
					Examination			
SEMESTER I								
I	19LATA01/ 19LAHI01/ 19LAMY01/ 19LAFR01	Language – I/ Hindi–I/ Malayalam-I/ French-I	5	3	30	70	100	3
II	19ENG001	English –I	5	3	30	70	100	3
III	19BAC101/	Core 1Principles of Management	6	3	30	70	100	4
III	19BAC102	Core 2Introduction to information technology	6	3	30	70	100	4
III	19BACID1	IDC1:Business Mathematics and Statistics	6	3	30	70	100	4
IV	19UFCA01	Foundation Course I : EVS #	2	3	-	50	50	2
		Total	30				550	20
SEMESTER II								
I	19LATA02/ 19LAHI02/ 19LAMY02/ 19LAFR02	Language – II/ Hindi-II/ Malayalam-II/ French-II	5	3	30	70	100	3
II	19ENG002	English – II	5	3	30	70	100	3
III	19BAC201	Core 3 Financial Accounting	6	3	30	70	100	4
III	19BACP01	Core Lab 1 PC-Software	6	3	40	60	100	4
III	19BACID2	IDC 2: Operations Research	6	3	30	70	100	4
IV	19UFCA02	Foundation Course II: Value Education #	2	2	-	50	50	2
		Total	30				550	20
SEMESTER III								
III	19BAC301	Core 4 Marketing Management	5	3	30	70	100	4
III	19BAC302	Core 5 Production and Operations Management	5	3	30	70	100	4
III	19BAC303	Core 6 System Analysis and Design	5	3	30	70	100	4
III	19BACP02	Core Lab 2 Accounting Package Tally	5	3	40	60	100	4
III	19BACID3	IDC 3: Business Taxation	5	3	30	70	100	4
IV	19BACSB1/ 19BACSB2	**SBC- 1** Retail Management/Customer Relationship Management #	3	3	-	75	75	3
IV	19BTA001/ 19ATA001/ 19BACED1	**EDC-1** BT- I/AT-1/ Multimedia and its applications#	2	2	-	50	50	2

			Total	30				625	25

			SEMESTER IV					
III	19BAC401	Core 7 Human Resource Management	5	3	30	70	100	4
III	19BAC402	Core 8 Research Methods for Management	5	3	30	70	100	4
III	19BAC403	Core 9 RDBMS and ORACLE	5	3	30	70	100	4
III	19BACP03	Core Lab 3 RDBMS and ORACLE	5	3	40	60	100	4
III	19BACID4	IDC 4 Business Economics	5	3	30	70	100	4
IV	19BACSB3/ 19BACSB4	**SBC 2** Business Communication/Modern Office Management #	3	3	-	75	75	3
IV	19BTA002/ 19ATA002 19EDC002	**EDC 2**: BT-II/AT-II/ Communicative English #	2	2		50	50	2
V	19NSS001/ 19NCC001/ 19EXT001	NCC/NSS/Sports/Extension Activities@	-	-	50	-	50	2
			Total	30				675	27

			SEMESTER V					
III	19BAC501	Core 10 Financial Management	5	3	30	70	100	4
III	19BAC502	Core 11 Consumer Behavior	5	3	30	70	100	4
III	19BAC503	Core 12 Visual Programming	5	3	30	70	100	4
III	19BACP04	Core Lab 4 Visual Programming	5	3	40	60	100	4
III	19BACE01/ 19BACE02/ 19BACE03	**Elective I** Advertising and Sales Promotion/Banking Law and Practices/ Labor Welfare and Industrial Relations	5	3	30	70	100	4
III	19BACPR1	Project and Viva Voce	5	3	50	50	100	4
			Total	30				600	24

			SEMESTER VI					
III	19BAC601	Core 13 Cost and Management Accounting	5	3	30	70	100	4
III	19BAC602	Core 14 Industrial Law	5	3	30	70	100	4
III	19BAC603	Core 15 Internet &Web Design	5	3	40	60	100	4
III	19BACP05	Core Lab 5 Internet &Web Design	5	3	30	70	100	4
III	19BACE04/ 19BACE05/ 19BACE06	**Elective II** Event marketing/Financial Services/Human Resource Development	5	3	30	70	100	4
III	19BACE07/ 19BACE08/ 19BACE09	**Elective III** Supply Chain & Logistics/Stock Exchange and Practice/Training and Development	5	3	30	70	100	4
			Total	30				600	24
			Total					3600	140

\# No Continuous Internal Assessment (CIA) , only Comprehensive Examination (CE)

@ No Continuous Internal Assessment (CIA), No Comprehensive Examination (CE)

IDC- Inter disciplinary Course, EDC – Extra Disciplinary course , SBC –Skill Based Course

List of Skill Based Courses

Sem	Code	Subject Title	Max Marks	Credits
III	19BACSB1	Retail Management	75	3
III	19BACSB2	Customer Relationship Management	75	3
IV	19BACSB3	Business Communication	75	3
IV	19BACSB4	Modern Office Management	75	3

List of Elective Courses

Sem	Elective	Subject Code	Subject Title
V	Elective I	19BACE01	Advertisement and Sales Promotion
		19BACE02	Banking Law and Practices
		19BACE03	Labour Welfare and Industrial Relations
VI	Elective II	19BACE04	Event Marketing
		19BACE05	Financial Services
		19BACE06	Human Resource Development
VI	Elective II	19BACE07	Supply Chain & Logistics
		19BACE08	Stock Exchange and Practices
		19BACE09	Training and Development

List of Extra Disciplinary Courses

Sem	Code	Subject Title	Credits
III	19BTA001	Basic Tamil-I	2
III	19ATA002	Advanced Tamil-I	2
III	19EDC002	Communicative English	2
IV	19BTA002	Basic Tamil-II	2
IV	19ATA002	Advanced Tamil-II	2
IV	19BACED1	Multimedia and its applications	2

List of Additional Credit Course

Sem	Code	Subject Title	Max Marks	Credits
III	19BACAC1	E-Commerce	100	2
IV	19BACAC2	Institutional Training	100	2
V	19BACAC3	Banking Technology	100	2

Summary

Part	No of papers	Total Credits	Total Marks
I	2	6	200
II	2	6	200
III – Core	20	80	2000
III – IDC	4	16	400
III - Elective	3	12	300
III – Project	1	4	100
IV – Foundation Course	2	4	100

IV – EDC	2	4	100
IV – Skill Based Course	2	6	150
V – Extension Activities	-	2	50
Total	38	140	3600

REGULATIONS FORBOARD OF MANAGEMENTBBA (CA)

(Effective from the Academic Year 2019-2020 onwards)

1. **Project and Viva Voce** :

   Each student in the UG final year shall compulsorily undergo Project Work in the 5th Semester. Projects shall be done individually. Project Coordinators shall allocate the project title and the guide for each group. Project work shall be done only in the lab provided by the college, including Project Record Preparation. Project Reviews shall be conducted thrice in which the progress of project work shall be strictly evaluated by respective Project Guides and Project Coordinators. Viva-Voce shall be conducted only in the presence of Industrialists or academicians. Out of the Total of 100 marks, 50% of mark shall be allocated for CIA and 50% for CE VIVA VOCE.

2. **Submission of Record Note Books for practical examinations**

   Submission of Record Work for Practical Examinations, Candidates appearing for Practical Examinations shall submit Bonafide Record work for the concerned Practical Examination. If not the Candidates has to submit a Bonafide Certificate issued by the concerned subject in charge duly signed by the head of the department in order to be permitted to take up the Practical Examination. The Candidate so permitted will not be eligible for the Record work mark.

3. **Distribution of Marks:** The following are the distribution of marks for Comprehensive Examinations and CIA for Theory, Practical and Project.

Category	Max Marks	Comprehensive Examination		Internal Marks	Overall passing minimum (Internal + CE)
		Max Marks	Passing Minimum		
Theory Paper	100	70	28	30	40
	75	75	30	-	30
	50	50	20	-	20
Practical Paper	100	60	24	40	40
	75	75	30	-	30
Project	100	50	20	50	40

4. Distribution of Internal Mark for Theory :
(No Passing Minimum for CIA)

S. No	CIA	Distribution of Marks
1	Pre Model Examination	70
2.	Model Examination	70
3.	Seminar	30
4.	Attendance	10
Total		**180/6=30**

Seminar:

S.NO	SEMINAR SPLIT UP	Marks
1	Content	10
2	Flow of the presentation	10
3	Stage management and Body language	10
	Total	**30**

Breakup for Attendance:
Upto 74 %   - 4 Marks
75% - 84%   - 6 Marks
85% - 94%   - 8 Marks
95% - 100%   - 10 Marks

5. Distribution of Internal Mark for Practical:

MAXIMUM MARKS : 40		
S No	CIA	Distribution of Marks
1	For Completion of the Practical List	20
2	Test –I	10
3	Test –II	10
	Total	40

6. **Distribution of Comprehensive Exam Mark for Practical :**

MAXIMUM MARKS : 60		
S. No	**Comprehensive Examination**	**Distribution of Marks**
1	Record	10
2	Program – I Algorithm Coding Execution	5 10 10 TOTAL (25)
3	Program – II Algorithm Coding Execution	5 10 10 TOTAL (25)
	Total	60

7. **Distribution of Mark for Project VIVA-VOCE :**

S.No	CIA	Distribution of Marks
1	**Internal** a) Review –I b) Review –II c) Documentation & Final Review	10 10 30 **Total (50)**
2	**External *** a) Presentation b) Viva	30 20 **Total (50)**
	Total	**100**

*Marks to be awarded by both External and Internal Examiners

The distribution of marks among the various components for CIA and CE for theory, practical and project work is given in detail in the respective schemes of examination and regulation of the UG programme, duly passed in their respective board.

8. Pattern of Question Paper

For Pre model, Model and Comprehensive Examination under – Graduate Courses.

Maximum Marks : 100 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×8=40)	Each question carries eight marks	Internal Choice
Section – C	(5×10=50)	Each question carries ten marks	Internal Choice
Maximum Marks : 70 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×4=20)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 75 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×5=25)	Each question carries five marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 50 / Time 2 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×3=15)	Each question carries three marks	Internal Choice
Section – C	(5×5=25)	Each question carries five marks	Internal Choice

Note:

1. The questions should be numbered sequentially and continuously running through the Sections A, B and C. The maximum external marks for theory are 70/75.

2. Questions should be evenly distributed among the unit in the syllabus in all the sections of the Question paper.

3. While framing questions with internal choice the questions must be identified as (a) or (b). (e.g 11. a or b). Further, the internal choice must be from the same unit.

4. The Controller of the Examinations shall arrange for the setting of question papers on the basis of the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies.

9. Conduct of Practical Examination

Practical Examination shall be conduct with one Internal Examiner and one External examiner. The question paper for practical examination shall be set by both Internal and External examiner.

10. Industrial Training

The student has to go for Industrial Training to specified in the syllabus for a minimum period of 15 days at the end of the II and IV Semester and has to submit the Report during the III and V Semester and the Report is adjudicate with External examiners. The results are given as Complete or Incomplete.

11. Certificate Course

In the academic year 2019-2020 we are introducing certificate course on III and IV semester as an interdisciplinary course. The course title is as follows.

List of Certificate Course

S.No	Sem	Subject Title
1		Security Management
2	III	Office Administration
3		Business Excellence
4		Insurance Management
5	IV	Oral Communication in Business
6		Practical Accounting

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FIRST SEMESTER
PART – III – CORE-1 PRINCIPLES OF MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective: On the Successful completion of this paper, the students should have acquired knowledge of the nature and types of business organizations, Principles and functions of Management Process, decision making, Modern trends in management process

Unit –I   (15 Hours)
Nature and evolution of management – Meaning and definition of management – Contributions of Taylor, Fayol, Mayo and Drucker – Functions of management – management: Art, Science and Profession – Administration Vs management – Functional areas of management – Managerial skills: Levels of management-Social responsibility and Ethics.

Unit –II   (15 Hours)
Planning: Nature and purpose of planning - steps in planning - types of planning- Objectives and strategies-Policies - Decision making: Process of Decision making - types of Decisions, MBO-Definition and concept-process-merits and demerits.

 Unit –III   (13 Hours)
Organising: Meaning, definition and Principles, Formal and Informal Organization – Organization structure – Line and staff organization – Types of Groups – Formal and Informal Groups – Merits and Demerits of the groups

Unit –IV   (14 Hour)
Directing: Definition and principles of Directing – Motivation: Meaning, nature and importance – Maslow, Mc Gregor, Herzberg Mc Cleland, and Alderfer theories of motivation– Delegation of Authority – Centralization and decentralization – Merits and Demerits.: Co-ordination: Meaning need and features – Techniques – Problems in coordination.

Unit – V   (15 Hours)
Staffing: Meaning and importance of staffing – Recruitment, Selection, Training of staff. Controlling: Meaning, definition and need – Principles of controlling – Controlling techniques.

Course Outcome:

- To learn and acquire the knowledge of the nature and type of business organization.
- To make an effective planning and what are all the strategies and policies to be followed for successful organization.
- The purpose of this study is to learn about the formal and informal organization structure and the achievement of organizational goals.
- The students will acquire the knowledge about directing, motivating towards the growth of the organization.

- The students will learn about the various techniques involved in staffing and controlling.

Text Books:

1. P. C. Tripathy, P.N.Reddy, Principles of Management, 3rd Edition, Tata MC Graw hill publishing Company ltd, New Delhi, 2007.
2. Principles of Management – Dr.G.Venkatesan, R.K.Sharma & Shashi K.Gupta

Reference Books:

1. Bhushan Y.K, Business Organization, 4th Edition, Tata MC Graw hill publishing, New Delhi, 2006
2. L.M.Prasad, Principles of Management, 5th Edition, Himalaya publication, Mumbai - 2006

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FIRST SEMESTER
PART – III – CORE 2 –INTRODUCTION TO INFORMATION TECHNOLOGY

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
On the successful completion of the course, the students should have understood the concept of system.

Unit-I   (15 Hours)
Computer Basics: Introduction-Evolution of Computers-Generation of computers-Classification of Computers-The Computer System-Applications of Computers.

Unit-II   (15 Hours)
MS Word: Introduction-Working with Word-Working with Text-Working with Tables-Checking Spelling & Grammar-Adding Graphics to Documents-Printing a Document.

Unit- III   (15 Hours)
MS PowerPoint: Introduction-Working with PowerPoint-Working with different views-Designing Presentation-Printing in PowerPoint.

Unit-IV   (15 Hours)
MS Excel: Introduction-Working with Excel-Working with Worksheet-Formulas & Functions-Inserting charts –Printing in Excel.

Unit-V   (12 Hours)
Internet: Introduction-Evolution of Internet-Basic Internet Terms-Getting connected to internet-Internet Application –Data over Internet.

Course Outcome:

- On successful completion of this introduction of computer the students will have the knowledge about Computer System.
- To improve the users knowledge of the various tools provided within Word and makes their use of word processing application more efficient
- To develop creativity among students in designing a presentation in power point which helps them to create a basic presentation
- To increase the student's knowledge of Microsoft Excel in daily life is to perform the calculation, analysis, and visualization of data and information.

- To develop technical and communication skills of students by using Internet and it is common user-friendly and make students life easy.

Text Books:

1. V. Rajaraman, Introduction to Information Technology, PHI Learning Pvt.Ltd,3rd Edition, 2018.
2. Prided K.Sinha & Priti Sinha, Computer Fundamentals, BPB Publications, 6th Edition, 2014.

Reference Books:

1. ITL Education Solutions Ltd, Introduction to Information Technology, 2nd Edition, Pearson Education, 2012.
2. Brian K.Williams & Stacey Sawyer, Using Information Technology, Mc-Graw Hill Publications, 11th Edition, 2014.

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SECOND SEMESTER
PART – III – CORE-3 FINANCIAL ACCOUNTING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective: On the Successful completion of this paper, the students should have acquired knowledge of the basic accounting concepts

Unit – I   (15 Hours)
Introduction to Accounting: Need for accounting-Definition of accounting-Advantages and disadvantages of accounting-Methods of accounting: Single and Double Entry book keeping-Types of accounts- Basic accounting concepts - Journal-Ledger.

Unit – II   (12 Hours)
Subsidiary books-Trial balance [problems] - Errors-types of errors-Rectification of errors [excluding suspense account]

Unit – III   (15 Hours)
Final accounts of trading concerns [with simple adjustment only]-Depreciation accounting-Meaning-Causes -Methods of providing depreciation- Straight Line Method -Written down Value method.

Unit – IV   (16 Hours)
Branch accounting-Meaning-merits-demerits-Departmental accounting- Meaning of departments and departmental accounting –Need for departmental accounting-advantages-Difference between branch and departmental accounts-Methods and techniques of departmental accounting [simple problems only]

Unit – V   (14 Hours)
Preparation of accounts from incomplete records [Theory and Problems] - Accounting for non-trading institutions. [Theory and problems may be in the ratio of 20% and 80%respectively].

Course Outcome:

- Preparing financial statements in accordance with appropriate standards.
- Explain the purpose Subsidiary books, Trial balance to understanding the accounting system properly. Preparation of rectification errors.
- Prepare ledger accounts using double entry bookkeeping and record journal entries accordingly
- Preparing accounting information for Branch and Departmental and for the Techniques of accounting.
- Accounts from incomplete records and Accounting for non-trading institutions.

Text Books:

1. S.P.Jain, K.L.Narang, Financial Accounting and analysis, 6th Edition-Kalyani Publishers, 2012, Mumbai
2. Dr.S.N.Maheshwari, Financial Accounting, 1st Edition- Sultan Chand and Sons, 2014, New Delhi

Reference Books:
1. Dr. P.C.Tulsian, Financial Accounting, 4th Edition, Tata MC Graw Hill, 2011, Delhi
2. V.K.Gupta, Financial Accounting, 5th Edition- Sultan Chand and Sons, 2010, New Delhi.

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SECOND SEMESTER
PART – III-CORE LAB 1 –PC-SOFTWARE (PRACTICAL)

Maximum CIA: 40
Maximum CE: 60
Total Hours: 72

Course Objective: On the Successful completion of this paper, the students should acquired developing and designing skills in Ms Office and method of calculating, accounting techniques by using Tally.

LIST OF PRACTICALS

Objective: Imparting professional skills in Personal Computer software.

MS-WORD

1. Creating an Invitation.
2. Preparing a job application letter enclosing Detailed Resume.
3. Performing Mail Merger Operation.

MS – EXCEL

4. Creating a Worksheet Using Formulas for a pay roll preparation.
5. Calculating electricity bill using formulas.
6. Drawing graphs to illustrate class performance of semester marks result analysis.

MS- ACCESS
7. Simple commands perform sorting on name, place and pin code of students database and address printing using label format.
8. Pay rolls processing and prepare report.

MS- POWER POINT

9. Designing an advertisement campaign with minimum three slides.
10. Preparing a power point presentation for grouping and ungrouping concept with minimum three slides.

INTERNET

11. Working with Internet Explorer to search data in Internet.
12. Create an Email Account, Compose and Send mail by using CC and BCC options with Attachments.

Course Outcome:

- To understand a Word Processor and to create, Edit and Format documents.
- To understand a Spreadsheet and to Create, Edit and Format Worksheet, Work with Charts and performing basic Calculations.
- To create effective presentations and apply Designs to Enhance the looks of the Presentation.
- To identify the terminology and functions common to most database management systems. To create simple reports and forms and using Queries.
- To describes the effects of the current development of Internet technologies on students learning experience. The main advantage is access to educational resources, leading to an improved learning experience for students.

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THIRD SEMESTER
PART III - CORE 4 - MARKETING MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
On the successful completion of this paper, the students should have acquired knowledge in Principles of Marketing Management, Market Segmentation, Product Life Cycle, Pricing, and Branding.

Unit-I   (10 Hours)
Definition of Marketing - Marketing Management- Marketing Concept – Meaning Importance of Marketing in Developing Countries - Functions of Marketing – Concept of Holistic Marketing Orientation, Customer Value-Changing Marketing Practices.

Unit-II   (15 Hours)
Buyer Behavior - Buying Motives - Market Segmentation of Different Bases – Market Positioning – Market Targeting - Marketing Strategy - Branding Decisions: Brand-Brand Image, Brand Identity-Brand Personality –Brands Equity.

Unit-III   (10 Hours)
The Product- Types of Product - Product Policy - Product Life Cycle [PLC] - Product Mix - Modification and Elimination – Packing – New Product Development – Strategies.

Unit-IV   (15 Hours)
Definition and Types of Channel - Channel Selection and Problems- Middle Man: Wholesaler - Retailer- Agent Middleman Price Decision-Concept, and Meaning of Price and Pricing-Significance of Pricing Decision- Factors Affecting Price Determination; Pricing Methods and Techniques.

Unit-V   (10 Hours)
Advertisement Media- Radio-T.V-Newspaper- Merits and Demerits of Advertisement – Sales Promotion – Publicity – Personal Selling.

Course Outcome:
CO 1: To learn and understand Concepts of marketing
CO 2: To understand about the Marketing Strategies
CO 3: To Design and develop various Marketing Strategies and pricing
CO 4: The students will acquire the knowledge about various Pricing Methods and Techniques.
CO 5: The students will learn about to develop Business Strategies.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	H						M	
CO 2		H			M	M		
CO 3			L					
CO 4				H			L	
CO 5			M					L

Text Books:

1. Philip Kotler and Kevin Lane Keller, Marketing Management, 14th Edition, 2012, Prentice Hall of India, New Delhi.

2. KS Chandrasekhar, Marketing Management-Text and Cases, First Edition, 2010, Tata McGraw Hill.

Reference Books:

1. Paul Baines, Chris Fill and Kelly Page, Marketing, 2nd Edition, 2011, Oxford University Press.

2. Philip Kotler, Marketing Management, 2nd Edition, 2010, McGraw Hill, New Delhi.

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THIRD SEMESTER
PART III - CORE 5 - PRODUCTION AND OPERATIONS MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
On the Successful completion of this paper, the students should have acquired knowledge of Principles and Process of Production Management.

Unit-I   (12 Hours)
Production Management - Functions - Scope - Plant Location - Factors - Site Location -Plant Layout - Principles - Process - Product Layout for Production Planning and Control -Principles - Information Flow - Routing - Scheduling - Dispatching – Control.

Unit-II   (12 Hours)
Materials Requirement Planning (MRP) – Evolution of MRP into MRP II – JIT- Difference between JIT and MRP - Maintenance - Types - Breakdown - Preventive - Routine - Methods Study –Work Study-Time Study - Definition - Motion Study - Principles – Work Measurement.

Unit-III   (12 Hours)
Purchasing – Procedure - Principles - Import Substitution and Import Purchase Procedure - Value Analysis / Value Engineering – Steps - Vendor Rating - Vendor Development – ERP – Business Engineering – BPR.

Unit-IV   (12 Hours)
Function of Inventory - Importance - Tools - ABC, VED, FSN Analysis - EOQ – Reorder Point - Safety Stock - Lead Time Analysis - Store Keeping - Objectives - Functions – Store Keeper - Duties - Responsibilities - Location of Store - Stores Ledger - Bin card – KAIZEN.

Unit-V   (12 Hours)
Inspection and Quality Control - Types of Inspection. TQM: Meaning -Objectives - Elements - Benefits - Bench Marking: Meaning - Objectives - Advantages -ISO: Features - Advantages - Procedure for Obtaining ISO- AGMARK-ISI- Six Sigma Concept- Acceptance Sampling.

Course Outcome:
CO 1: To understand Principles and Process of Production Management
CO 2: To understand about the techniques in Production
CO 3: To learn about the Import Purchase Procedure
CO 4: The students will acquire the knowledge about Quality Control
CO 5: The students will learn about concepts in sampling in production

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	H						M	
CO 2		H				M		
CO 3			L	M				
CO 4				H			L	
CO 5			M					L

Text Books:

1. Pannerselvam, Production and Operation Management, 5th Edition, March 2012, Prentice Hall of India, New Delhi.
2. SwapnilRupaye, Production and Operations Management 12th Edition, April 2015, OUP Australia and New Zealand.

Reference Books:

1.S.K.Anil Kumar and N.Suresh, Production and Operations Management, Revised Edition, 2012, New Age International Publishers.
2. Elwood.S.Buffa and Rakesh.Sarin, Modern Production Operation Management, 8th Edition, 2010, John Wiley and Sons, USA.

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THIRD SEMESTER
PART III - CORE 6 – SYSTEM ANALYSIS AND DESIGN [THEORY]

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
On the successful completion of this course, the students should have implicit knowledge of analyze and design system.

Unit-I   (12 Hours)
Overview of System Analysis and Design: What is System-Characteristics of system-Element of System-System Components, Environment and Boundaries-Types of systems-System Models-Types of Information System.

Unit-II   (12 Hours)
System Development life Cycle: Introduction to System development Life Cycle-Phases of SDLC-Life Cycle Models-Organization for a project-System Documentation Consideration-Role and need of System Analyst.

Unit-III   (12 Hours)
Tools and Techniques for Modeling: Data flow diagram- Data Dictionary- Decision Table-Decision Table- Decision Tree- Entity Relationship Diagrams- System Flowchart- Programming Flowchart.

Unit-IV   (12 Hours)
System Design and Modeling: An Overview of Design Phase- Design Consideration-Logical and Physical Design-Data Modeling and Design-Types of files in an organization System-File Access and Organization-Database Design.

Unit-V   (12 Hours)
Input And Output Design Control: Overview of Input and Output-Forms-Input Design-Output Design-Introduction to structured Design Concepts-Top Down and Bottom Up Design-Tools for Structured Design- Module Coupling and Cohesion-Specification.

Course Outcome:
CO 1:The student should Work effectively in a team environment.
CO 2: To gather data to analyze and specify the requirements of a system.
CO 3:To build general and detailed models that assist programmers in implementing a system.
CO 4: To design a database for storing data, a user interface for data input and output, and controls to protect the system and its data.

CO5:To describe the role and responsibilities of the participants in information systems
      development.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		H			M		M	
CO 2			M					L
CO 3		L		H		M		
CO 4	M						H	
CO 5		H			H	M		

Text Books:
1. PreetiGupter- Structured System Analysis and Design, Lakshmi Publication Pvt.Ltd, 3rd Edition.
2. Shelly, Cashman, Rosenblatt, Thomson, Systems Analysis and Design, 4th Edition.

Reference Books:
1. Elias Awad Systems Analysis and Design, Galgotia Publications, 3rd Edition.
2. Whitten, Bentley, Dittman, Systems Analysis and Design Method, McGraw-Hill/ Irwin 5th Edition.

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THIRD SEMESTER
PART III - CORE LAB 2 - ACCOUNTING PACKAGE TALLY

Maximum CIA: 40
Maximum CE: 60
Total Hours: 60

Course Objective:

On the Successful completion of this paper impart knowledge regarding concepts of Financial AccountingTally is an accounting package which is used for learning to maintain accounts.

List of Practical Programs

1. By using Tally - Create Voucher & ledger with adjustments (Using F11 and F12 keys).

2. Prepare Trial Balance, Profit & Loss A/C and Balance Sheet (With minimum of any 5 adjustments).

3. Prepare Inventory statement using (Calculate Inventory by using all methods) a) FIFO b) LIFO c) Simple Average method d) Weighted Average Method.

 4. Prepare a day book and give your opinion.

5. Create a inventory and calculate the interest.

6. Create a company details and financial year using Tally.

7. Create a ledger and inventory information.

8. Prepare a list of accounts.

9. Create a report for sales register and purchase register.

10. Prepare a stock report of the organization.

11. Balance sheet preparation of an organization.

12. Budget preparation of an organization.

Course Outcome:

CO 1: TheStudent will learn to create company, enteraccounting voucher entriesincluding advance voucher entries.

CO 2: Students do possess required skill and can also be employed as Tally data entry operator.

CO 3: Students will help to work with well-knownaccounting software

CO 4: To make students ready with required skill for employability in the job market.

CO 5: The students to maintain accounts with and without inventory.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M				H		M	
CO 2		H						L
CO 3		L		H		M		
CO 4	M						H	
CO 5			H		H			H

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THIRD SEMESTER
PART III-IDC 3–BUSINESS TAXATION

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
On the successful completion of this paper, the students should have acquired knowledge in Business Taxation.

Unit-I   (12 Hours)
Direct tax- Meaning –Merits –Demerits- Income –Features-Types -Assessment Year - Previous year- Assesses - Types of Assesses - Residential status of Person - Exempted Income.

Unit-II   (12 Hours)
Heads of Income- Income from Salaries – Characteristics of Salary - Treatment of Provident Fund – Allowances – Types of Allowances- Perquisites- Taxability of Perquisites - Valuation of Rent free Accommodation - Gratuity – Pension –Leave Encashment - Calculation of Income from Salary.

Unit-III   (12 Hours)
Income from House Property – Annual Value - Different Types of   Rental Value – Determination – Deduction U/S 24 – Calculation of Income from House Property. Profits   and Gains of Business or Profession – Computation of Income from Business or Profession.

Unit-IV   (12 Hours)
Capital Gains- Types –Exemption - Determination of Cost of Acquisition –Treatment of Capital Loss - Set-off and Carry Forward of Losses – Income from Other Sources –Tax treatment of Gift - Deduction of Tax at Source .

Unit-V   (12 Hours)
Deductions to be made from Total Income –Assessment of Individuals - Computation of Tax Liability –   E-Filing – Procedure.

Note: Distribution of marks: Theory 40% and Problems 60%

Course Outcome:
CO 1: Should have acquired knowledge about Tax.
CO 2: To know about heads of income.
CO 3: To Know about calculation of incomes from house property and business profession.
CO 4: To know the Determination of Cost of Acquisition and Deduction of Tax Source.
CO 5: To Analyze the Computation of Tax Liability, deductions, E-Filing & its Procedures.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		M		H			M	
CO 2				M				L
CO 3			H		M			
CO 4	M					L		
CO 5		H			H	M		

Text Books:
1. Gaur.V.P and Narang.D.B, Puja Gahai,RajeevPuri , Income Tax Law and Practice ,44th edition, Kalyani Publishers , 2016, New Delhi.
2. Hariharan.N, Income Tax, 12th edition, Tata McGraw hill, 2018, New Delhi.

Reference Books:
1. Hariharan.N, Income Tax, 10th edition, Tata McGraw hill, 2016, New Delhi.
2. T.S.Reddy and Y.Hari Prasad Reddy, Income Tax Law and Practice, 16th Edition, Margam Publication, Chennai

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THIRD SEMESTER
PART IV - SBC I- RETAIL MANAGEMENT

Maximum CE: 75
Total Hours: 36

Course Objective:

On the Successful completion of this paper the students should have acquired knowledge of retail, pricing, promotion strategy, retail customer, retail in India.

Unit-I   (8Hours)

Introduction to Retailing - Meaning - Functions of Retailer - Types of Retailers. Retailing in India-The Evolution of Retail in India - Foreign Direct Investment in Retail - Challenges Ahead for Retailing.

Unit-II   (7 Hours)

Retail Strategy - Growth Strategy - Value Chain and Ethics. Retail Location - Types - Steps Involved in Selection. Store Design - Principles and Elements – Elements of Store Design.

Unit-III   (7 Hours)

Retail Franchising - Concept of Franchising - Evolution of Franchising – Types of Franchising – Basic Retail Merchandising - Meaning - Factors Affecting Buying Functions - Role and Responsible of Merchandiser and Buyer.

Unit-IV   (7 Hours)

Retail Marketing - Role of Marketing in Retail - Retail Marketing Mix - STP Approach - Retail Image - Concept of Retail Branding –Retail Pricing - Retail Pricing Policy.

Unit-V   (7 Hours)

Retail MIS - Importance of Information Technology in Retail - Factors Affecting the Use of Information Technology - Applications of Technology – E-Tailing - The New Online Retail Categories.

Course Outcome:

CO 1:To describe the process of conceiving, producing, and selling fashion products for in-store and on-line retailing.

CO 2:Demonstrate the skills needed to develop ideas and make decisions based on ethics, proper research, analysis, and critical thinking.

CO 3:Describe the key actions to be taken to effectively and efficiently utilize organizational resources to achieve stated purpose and goals.

CO 4: Demonstrate the interpersonal skills to communicate effectively, both orally and in writing.

CO 5: Develop a professional growth plan for lifelong learning.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		H				H		
CO 2			M				M	
CO 3		H			M		M	
CO 4	L			M		L		
CO 5				M				H

Text Books:

1.Swapna Pradhan, Retailing Management (Text and Cases), Tata McGraw Hill Publishing, 6th Edition, 2018.

2. Gibson G Vedamani, Retail Management – Functional Principles and Practice, Jaico Publishing House 8th Edition, 2018

Reference Books:

1. Barry Berman and Joel R Evans, Retail Management, A strategic Approach, Prentice Hall of India, 12th edition, 2017.

2.ChetanBalaji&RajnishTuli, Retail Management, 3rd Edition, Oxford Publication, 2017.

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THIRD SEMESTER
PART IV- SBC I –CUSTOMERRELATIONSHIP MANAGEMENT

Maximum CE: 75
Total Hours:36

Course Objective:
On the Successful completion of this paper, the students should have acquired knowledge of Relationship Marketing.

Unit-I   (8 Hours)
Customer Relationship Management- Fundamentals- Evolution of Relationship Marketing-Stages of Relationship- Issues of Relationship- Purpose of Relationship Marketing- CRM Definitions, Emergence of CRM Practice:, CRM Cycle, Types of CRM .

Unit-II   (7 Hours)
CRM – Overview and Evolution of the Concept – CRM and Relationship Marketing – CRM Strategy – Importance of Customer Divisibility in CRM.

Unit-III   (7 Hours)
Sales Force Automation – Contact Management – Concept – Enterprise Marketing Management – Core Beliefs – CRM Practices in Retail Industry- Hospitality Industry- Banking Industry- Telecom Industry-Aviation Industry.

Unit-IV   (7 Hours)
Value Chain – Concept – Integration Business Management – Benchmarks and Metrics – Culture Change – Alignment with Customer Eco System – Vendor Selection.

Unit-V   (7 Hours)
Database Marketing – Prospect Database – Data Warehouse and Data Mining – Analysis of Customer Relationship Technologies – Best Practices in Marketing Technology.

Course Outcome:
CO 1: To know how to develop a plan for implementing effective customer care
CO 2: To understand how you, as a leader, can help to develop a 'customer focused' team.
CO 3: To understand the components of successful customer care
CO 4: To identify customer service barriers within your organization
CO 5: To understand why customers, complain, and how to deal professionally with
Complaints.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M			L			M	
CO 2		H				H		
CO 3			M				M	
CO 4				H			M	
CO 5			M			M		H

Text Books:

1. S. Shajahan, Relationship Marketing, 5th Edition, 2010, McGraw Hill, New Delhi.
2. Paul Green Berg, CRM, 5th Edition, 2011, Tata McGraw Hill, New Delhi.

Reference Books:

1. Philip Kotler, Marketing Management, Revised Edition, 2012, Prentice Hall of India.
2. Barry Berman and Joel R Evans, Retail Management, A Strategic Approach, 12th Edition, 2011, Prentice Hall of India.

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THIRD SEMESTER
PART IV – EDC 1- MULTIMEDIA AND ITS APPLICATIONS

Maximum CE: 50
Total Hours: 24

Course Objective:
On the successful completion of the course, the students should have understood the concept of Multimedia is the combined use of text, graphics, sound, animation, and video.

Unit-I   (4 Hours)
Introduction: multimedia presentation and production –characteristics of multimedia presentation – multiple media –utilities of sensory perception –hardware and software requirement. Digital representation: analog representation –waves –digital representation-need for digital representation.

Unit-II   (5 Hours)
Text: types of text –Unicode standard –font –insertion of text –text compression –file formats.

Unit-III   (5 Hours)
Image: Image type –seeing color-color modals –basis steps for image processing-scanner-digital camera –interface standards –specification of digital images.

Unit-IV   (5 Hours)
Audio: Introduction –acoustics –nature of sound wave –fundamental characteristics of sound – microphone-amplifier-loudspeakers –audio mixer-digital audio

Unit-V   (5 Hours)
Video: Analog video camera –transmission of video signals-video signal formats –PC video –video recording formats and systems –video file formats.

Course Outcome:
CO 1: To learn and understand technical aspect of Multimedia Systems.
CO 2: To understand the standards available for different audio, video and text applications.
CO 3: To Design and develop various Multimedia Systems applicable in real time.
CO 4: The students will acquire the knowledge about various multimedia authoring systems.
CO 5: The students will learn about to develop multimedia application and analyze the performance of the same.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		L					H	
CO 2	M			H		M		
CO 3					L		L	
CO 4		M		L		H		M
CO 5			L				M	

Text Books:

1. Tay Vaughan, "Multimedia: Making It Work", 9th Edition, Osborne/McGraw-Hill, 2017.

2. Principles of Multimedia –Ranjan Parekh, 2014, TMH.

Reference Books:

1. Ralf Steinmetz &KlaraNahrstedt - "Multimedia Computing, Communication & Applications", Pearson Education, 2015.

2. Multimedia: making it work –tay Vaughan, 7thedition, TMH.

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FOURTH SEMESTER
PART III - CORE 7- HUMAN RESOURCE MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
On the successful completion of this paper, the students should have acquired knowledge in Role of a HR Manager, Job Description and Job Analysis.

Unit-I   (12 Hours)
Human Resource Management - Definition - Objectives - Functions - Scope - Importance - HRM in India - Evolution of HRM - Computer Application in Human Resource Management - Quality of a Good Human Resource Managers - Human Resource Planning - Job Analysis, Job Description and Job Specification.

Unit-II   (12 Hours)
Recruitment and Selection - Sources of Recruitment - Selection Process - Test Types - Interview Types - Career Planning vs. Man Power Planning and Succession Planning - Career Planning - Process - Career Development - Placement and Induction.

Unit-III   (12 Hours)
Training - Methods of Training - Executive Development - Performance Appraisal - Methods of Performance Appraisal - Transfers - Promotion - Wage & Salary Administration - Wage Boards and Pay Commission - Wage Incentive - Fringe Benefits - Employees Welfare - Safety and Health Measures - Grievance Procedures - Redressal of Grievances.

Unit-IV   (12 Hours)
Industrial Relations - Meaning & Characteristics Industrial Relations - Parties to Industrial Relations - Nature of Trade Unions - Problems of Trade Union - Measures to Strengthen Trade Union Movement in India - Causes for Industrial Disputes - Settlement of Industrial Disputes.

Unit-V   (12 Hours)
Collective Bargaining - Features - Pre-requisite of Collective Bargaining - Agreement at Different Levels - Workers Participation in Management - Objectives for Successful Participation.

Course Outcome:
CO 1:To know Strategic importance of human resources management.
CO 2: To understand Orientation, training, development and career planning.
CO 3 To understand various functions of human resource management relationship in workplace.

CO 4: To Identify and predict human resource management trends in the automotive industry.

CO 5: To understand Union-management framework.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M			L		M		
CO 2		H	L			H		
CO 3			L		M			L
CO 4	M			H			M	
CO 5			H			L		H

Text Books:

1. Dr. C.B. Gupta, Human Resource Management, Revised Edition, 2014, Sultan and Sons.

2. K. Aswathappa, Human Resource and Personnel Management, Revised Edition, 2013, Tata McGraw Hill Publishing Co. Ltd.

Reference Books:

1. C.S. VenkataRathnam& B.K. Srivastava, Personnel Management & Human Resources, Revised Edition, 2011, TMPL.
2. Dr. C.B. Memoria, Dr. SatishMemoria& S.V. Gankar, Dynamics of Industrial Relations, Revised Edition, 2009, Himalaya Publishing House.

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FOURTH SEMESTER
PART III - CORE 8 - RESEARCH METHODS FOR MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
On the Successful completion of this paper, the aim of the course is to provide student with an introduction to research methods and report writing and basic awareness of data analysis-and hypothesis testing procedures.

Unit-I   (12 Hours)
Research - Meaning - Scope and Significance - Types of Research - Research Process - Problems in Research – Characteristics of Good Research - Research in an evolutionary perspective – the role of theory in research.

Unit-II   (12 Hours)
Research Design - Sources - Types - Formulation Research Design - Types – Features of Good Design - Measurement - Meaning - Need Errors in Measurement - Tests of Sound Measurement - Techniques of Measurement - Scaling Techniques - Meaning - Types of Scales - Scale Construction Techniques.

Unit-III   (12 Hours)
Sampling Design: Meaning - Concepts - Steps in Sampling - Criteria for Good Sample Design - Types of Sample Designs - Probability and Non-Probability Samples. Data Collection: Types of Data - Sources - Tools for Data Collection- Methods of Data Collection - Construction of questionnaire and instrument- Pilot Study - Case Study .Data processing: Coding – Editing and Tabulation of Data - Application of statistical software for data analysis.

Unit-IV   (12 Hours)
Hypothesis - Formulation of Research Hypotheses -Central Limit Theorem - Test of Significance- Assumptions about Parametric and Non-Parametric Tests. Parametric Test - T Test, F Test, Chi-Square Test and Z Test - Non Parametric Test [No Problems] - U Test, Kruskal Wallis Test, Sign Test.

Unit-V   (12 Hours)
Interpretation - Meaning - Techniques of Interpretation - Report Writing:- Significance - Steps in Report Writing - Layout of Report - Types of Reports – Oral Presentation - Executive Summary - Mechanics of Writing Research Report – Precautions for Writing Report - Norms for using Tables, Charts Diagrams, Index, Appendix, and Bibliography – Application of SPSS.

Note: Theory and Problems in the Ratio of 80% and 20% respectively.

Course Outcome:

CO 1: The students can understand the concept of research and they can develop basic knowledge on qualitative research techniques.

CO 2: To enable the students in conducting research work and formulating research synopsis and report.

CO 3: To impart knowledge for enabling students to develop data analytics skills and meaningful interpretation to the data sets so as to solve the business/Research problem.

CO 4: Develop understanding on various kinds of research, objectives of doing research, research Process, research designs and sampling.

CO 5: Students can adequate knowledge on measurement & scaling techniques as well as the Quantitative data analysis.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	H					L		
CO 2	M					M		
CO 3					M		L	
CO 4		M		M		H		M
CO 5			M				M	

Text Books:

1. Business Research Methods,Dr.Shraddha. M. Bhome- Research supervisor-[JJT university]- Rajasthan

2. S.S.VinodChandra,S.AnandHareendran, Research Methodology,2017

Reference Books:

1. Dr.Swati.S Desai –Associate Professor-PralhadDalmia College of Commerce and Economics,Malad.

2. R.Pannerselvam, Research Methodology, Revised Edition, 2014, PHI Learning, New Delhi.

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FOURTH SEMESTER
PART III - CORE 9 - RDBMS AND ORACLE (THEORY)

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
On the successful completion of this course, the students should have implicit knowledge of Basic structure of Oracle, RDBMS and DBMS, PL/SQL Programming and Procedures.

Unit-I   (12 Hours)
Introduction: Database System Applications -Purpose of Database Systems -Database Languages -Transaction Management -Database Architecture - Relational Model: Structure of Relational Databases -Database Design -ER Model -Overview of the Design Process -The Entity- relationship Model .

Unit-II   (12 Hours)
Relational Algebra Operations -Relational Languages: The Tuple--Relational Calculus - The Domain Relational Calculus -SQL: Background -Data Definition Basic Structure of SQL Queries -Set Operations -Aggregate Functions -Null Values Nested Sub- Queries -Views -Modification of the Database.

Unit-III   (12 Hours)
PL/SQL: A Programming Language: History -Fundamentals -Block Structure- Comments- Data Types -Declaration -Assignment operation-Substitution -Variables -Arithmetic Operators.-Control Structures -Nested Blocks -SQL in PL/SQL –Data Manipulation -Transaction Control statements.

Unit-IV   (12 Hours)
PL/SQL Cursors and Exceptions: Cursors -Implicit & Explicit Cursors and Attributes -Cursor FOR loops -SELECT...FOR UPDATE-Cursor with Parameters -Cursor Variables -Exceptions -Types of Exceptions.

Unit-V   (12 Hours)
PL/SQL Composite Data Types: Records. -Tables -Varrays. Named Blocks: Procedures -Functions -Packages -Triggers -Data Dictionary Views.

Course Outcome:

CO 1: The students will able to develop structured query language (SQL) queries to create, read, update, and delete relational database data.

CO 2: To prepare various database tables and joins them using SQL commands.

CO 3: Understand the basic concept how storage techniques are used to backup data and maintain data access performance.

CO 4: The students will acquire the knowledge about various database tables and joins them using SQL commands.

CO 5: The students will learn about to develop a clear understanding of the conceptual frameworks and definitions of specific terms that are integral to the Relational Database Management Systems.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M			H			M	
CO 2		L				M		
CO 3			H		M		L	
CO 4		H		M		H		M
CO 5			M			H		

Text Books:

1. Relational Database Management System -Riktesh Srivastava, New Age International Private Limited; First edition-Jan 2014.

2. The Programming Language of Oracle – Ivan Bayross,BPB Publication,4th edition-2015.

Reference Books:

1. David Loctman- Developing Personal Oracle for Windows 95 Application – 2ND EDITION- SAMS PUBLICATION- 2014- USA.

2. Ivan Bayross – Commercial Application Development using Oracle Developer 2000.- 2ndEdition- Tata McGraw Hill- USA.

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FOURTH SEMESTER
PART III - CORE LAB-3 - RDBMS AND ORACLE [PRACTICAL]

Maximum CIA: 40
Maximum CE: 60
Total Hours: 60

Course Objective:

On the Successful completion of this paper, the students should acquire developing and designing professional skills in Oracle database programming.

List of Programs:

1. Create tables to maintain ticket header, ticket details

2. Create tables to maintain flight header, flight details

3. Insert records into both ticket database and flight database

4. Display various forms of select statement in SQL.

5. Adding a field in place information both add and modify, Field name (add): remarks, Field name (modify): flight name

6. Change case and Perform aggregate functions in database tables

7. Display a program to swap two numbers using PL/SQL Program

8. Develop a simple PL/SQL block for Bank information

9. Display a program to print patterns using PL/SQL.

10. Display a given number to its reverse of a number

11. Display Student mark list preparation using PL/SQL.

12. Establish a function to perform net balance.

Course Outcome:

CO 1: To develop structured query language (SQL) queries to create, read, update, and delete relational database data.

CO 2: To attain a good practical understanding of the SQL.

CO 3: To prepare various database tables and joins them using SQL commands.

CO 4: To identify the terminology and functions common to most database management systems. To create simple reports and forms and using Queries.

CO 5: The students can design, implement, and evaluate a computer-based system using PL/SQL.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M			H			M	
CO 2			L			M		
CO 3			H		H		L	
CO 4		H		M		H		M
CO 5			M				H	

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FOURTH SEMESTER
PART III –IDC 4 - BUSINESS ECONOMICS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective:
On the successful completion of this paper the students should have acquired knowledge of Profit Maximization, Demand Analysis, Elasticity of Demand, Cost, Pricing Government and Business.

Unit-I   (14 Hours)
Objectives of business firm: Definition - Nature and scope of Economics - Objectives - Profit maximization - Social responsibility of business - demand analysis - Law of demand- Demand forecasting.

Unit-II   (14 Hours)
Elasticity of demand: Types of elasticity - price elasticity of demand, income elasticity of demand and cross elasticity of demand -factors of influencing elasticity of demand - Basic Economic Problems - Market forces in solving economic problems.

Unit-III   (15 Hours)
Production function: Factor of production - Types - Iso-quant Curves - law of production - law of diminishing returns law of variable proportion - Theories of Profit- Law of returns to scale.

Unit-IV   (15 Hours)
Cost and Revenue :Cost - Average, Marginal, fixed & total cost, Relation between production & cost, - opportunity cost - revenue analysis - total, average & marginal Revenue - break even analysis - Break Even point, Managerial use of B.E.P. and its limitation.

Unit-V   (14 Hours)
Product pricing and firms: marketing structure - Characteristics - equilibrium under perfect, imperfect competition and monopoly - determination under monopolistic competition - oligopoly - duopoly. Government and business - performance of public enterprises in India - price policy in public utilities, government measures to control monopoly in India - MRTP Act.

Course Outcome:

CO1: Apply the concept of opportunity cost

CO2: Employ marginal analysis for decision making

CO3: Analyze operations of markets under varying competitive conditions

CO4: Analyze causes and consequences of unemployment, inflation and economic growth

CO5: Use critical thinking skills in business situations and to apply an ethical understanding and
　　　Perspective to business situations.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L							
CO 2				M		L		H
CO 3			H		M			
CO 4				H			M	
CO 5		L						

Text Books:

1. S. Sankaran, Business Economics, 4th edition, Margham Publication, 2014, Chennai.
2. P.L. Mehta, Managerial Economics, 12th edition, sultan chand and sons, 2006 New Delhi.

Reference Books:

1. B.L Varshney and K.L Mageswari, Business Economics, 19th Edition, Sulthanchand and Sons, 2005, New Delhi.
2. S. Sankaran, Indian Economy, 4th edition, Margham Publication, 2008, Chennai.Edwin Mansfield, Managerial economics 2nd Edition, Nortan Company, New Yor.

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**FOURTH SEMESTER
PART IV-SBC II - BUSINESS COMMUNICATION**

Maximum CE: 75
Total Hours: 36

Course objective:
On the Successful completion of this course, the students should have understood Methods of
Communication, Types of Communication and Barriers of Communication.

Unit-I   (6 Hours)
Define Communication- Importance-Objectives-Types-Barriers-Principles.

Unit-II   (10 Hours)
Written Communication-Essentials of an Effective Business Letter-The Layout-Enquiries and
Replies-Orders and Their Execution-Collection Letters-Circular Letters-Sales Letters-Bank
Correspondence-Application Letters.

Unit-III   (8 Hours)
Correspondence of Company Secretary with Shareholders, Directors-Agenda-Minutes of Meeting-
Group Discussion and Interviews-Seminar-Conference -Press Releases.

Unit-IV   (6 Hours)
Communication through Reports: Essentials-Importance-Contents-Reports by Individuals-
Committees-Annual Report-Application for Appointment-Reference and Appointment Orders.

Unit-V   (6 Hours)
Internal Communication-Short Speeches-Memo Circulars-Notices-Explanations to Superiors-Precise
Writing-Communication Media-Merits of Various Devices-Intercom, Telex and Telephone-Fax-
Internet.

Course Outcome:
CO 1: To developing and delivering effective presentations.
CO 2: To develop knowledge and high level skills in business writing.
CO3: Students undertake the role of a new graduate employee in the workplace and develop
Responses to a range of current and emerging business issues.
CO 4: To provide students with the skills and knowledge of communication in the business
Environment.
CO 5: To develops the student's communication skills and knowledge in a supportive peer group
Environment through ideas exchange and argument.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		H		M		H		
CO 2	M			L			M	
CO 3		M			H	L		H
CO 4			H	M		H		M
CO 5		M						M

TextBooks:

1. Rajendra Pal Korahalli, Essentials of Business Communication, 13th Edition 2015, Sultan Chand & Sons, New Delhi.
2. Ramesh, MS, & C.C Pattanshetti, Business Communication, R.Chand& Co, Revised Edition 2011, New Delhi.

Reference Books:

1. V.K.Jain& Prakash Biyani, Business Communication, 1st Edition, 2014, Sultan Chand & Sons.
2. C.B.Gupta, Business Communication, Reprint 2014, Sultan Chand & Sons.

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FOURTH SEMESTER
PART IV- SBC II - MODERN OFFICE MANAGEMENT

Maximum CE: 75
Total Hours: 36

Course Objective:
On the Successful completion of the course the students should have acquired knowledge regarding Modern Office Management.

Unit-I   (8 Hours)
Office Management and Organization: Basic concepts of Office – Importance – Functions – Size of the Office – Office Management – Relations with Other Departments – Scientific Office Management – Office Manager - Principles of Office Organization.

Unit-II   (7 Hours)
Office Environment & Communication: Office Location – Characteristics / Qualities of Office Building – Environment – Secrecy – Meaning – Essential features – Classification – Communication Barriers- Secretaries- Meaning –Types of Secretaries-Qualifications -Duties.

Unit-III   (7 Hours)
Office Correspondence & Record Management: Centralized Vs Departmental Correspondence – Departmental Typing and Typing Pools – Classification of Records – Principles of Record Keeping – Filling – Methods.

Unit-IV   (7 Hours)
Office Systems & Procedures: Systems – Procedure – Advantages – Characteristics of Sound Office System & Procedures – Work Simplification – Principles – Types of Reports.

Unit-V   (7 Hours)
Office Personnel Relations: Personnel Management – Definitions – Functions – Office Committees - Employee Morale – Productivity – Employee Welfare – Grievances – Work Measurement – Office Work Control-Office Automation –Routine handling of mail.

Course Outcome:
CO 1: To develop a student will help in service-employees to become future managers.
CO 2: The student will be able to understand characteristics of wants and standard of living.
CO 3: To identify consumer surplus and its uses.
CO 4: To understand the importance of the law of diminishing marginal utility.
CO5:The students can focuses on office management, business communication, business organization and basic knowledge of various types of accounting.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		M		H			M	
CO 2	M		L			M		
CO 3			H		M		L	
CO 4		H		M		H		M
CO 5			M				H	

Text Books:

1. R.S.N Pillai Bagavathi, Modern Office Management, S Chand, Revised Edition-2018.
2. Dr.R.K Chopra PriyankaGouri, Office Management, Himalaya Publishing House, Second   Edition,
June 2017.

Reference Books:

1. Dr.I.M.Shahai, Office Management, SahityaBhawanPublications,Revised Edition-2017.
2. S.P Arora, Office Organization and Management, 2nd Edition-2012, Vikas Publishing
   House Pvt Ltd.

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**THIRD SEMESTER
PART III – ALC I -E-COMMERCE**

<div align="right">Maximum CE: 100</div>

Course Objective:
On the Successful completion of this paper the students should have acquired knowledge of
Techniques in the Application of E-Commerce.

Unit-I
Foundation of electronic Commerce :- Definition and Content of the Field – Driving Force of
ECImpact of Ec – Managerial Issues- Benefits and Limitations of EC Retailing in EC :Business
Models of E–Marketing – Aiding Comparison Shopping - The Impact of EC on Traditional Retailing
System.

Unit-II
Internet Consumers and Market Research: - The Consumer Behavior Model – Personal
Characteristics and the Demographics of Internet Surfers - Consumer Purchasing Decision Making -
One – to – One Relationship Marketing - Delivering Customer Service in Cyberspace– Marketing
Research of EC-Intelligent Agents for Consumers – Organizational Buyer Behavior.

Unit-III
Advertisement in EC: Web Advertising – Advertisement Methods – Advertisement Strategies – Push
Technology and Intelligent Agents – Economics and Effectiveness of Advertisement – Online
Catalogs. Internet and Extranet: Architecture of Intranet and External: Applications ofIntranet and
Extranet.

Unit-IV
Business – to – Business Electronic Commerce: Characteristics of B2B EC- Model– Procurement
Management Using the Buyer's Internal Market Place – Supplier and Buyer Oriented Marketplace –
Other B2B Models Auctions – and Service – Integration with Back End Information System -The
Role of S/W Agents in B2B – Electronic Marketing in B2B.

Unit-V
Public Policy : From Legal Issues to Privacy : Legal, Ethical and Other Public Policy Issues –
Protecting Privacy – Free Speech , Internet Indecency Censorship – Taxation and Encryption Policies
and Seller Protection in EC-Case study.

Course Outcome:
CO 1: To understand the foundations and importance of E-commerce
CO 2: The student will be able to analyze the impact of E-commerce on business models and
         Strategy

CO 3: To describe Internet trading relationships including Business to Consumer, Business-to-Business, Intra-organizational.

CO 4: To describe the key features of Internet, Intranets and Extranets.

CO5:The students Recognize and discuss global E-commerce issues.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		M		H			M	
CO 2	H		M			M		L
CO 3					M			
CO 4		H		M		H		M
CO 5			M				H	

Text Books:

1. Ravi KalakotaandAndrewb.Whinston, "Frontiers of Electronic Commerce", 2ndEdition, 2009, Dorling Kindersley Pvt.Ltd, India.

2. Bharat Bhasker, "Electronic Commerce", 3rd Edition, 2006, Tata McGraw Hill Company Pvt Ltd, New Delhi.

Reference Books:

1. Daniel Minoli, Emma Minoli"Web Commerce Technology Handbook", 4th Edition,2009, Tata McGraw Hill Company Pvt Ltd, New Delhi.

2. Dr.C.S.Rayudu,"E-Commerce and E-Business", 2nd Edition, 2007, Himalaya Publishing House, Mumbai.

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THIRD SEMESTER
CERTIFICATE COURSE -SECURITY MANAGEMENT

Total Hours: 30

Course Objective:
The objective of the course is to introduce the different facets of actual trading. The students will be taught different types of trading strategies, as well as a concrete build-up of positions.

Unit-I
Securities Markets and Performance - Meaning of securities and key function of securities markets participants - Features of equity capital - features of debt capital - factors that influence the choice between equity and debt capital for issuers.

Unit-II
Primary Markets - nature and functions of the primary market - difference between various types of public issues - the categories of issuers - regulatory framework - types of investors - public issue process.

Unit –III
Secondary Markets- role and functions of the secondary markets - market structure and participants in the secondary markets - role of brokers and processes for client acquisition - process of trade execution in the secondary market - process of trade settlement.

Unit- IV
Equities, Fundamental analysis – Revenue, earnings, future growth, return on equity, profit margins – Balance sheet and financial ratio - Technical analysis – Trend - Uptrend, Downtrend, Trading Range – line chart – Bar chart - - Moving average – MACD - RSI – ROC.

Unit-V
Demat Account - Online trading – Advantages and disadvantages –process of online trading –types of orders – traditional trading vs. online trading– players in online trading.

Text Books:
1. Prasanna Chandra, Investment Analysis and Portfolio Management, McGraw Hill Education; Fifth edition 2017.
2. Benjamin Graham and David Dodd, Security Analysis, McGraw Hill Education; 6 edition 2017.

Reference Book:

1. Khushboo Gala and Ankit Gala, Fundamental Analysis Shares : Become An Intelligent Investor - Buzzingstock Publishing House; 1st edition 2019

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THIRD SEMESTER
CERTIFICATE COURSE -OFFICE ADMINISTRATION

Total Hours: 30

Course Objective:

On the Successful completion of this paper the students will acquired the knowledge on administration of office management skills and development of management.

Unit-I

Office management – Meaning – Elements of office management – Functions of Office management.

Unit -II

Office organization – Definition, Characteristics and Steps – Types of Organization – Functions of an Office administrator.

Unit -III

Office record management – Importance – Filing essentials –Classification and Arrangement of files-Modern methods of filing-Modern filing devices.

Unit -IV

Office Communication – Correspondence and Report writing –Meaning of office Communication & mailing.

Unit -V

Form letters –Meaning, Principles, and Factors to be considered in designing Office forms – Types of report writing.

Text Books:

1. Heinemann, Business and Office Administration, Heinemann Publications, 2nd Edition, 2016.
2. Macmillan, Office Administration, Macmillan Caribbean Publications, 6th Edition, 2015.

Reference Books:

1. Wiley, Design of Office Administration, Wiley Publication, 1st Edition, 2016.
2. Herbert A. Simon, Administrative Behavior, Royal Academy of Science Publications, 2015.

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THIRD SEMESTER
CERTIFICATE COURSE - BUSINESS EXCELLENCE

Total Hours: 30

Course Objective:
On the Successful completion of this paper the students will acquired the knowledge on Managerial approaches/functions, skills and competencies.

Unit-I
Nature and scope of business- Meaning; Scope; Managerial levels and skills-Managerial Roles-Management: Science, Art or Profession.

Unit-II
Function of management: Planning -Organizing-Directing-Staffing-Controlling.

Unit-III
Leadership theories-motivation –communication-leadership styles.

Unit-IV
Organizational behavior (OB) in global context, Boundary less business excellence, Cross-Cultural Management, Managing multicultural teams, communicating across cultures.

Unit-V
Social responsibilities of business - Concept of social responsibility- corporate governance-managing ethical behavior of business.

Text Books:
1. Heinz. W, Mary V Cannice&Koontz.H (2019). Management (13th Edition). Tata McGraw Hill Publications.
2. Prasad, L.M., Principles and practices of management. New Delhi: Sultan Chand & Sons.

Reference Book:
1. Joseph L Massie, Essentials of Management. Prentice-Hall India, New York.

FOURTH SEMESTER
CERTIFICATE COURSE - INSURANCE MANAGEMENT

Total Hours: 30

Course Objective:

On the successful completion of this paper the students will gain the knowledge on Insurance Business and its regulation.

Unit-I
Definition of Insurance – Insurable risk – Principles of insurance – Kinds of insurance – Costs and benefits of insurance – Pooling in insurance – Globalization of Insurance Sector – Reinsurance.

Unit-II
Types of Insurance - Types of general insurance – Fire and Motor Insurance-Health Insurance-Marine Insurance-Automobile Insurance.

Unit-III
Regulation of Insurance in India-Control of Malpractices, Negligence-Loss Assessment and Loss Control, Exclusion of Perils- Computation of Insurance Premium.

Unit-IV
Insurance Business in India – Framework of insurance business – privatization of insurance business – Insurance Regulatory and Development Authority (IRDA) – Government Policy on insurance sector.

Unit-V
Recent developments in Insurance Business sector India – Growth and development.

Text Book:
1. George E. Rejda: Principles of Risk Management & Insurance, New Delhi. 13 Editions, 2016

Refernce Books:
1. NaliniPravaThirupathi and Prabir Pal, Insurance theory and Practice, PHI, 6th Edition, 2005, New Delhi
2. Principle and practice of insurance, Second edition, Himalaya publishing, 2019

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FOURTH SEMESTER
CERTIFICATE COURSE - ORAL COMMUNICATION FOR BUSINESS BEHAVIOUR

Total Hours: 30

Course Objective:

On the Successful completion of this paper the students will acquired the knowledge on effective oral communication skills. Students will learn effective oral communication techniques.

Unit-I

Basic Principles of Oral Communication-Understanding Oral Communication - Communication Process- nature of communication. –Communication model.

Unit- II

Constructing the Self through Communication- grammatical constructions in context - Identification of the use of the grammatical devices form different texts like newspapers, poems, stories etc.

Unit- III

Public Communication- concepts of intrapersonal and interpersonal communication -Public speech – Telephonic Conversation etiquette –E-mail etiquette

Unit- IV

Organizing – Organization Structure and Design – Authority- Perception and Learning – Personality and Individual Differences

Unit- V

Model of business behavior-challenges and opportunities for business behavior in communication.

Text Books:

1. An introduction to Professional English and Soft Skills by B. K. Das et al., Cambridge University Press (Facilitated by BPUT)
2. Technical Communication: Principles and Practice, Second Edition by Meenakshi Raman and Sangeeta Sharma, Oxford Publications.

Reference Book:

1. Effective Technical Communication by M Ashraf Rizvi, The McGraw-Hill companies

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FOURTH SEMESTER
CERTIFICATE COURSE - PRACTICAL ACCOUNTING

Total Hours: 30

Course Objective:

On the successful completion of this paper the students will gain the knowledge on basic accounting and understanding about recording of business transactions and preparation of financial statements.

Unit-I

Accounting Concepts and Procedures - Introduction to Accounting - Using Financial Information for Decision Making - Introduction to the Accounting System - Understanding Business Transactions - Analyzing and Recording Business Transactions - Recording through Accounting Equation.

Unit-II

Banking Procedures and Control of Cash. Sales and Cash receipts, Purchases and Cash payments - Accounts finalization – closing book of accounts, ledger scrutiny – Prepare financial statement, profit and loss account.

Unit-III

Introduction to the Elements of Balance Sheet: Assets, Liabilities and Equity - Non-current Assets - Current Assets - Non-current Liabilities - Current Liabilities – Equity.

Unit-IV

Financial Statement Analysis - Analyzing the Financial Statements - Horizontal Analysis of Financial Statements - Common Size Analysis of Financial Statements - Ratio Analysis.

Unit-V

Calculating Payroll Taxes and Recording Payroll and Payroll Taxes - TDS act - E-Payment - E-return filing - Income tax computation for individual and a company.

Text Books:
1. S. N .Maheshwari, Suneel K Maheshwari, Sharad K Maheshwari, Financial Accounting, Vikas Publishing House; Sixth edition, 2018
2. R.K.Arora, Financial Accounting: Fundamentals, Analysis and Reporting, Second Edition, Wiley publication, 2018.

Reference Books:
1. Gupta, Financial Accounting for Management, Pearson Education India; Fifth edition 2016
2. R. Narayanaswamy, Financial Accounting: A Managerial Perspective PHI Learning; 6th Revised Edition 30 December 2017.

Department of Commerce
Regulations for B.Com
(Effective from the academic year 2019-2020 onwards)

Introduction:

The Department of Commerce came into being along with the inception of the College in the year 1991. The Department stretched itself by incorporating Post Graduate Programmes during the year 2002-03 by starting M.Com along with Research Programme leading to M.Phil and Ph.D Programmes.

Objective:

The knowledge in Commerce enables the student to understand and participate in the modern business and economic world. It also enriches them for subsequent studies and to achieve success in their professional career at domestic and global level.

Eligibility: UG Programme

A pass in Higher Secondary Examination conducted by Government or an equivalent examination, preferably with Accountancy and Commerce as subjects of study.

Duration of UG Programme

The course shall extend over a period of three years comprising of six semesters, with two semesters per year. There shall not be less than ninety instructional days during each semester. Examination shall be conducted at the end of each semester for the respective subject.

Vision:

Empowering Youth towards Universal Excellence.

Mission:

To empower our students by providing continuous learning environment so as to enrich them in professional, ethical, moral and social aspects that add values to their future career and community as a whole.

Programme Educational Objectives

The Graduates will be able to

1. Have complete knowledge of Finance, Accounting, Information Technology, Business Law and other

2. equip with professionals, Inter Personal and Entrepreneurial Skill

3. Gear up with updated knowledge in implementing Business practice

4. Evaluate Environmental factors that influence Business Operations

5. Prepare for Post Graduates studies and to achieve success in their Professional Careers

Programme Specific Outcomes

1. Students shall experience problem solving skills related to Accounting, Costing & Analyzed Financial Statement of Companies

2. Reveal Knowledge of forms of Organization and key areas of Marketing and apply Laws pertaining to Business

3. Demonstrate Knowledge of key concepts in Entrepreneurship, Direct & Indirect Taxes

Bachelor of Commerce (B.Com)
Scheme of Examination (CBCS and OBE Pattern)
For the Candidates admitted from the Academic Year 2019-2020 onwards

Part	Sub Code	Subject Title	Ins.Hrs/Week	Dur. Hrs.	CIA	CE	Total	Credit
					Examination			
SEMESTER I								
I	19LATA01/ 19LAHI01/ 19LAMY01/ 19LAFR01	Language –I	5	3	30	70	100	3
II	19ENG001	English-I	5	3	30	70	100	3
III	19BCM101	Core 1:Principles of Accountancy	6	3	30	70	100	4
III	19BCM102	Core 2: Business Organisation	6	3	30	70	100	4
III	19BCMID1	IDC 1: Business Economics	6	3	30	70	100	4
IV	19UFCA01	Foundation Course I : Environmental studies #	2	3	-	50	50	2
		Total	**30**				**550**	**20**
SEMESTER II								
I	19LATA02/ 19LAHI02/ 19LAMY02/ 19LAFR02	Language –II	5	3	30	70	100	3
II	19ENG002	English – II	5	3	30	70	100	3
III	19BCM201	Core 3: Financial Accounting	6	3	30	70	100	4
III	19BCM202	Core 4 : Principles of Banking and Insurance	6	3	30	70	100	4
III	19BCMID2	IDC 2 : Practical –I Computer Applications in Business – MS Office	6	3	40	60	100	4
IV	19UFCA02	Foundation Course II: Value Education #	2	3	-	50	50	2
		Total	**30**				**550**	**20**
SEMESTER III								
III	19BCM301	Core 5: Corporate Accounting	5	3	30	70	100	4
III	19BCM302	Core 6: E. Commerce	5	3	30	70	100	4

III	19BCM303	Core 7 : Commercial Law	5	3	30	70	100	4
III	19BCM304	Core 8: Practical II – Computerized Accounting with Tally	5	3	30	70	100	4
III	19BCMID3	IDC 3 : Business Mathematics	5	3	30	70	100	4
IV	19BCMSB1 19BCMSB2	SBC I #	3	3	-	-	75	3
IV	19BTA001/ 19ATA001/ 19BCMED1	EDC I : Basic Tamil I /Advanced Tamil I / Web Designing #	2	3	-	50	50	2
		Total	**30**				**625**	**25**

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SEMESTER IV

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III	19BCM401	Core 9 : Higher Corporate Accounting	5	3	30	70	100	4
III	19BCM402	Core 10: Company Law and Secretarial Practice	5	3	30	70	100	4
III	19BCM403	Core 11:Corporate Communication	5	3	30	70	100	4
III	19BCM404	Core 12: Principles of Marketing	5	3	40	60	100	4
III	19BCMID4	IDC 4 : Business Statistics	5	3	30	70	100	4
IV	19BCMSB3/4	SBC II#	3	3	-	-	75	3
IV	19BTA002/ 19ATA001/ 19EDC002	EDC II : Basic Tamil II/Advanced Tamil II/ Communicative English #	2	3	—	50	50	2
V	19NSS001/ 19NCC001/ 19SPT001/ 19EXT001	NCC/NSS/Sports/ Extension Activities @	—	—	50	—	50	2
		Total	**30**				**675**	**27**

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SEMESTER V

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III	19BCM501	Core 13: Cost Accounting	5	3	30	70	100	4
III	19BCM502	Core 14: Management Principles and Practices	5	3	30	70	100	4
III	19BCM503	Core 15: Income Tax Law and Practice	5	3	30	70	100	4
III	19BCM504	Core 16: Principles of Auditing	5	3	30	70	100	4
III	19BCM505	Core 17: Entrepreneurial Development	5	3	30	70	100	4
III	19BCME01/ 19BCME02/ 19BCM E03	Elective I	5	3	30	70	100	4
III	19BCMPR1	Institutional Training	-	-	-	-	-	-

		Total	**30**					**600**	**24**
		SEMESTER VI							
III	19BCM601	Core 18: Management Accounting	5	3	30	70		100	4
III	19BCM602	Core 19: Business Finance	5	3	30	70		100	4
III	19BCM603	Core 20: Marketing Research	5	3	30	70		100	4
III	19BCME04/ 19BCME05/ 19BCME06	Elective II	5	3	30	70		100	4
III	19BCME07/ 19BCME09/ 19BCME08	Elective III	5	3	30	70		100	4
III	19BCMPR2	Project and Viva Voce	-	3	50	50		100	4
		Total	**25**					**600**	**24**
		Total						**3600**	**140**

\#   No Continuous Internal Assessment (CIA) , only Comprehensive Examination (CE)
@ No Continuous Internal Assessment (CIA) and Comprehensive Examination (CE)
IDC- Inter disciplinary Course , EDC – Extra disciplinary Course , SBC –Skilled Based Course

List of Skill Based Courses		
SBC I	19BCMSB1	Industrial Law
	19BCMSB2	Cyber Law
SBC II	19BCMSB3	Service Marketing
	19BCMSB4	Indirect Taxation

List of Elective Courses		
Elective I	19BCME01	Human Resource Management
	19BCME02	Customer Relationship Management
	19BCME03	Organizational Behaviour
Elective II	19BCME04	Retail Marketing
	19BCME05	Business Environment
	19BCME06	Working Capital Management
Elective III	19BCME07	International Financial Reporting Standards
	19BCME08	Indian Capital Market
	19BCME09	Brand Management

List of Extra Disciplinary Courses

EDC I	19BTA001	Basic Tamil	
	19ATA001	Advanced Tamil	
	19BCMED1	Web Designing	
EDC II	19BTA002	Basic Tamil II	
	19ATA002	Advanced Tamil II	
	19EDC002	Communicative English	

List of Additional Credit Papers

Sem	Code	Subject Title	Marks	Credits
III	19BCMAC1	Principles of International Trade	100	2
IV	19BCMAC2	Supply Chain Management	100	2
V	19BCMAC3	Digital Finance	100	2

Summary of the Programme

Part	No of Papers	Total Credits	Total Marks
I	2	6	200
II	2	6	200
III –Core	20	80	2000
III – IDC	4	19	400
III – Elective	3	12	300
III –Project	1	4	100
IV –Foundation Course	2	4	100
IV – EDC	2	4	100
IV – Skill Based Course	2	6	190
V Extension Activities	-	2	50
Total	**38**	**140**	**3600**

Regulations for B.Com
(Effective from the Academic Year 2019-2020 onwards)

1. **Submission of Record Note Books for practical examinations**

Candidates appearing for practical examinations should submit Bonafide Record Note Books prescribed for practical examinations, Otherwise the candidate shall not be permitted to appear for the Practical Examinations.

2. Ratio of Comprehensive Examination, Pre- Model and Model Examinations Marks for B.Com Degree Courses

Part	Internal Assessment	External Assessment	Total Marks
I (Languages)	30	70	100
II (English)	30	70	100
III(Core, IDC)	30	70	100
IV (SBC)	-	75	75
IV (EDC/Foundation Course)	-	50	50
V (NCC/NSS/Sports/Ext. Activity)	50	-	50

3. Distribution of Internal Mark for Theory

S.No	CIA	Distribution of Marks
1	Pre Model Examination	70
2	Model Examination	70
3	Seminar	30
4	Attendance	10
	Total	**180/6=30**

4. Break up for Internal Marks

S. No	Internal Marks	Distribution of Marks
1	Pre Model Examination	70
2	Model Examination	70
3	Seminar	30
4	Attendance	10
	Total	**180/6=30**

5. Seminar Split up

S.NO	Seminar split up	Marks
1	Content	10
2	Flow of the presentation	10
3	Stage management and Body language	10
	Total	**30**

6. Attendance Break up

S.NO	Attendance split up	Marks
1	65% to 74%	4
2	75% - 80%	6
3	81% - 90%	8
4	91% - 100%	10

7. Internal Marks for Practical (Maximum 40)

Maximum Marks : 40		
S No	CIA	Distribution of Marks
1	For Completion of the Practical List	20
2	Test –I	10
3	Test –II	10
Total		**40**

8. Distribution of Comprehensive Examination Mark for Practical:

MAXIMUM MARKS : 60		
S. No	Comprehensive Examination	Distribution of Marks
1	**Record**	**10**
2	**Program – I** a) Algorithm b) Coding c) Execution	5 10 10 TOTAL **(25)**
3	**Program – II** a) Algorithm b) Coding c) Execution	5 10 10 TOTAL **(25)**
Total		**60**

9. Project Work Mark Distribution

Particulars	IA	CE	Total
Project Work (UG)	50	50	100
Project Work (PG)	100	100	200
Project Work(M.Sc(CS)/M.Sc(ECS)	150	100	250
Project Work (M.Com/MIB)	50	100	150

10. Internal and External Marks for Project Work

S.No	Internal Marks	Distribution of Marks

1	INTERNAL	
	Review –I	10
	Review –II	10
	Documentation & Final Review	30
		Total (50)
2	**EXTERNAL**	
	Presentation	30
	Viva	20 **Total (50)**
Total		**100**

11. Internal and External Marks for Project Work (Maximum 250)

S.No	Internal Marks	Distribution of Marks
1	**INTERNAL**	
	Three Project Reviews	75
	Report	75
		Total (150)
2	**EXTERNAL**	
	Presentation	50
	Viva	50
		Total (100)
Total		**250**

The distribution of Marks among the various components for IA and CE for Theory, Practical and Project Work is given in detail in the respective Schemes of Examination and Regulation of the different UG and PG Courses, duly passed in their respective Board of Study.

12. Pattern of Question Paper

For Pre model Test, Model and Comprehensive Examination under – Graduate and Post-Graduate Courses.

Maximum Marks : 70 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×4=20)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 75 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×5=25)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice

Maximum Marks : 50 / Time 2 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×3=15)	Each question carries four marks	Internal Choice
Section – C	(5×5=25)	Each question carries eight marks	Internal Choice
Maximum Marks : 100 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries two mark	Ten Multiple Choice Questions
Section – B	(5×8=40)	Each question carries seven mark	Internal Choice
Section – C	(5×10=50)	Each question carries fifteen mark	Internal Choice

Note:

1. The questions should be numbered continuously running through the Sections A, B and C.

2. Questions should be evenly distributed among the unit in the syllabus in all the sections of the Question paper

3. While framing questions with internal choice the questions must be identified as (a) or (b). (e.g 11. a or b). Further, the internal choice must be from the same unit.

4. The Controller of the Examinations shall arrange for the setting of question papers on the basis the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies.

13. Conduct of Practical Examinations:

Practical Examination shall be conduced with one internal examiner and one External Examiner and the Question paper for Practical Examination shall be set by both Internal and External Examiners

14. Certificate Course

In the academic year 2019-2020 the following inter disciplinary certificate courses has been introduced. The candidates shall opt for any one of the following course respectively during III and IV th semester of their study.

List of Certificate Courses

S.No	Sem	Subject Title
1	III	Advertisement and Sales Promotion
2		Practical Banking
3		Entrepreneurship Development Programme
4	IV	E. Commerce
5		Office Management
6		Principles of Insurance

B.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards

FIRST SEMESTER
PART – III: CORE 1 - PRINCIPLES OF ACCOUNTANCY

Maximum CIA: 30

Maximum CE: 70

Total Hours   : 72

Course Objective: To enable the students to learn Principles, Conventions and Concepts of Accounting.

Unit I   (15 Hours)

Introduction to Accounting - Scope – Accounting Concepts and Conventions –Indian Accounting Standards (AS 1, AS 6, AS 14, AS 22, AS 27) - Double Entry Book Keeping - Journal, Ledger, Subsidiary books, Preparation of Trial Balance - Rectification of Errors- Preparation of Final accounts with simple adjustments.

Unit II   (15 Hours)

Depreciation – Meaning – Objectives- Causes – Methods of Calculating Depreciation – Straight Line Method – Diminishing Balance Method - Annuity Method – Sinking Fund Method.

Unit III   (14 Hours)

Bills of Exchange (excluding Accommodation Bills) - Average Due Date - Account Current.

Unit IV   (14 Hours)

Bank Reconciliation Statement-Accounting for Non- Profit Organizations: Receipts and Payments Account, Income and Expenditure Account and Balance sheet.

Unit V   (14 Hours)

Single entry - Meaning, Features, Defects, Difference between Single entry and Double entry Systems –Methods-Statement of Affairs and conversion

Course Outcomes:

- Understand the various Concepts and Conventions of Accounting and interpret the financial result of Gross Profit, Net Profit and the actual financial position (Assets and Liabilities of the Company).

- Knowledge on the various methods of depreciation and its causes, Straight line method,
  Diminishing Balance method, Annuity method, Sinking fund method calculation

- Knowledge on Bill of Exchange and Average due date from the collection of cash from Debtors and Payment to Creditors

- Interpret Bank Pass Book and Cash Book Maintenance and interpret the financial position of nonprofit organization.

- Understand the concepts of single entry system and its methods.

Text Book

1. Reddy T.S and Murthy.A, Financial Accounting, 5th Edition, Margham Publications, 2016, Chennai.

Reference Books

1. Tulsian.P.C, Financial Accounting, 2nd Edition, Tata Mc Graw Hill, 2016, New Delhi.
2. Grewal.T.S, Introduction to Accountancy, 9th Edition, S.Chand and Company Ltd., 2016, New Delhi.

B.Com Degree Examination – Syllabus for Candidates admitted from the academic year 2019-2020 onwards

FIRST SEMESTER

PART III - CORE 2 – TRADE ORGANISATIONS

Maximum CIA: 30
Maximum CE : 70
Total Hours : 72

Course Objectives: To enrich the students in the fundamental areas of commerce.

Unit I   (15 Hours)

Commerce: Meaning – Features - Importance –Functions -Nature and Scope – Trade – Types-Differences between trade, business and commerce. Business – objectives - Evolution – Barter system – Ethics in business - Social responsibilities of business.

Unit II   (14 Hours)

Forms of Business organizations: Sole trader- Features – Partnership-Definition – Features – Advantages – Disadvantages – Partnership deed – Kinds of partner – Company – types – formation – Co-operative enterprises – Public Utilities.

Unit III   (14 Hours)

Chamber of Commerce: Need –Features –objectives - Functions –Importance - Benefits - Role for economic development –International chamber of commerce –ICC Arbitration – FICCI – Trade Associations – Trade Unions –Difference between trade association and chamber of commerce.

Unit IV   (14 Hours)

Financial Markets- Money market- Capital market- Instruments - Stock Market: Functions – Merits and Demerits – Functions of SEBI –Powers - DEMAT of shares.

Unit V   (15 Hours)

International Business – Meaning – Nature – Significance – Types of International Business – Determinants of Imports and Exports – WTO – GATT – TRIPs – TRIMs – Risks in International Business.

Course Outcome

- To understand the basics concepts Business
- To know the various forms of Business Organisation
- To Describe trade association and chamber of Commerce and its functions
- Analyse share trading and functions of SEBI
- Understand International Business and various organizations associated with International Business.

Text Books

1. G. Prasad, " Business organization", Margham publication, 7th Edition 2016
2. Preeti Singh, " Investment Management", Himalaya Publishers, 14th Edition, 2015
3. Francis Cherunilam, International Business, PHI Learning Pvt Ltd, 2009.

Reference Books

1. P.C.Tulsian, Business Organisation and Management, Pearson Publication, 5th Edition, New Delhi, 2010.

2. Khan.M.Y , Financial Service, 8th Edition, Tata Mc Graw-Hill Publishing Company Limited, 2015, New Delhi.

B.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019– 2020 onwards

FIRST SEMESTER
PART III – IDC 1- BUSINESS ECONOMICS

Maximum CIA: 30

Maximum CE : 70

Total Hours: 72

Course Objective: To enable the students to absorb concepts and inculcate the knowledge of Economics and to understand the basic problems in an economy.

Unit I   (15 Hours)

Introduction to Economics: Definition –Nature and Scope of Economics –Decision Making in Business – Demand – Meaning-Determinants –Law of Demand-Elasticity of Demand – Inflation – Deflation.

Unit II   (15 Hours)

Introduction to Supply-Equilibrium –Utility-Law of Diminishing Marginal Utility– Equi-marginal utility-Production-Factors of Production-Law of Variable Proportion-Returns to Scale.

Unit III   (14 Hours)

Introduction to Market structure: Types of Competition –Perfect Competition-Monopoly-Monopolistic Competition-Oligopoly.

Unit IV   (14 Hours)

Introduction to Economic Growth and Development-Characteristics of Under developed Countries – Determinants – Obstacles-Indian Agriculture and its Role in Indian Economic Development.

Unit V   (14 Hours)

Introduction to growth of population – Population Policy-Higher Education and its need – Health –Infrastructure-Technology and Economic Development.

Course Outcomes

On the successful completion of the course, students will be able to

- Define and pinpoint the concepts of Economics
- Understand the Supply concepts and Law of Diminishing Marginal Utility, Equi-marginal utility and Production, Law of Variable Proportion, Returns to Scale.
- Distinguish the types of Competition in Market Structure such as Perfect, Monopoly, Monopolistic and Oligopoly competitions
- Describe the important commencement of Economic Growth and Development, Characteristics of Under developed Countries and Role of Agriculture in Indian Economic Development
- Educate the growth of population and Population Policy, Higher Education and its necessity, Health, Infrastructure, Technology and its role in Economic Development.

Text Book

1.Sundharam K.P.M. and Sundaram .E.N,Business Economics,4th Edition Sultan Chand and sons.2007,New Delhi.

Reference Books

1.Ahuja.H.L.Business economics 6thEdition,S.Chand& Company Ltd., 2007,New Delhi.

2.RuddarDatt,K.P.M. Sundharam, Indian Economy, S.Chand Company Ltd, latest edition, Ram nagar, New Delhi.

B.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019– 2020 onwards

SECOND SEMESTER

PART III – CORE 4 - PRINCIPLES OF BANKING AND INSURANCE

Maximum CIA : 30

Maximum CE : 70

Total Hours: 72

Course Objective : To impart the knowledge on the theory and practice of Banking and to understand about Insurance.

Unit I   (15 Hours)

Banker and Customer- Definition-Relation between Banker and Customer-Paying and Collecting Banker-Rights and Responsibilities – Commercial Banks –Evolution - Functions of Modern Commercial Banks – Branch Banking – CRM In Banking – Multinational Banking – Customer Service.

Unit II   (15 Hours)

Opening of a New Account — Types of Accounts – Fixed Deposit and its implications – Savings Account – Current Account – Recurring Deposit – Special Type of Customers – Minor – Lunatic – Drunkards – Joint Accounts – Partnership Account – Public Limited Account – Closure of Accounts – Ombudsmen Scheme.

Unit III   (14 Hours)

Negotiable Instruments – Meaning – Characteristics – Types – Bills Of Exchange – Essentials – Promissory Note – Essentials – Cheques –Drawing of a Cheque- Crossing of Cheques - Marking of Cheques –Types of Cheque- Essentials – Endorsements –Types – Online Bank Transactions-NEFT-IMPS-RTGS – Digital Banking.

Unit IV   (14 Hours)

Insurance-Meaning-Need- Principles -Contract of Insurance(Indemnity, Guarantee, Subrogation)- -Classifications of Insurance-IRDA Act 1938-Constitutions of IRDA- Objectives- Indian Companies Act 2013-Role of Insurance in Economic Development- Privatisation of Insurance.

Unit V   (14 Hours)

General Insurance Business act 1973- Role of GIC- Recent Developments- Procedures - Motor Vehicle Act 1988-Fire Insurance - Marine Insurance Act– Essentials –Types - Reinsurance – Concepts – Types - Double Insurance.

Course Outcome

- To Understand the conceptual framework of Banking
- Classify and demonstrate the types of Customers and deposits
- Explains the basic concepts of Cheque, Endorsement and Electronic payment method
- To know the principles of Insurance and its classifications and Understand the IRDA Act,
- To know the concepts of GIC, Reinsurance and Double insurance.

Text Books :

1. Gordon and Natarajan , Banking theory law and practice, Himalaya publishing house,New Delhi.Revised Edition 2016.
2. Principles and Practises of Insurance, , Himalaya publishing house,New Delhi.Revised Edition 2017

Reference Book:

1. N.C . Majumdar , Fundamentals of Modern Banking , New central book agency (P) Ltd, New Delhi, 2010.
2. Dr.P.Periyasamy, Principles and Practice of Insurance, Himalaya publishing house,New Delhi.Revised Edition 2015

B.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards

SECOND SEMESTER

PART III: CORE 3- FINANCIAL ACCOUNTING

Maximum CIA: 30

Maximum CE: 70

Total Hours: 72

Course Objective : To enable the students to learn Principles, Conventions and Concepts of Accounting.

Unit I   (15 Hours)

Hire Purchase and Installment System – Branch accounts: Dependent Branch – Independent Branch (excluding Foreign Branch) – Department Accounts.

Unit II   (15 Hours)

Consignment – Valuation of unsold Stock – Normal Loss – Abnormal Loss –Joint Venture (Excluding Memorandum of Joint Venture Account)

Unit III   (15Hours)

Admission and Retirement of Partner – Treatment of Goodwill – Revaluation of Assets and Liabilities – Calculation of Gaining and Solvency Ratio – Death of a Partner –Settlement to executor.

Unit IV   (14 Hours)

Dissolution – Insolvency of Partners – Garner Vs Murray – Preparation of Deficiency A/C

Unit V   (14 Hours)

Conversion of Partnership into Company – Insolvency A/c – Preparation of Statement of Affairs – Deficiency A/c

Course Outcome

- To understand the Accounting treatment for Hire Purchase and Installment system and to know the accounting procedure for Branch and Departmental Accounting.

- To understand the Accounting treatment of consignment in the books of Consignor and Consignee and identify the value of unsold stock, normal loss and abnormal loss
- Interpret the financial result at the time of admission and retirement/death and explain different accounting policies, understand the need for revaluation of assets and construe the meaning and factors affecting goodwill demonstrate the various methods of settling the claim of retiring partner and the related accounting treatment
- Discuss the case Garner Vs Murray and solve problems relating to insolvency of partners.
- Demonstrate the various list in the preparation of statement of affairs when an individual is insolvent & list out the items for deficiency account

Text Book

1. Reddy T.S and Murthy.A, Financial Accounting, 5th Edition, Margham Publications, 2016, Chennai.

Reference Books

1. S.P Jain & K.L Narang , Advanced Accounting, 2nd Edition, Kalyani Publishers, 2016, Chennai.
2. Grewal.T.S, Introduction to Accountancy, 9th Edition, S.Chand and Company Ltd., 2016, New Delhi

B.Com Degree Examination – Syllabus for candidates admitted from the academic Year 2019-2020 onwards

SECOND SEMESTER

PART III – IDC 2 – PRACTICAL I – COMPUTER APPLICATIONS IN BUSINESS

Maximum CIA: 40

Maximum CE :60

Total Hours: 72

Course Objective:

Enabling the students to acquire practical knowledge to be successful in Ms Office

I – MS WORD

1. Prepare Chairman's Speech/ Auditors Report Minutes/ Agenda and Perform the following Operations: Bold- Underline- Font Size- Style- Background Color- Text Color- Line Spacing- Spell Check- Alignment- Header and Footer- Inserting Pages and Page Numbers- Find and Replace.

2. Prepare an Invitation for the College Function Using Text Boxes and Clip arts.

3. Prepare Class Time Table and Perform the Following Operations Inserting the Table- Data Entry- Alignment of Rows and Columns- Inserting and Deleting the Rows and Columns and Change of Table Format.

4. Prepare Shareholders Meeting Letter for 10 Members Using Mail Merge Operation.

5. Prepare Bio- Data by Using Wizard/ Templates.

II – MS EXCEL

1. Prepare Mark List of Your Class (Minimum of 5 Subjects) and Perform the following Operations: Data Entry- Total- Average- Result and Ranking by Using Arithmetic and Logical functions and sorting.

2. Prepare Statement of Bank Customer's Account Showing Simple and Compound Interest Calculations for 10 different Customers using Mathematical and Logical functions.

3. Prepare a Result Analysis chart with subject details, staff details and pass percentage details.

III – MS POWERPOINT

1. Design a Presentation slides for a Product of Your Choice.

2. Design a Presentation Slides for Organization details for 5 levels of hierarchy of a Company by using Organization chart.

3. Design a presentation slides for the Seminar/Lecture Presentation using Animation effects and perform the following operations: Creation of different Slides- Changing Background Color – Font Color Word Art

IV MS ACCESS

1. Prepare a Payroll for Employee database of an Organization with the following details: Employee Id- Employee Name- Date of Birth- Department and Designation- Date of Appointment- Calculation of Basic Pay- Dearness Allowance- and House Rent Allowance and other deductions (if any) and perform queries for different categories.

2. Create Mailing Labels for Student's Database which should include at least three tables must have at least two fields with the following details-Roll Number- Name- Course- Year- College Name- University- Address- Phone Number.

3. Gather Price- Quantity and other descriptions for five products and enter in the Access Table and create an invoice in form design view.

4. Prepare a Report based on Invoice details such as product number, quantity, price etc., for five products.

Course Outcomes

- On the successful completion of the course, students will be able to

- To introduce the students about basics of MS-Office, practical knowledge exposure to MS- Word in preparation of invitations, bio-data

- To provide practical knowledge about MS-Excel regarding result analysis, arithmetic operations

- To provide practical knowledge of MS- Power Point related to preparation of slides, different layouts and options

- To provide practical knowledge exposure MS-Access

Text Book

1. R.K.Taxali, PC Software, 1st edition Tata MC Graw Hill , 2005, (Last Edition).

Reference Books

1. Ashok Kisor, Tally 9**,** 2nd Edition BPB Publication, 20011, New Delhi

2. Dinesh Veerma, Computer Basics and PC Software, Gullybaba Publishing House, 2012

B.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards

THIRD SEMESTER
PART III - CORE 5 - CORPORATE ACCOUNTING

Maximum CIA: 30
Maximum CE : 70
Total Hours: 60

Course Objective:
        To enable the students understand the preparation of accounts of companies.

Unit I   (12 Hours)
Issue of Shares – Various kinds – Under subscription and over subscription- Issue of Share at Discount and Premium - Pro rata allotment - Forfeiture of Shares – Reissue of Forfeited Shares – Bonus Shares and Right Issues

Unit II   (12 Hours)
Profits prior to Incorporation – Preparation of Final Accounts of Companies – (including Managerial Remuneration Calculation).

Unit III   (12 Hours)
 Redemption of Preference shares - Underwriting of shares – Types of Underwriting – Marked and Unmarked Application – Complete Underwriting – Partial Underwriting - Firm underwriting

Unit IV   (12 Hours)
Issue of Debentures – Distinction between Shares and Debentures - Par, Premium and Discount Rating - Redemption of Debentures.

Unit V   (12 Hours)
Liquidation of Companies – Preparation of Statement of affairs and Deficiency account - Valuation of Goodwill and Shares.

NOTE : Distribution of marks : Theory 20% and Problems 80%

Course Outcome:
On the successful completion of the course, students will be able to study and know
CO 1: Acquire the conceptual knowledge of the fundamentals of corporate accounting and to understand the features of Shares
CO 2: Develop an understanding about redemption of Shares and Debenture and its types

CO 3: Understand the concepts and standards underlying the accounting procedures for issue of Debentures

CO 4: To provide knowledge about accounting procedures of Liquidation and Goodwill

CO 5: To give an exposure to the company final accounts

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	H					H		
CO 2			M			M		
CO 3				M			M	
CO 4								
CO 5	M						L	

Text Books

1. T.S. Reddy, A. Murthy, Corporate Accounting , Revised Edition, Margham Publication, New Delhi, 2015

Reference Books

1. Gupta R.L, Radhaswamy .M ,Corporate Accounts, 13th Revised Edition, Sultan Chand and Co., New Delhi, 2006.

2. Shukla M.C , Grewal T.S., Gupta S.L., Advanced Accountancy, 12th Edition, S. Chand and Co., New Delhi, 2005.

B.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards

THIRD SEMESTER
PART III – CORE 6 – E-COMMERCE

Maximum CIA: 30
Maximum CE : 70
Total Hours: 60

Course Objective: To enable the students to have knowledge in electronic commerce

Unit I   (12 Hours)
Electronic Commerce-Meaning-Introduction to E-Commerce-Goals of E-Commerce-Technical Components of E-Commerce-Advantages and Disadvantages of E-Commerce- Electronic Commerce and Electronic Business- C2C,C2G,G2G, B2G, B2P, B2A, P2P, B2A, C2A, B2B, B2C

Unit II   (12 Hours)
The Internet - Domain Names and Internet Organization (.edu ,.com, .mil,.gov, .net etc.-Types of Network -World Wide Web–Benefits of Website- -Target email, Banner Exchange, Shopping Bots– Social Networking.

Unit III   (12 Hours)
Planning for Electronic Commerce--Linking objectives to business strategies-Measuring cost objectives-Comparing benefits to Costs -Strategies for developing electronic commerce web sites- E-marketing-E-Advertising-E-commerce sites- Designs.

Unit IV   (12 Hours)
Internet Marketing-The PROS and CONS of online shopping-Internet marketing techniques- -The E-cycle of Internet marketing-Personalization E-commerce - Electronic Data Exchange-Introduction-Concepts –Applications -Advantages and Disadvantages -EDI model

 Unit V   (12 Hours)
E -Payment System -Benefits –Components-Credit Card System –Electronic Fund Transfer-Paperless bill -Modern Payment Cash- Electronic Cash-Internet Security-Secure Transaction- -Privacy on Internet-Corporate Email privacy – Privacy Law.

Course Outcome:
On the successful completion of the course, students will be able to study and know

CO 1: Discuss modern computing infrastructures from the perspective of the internet and organizations

CO 2: Have the knowledge of different types of networks

CO 3: Discuss and explain theoretical and practical issues of conducting business over the internet and the Web of specific tools, techniques and methods in e-business.

CO 4: Understand the concepts of EDI and its model

CO 5: To expose the knowledge about the technologies used in E payment system

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M					M		
CO 2	H							
CO 3			M				L	
CO 4							L	
CO 5				M				

Text Book:

1.Dr. K. Abirami Devi, Dr. M. Alagammai, E-Commerce, Margham Publications , Chennai, Reprint 2015.

Reference Books:

1. P.T.Joseph, S.J, "E-Commerce- An Indian Perspective", 4th Edition, PHI Publishers, New Delhi, 2016

2.David Whitley, E - Commerce: Strategy, Technologies and Applications, Tata McGrawHill, New Delhi, 2001.

B.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards

THIRD SEMESTER

PART III - CORE 7 – COMMERCIAL LAW

Maximum CIA: 30
Maximum CE :70
Total Hours: 60

Course Objective:

On the successful completion of this paper, the students should be well versed in the basic provisions regarding legal framework governing the business world.

Unit I   (12 Hours)
Sources of Law – Law of Contract – Nature – Kinds – Essentials of Valid Contract – Offer – Acceptance – Intention to create Legal relations – Consideration – Capacity to Contract.

Unit II   (12Hours)
Free Consent – Mistake – Misrepresentation – Fraud – Coercion and Undue influence – Lawful Objet – Agreement not declared Void – Legal formalities

Unit III   (12 Hours)
Contingent Contract – Performance of Contract – Remedies for Breach of Contract – Quasi Contract – Discharge of Contract

Unit IV   (12 Hours)
Special Contracts – Indemnity and Guarantee – Rights and Liabilites of Surety – Discharge of Surety – Agency – Bailment and Pledge.

Unit V   (12 Hours)
Law relating to Sale of Goods Act 1930 – Rights of Unpaid Seller – Caveat Emptor – Auction Sale – Condition and Warranties to Sale – Performance of Contract of Sale – Rights and Duties of Buyer.

Course Outcome:
On the successful completion of the course, students will be able to study and know
CO 1:To state the law relating to Indian Contract Act and define the concept of contract

CO 2:To understand the different elements of contract, performance of contract and different modes of discharge of contract

CO 3:Explain the principles of law that apply to performance of contract

CO 4:To explain the concept of special contracts

CO 5:Analyse the Law relating to Sales

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	H					M		
CO 2			L				H	
CO 3				M				
CO 4							M	
CO 5								

Text Book

1. N.D.Kapoor, Business Law, 5th Revised Edition, Sultan Chand and Sons, New Delhi, 2014.

Reference Books

1. S.Kathiresan. V. Radha, Commercial Law, Prasanna Publication, Chennai, 2002.

2. N.Premadevi, Business Law, Sri Vishnu Publication, Chennai, 2003

3. Noshirvan. H. Jhabvala, Sale of Goods Act & The IPA, Jamnadas & Co, Mumbai,2000

B.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards

THIRD SEMESTER

PART III – CORE 8 – PRACTICAL II – COMPUTERIZED ACCOUNTING WITH TALLY

Maximum CIA : 40
Maximum CE : 60
Total Hours :   60

Course Objective: To enable the students to have a practical knowledge in Tally

1. Introduction of Tally – History of Tally version– Features and configuration-– company creation - Tally Short keys.

2. Ledger creation - Group creation – Accounting voucher.

3. Receivables and payables management.

4. Bank Reconciliation statement - Cheque printing.

5. Calculation of Interest - Interest Payable – Interest receivable –Inventory statement.

6. Preparation of Invoice.

7. Preparation of Stock summary – Creation of Stock group – Creation of stock category - Unit of measurement – Stock item creation.

8. Go down management creation – Inventory vouchers.

9. Preparation of final Accounts.

10. Ratio analysis.

11. Introduction to GST - Getting Started with GST (Goods)

12. Recording Advanced Entries (Goods)

13. GST Adjustment and Return Filing

14. Getting Started with GST (Services)

15. Recording Advanced Entries (Services)

Course Outcomes

On the successful completion of the course, students will be able to study and know

CO 1: Develop the students to learn to create company, enter accounting voucher entries.

CO 2: Practically know about preparation of financial statement by using Tally ERP

CO 3: Able to reconcile bank statement, accrual adjustments, and also print financial statements, etc. in Tally ERP.9 software

CO 4: Understand the concepts of GST and making entries

CO 5: To understand the various rates of service tax applicable to GST (service) and its entries

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1				M		H		
CO 2			M			M		
CO 3					L		L	
CO 4								
CO 5		L						

Text Book

1. R.K.Taxali, PC Software, 1st Edition Tata MC Graw Hill , 2005, (Last Edition).

2. Nitya Tax Associates, Basics of GST, 1st Edition Taxmann's , 2016

Reference Books

1. Ashok Kisor, Tally 9, 2nd Edition BPB Publication, 20011,New Delhi.

2. Dinesh Veerma, Computer Basics and PC Software, Gullybaba Publishing House, 2012

B.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PART IV: SBC I- INDUSTRIAL LAW

Maximum CE: 75
Total Hours: 36

Course Objective : After completion of this Course the Students shall be through knowledge in Industrial Legislations.

Unit I   (7 Hours)
Factories Act 1948 – Provisions relating to Health, Safety and Welfare – Employment of Child and Young Men – Adult Workers – Women Workers.

Unit II   (7 Hours)
The Minimum Wage Act 1948 – Workmen's Compensation Act 1923 – Employers Liability & Non-Liability. Partial , Permanent and Total Disablement – Accusation Diseases – Provident Fund Act – Online E Portal.

Unit III   (8 Hours)
Payment of Bonus Act 1965-Meaning of Gross Profit- Computation of available and allocable Surplus – Eligibility for Bonus – Minimum & Maximum Bonus – Exemption – Applicability of the Act – Employees State Insurance Act of 1948 – Definition –Medical Board – Purpose for which Funds can be spent – Benefits.

Unit IV   (6 Hours)
Industrial Disputes Act 1947 – Provision relating to Strike, Lockout and Retrenchment. Layoff – closure – Machinery to solve dispute.

Unit V   (8 Hours)
Trade Unions Act 1926 – Definitions registration - Rights and Privileges – Cancellations of Registration – Political Fund – Payment of Wages Act 1926 – Permissible Deductions – Time and Mode of Payment.

Course Outcomes
On the successful completion of the course, students will be able to study and know

CO 1:Knowledge about Factories act and its Provisions.

CO 2:Understand about Industrial Disputes Act and it's relating Issues.

CO 3:Analyze Provisions relating to Trade Unions.

CO 4:Insight about Bonus Act and Employee Insurance Act and its Purpose.

CO 5:Enlightenment of Minimum wages act and Provisions in Workmen's Compensation.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	H					H		
CO 2			L					
CO 3							M	
CO 4		L						
CO 5				M				

Text Book

1. N.D.Kapoor , Industrial Laws, Sulthan Chand and Sons Publications, 2013

Reference Books

1. P.K. Pathi, Labour and Industrial Law, Prentice Hall India Learning Pvt., Ltd, 2nd Edition, 2012
2. S.S.Srivatsava, Industrial Relations and Labour Laws, Vikas Publishing House, 6th Edition, 2011

B.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards

THIRD SEMESTER
PART IV : SBC II - CYBER LAW

Maximum CE :75
Total Hours: 36

Course Objectives :
After the successful completion of the course the student shall gain knowledge on various Cyber Acts and its practical applications.

Unit I   (7 Hours)
Cyber Law: Introduction- Concept of Cyberspace- E-Commerce in India-Privacy factors in ECommerce- Cyber law in E-Commerce-Contract Aspects.

Unit II   (7 Hours)
Security Aspects: Introduction-Technical Aspects of Encryption-Digital Signature-Data Security. Intellectual Property Aspects: WIPO-GII-ECMS-Indian Copy rights Act on Soft Proprietary Works-Indian Patents Act on Soft Proprietary works.

Unit III   (8 Hours)
Evidence Aspects: Evidence as part of the Law of Procedures –Applicability of the Law of Evidence on Electronic Records-The Indian Evidence Act 1872.Criminal Aspect: Computer Crime-Factors influencing Computer Crime- Strategy for prevention of Computer Crime Amendments to Indian Penal Code 1860.

Unit IV   (7 Hours)
Global Trends- Legal frame work for Electronic Data Interchange: EDI Mechanism-Electronic Data Interchange Scenario in India

Unit V   (7 Hours)
The Information Technology Act 2000-Definitions-Authentication of Electronic Records Electronic Governance-Digital Signature Certificates.

Course Outcome:
On the successful completion of the course, students will be able to study and know
CO1:Describe laws governing cyberspace and analyze the role of Internet Governance in framing policies for Internet security.
CO2:Discuss about Security Aspects and Intellectual Aspects.
CO3:Elucidate Evidence aspects and Criminal Aspects.
CO4:Knowledge about Global Trends in EDI in India.

CO5:Understand about Information Technology Act.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1						M		
CO 2		L					L	
CO 3				M				
CO 4						L		
CO 5		M						

Text Book
   1. The Indian Cyber Law : Suresh T.Viswanathan, Bharat Law House, New Delhi

Reference Books
   1. Pavan Duggal, Text Book on Cyber Law, Universal Law Publishing Co.,2nd Edition, 2016
   2. Dr.P.Rizwan Ahmed, Cyber Law, Margham Publication, 2016

B.Com Degree Examination – Syllabus – for candidates admitted from the academic year 2019– 2020 onwards

FOURTH SEMESTER
PART III – CORE 9- HIGHER CORPORATE ACCOUNTING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective :
To enable the students understand the preparation of accounts of companies.

Unit I   (12 Hours)
Amalgamation– Types of Amalgamation– Purchase Considerations – Absorptions and Reconstruction of Companies (Both Internal and External Reconstruction)

Unit II   (12 Hours)
Holding Company Account – Consolidation Of Balance Sheet with Treatment of Mutual Owings ,Contingent Liability, Unrealised Profit, Revaluation of Assets, Bonus Issues and Payment of Dividend (Inter Company Holdings Excluded)

Unit III   (12 Hours)
Statement of Accounts for Electricity Companies – Treatment of Repairs and Renewals –Final accounts of Electricity Companies

Unit IV   (12 Hours)
Accounts of Banking Companies –Preparation of Profit and Loss Account and Balance Sheet (New Format) – Guidelines of RBI – Preparation of Final Accounts– Classification of Bank Advances.

Unit V
Accounts of Insurance Companies –Life Insurance – General Insurance (Both Marine and Fire Insurance Claims)
Note: Distributionof Marks: Theory 20% and Problems 80%

Course Outcome:
On the successful completion of the course, students will be able to study and know
CO 1: Understand the corporate practice in Amalgamation and Absorptions.
CO 2: Develop the skills in preparation of consolidated Balance Sheet of Holding Company and Subsidiary company.
CO 3: Accounting Provisions relating to Electricity Company.

CO 4: Acquaint with the legal formats and special items and adjustments pertaining to Banking companies.

CO 5: To Know the Legal Procedures of Insurance company Accounts.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	H					H		
CO 2		M					M	
CO 3					L			
CO 4			M					
CO 5				L				

Text Books:
1. T.S.Reddy and A.Murthy, Corporate Acconting ,Revised Edition , Margham Publication, NewDelhi,2015

2. Jain.S.P and Narang.K.L, Advanced Accounting, 14th Edition, Kalyani Publications, NewDelhi, 2008.

Reference Books:

1. Gupta.R.L, Radhaswamy.M, Corporate Accounts,13th Revised Edition Sultan Chand & Co., New Delhi, 2006.

2. Shukla.M.C, Grewal.T.S, Gupta.S.L, Advance Acconutancy, 12th Edition, Sultan Chand & Co., New Delhi, 2005.

B.Com Degree Examination – Syllabus – for candidates admitted from the academic year 2019– 2020 onwards

FOURTH SEMESTER
PART III – CORE 10- COMPANY LAW AND SECRETARIAL PRACTICE

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective :

To enable the student to have a thorough knowledge on Company Law and Secretarial Practice

Unit-I   (12 Hours)

Company - Introduction- Types of Company - Characteristics - Lifting of Corporate Veil – Salient Features of Companies Act 2013 - Incorporation of Company – Memorandum and Articles of Association-Meaning- Provisions (including TIN) - Differences – Registrar - Promoter of the Company – Duties and Legal Status of Promoter .

Unit-II   (12 Hours)

Appointment of Director – Fixation of Remuneration - Company Secretary – Legal position of Company Secretary- Appointment of Company Secretary – Procedure for Appointment of a Company Secretary - Role of a Company Secretary- Functions - Duties, Rights and Liabilities.

Unit-III   (12 Hours)

Form of Memorandum and Articles- Procedures for Alteration of Memorandum of Association –Alteration of Articles of Association –Share Certificate-Contents -Rules relating to Issue of Share Certificate - Share Warrant - Procedure for Issuing Share Warrant.

Unit-IV   (12 Hours)

Kinds of Company Meetings – Objects and Purpose of Meeting - Statutory Meeting - Annual General meeting - Extra ordinary General meeting - Board Meeting – Frequency of Board Meeting - Quorum-Powers of Chairman – Agenda – Writing of Minutes- Declaration of Dividend-Quasi- Corporate Governance - Judicial Bodies - National Company Law Tribunal (NALT) and National Company Law Appellate Tribunal (NCLAT)

Unit-V   (12 Hours)

Meaning of Winding up – Modes of Winding up – Winding up by the Tribunal-Filing of Petition for Winding up - Contents of the Petition – Official Liquidator – Provisional Liquidator –Winding up Committee – Duties of Liquidator – Powers of the Official Liquidator.

Course Outcomes

On the successful completion of the course, students will be able to study and know

CO 1: Understand the formation and kinds of companies.

CO 2: Knowledge about Appointing Company Secretary and his Role and Functions

CO 3: Acquire knowledge on basic documents in a company and various methods of raising of capital.

CO 4: Understand about Company Meetings and its Procedures.

CO 5: Describe Provisions relating to Winding up of Companies.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M					M		
CO 2		H					M	
CO 3	M							L
CO 4				H				
CO 5				L				

Text Books

1. Dr. G.K. Kapoor, Company Law (A Comprehensive Text Book on Companies Act, 2013), 18th Edition, Taxmann, New Delhi,2019.

Reference Books

1. M.C.Kuchhal , Secretarial Practice ,18th editionVikas Publishing House ,New Delhi,2017

2. N.D.Kapoor , Elements of Company Law, 31st edition, Forward   Book Depot Educational publishers, 2018.

B.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards

FOURTH SEMESTER
PART III – CORE 11 – CORPORATE COMMUNICATION

Maximum CIA: 30
Maximum CE :70
Total Hours: 60

Course Objective:
    To enable the student to have a complete knowledge in formal Business Communication.

Unit I   (12 Hours)
Meaning of Communication – Objectives - Types – Functions – Importance – Principles of Effective Communication - Barriers – Modern Communication Method –Channels of Communication - Composition of Sentences - Structure of Business Letters.

Unit II   (12 Hours)
Business Letters – Enquiries - Reply – Orders and Execution- Claims & Adjustments- Collection- Sales Letters – Bank Correspondence- Internal Business Communication – Memos, Circular and Notices

Unit III   (12 Hours)
Overview of Corporate – Oral & Written Communication- Merits and Demerits- Communication for meetings –Meetings - Drafting of a Company Meetings- Kinds of Meetings- Preparing Agenda and Minutes - Non – Verbal Communication: Body Language, Kinetics, Proxemics, Para Language.

Unit IV   (12 Hours)
Meaning of Reports – Types – Preparation- Structure & Organization of Reports- Reports by Individuals & Committees- Persuasive Communication: Publicity Material, News Letter, Notices, Leaflets, and Invitation.

Unit V   (12 Hours)
Employment Communication - Application for Jobs - Preparation of Resume – Types of Interview- Modern forms of Communication – Fax, Email, Video Conferencing and their uses in Business.

Course Outcome:
On the successful completion of the course, students will be able to study and know
CO1: To provide an overview of Prerequisites to Business Communication Modern methods.
CO 2: To develop Knowledge about Business Letters and Bank Correspondence.
CO 3: To use basic mechanics of Oral and Written Communication.

CO 4: To Describe Reports and Non - Verbal Communication.

CO5: To Understand Employment Communication and Modern Form of Communication.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M						M	
CO 2		L						
CO 3				L				
CO 4			M					
CO 5				M				L

Text Book

1. Dr. Kathiresan, Dr. Radha, Business Communication, 1st Edition, Prasanna Publication Chennai , 2014.

Reference Books

1. Ramesh, M.S. and C.C.Pattanshetti, Business Communication, 1st Edition, R.Chand & Co, New Delhi 2003 (Last Edition)

2. Meenakshi Raman, Business Communication, Oxford Publishers, 2012

B.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards

FOURTH SEMESTER
PART III - CORE 12 - PRINCIPLES OF MARKETING

Maximum CIA: 30
Maximum CE :70
Total Hours: 60

Course Objective:

On the successful completion of this paper the students should have acquired the basic knowledge of marketing and its functions.

Unit – I   (12 Hours)

Introduction to Market - Meaning, Definition and Concept – Role and Importance of Market- Evolution of Marketing-Traditional and Modern Marketing concepts - Classification of Market- Marketing Function –Functions of Marketing Manager - Marketing Process.

Unit – II   (12 Hours)

Marketing Mix - Product mix – Meaning of products – Product Life Cycle – Branding, Labeling - Price mix, Importance of Price – Pricing Objectives - Kinds of Pricing – Pricing Strategies

Unit – III   (12 Hours)

Promotion - Advertisement – Personal Selling and Sale promotion - Distribution - Importance of Channels of Distribution – Meaning – Functions of Middlemen – Elimination of Middlemen.

Unit – IV   (12 Hours)

Market Segmentation – Benefits – Bases – Requisites of Sound Market Segmentation – Market Segments and Marketing Mix – Buyer Behaviour – Significance – Buying Process – Steps in Online Buying Process – Buyer Behaviour Models.

Unit – V   (12 Hours)

Recent Trends in Marketing – E-Marketing, Direct Marketing, Online Marketing, Market Research, AG-MARK-Green Marketing- Consumerism and Consumer rights – COPRA ACT.

Course Outcome:

On the successful completion of the course, students will be able to study and know

CO 1: Define the core concepts of marketing and discuss the role of marketing in business and society.

CO 2: Identify the marketing mix elements and describe the components of market mix.

CO 3: Explain the modern marketing techniques and discuss how it is used to pursue new marketing opportunities

CO 4: Describe about Market segments and Buyer's Behavior.
CO 5: Study recent trends in Marketing.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M							
CO 2			M				H	
CO 3				L			M	
CO 4			L					L
CO 5					M			

Text Book
1. Philip Kotler, Gary Armstrong, Principles of Marketing, 14th Edition, Prentice Hall of India Pvt Ltd, 2015.

Reference Books
1. Gupta.C.B , Rajan Nair. N, Marketing Management, 11th Edition, Sultan Chand and Sons, New Delhi, 2014.
2. Varshney R.L and Gupta S.L, Marketing Management, 3rd Edition, Sultan Chand and Sons, 2013

B.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards

FOURTH SEMESTER
PART IV : SBC II- SERVICE MARKETING

Maximum CE :75
Total Hours: 36

Course Objective: On completion of this course, the students shall acquire knowledge about marketing various services.

Unit I   (8 Hours)
 Foundations of Service Marketing: Concept of Service- Nature and Classification of Service- Characteristics of Service- Importance of Services Marketing- Service Industry- Services Marketing Triangle- Environment for Services Marketing-PESTEL frame work

Unit II   (8 Hours)
 Services Market Segmentation: Target Market Selection- Approaches to Target Market- Positioning and Differentiation of Services- Positioning: process - Types- Determinants of Service Quality- Measuring Service Quality.

Unit III   (7 Hours)
 Services Marketing Mix: Need for expanding Marketing Mix- Service Product- Product Mix, Branding of Services, New Service Development- Service Pricing- Distribution of Services- Promotion .

Unit IV   (6 Hours)
 Applications of Service Marketing: Marketing of Hospitality, Travel and Tourism, Health Care, Financial Services, IT enabled Services, Education, Entertainment, Transport Services, E-Services.

Unit V   (7 Hours)
Customer Relationship Marketing in Services: Evolution of Relationship Marketing- Types of Relationship Marketing- Classic, Special, Mega, Nano Relationships- Components of Buyer Seller Relationships- Methods used to develop Customer Relationships.

Course Outcome:
On the successful completion of the course, students will be able to study and know
CO 1: Knowledge about Service Marketing Concepts.
CO 2: Understand about Market Segmentation and Approaches.
CO 3: Identify the marketing mix elements and describe the components of market mix.
CO 4: Study about Applications of Service Marketing.

CO 5: Know about CRM in Service Marketing.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M						M	
CO 2		L					L	
CO 3			M					
CO 4					L		H	
CO 5			L				L	

Text Book
1. Zeithaml, Valarie A and Bitner, Mary Jo, Services Marketing, Tata McGraw Hill, New Delhi, Latest edition.

Reference Books
1. Woodruffe, Helen: Services Marketing, Macmillan India, New Delhi, (latest edition).
2. Lovelock, Christopher H: Managing Services: Marketing Operations and Human Resources, Prentice Hall, New Jersey, (latest edition)

B.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards

FOURTH SEMESTER
PART IV: SBC II - INDIRECT TAXATION

Maximum CE :75
Total Hours: 36

Course Objective: The course enables the students to understand the concepts of indirect taxation and GST

Unit I   (8 Hours)
Indirect Taxation – Introduction and Concepts - GST – Origin – Features – Objectives – Difference between Direct Tax and Indirect Tax - Benefits : Central Govt, State Govt, Individuals and Companies – Goods and Service Tax Network (GSTN).

Unit II   (8 Hours)
GST Constitutional Amendment Bill 2016 - CGST Act – IGST Act – SGST Act – Difference between Previous Taxation and New GST in India – Provision of demand under GST

Unit III   (7 Hours)
Types of GST in India: CGST, SGST, IGST – Categories GST Exemptions: Exempted, Essential, Standard and Special Goods & Services Categories.

Unit IV   (6 Hours)
Authorities implementing GST - Registration Procedure – Penalties for Non Compliance – Self Assessment under GST – Goods and Service Tax System

Unit V   (7 Hours)
Application of GST – Mechanism of GST – Applicable GST Rate – Levy of GST – Implementation of GST Bill: Benefits and Challenges

Course Outcome:
On the successful completion of the course, students will be able to study and know
CO 1: Understand the basic principles underlying the Indirect Taxation Statutes.
CO 2: Identify and analyze the provisional Aspects of GST.
CO 3: Study about GST Types and Exemptions.
CO 4: Knowledge about Registration Procedures and Penalties.
CO 5: Describe Mechanism of GST Bill.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1				M		H		
CO 2			L					M
CO 3				M			L	
CO 4		H						H
CO 5					M			

Text Book
1. Bimal Jain and Isha Bansal, GST Law and Analysis with Conceptual Procedures, Young Global Publications, 2016

Reference Books
1. Jayaram Hiregange and Deepak Rao, India GST for Beginners, White Falcon Publishing, 2016
2. CA. Chitresh Gupta, An Insight into GST, GB Books, 2015.

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.
THIRD SEMESTER
CERTIFICATE COURSE – ADVERTISING AND SALES PROMOTION

Total Hours: 30

Course Objective:
To familiarize the student with the practice of promoting market for products through advertisements and sales promotion.

Unit I   (6Hours)
Advertising – Origin and Development –Advertising- an element of Marketing mix- Objectives – Advertising and Salesmanship – Role and Importance – Planning for Advertisement communication process

Unit II   (6 Hours)
Advertisement – Kinds of Advertisements– Economic and social affects of advertising – Advertising mix – Advertising budget and relevant decisions.

Unit III   (6 Hours)
Advertising Agencies -Role – Types of Advertising – Measuring the effectiveness of Advertisement - Managing agency -Evaluation of Advertising

Unit IV   (6 Hours)
Sales Promotion – Objectives – Advantages - Tools and their effectiveness – Aggressive selling.

Unit V   (6 Hours)
Sales promotion –Objectives- Planning, implementation Control-Consumer sales promotion-Trade sales promotion-Measuring the effectiveness of promotion company- Evaluation of Sales Promotion

Text Books:
   1. S.A.Chunawalla , Advertising and Sales Promotion Management, Himalaya Publishing House; Sixth Edition edition (2015)
   2. Mr.PankhuriBhagat , Advertising & Sales Promotion ,SBPD Publishing House (2015)
Reference Books :
   1. Mr. RituNarang ,Advertising, Selling & Promotion, Pearson Education(2020)

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

THIRD SEMESTER
CERTIFICATE COURSE – PRACTICAL BANKING

Total Hours: 30

Course Objective

The objective of this course is to acquaint students with the theoretical and practical aspects of modern banking.

Unit-I   (6 Hours)

Definition of Banker and Customer-General Relationship-Special Relationship-Nationalized Banks-Private Banks -Evolution of Commercial Banks-Functions of modern Commercial Banks.

Unit-II   (6 Hours)

Opening of New Bank Account-Precautions-Types-Savings Account-Current Account-Fixed Deposit-Recurring Deposit-Cumulative Deposit-TL-Cash Credit-Overdraft-Joint Account- KYC-Closure of bank Account.

Unit-III   (6 Hours)

Negotiable Instruments-Meaning-Characteristics- Bills of Exchange-Promissory Note- Cheque-Features- Crossing of a Cheque- Cancellation of Cheque –Types of Crossing- Endorsement-Dishonour of a Cheque – Stop the Payment of a Cheque - Demand Draft.

Unit-IV   (6 Hours)

Funding of Corporate seeds-Types of Finance-Seed Capital-Bank Finance of seed capital - Venture Capital- Procedures for loans.

Unit-V   (6 Hours)

Electronic Payments: CIBIL-Concept of Security-Primary vs Collateral-Application Forms-Annexure-Electronic Payment-NEFT-RTGS-IMPS- Cardless withdrawals

Text Book

1. Sundaram and Varshney , Banking Theory Law and Practice, 20th Revised Edition,

Sultan Chand & Sons,Year 2014.

Reference Books

1.H.R. Gupta, Practical Banking in India, Gyan Publishing House, 2011.

2.Gurusamy, S., Banking Theory: Law and Practice, 2ndEdition, Tata McGraw Hill, Year

2010.

All UG Degree Examination-Syllabus -for Candidates admitted from the Academic Year 2019– 2020 onwards

THIRD SEMESTER

CERTIFICATE COURSE- ENTREPRENEURSHIP DEVELOPMENT PROGRAMME

Total Hours : 30

Course Objectives :

To enable the students to learn the fundamentals of being a good entrepreneur and the Concept of entrepreneurship.

Unit I   (6 Hours)
Concept of Entrepreneurship : Definition Nature and characteristics of entrepreneurship – function and type of entrepreneur. Development of women entrepreneur and rural entrepreneur.

Unit II   (6 Hours)
The start-up process, Project identification – Business Idea – Sources of Business Idea – Selection of the product – project formulation - evaluation , Project Report.

Unit III   (6 Hours)
Institutional services to entrepreneurs – DIC, SIDO, NSIC, SISI, SIDCO and KVIC, Institutional finance to entrepreneurs : IFCI, SFC, IDBI, ICICI, TIIC and SIPCOT.

Unit IV   (6 Hours)
Incentives and subsidies – Subsidised services – subsidy for market - Transport – seed capital assistance - Taxation benefit to SSI.

Unit V   (6 Hours)
Industrial Sickness- Symptoms- Remedies – Causes.

Text Book
1. Gupta.C.B and Srinivasan N.P, Entrepreneurial Development, 4th Edition 2005, Sultan Chand and Co., New Delhi.

Reference Book
1. Saravanavel.P, Entrepreneurial Development, 2nd edition, Essae Chandra Institute, 2005, Mumbai.

All UG Degree Examination-Syllabus -For Candidates admitted from the Academic Year 2019– 2020 onwards

FOURTH SEMESTER
CERTIFICATE COURSE- E-COMMERCE

Total Hours : 30

Course Objectives :
Enabling the Students to Acquire Theoretical knowledge to be successful in E-Commerce.

Unit I   (6 Hours)
E Commerce: The Revolution is just beginning ,E Commerce: A Brief History-Electronic Commerce-Electronic Commerce Models-Types of Electronic Commerce-Value Chains in Electronic Commerce-E-Commerce in India-Introduction to E-Business-Internet-World Wide Web-Internet Architectures-Internet Applications-Web Based tools for Electronic Commerce.

Unit II   (6 Hours)
E-Commerce Business models and concepts-The Internet and World Wide Web - E Commerce Business models, Major Business to consumer (B2C) Business models, Major Business to Business (B2B) business models, Business models in emerging Ecommerce areas, Intranet-Composition of Intranet- Business Applications on Intranet-Extranets Electronic Data Interchange-Components of Electronic Data Interchange-Electronic Data Interchange (Communication Process).

Unit III   (6 Hours)
Security Threats to E-Business- Security Overview- Electronic Commerce Threats-Encryption-Cryptography- Public Key and Private Key Cryptography- Digital Signatures-Digital Certificates- Security Protocols over Public Networks- HTTP- SSL- Firewall as Security Control- Public Key Infrastructure (PKI) for Security- Prominent Cryptographic Applications.

Unit IV   (6 Hours)
Electronic Payment System- Concept of Money-Electronic Payment System- Types of Electronic Payment Systems-Smart Cards and Electronic Payment Systems- Infrastructure Issues in EPS, Electronic Fund Transfer.

Unit V   (6 Hours)
Ecommerce Marketing concepts –Online Retailing and Services-Consumer online: The Internet Audience and Consumer Behavior-Basic Marketing concepts-Internet Marketing–The Service sector of offline and online, Online financial services-online travel services-Online career – Social networks and Online communities, Online auctions, E Commerce Portals

Text Book
1. Whitley, David. E-Commerce Strategy, Technologies and Applications. Tata McGraw Hill, Reprint 2014.

Reference Books:
1. C.Laudon, E- Commerce :Business Technology Society, 4th Edition, Pearson Education, Reprint 2011.
2. Balaji, Kamlesh K and Nag, Debjani, E-Commerce: The Cutting Edge of Business, Tata McGraw Hill, Publishing Company Ltd., New Delhi. Reprint 2011.

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

FOURTH SEMESTER
CERTIFICATE COURSE – OFFICE MANAGEMENT

Total Hours :30

Course Objective:

      To prepare Students in managing the day-to-day activities related to administration activities in offices.

Unit I   (6 Hours)

Office and office Management – meaning of office, function of office, primary and administrative functions, importance of office. Relation of office with other departments of business Organization. Concept of paperless office, virtual office, back and front office, open and private office.

Unit II   (6 Hours)

Filing and Indexing – Meaning and importance of filing, essential of good filing system. Centralized and decentralized filing system. Meaning, need and types of indexing used in the business organization.

Unit III   (6 Hours)

Office forms– Meaning and types of forms used in business organization, advantages, forms controls, objectives, form designing, principles of forms designing and specimens of forms used in office. Office Record Management – Meaning, importance of record keeping management, principles of record management and types of records kept in a business organization- Office Automation

Unit IV   (6 Hours)

Office Machines and equipments – Importance, objectives of office machines.Office6Safety and Security – Meaning, importance of office Safety, safety hazards and steps to improve office safety. Security hazards and steps to improve office security.

Unit V   (6 Hours)

Measurement of Office Work – Importance, purpose, difficulty in measuring office work. Different ways of measurement, setting of work standards, benefits of work standards. Techniques of setting standards. Office Manuals – Meaning, need, types of office manuals and steps in preparing of office manuals.

Text Books

1.Chhabra, T.N., Modern Business Organisation, New Delhi, DhanpatRai& Sons.

Reference Books

1.P.K. Ghosh, "Office Management", Sultan Chand & Sons. New Delhi

2.R.K. Chopra, Office Management, Himalaya Publishing House

All UG Degree Examination – Syllabus for Candidates admitted from the Academic Year 2019-2020 onwards.

FOURTH SEMESTER
CERTIFICATE COURSE - PRINCIPLES OF INSURANCE

Total Hour: 30 hours

Course Objective:

The student gains the ability to apply the knowledge and understanding, in simple situations, to the operation, on sound financial lines of life insurance companies.

Unit I   (6 Hours)

Insurance: Meaning, Functions - Role and Importance of Insurance – Essentials of contract of insurance Principles of insurance.

Unit II   (6 Hours)

Life Insurance – Meaning, Nature – Various Policies - Procedure for taking life Insurance policy- Surrender and revival of policy - Assignment and Nomination – Procedures, - Settlement of claim – Loan on policy

Unit III   (6 Hours)

General Insurance- Fire Insurance, Marine insurance , Health Insurance , Personal accident Insurance , Motor Insurance and miscellaneous Insurance – Characteristics , Procedure for claim.

Unit IV   (6 Hours)

Agent- Meaning, Procedures for Becoming an Agent: Pre- requisite for obtaining a license: Duration of license; Cancellation or suspension/termination of agency
Appointment; Code of conduct; Unfair practices. Functions of the Agent

Unit V   (6 Hours)

IRDA - Mission - Composition of Authority - Duties, Powers and Functions - Powers of Central Government in IRDA Functioning.

Text Book:
   1. M.N. Mishra, "Insurance –Principles and Practice", S.Chand & Company Ltd., New Delhi, 2016.

Reference Book:
1. B.S Bodla, M.C. Garg & K.P. Singh,"Insurance -Fundamentals, Environment & Procedures" , Deep & Deep Publications Pvt. Ltd., New Delhi, 2014 (Last Edition)
2. P.Periysamy, Principles and Practice of Insurance, Himalaya Publication House, Year -2017

B.Com Degree Examination – Syllabus for candidates admitted from the academic Year 2019-20 onwards

THIRD SEMESTER
ALC 1 - PRINCIPLES OF INTERNATIONAL TRADE

Maximum CE : 100

Course Objective

On successful completion of the paper the Student should understand the determinants and concepts of trade and development between countries

Unit I

The global Economy – Perspective on the theory of International Trade – The importance of International trade – Counter Trade – Forms of Counter Trade – Reasons for Growth of Counter Trade – Global Trade and Developing Countries.

Unit II

International commodity Agreements – Quota agreements, Buffer stock Agreements – Carts – State Trading – Bilateral and Multilateral contracts. Gains from Trade – Terms of Trade –Factors influencing the terms of trade.

Unit III

Tariff – Meaning – Tariffs, Taxes and Distortions – Imports Tariffs and Export Taxes – Export Subsidies – Arguments for free Trade – Arguments for protection – Demerits of protection – Trade barriers.

Unit IV

International Investments – Types of Foreign Investment – significance of Foreign Investments – Limitations and Dangerous of Foreign Capital – Factors affecting International
Investment – Foreign Investment by Indian companies.

Unit V

Multinational Corporation – Definition and Meaning – Importance of MNCS – benefits of MNCs – Criticism – Globalizations – Meaning – stages – Essential conditions for Globalization – Implications and Importance of Globalization – Benefits – Obstacles to Globalization in India – Factors favoring Globalization.

Text Book
1. International Trade – Theory and Evidence – By James R.Markusen, James R.Melvin, William H.Kaempfer & Keith E.Maskus.
Reference Books
1. International Business – Francis Cherunilam, PHI Learning Private Limited

B.Com Degree Examination – Syllabus for candidates admitted from the academic Year 2019-20 onwards
FOURTH SEMESTER
ALC 2 – SUPPLY CHAIN MANAGEMENT

Maximum CE: 100

Course Objective:
On successful completion of the paper the Student should understand to manage the interaction of Business functions across Companies in the Supply Chain Management.

Unit I
Supply Chain Management – Need for supply chain - Supply Chain Performance - Achieving Strategic Fit and Scope Supply Chain - Drivers and Metrics- Demand Forecasting in a Supply Chain- Aggregate Planning in a Supply Chain.

Unit II
Planning Supply and Demand in a Supply Chain - Managing Predictable Variability - Managing Economies of Scale in a Supply Chain - Cycle Inventory- Managing Uncertainty in a Supply Chain - Safety Inventory.

Unit III
Determining the Optimal Level of Product Availability - Transportation Decisions in a Supply Chain- Designing Distribution Networks and Applications to E-Business – E- Retailing - Frame work for Strategic Alliances – 4PL – Merits and Demerits - Advantages and Disadvantages of RSP – Distributor Integration.

Unit IV
Network Design in the Supply Chain- Network Design in an uncertain Environment- Sourcing Decisions in a Supply Chain - Supply Chain Integrates- Push, Pull Strategies – Demand Driven Strategies – Impact on Grocery Industry – Retail Industry – Distribution Strategies

Unit V
Pricing and Revenue Management in a Supply Chain- Information Technology in a Supply Chain- Coordination in a Supply Chain –Information Systems in Supply Chain Management – Importance – MR,DRP,ERP,PDM,EIP,CPFR- Reverse Supply Chain Management.

Text Book
1. Supply Chain Management 6th Edition – Sunil Chopra , Peter Meidhl, Person Publications, 2016.
Reference Books
1. Martin Christopher, Logistics and Supply Chain Management, 4th Edition, FT Press; 4 Edition 2011.

VLB Janakiammal College of Arts and Science
(Autonomous)
Department of Commerce with Professional Accounting

Introduction

The Bachelor of Commerce with Professional Accounting is introduced in the year 2015 and designed to enhance the ability to learn and will provide an opportunity to develop and apply professional skills through real-world experiences. The Department has national focus and strong links with auditors and the business community coupled with a commitment to ensure its teaching is relevant and valuable to the industry – providing an educational experience that extends beyond academic excellence. Accounting is the art of recording transaction in organizations. This program provides exposure to students with the sound understanding in Accounting, Taxation and Corporate

Vision

To prepare students for carrier development in the present business era by maintaining a leading department that fosters the creation and dissemination of knowledge in a changing global environment with a holistic concern for their better life.

Mission

Empowering students' knowledge along with human values through proper guidance that need to become worthy professionals which ultimately enhances their employability.

Objective

➢ Promote and increase the knowledge, skill and proficiency of students in accounting and financial management skills.

➢ Exposing the students to the practical field of Accounting.

➢ Uniquely designed to create accounting / finance professionals.

➢ To keep the students in constant touch with the happening taking place globally with the proper use of internet.

➢ Practice the professional and ethical requirements of the profession.

Eligibility: UG Programme

A pass in Higher Secondary Examination conducted by Tamilnadu (or) an equivalent examination, with Commerce subjects of Business Studies and Accountancy.

Duration of UG Programme

The course shall extend over a period of three years comprising of six semesters, with two semesters per year. There shall not be less than ninety instructional days during each semester. Examination shall be conducted at the end of each semester for the respective subject.

Program Outcome (POs)

The graduates will be able to

PO1- Have complete knowledge of Finance, Accounting, Taxation, Information Technology, Business laws and other laws

PO2 - Equip with professional, inter personal and entrepreneurial skills.

PO3 - Gear up with updated knowledge in implementing business practices

PO4 - Evaluate environmental factors that influence business operation.

PO5 - Prepare for post graduate studies and to achieve success in their professional careers

Program Specific Outcome (PSOs)

PSO-1 - Serving as a launch pad for professional programmes like CA, ICWA and ACS.

PSO-2 - Moulding the students in such a way which will make them having superficial knowledge about everything in commerce and in depth knowledge about core subjects.

PSO-3 - Provide several opportunities to engage with the accounting professionals.

B.Com – PA (Professional Accounting)
Scheme of Examination (CBCS and OBE Pattern)
For the Candidates Admitted From the Academic Year 2019-2020 Onwards

Part	Subject Code	Subject Title		Ins. Hrs/Week	Dur. Hrs.	CIA	CE	Total	Credit
SEMESTER-I									
I	19LATA01/ 19LAHI01/ 19LAMY01/ 19LAFR01	Language-I		5	3	30	70	100	3
II	19ENG001	English-I		5	3	30	70	100	3
III	19BCP101	Core-1 Fundamentals of Accounting-I		6	3	30	70	100	4
III	19BCP102	Core-2 Management Principles and Practices		6	3	30	70	100	4
III	19BCPID1	IDC-1 Mathematics for Business		6	3	30	70	100	4
IV	19UFCA01	Foundation Course-I : EVS #		2	2	-	50	50	2
		Total		30				**550**	**20**
SEMESTER-II									
I	19LATA02/ 19LAHI02/ 19LAMY02/ 19LAFR02	Language-II		5	3	30	70	100	3
II	19ENG002	English –II		5	3	30	70	100	3
III	19BCP201	Core-3 Fundamentals of Accounting-II		6	3	30	70	100	4
III	19BCP202	Core-4 Business Law		6	3	30	70	100	4
III	19BCPID2	IDC-2 Statistics for Business		6	3	30	70	100	4
IV	19UFCA02	Foundation Course-II: Value Education #		2	2	-	50	50	2
		Total		30				**550**	**20**
SEMESTER-III									
III	19BCP301	Core-5 Advanced Accountancy		6	3	30	70	100	4
III	19BCP302	Core-6 Company Law and Secretarial Practice		5	3	30	70	100	4
III	19BCP303	Core-7 Practical Banking	T	4	3	50	50	100	4
			P	1					
III	19BCP304	Core-8 General Economics		5	3	30	70	100	4
III	19BCPID3	IDC-3 Introduction to Information Technology		4	3	30	70	100	4
IV	19BCPSB1/ 19BCPSB2	SBC-I Principles of Marketing #		3	3	-	75	75	3
IV	19BCPED1/ 19BTA001/ 19ATA001	BT – I /AT – I / EDC -I Web Designing #		2	2	-	50	50	2
		Total		30				**625**	**25**

		SEMESTER-IV							
III	19BCP401	Core-9 Corporate Accounting-I		6	3	30	70	100	4
III	19BCP402	Core-10 Cost Accounting		6	3	30	70	100	4
III	19BCP403	Core-11 Practical Auditing	T	4	3	50	50	100	4
			P	1					
III	19BCP404	Core-12 Industrial and Labour Laws		5	3	30	70	100	4
III	19BCPID4	IDC-4 M.S. Office and Tally (Practical)		3	3	40	60	100	4
IV	19BCPSB3/ 19BCPSB4	SBC-II Management of Financial Markets and services #		3	3	-	-	75	3
IV	19BTA002/ 19ATA002 19BCPED2	BT – II /AT – II / EDC - II Communicative English #		2	2	-	50	50	2
V	19NSS001/ 19NCC001/ 19SPT001 19EXT001	NCC/NSS/SPORTS/ EXT @		-	-	50	-	50	2
		Total		**30**				**675**	**27**
		SEMESTER-V							
III	19BCP501	Core-13 Corporate Accounting-II		5	3	30	70	100	4
III	19BCP502	Core-14 Strategic Management		5	3	30	70	100	4
III	19BCP503	Core-15 Business Ethics and Corporate Social Responsibility		5	3	30	70	100	4
III	19BCP504	Core-16 Taxation-I		5	3	30	70	100	4
III	19BCP505	Core-17 Research Methodology		5	3	30	70	100	4
III	19BCPE01/ E02/E03	Elective-I – Entrepreneurial Development / Corporate Governance /Brand Management		5	3	30	70	100	4
III	19BCPIT1	Institutional Training		-	-	-	-	-	-
		Total		**30**				**600**	**24**
		SEMESTER-VI							
III	19BCP601	Core-18 Management Accounting		5	3	30	70	100	4
III	19BCP602	Core-19 Investment Management		5	3	30	70	100	4
III	19BCP603	Core-20 Indirect Taxation		5	3	30	70	100	4
III	19BCPE04/ E05/E06	Elective-II – Financial Management / Micro Finance / Supply Chain Management		5	3	30	70	100	4
III	19BCPE07/ E08/E09	Elective-III – Human Resource Management / Business Environment / Materials Management		5	3	30	70	100	4
III	19BCPPR1	Project and Viva Voce		5	3	50	50	100	4
		Total		**30**				**600**	**24**
		Total						**3600**	**140**

\#   No Continuous Internal Assessment (CIA) , only Comprehensive Examination (CE)

@ No Continuous Internal Assessment (CIA) and Comprehensive Examination (CE)

IDC- Inter disciplinary Course, EDC – Extra disciplinary Course, AOC –Application Oriented Course

List of Skilled Based Courses		
SBC-I	19BCPSB1	Principles of Marketing
	19BCPSB2	E Business
SBC-II	19BCPSB3	Management of Financial Markets and services
	19BCPSB4	Exim Trade and Forex Management

List of Elective Courses

Elective-I	19BCPE01	Entrepreneurial Development
	19BCPE02	Corporate Governance
	19BCPE03	Brand Management
Elective-II	19BCPE04	Financial Management
	19BCPE05	Micro Finance
	19BCPE06	Supply Chain Management
Elective-III	19BCPE07	Human Resource Management
	19BCPE08	Business Environment
	19BCPE09	Material Management

List of Extra Disciplinary Course

EDC	Code	Subject Title
I	19BCPED1/ 19BTA001/ 19ATA001	BT – I /AT – I / EDC - I Web Designing
II	19BTA002/ 19ATA002 19BCPED2	BT – II /AT – II / EDC - II Communicative English

List of Additional Credit Course

Semester	Code	Subject Title	Credits
III	19BCPAC1	Organizational Behaviors	2
IV	19BCPAC2	Contemporary Issues in Business	2
V	19BCPAC3	Insurance and Risk Management	2
		Total	6

Summary

Part	No. of Papers	Total Credits	Total Marks
I	2	6	200
II	2	6	200
III –Core	20	80	2000
III – IDC	4	16	400
III – Elective	3	12	300
III –Project	1	4	100
IV –Foundation Course	2	4	100
IV – EDC	2	4	100
IV – Skilled Based Course	2	6	150
V Extension Activities	-	2	50
Total	38	140	3600

REGULATIONS
(Effective from the Academic Year 2019-2020 Onwards)

1) Conduct of Practical Examinations:

Practical examinations shall be conducted with one internal examiner and one external examiner and the question paper for practical examination shall be set by both Internal and External examiners.

2) Ratio of Comprehensive Examination, Pre- Model and Model Examinations Marks for UG Courses

Part	Internal Assessment	External Assessment	Total Marks
I (Languages)	30	70	100
II (English)	30	70	100
III(Core, IDC)	30	70	100
IV (SBC)	-	75	75
IV (EDC/Foundation Course)	-	50	50
V (NCC/NSS/Sports/Ext. Activity)	50	-	50

3) Project Work Mark Distribution

Particulars	IA	CE	Total
Project Work (UG)	50	50	100

4) Practical Mark Distribution for all UG and PG Courses

Internal -40 External-60 Total Marks -100

5) Break up for Internal Marks

S. No	Internal Marks	Distribution of Marks
1	Pre Model Examination	70
2	Model Examination	70
3	Seminar	30
4	Attendance	10
Total		**180/6=30**

6) Seminar Split up

S.No	Seminar Split up	Marks
1	Content	10
2	Flow of the presentation	10
3	Stage management and Body language	10
	Total	**30**

7) Attendance Break up

S.No	Attendance Split up	Marks
1	65% to 74%	4
2	75% - 80%	6
3	81% - 90%	8
4	91% - 100%	10

8) Internal Marks for Practical (Maximum 40)

Maximum Marks : 40		
S.No	Internal Marks	Distribution of Marks
1	For Completion of the Practical List	20
2	Test –I	10
3	Test –II	10
	Total	**40**

9) External Marks for Practical (Maximum 60)

Maximum Marks : 60		
S. No	Comprehensive Examination	Distribution of Marks
1	Record	10
2	Program – I Algorithm Coding Execution	5 10 10 **Total (25)**
3	Program – II Algorithm Coding Execution	5 10 10 **Total (25)**
	Total	**60**

10) Internal and External Marks for Project Work

S.No	Internal Marks	Distribution of Marks
1	**Internal** Review –I Review –II Documentation and Final Review	 10 10 30 **Total (50)**

	External	
2	Presentation	30
	Viva	20
		Total (50)
	Total	**100**

The distribution of Marks among the various components for IA and CE for Theory, Practical and Project Work is given in detail in the respective Schemes of Examination and Regulation of the different UG and PG Courses, duly passed in their respective Board of Study.

11) Pattern of Question Paper
For Pre model Test, Model and Comprehensive Examination under – Graduate Courses.

Maximum Marks : 70 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×4=20)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice

Maximum Marks : 75 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×5=25)	Each question carries five marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice

Maximum Marks : 50 / Time 2 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×3=15)	Each question carries three marks	Internal Choice
Section – C	(5×5=25)	Each question carries five marks	Internal Choice

Maximum Marks : 100 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×8=40)	Each question carries eight mark	Internal Choice
Section – C	(5×10=50)	Each question carries ten mark	Internal Choice

Maximum Marks : 50 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions

Section – B	(5×2=10)	Each question carries two mark	Internal Choice
Section – C	(5×4=-20)	Each question carries four mark	Internal Choice
Section – D	(1X10=10)	One question carries ten mark	Compulsory Question

Note:

1) The questions should be numbered sequentially, running through the Sections A, B and C.

2) The maximum marks are 70/75.

Note:

1) The questions should be numbered continuously running through the Sections A, B and C.

2) Questions should be evenly distributed among the unit in the syllabus in all the sections of the Question paper

3) While framing questions with internal choice the questions must be identified as (a) or (b). (e.g 11. a) or b) Further, the internal choice must be from the same unit.

4. The Controller of the Examinations shall arrange for the setting of question papers on the basis the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies.

12) Institutional Training

The students may be deputed to attend an Institutional Training Programme for 30 days during the second year Summer Holidays to work in auditor's office. The teachers of the department will make periodical visits to monitor the progress of the students. They have to submit a Training Report during Fifth Semester for further processing. This programme aims to impart practical knowledge to the students in institutions of high repute.

13) Hands on Training

Every student admitted in B.Com PA course has to undergo Hands on Training in order to gain working knowledge in the following subjects.

A. Practical Banking and B. Practical Auditing

The above specified papers will have 4 hours of technical hours and 1 hour of practical schedule every week. (Practical schedule may range between 10-12 hours per semester).

In case of practical Banking and Auditing, the practical components will include various activities done by the Bankers and by the Auditors.

In case of Practical Banking and Auditing, the student is required to submit the record work in form of a Book binding to the department before the conduction of the practical examination.

14) Break up for Internal Marks Practical Banking and Practical Auditing

S. No	Internal Marks	Distribution of Marks
1	Pre Model Examination	50
2	Model Examination	50
3	Seminar	30
4	Attendance	10
5	Internal Viva-voce	40
	Total	**180/6=30**

15) Distribution of External Marks for Practical Banking and Practical Auditing

MAXIMUM MARKS : 20		
S. No	CIA	Distribution of Marks
1	Record	5
2	Presentation in the Viva Voce examination	15
	Total	**20**

It has been proposed that the student who has been admitted to the above program has to undergo Hands on Training in Banking and Auditing during the 3rd and 4th semester respectively. In order to make the Practical Training more productive and result oriented it has been unanimously decided by the board to provide Internal Viva-voce for the students prior to the Model Examination for 40 marks.

16) Certificate Course

In the academic year 2019-2020 the following inter disciplinary certificate courses has been introduced. The candidates shall opt for any one of the following course respectively during III and IV th semester of their study.

Sl. No	Semester	Subject Title
1		Advertisement and sales Promotion
2	III	Practical Banking
3		Entrepreneurship Development Programme
4		E-Commerce
5	IV	Office management
6		Principles of Insurance

B.Com [PA] Degree Examination – Syllabus for Candidates admitted from the academic year 2019-20 onwards

FIRST SEMESTER
PART – III – CORE-1 – FUNDAMENTALS OF ACCOUNTING-I

Maximum CIA: 30

Maximum CE: 70

Total Hours: 72

Course Objective: On successful completion of this course, the student should have understood Basic Accounting framework Concepts and conventions of Accounting.

Unit-I (14Hours)

Fundamentals of Book Keeping – Branches of Accounting – Methods of Accounting – Types of Accounts – Accounting Rules - Accounting Concepts and Conventions –Accounting Standards – Concepts – objectives – Benefits and limitations – overview of Accounting Standards in India - Role of an Accountant - Journal – Ledger –Subsidiary books – Preparation of Trial balance.

Unit-II (14 Hours)

Final accounts of a sole trader - Closing Adjustments entries – Trading Account – Profit and Loss Account and Balance sheet - Bank Reconciliation statement – Introduction – Need – Importance - Reason – Preparation of Bank Reconciliation statement - Errors and Rectification –Types of Errors - Rectification in different stages in accounting cycles – Basic principle for Rectification of errors – suspense Account.

Unit-III (14Hours)

Bill of Exchange-Definition – Features – Parties involved – Advantages and Types – Trade Bills and Accommodation Bills – Accounting for Bill of Exchange – Account Current - Average due date – Meaning - Calculation of Average Due Date in various Situations.

Unit-IV (15Hours)

Accounting for Consignments – Meaning – Features – Distinction between Sale and Consignment – Accounting treatment for Consignment transaction and Events in the books of Consignor and

Consignee - Joint Ventures – Meaning – Features - Distinction between Joint Venture and Partnership – Methods of maintaining Joint Venture Account and Memorandum Joint Venture Account.

Unit-V   **(**15Hours)

Accounts of Non- Profit Organisation– Introduction – Distinction between Receipts and Payments and Income and Expenditure account - Preparation of Receipts and Payments account from Income and Expenditure account and Balance sheet

Note: Distribution of Marks between problems and theory shall be 80% and 20%.

Course Outcome

➢ Describe various accounting concepts and double entry system of book keeping.

➢ Understand on how to deal with adjustments in Final accounts and also about preparation of Bank Reconciliation statement.

➢ Acquired knowledge on various types of bill of exchange.

➢ Describe about preparation of Consignment and Joint Venture.

➢ Understand on how accounting books for Non-Profit Organization.

Text Books

1) T.S .Reddy-A. Murthy, Financial Accounting, 6th Revised Edition, Margham Publications, Reprint, Chennai, 2019.

2) Jain S.P, Narang K.L, Advanced Accountancy, 6th Edition, Kalyani Publishers, Chennai, 2014.

Reference Books

1) P.C.Tulsian**,** Financial Accounting, 2nd Edition , Sultan Chand & Sons, New Delhi, 2014.

2) Gupta R.L, Radhaswamy, Advanced Financial Accounting, 4th Edition, Sultan Chand & Sons, , New Delhi, 2009.

B.Com [PA] Degree Examination – Syllabus for Candidates admitted from the academic year 2019-20 onwards

FIRST SEMESTER

PART – III – CORE-2 - MANAGEMENT PRINCIPLES AND PRACTICES

Maximum CIA: 30

Maximum CE: 70

Total Hours: 72

Course Objective:

To enable the students to acquire basic theoretical knowledge in Principles of Management

Unit-I   (14 Hours)

Introduction to Management- Meaning – Administration vs. Management –Nature – Importance – Scope of Management - Management is a Science or an Art –Theories of Management - Taylor, Fayol, Peter F.Drucker – Levels and Functions of Management.

Unit-II   (15 Hours)

Planning -   Meaning and Definition – Nature of Planning – Objectives – Importance – Advantages and Limitations of Planning – Nine Steps in Planning – Types of Planning – Essentials of Sound Plan – Methods of Planning – MBO.

Unit-III   (15 Hours)

Organizing - Meaning and Definition – Types of Organization –Nature - Organizational structure- Process of organization – Elements and Importance of organization – Principles of good organization - Span of Control – Delegation - Elements – Principles of Delegation – Types of Delegation-Importance, Advantages and Disadvantages – Barriers and Steps to make Effective Delegation - Decentralization – Line and Staff relationship.

Unit-IV   (14 Hours)

Directing: Nature and purpose of Directing-Essentials Elements of Directing-Supervision- Qualities of Good Supervisor-Functions of Supervisor-Motivation-Meaning-Process-Elements-Nature-Theories

and Types of Motivation-Decision Making-Leadership-Nature-Needs-Functions and Types of Leaders-Qualities of Leadership

Unit-V   (14 Hours)

Co-ordinating: Definition – Features – Need for Co-Ordination – Elements of Co-Ordination – Types of Co-Ordination-Controlling: Definition – Characteristics of control – Steps in Controlling – Techniques of Control – Effective Control.

Course Outcome

- ➢ Described about different management theories – Taylor & Fayol.
- ➢ Acquired knowledge on types of planning and sound planning.
- ➢ Understands about PODSCORB.
- ➢ Described about different concept like directing, leadership, staffing, and delegation.
- ➢ Understands about co-ordination & controlling.

Text Books

1) Dinkar Pagare, Principles of Management, Sixth Thoroughly Revised Edition, Sultan Chand & Sons, 2018.
2) Gupta C.B, Management Principles and Practice, 3rd Revised Edition, Sultan Chand & Sons, New Delhi, 2015.

Reference Books

1) S.A.Sherlekar and Dr. Khushpat S. Jain   Principles of Business Management, Himalaya Publishing House, 2017.
2) P.C. Tripathi and P.N.Reddy Principles of Management, Mc Graw Hill, 2017.

B.Com [PA] Degree Examination – Syllabus for Candidates admitted from the academic year 2019-20 onwards

SECOND SEMESTER

PART – III – CORE-3 - FUNDAMENTALS OF ACCOUNTING-II

Maximum CIA: 30

Maximum CE: 70

Total Hours: 72

Course Objective:

Enabling the students to acquire basic accounting knowledge in Financial Accounting

Unit-I (14 Hours)

Accounting for Depreciation – Meaning – Characteristics – Causes – Objectives – Basic factors affecting the amount of Depreciation - Methods of recording Depreciation – Distinction between Straight Line Method and Written down Value Methods-Annuity method-Depreciation fund or Sinking Fund method-Insurance Policy Method-Revaluation method- Depletion Method-Machine Hour Rate Method - Reserves and Provisions.

Unit-II (14 Hours)

Single Entry System - Meaning – Definition – Salient Features –Limitations – Difference between Double Entry System and Single Entry System - Methods of Single Entry System –Ascertainment of Profit – Net worth Method –Distinction between Balance Sheet and Statement of affairs - Conversion Method.

Unit-III (14 Hours)

Hire Purchase– Definition – Main features -   Installment purchase System - Distinction between Hire purchase and Installment System - Accounting treatment for Hire purchase System - Calculation of Interest – Default and Repossession - Hire Purchase Trading Account – Debtors methods – Stock and Debtors System - Installment purchase System – Meaning – Accounting Treatment - Model Entries.

Unit-IV (15 Hours)

Branch Accounts – Meaning - Objectives – Types of Branches – Dependent Branches – Accounting in respect of Dependent Branches – Inland Branches – Independent Branches – Departmental

Accounts –Meaning – Need – Advantages - Distinction between Department and Branches – Methods and techniques of Departmental Accounting - Transfer at cost or selling prices.

Unit-V (15 Hours)

Fire Claims for Loss of stock – Computation of Claim- Gross profit Ratio-Normal Loss – Abnormal Loss-Average clause – Loss of Profit. International Accounting Standards - International Financial Reporting Standard (IFRS), Significant difference Indian Accounting Standards and International Accounting Standards.

Note: Distribution of Marks between problems and theory shall be 80% and 20%.

Course Outcome

- ➢ Advancing knowledge in preparing the final accounts.
- ➢ Preparing the final Accounts with incomplete records.
- ➢ Introducing the system of Hire Purchasing and Installment.
- ➢ Familiarizing the concept of Branch account and its system and departmental accounting system.
- ➢ Gaining knowledge about International Financial Reporting Standard and International Accounting Standards.

Text Books

1) T.S .Reddy-A. Murthy, Financial Accounting, 6th Revised Edition, Margham Publications, Reprint, Chennai, 2019.

2) Jain S.P, Narang K.L, Advanced Accountancy, 6th Edition, Kalyani Publishers, Chennai, 2014.

Reference Books

1) P.C.Tulsian**,** Financial Accounting, 2nd Edition , Sultan Chand & Sons, New Delhi, 2014.

2) Gupta R.L, Radhaswamy, Advanced Financial Accounting, 4th Edition, Sultan Chand & Sons, , New Delhi, 2009.

B.Com [PA] Degree Examination – Syllabus for Candidates admitted from the academic year 2019-20 onwards

SECOND SEMESTER

PART – III – CORE-4 – BUSINESS LAW

Maximum CIA: 30

Maximum CE: 70

Total Hours: 72

Course Objective:

Enabling the students to know the law relating to Business

Unit-I   (14 Hours)

Sources of Law- Law of Contract -Definition– Nature –Kinds - Essentials of Valid Contract-Formation of contract-Offer-Conditions of making an Offer-Acceptance-Conditions of Acceptance- Intention to create Legal Relations – Considerations-Definition-Needs-Kinds- Capacity to a Contract-Minor-Persons of Unsound mind-Persons disqualified by law

Unit-II   (14 Hours)

Free Consent- Coercion-Essentials of Coercion- Undue Influence –Difference between Coercion and Undue Influence – Misrepresentations- Fraud-Elements of Fraud- Consequences of Fraud- Mistake-Kinds of Mistake-   Lawful Object- Agreements opposed to Public Policy- Exception – Agreement not declared Void –Types- Legal Formalities - Contingent Contract-Performance of Contract-Essentials of Valid tender- Discharge of contract -Remedies for Breach of Contract-Quasi Contracts- Kinds of Quasi Contracts.

Unit-III   **(**14 Hours)

Special Contracts – Contract of Indemnity - Contract of Guarantee – Essentials of contract of Guarantee- Kinds- Distinction between Contract of Indemnity and Guarantee– Bailment – Requisites of Bailment – Duties and Rights of Bailor and Bailee- Classification- Pledge– Agency-Agency Creation- Classification of Agent- Termination of Agency.

Unit-IV (15 Hours)

Law relating Sale of Goods Act 1930 – Right of Unpaid Seller – Caveat Emptor – Auction Sale - Condition and Guarantees- Express and Implied Conditions – Sales and Agreement to Sales- Distinction between sale and agreement- essential elements of valid sale- classification of goods.

Unit-V (15 Hours)

Right To Information Act 2005 – Meaning – Importance –Need - Scope – Procedure of Right To Information Act – Prevention of Money Laundering Act 2002 — Definitions – Features – Objectives - Obligations of Banking Companies, Financial Institutions and Intermediaries - Offence of Money- Laundering - Summons, Searches and Seizures, etc - Appellate Tribunal – WRIT Petition – Types of WRIT Petition.

Course Outcome

➢ Understanding the legal rules regarding contract.

➢ Gaining Knowledge on rules necessary for legal enforcement and Describing about different kinds of performances of the contract.

➢ Familiarizing Special Contracts

➢ Identifying the rules and regulations of Sale of Goods Act.

➢ Understanding the Government Transparency in implementing RTI, PML, WRIT Petition.

Text Books

1) N.D.Kapoor, Business Law, 8th Edition, Sulthan Chand and Sons, New Delhi, 2017.

2) S.M.Sundaram, Commercial Law, 2nd Edition, Sulthan Chand and Sons, New Delhi, 2015.

Reference Books

1) S.Kathiresan V.Radha, Commercial Law, 5th Edition, Prasanna publication, Chennai, 2016.

2) N.Premadevi, Business Law, 4th Edition, Sri Vishnu publication, Chennai, 2016.

B.Com (PA) Degree Examination – Syllabus for Candidates admitted from the academic year 2019-2020 Onwards
THIRD SEMESTER
PART III – CORE-5 - ADVANCED ACCOUNTANCY

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective:

       To have an understanding of the conceptual frame work for the preparation and presentation of financial statements

Unit-I   (15 Hours)

Partnership- Definition- Meaning- Features -Types of partner- – Admission of Partner – Treatment of Goodwill – Revaluation of Assets and Liabilities – Calculation of Ratios for Distribution of Profits – Capital Adjustments.

Unit-II   (15 Hours)

Retirement Calculation of Gaining Ratio – Treatment of Goodwill- Revaluation of Assets and Liabilities - Death of a partner - Mode of payment – Ascertainment of Deceased Partners Share of profit- Joint life policy

Unit-III   (14 Hours)

Dissolution – Insolvency of partners – Garner vs. Murray –Insolvency of Two partner - Insolvency of all partners – Deficiency A/C – Piecemeal Distribution-Proportionate Capital Method –Maximum loss method.

Unit-IV   **(**14 Hours)

Insolvency Accounts, Meaning of Insolvent – Relevant Acts – Difference between Balance sheet and Statement of Affairs – Preparation of statement of affairs – Deficiency Accounts

Unit-V   **(**14 Hours)

Voyage Account – Meaning- Methods of Voyage Account: Complete Voyage Account – Incomplete Voyage Account- Calculation

Course Outcome

CO1: Understanding the concept of partnership and Admission of partner and calculating the Ratios.

CO2: Preparing financial accounts for partnership firms in case of retirement and death.

CO3: Employing critical thinking skills to understand the difference between the dissolution of the

       firm and dissolution

CO4: Gaining knowledge in preparing the financial accounts for Insolvency Accounts

CO5: Familiarizing the concept of Voyage Account.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H					M		
CO2	H							L
CO3		H					M	
CO4	M			M				
CO5		M						H

Text Book

1. R.S.Reddy and Moorthy, Financial Accounting, 6th Edition 2011, Margham Publication, Year 2015.

Reference Books

1) R.L.Gupta, Advanced Accountancy Theory , Methods and Applications, Volume 1, 1st Edition, Sulthan Chand & Sons, Year 2013.

2) Amitabha Mukherjee, Advanced Accountancy, Volume 1, Mc Graw Hill Education India Private Ltd, Year 2011.

B.Com (PA) Degree Examination – Syllabus for Candidates admitted from the academic year 2019-2020 Onwards
THIRD SEMESTER
PART III – CORE-6 - COMPANY LAW AND SECRETARIAL PRACTICE

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective

This course aims to enlighten the students on the provisions of the Companies Act, 2013 along with relevant case laws.

Unit-I   (12 Hours)
Company – Definition – Characteristics – Kinds of Companies – Doctrine of Lifting the Veil-Promotion of a Company-The Companies Act 2013- Rules regarding Companies Act 2013-Registration procedures- Company Secretary – Appointment, Legal Position –Qualification – Duties and Responsibilities of a Secretary.

Unit-II   (12 Hours)
Memorandum of Association- Forms – Contents – Procedures for Alteration – Secretarial Duties – Articles of Association – Forms and Contents- Procedures for Alteration. Doctrine of Indoor Management- Distinguish between Memorandum And Articles. Prospectus – Contents – Statement in Lieu of Prospectus – Legal Formalities.

Unit-III   (12 Hours)
Share Capital – Kinds of share Capital –Issue and Allotment of Shares - Alteration –Rules regarding the Act- Provision regarding the Act - Increase and Reduction of share capital– Share Certificate- legal provisions - Transfer and Transmission of Shares – legal provisions- Secretarial duties.

Unit-IV   (12 Hours)
Directors –Women Directors- EKYC Directors- Appointment – Qualification – Powers, Duties, Liabilities –Directorship- Disqualification - Company Meeting – Kinds of Meetings – Requisites of a Valid Meeting – Minutes - Voting- Proxy – Resolution .

Unit-V   (12Hours)
Winding Up-Meaning-Modes of Winding Up-Consequences of Winding Up-Liquidator Appointment-Rules and Responsibilities- Rights and duties-Qualification and Disqualification.

Course Outcome:

CO1: Understanding the formation and kinds of companies.

CO2: To acquire knowledge on documents of the company

CO3: Acquiring knowledge on basic documents in a company and various methods of raising of capital.

CO4: Examining the provisions of Companies Act relating to meetings, resolutions and Company Management

CO5: To learn about law relating to winding Up of the company

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1		H					L	
CO2		H				M		
CO3	H						M	
CO4			L			M		
CO5			H				L	

Text Books

1) N.D.Kapoor, Company Law and Secretarial Practice, 13th Edition, Sulthan Chand & Sons, Year 2014.
2) J. Shanthi, Companies Act 2013, 1st Edition , Sulthan chand &Sons, Year 2013.

Reference Books

1) P.P.S. Gogna, A Textbook of Company Law, Latest edition, Sulthan Chand & Sons, Year 2015.
2) K.L. Maheswari, R.K. Maheswari, Company Law and Secretarial Practice, New Royal Book Company, Year 2013.

B.Com (PA) Degree Examination – Syllabus for Candidates admitted from the academic year 2019-2020 Onwards
THIRD SEMESTER
PART III – CORE-7 - PRACTICAL BANKING

Maximum CIA: 50
Maximum CE: 50
Total Hours: 60

Course Objective

   The objective of this course is to acquaint students with the theoretical and practical aspects of modern banking.

Unit-I   (12 Hours)

Definition of Banker and Customer-General Relationship-Special Relationship-Nationalized Banks-Private Banks -Evolution of Commercial Banks-Functions of modern Commercial Banks-Branch Banking-CRM in Banking sector-Multinational Banking-Customer Service- Net Banking

Unit-II   (12 Hours)

Opening of New Bank Account-Precautions-Types-Savings Account-Current Account-Fixed Deposit-Recurring Deposit-Cumulative Deposit-TL-Cash Credit-Overdraft-Joint Account- KYC-Closure of bank Account- Role of RBI- Objectives- Functions and powers- Loans: Short term loans and long term loans.

Unit-III   (12 Hours)

Negotiable Instruments-Meaning-Characteristics- Bills of Exchange-Promissory Note- Cheque-Features- Crossing of a Cheque- Cancellation of Cheque –Types of Crossing- Endorsement-Dishonour of a Cheque – Stop the Payment of a Cheque - Demand Draft.

Unit-IV   (12 Hours)

Funding of Corporate seeds-Types of Finance-Seed Capital-Bank Finance of seed capital -Venure Capital- Procedures for loans-CIBIL-Concept of Security-Primary vs Collateral-Application Forms-Annexure-Electronic Payment-NEFT-RTGS-IMPS- Cardless withdrawals

Unit-V (Hands on Training**)**   (12 Hours)

Advancement and Innovation of Modern Banking services -PAN Card application-Opening of New

Account- Physical Form issues-Pay-in Slips-Filling of Cheques and Demand Draft-Crossing of

Cheques-Online Account activation-Live Fund transfer-NEFT and RTGS forms-Filling- Bank

Reconciliation Statement-Bank Stock Statement.

Course Outcome

CO1: Understanding and explain the conceptual framework of banking

CO2: Classifying and demonstrate the types of Accounts, deposit and describing the role of RBI.

CO3: Acquiring knowledge on Negotiable instruments

CO4: Illustrating the various electronic payment methods

CO5: Giving Hands on training relating to Banking

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M						H	
CO2	H							L
CO3		H			M		M	
CO4		L				M		
CO5		M					H	

Text Book

1) Sundaram and Varshney , Banking Theory Law and Practice, 20th Revised Edition, Sultan Chand & Sons,Year 2014.

Reference Books

1) H.R. Gupta, Practical Banking in India, Gyan Publishing House, 2011.

2) Gurusamy, S., Banking Theory: Law and Practice, 2ndEdition, Tata McGraw Hill, Year 2010.

B.Com (PA) Degree Examination – Syllabus for Candidates admitted from the academic year 2019-2020 Onwards

THIRD SEMESTER
PART III – CORE-8 - GENERAL ECONOMICS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective
    To enable the students to understand various economic strategies in business decision making

Unit-I   (12 Hours)

Introduction to Economics: Meaning, Definition, Nature and Scope of Economics –Economic theories applied to business analysis-decision making in business –objectives of a business firm.

Unit-II
Demand and Supply Analysis: (12 Hours)
Demand – Meaning – Definition – Determinants of Demand – Distinction of Demand – Law of Demand – Elasticity of Demand ─ Price, Income and Cross Elasticity – Meaning and Determinants of supply – Law of supply and Elasticity of supply.

Unit-III   (12 Hours)
Production Function:
Production – Meaning – Factors of production – Laws of Production – The Law of variable proportions – Laws of returns to scale – Meaning of cost – Concepts of Costs ─ Short-run and long-run costs.

Unit-IV   (12 Hours)
Market and its Functions:
Market – Definition – Classification –Various forms of Markets – Perfect Competition – Monopoly – Monopolistic Competition – Oligopoly – Price determination in these markets.

Unit-V   (12 Hours)
Indian Economy – Nature of the Indian economy – Role of different sectors – National Income of India – Economic Reforms in India: – Features of economic reforms since 1991 - The aspects of Indian Economy – Population – Poverty – Unemployment – Infrastructure- Recent developments in Indian Economy

Course Outcome

CO1: Understanding the roles of managers in firms

CO2: Analyzing the demand and supply conditions and assess the position of a company

CO3: Familiarizing the concept about production and law of variable proportions

CO4: Gaining knowledge about market condition and monopolistic competition

CO5: Analyze real-world business problems with a systematic theoretical framework.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1			H				L	
CO2		H						
CO3			H				M	
CO4				H			M	
CO5		M		H			L	

Text Book
1. R.L.Varshney and K.L.Maheswari, Managerial Economics, 22nd Edition, Sultan Chand & Sons, Year 2014.

Reference Books
1. S.K.Agarwal, General Economics, Sultan Chand & Sons, Year 2011.
2. Dr.S.Sankaran, Managerial Economics, Margham Publication, Year 2013.

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THIRD SEMESTER
PART IV – SBC - I - PRINCIPLES OF MARKETING

Maximum CE: 75
Total Hours: 36

Course Objective

To help students to understand the concept of marketing and its applications. Also to expose the students to the latest trends in marketing

Unit-I

Market and Marketing: (8 Hours)

Introduction to Market - Meaning, Definition, Classification and Concept –Marketing- Features- Objects-Impotance of Marketing- Traditional and Modern marketing – Role and importance of Market and Marketing function - Marketing process

Unit-II (7 Hours)

Marketing mix : Meaning- Definition- Elements – Problems - Product mix – Meaning of products– Expansion and Contraction – PLC – Pricing strategies - Importance of price – Pricing objectives - Kinds o f pricing – methods of price determination.

Unit-III (7 Hours)

The Promotional Programme:

Sales Promotion: Definition, Purpose, Importance, Objective, kinds, Advantages and Limitations – Advertising: Objectives, Fuctions, Importance and Kinds – Personal Selling and Sale promotion – Channels of Distribution - Importance of channels of distribution – Meaning – Functions of middlemen – Elimination of middlemen

Unit-IV (7 Hours)

Market Segmentation – Benefits – Bases – Requisites of sound market segmentation – Market Segments and marketing mix – Buyer Behaviour – Significance – Buying Process – Steps in Buying Process – Buyer Behaviour Models.

Unit-V (7 Hours)

Recent Trends in marketing – E-marketing, Direct marketing, Online marketing, Market research, Marketing information system, Consumerism and Consumer rights.

Course Outcome

CO1: Understanding of marketing terminology and concepts

CO2: Demonstrate knowledge of key business communication strategies within the marketing field

CO3: Identifying the different promotional methods

CO4: Understanding the concept of Market segmentation and Buyer Behaviour

CO5: Demonstrate knowledge in recent trends in marketing

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1		H					H	
CO2			M					M
CO3		H						M
CO4							H	
CO5			L					L

Text Book

1) Philip Kotler , Principles of Marketing, 15th Edition, Pearson Publications, Year 2015.

Reference Books

1) C.B.Gupta, Principles of Marketing, Sultan Chand & Sons, Year 2013.

2) R.S.N. Pillai and Bagavathi, Modern Marketing Principles and Practices, Sultan Chand & Sons, Year 2010.

B.Com (PA) Degree Examination – Syllabus for Candidates admitted from the academic year 2019-2020 Onwards

THIRD SEMESTER
PART IV – SBC - I - E-BUSINESS

Maximum CE: 75
Total Hours: 36

Course Objective

Enabling the Students to Acquire Theoretical knowledge to be successful in E-business.

Unit-I   (8 Hours)

Introduction to E-Business: Concept and Importance –Electronic Commerce Models- Types of Electronic Commerce-Value Chains in Electronic Commerce- E-Commerce in India- Role of Internet in E- Commerce.

Unit-II   (7 Hours)

Intranet- Composition of Intranet- Business Applications on Intranet- Extranets Electronic Data Interchange- Components of Electronic Data Interchange-Electronic Data Interchange(Communication Process).

Unit-III   (7 Hours)

Security Threats to E-Business- Security Overview- Electronic Commerce Threats-Encryption-Cryptography- Public Key and Private Key Cryptography- Digital Signatures-Digital Certificates.

Unit-IV   (7 Hours)

Electronic Payment System- Concept and Benefits of Money-Electronic Payment System- Types of Electronic Payment Systems- Google Pay – Pay tm

Unit-V   (7 Hours)

Internet Basics –WWW–Web Pages–Web Browsers–Searching Web Internet Access. Electronic Mail: Introduction – E-Mail– Basics – Advantages Creating E-Mail Id.

Course Outcome

CO1: Understanding the concept of E-Business and the Role of internet in E-Commerce

CO2: Familiarizing the term Business Application on Internet

CO3: Gaining knowledge in Security threats to E- Business

CO4: Describing the Electronic Payment System and Encryption

CO5: Acquiring knowledge on Internet Basics and E- Mail

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H						L	
CO2		H				M		
CO3		H					M	
CO4			L				M	
CO5		M					L	

Text Book

1) Whitley, David. E-Commerce Strategy, Technologies and Applications. TataMcGraw Hill,2000.

Reference Books

1) Schneider Gary P. and Perry, James T ,Electronic Commerce. Thomson Learning, 2000.

2) Bajaj, Kamlesh K and Nag, Debjani, E-Commerce: The Cutting Edge of Business, Tata McGraw Hill, Publishing Company Ltd., New Delhi. 1999.

B.Com (PA) Degree Examination – Syllabus for Candidates admitted from the academic year 2019-2020 Onwards

THIRD SEMESTER
PART III – ALC - I - ORGANIZATIONAL BEHAVIOR

Maximum CE: 100

Course Objective

      On successful completion of this course, the student should be well versed in the concepts of Organizational Behavior.

Unit-I

Introduction - Definition – nature scope – contributing disciplines to the field of organizational behavior - Historical evolution of organizational behavior.

Unit-II

The individuals - Major personality attributes influencing OB – Organizational application of learning – application of perception in the organization – decision making – values – attitudes.

Unit-III

The Group -Definition – classification – group development –group structure – group decision – making – teams , power – policies – conflicts.

Unit-IV

Motivation and Leadership -Motivation – meaning – process – early theories –contemporary theories- application of motivation techniques – leadership –definition – characteristics – functions – styles – theories : Trait theories – behavioural theories – contingency theories – recent approaches.

Unit-V

Organizational System and Dynamics -System approach to organization – organizational culture – management of change : Need – resistance – organizational development : Meaning – characteristics – Techniques – organizational effectiveness.

Course Outcome

CO1: Understanding organizational Behaviour and Various discipline in the OB.

CO2: Analyzing Major personality attributes influencing OB

CO3: Gaining knowledge about Group, group development and structure

CO4: Familiarizing the concept about Motivation and Leadership

CO5: Analyzing Organizational System and Dynamics and System approach to organization.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H						L	
CO2			L			M		
CO3		H					M	
CO4			L				H	
CO5			M			H		

Text Book

1) L. M. Prasad, Organizational Behaviour, 5th Revised Edition Reprint 2014, Sultan Chand & Sons, Year 2014.

Reference Books

1) Robbins, Organizational Behavior, 7th Edition, McGraw Hill, Year 2010.

2) Ramasami.N, Organizational Behavior, 6th Edition, T.R.Publications, 2011.

B.Com (PA) Degree Examination – Syllabus for Candidates admitted from the academic year 2019-2020 Onwards

FOURTH SEMESTER
PART III – CORE-9 - CORPORATE ACCOUNTING I

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective

This course aims to enlighten the students on the accounting procedures followed by the Companies.

Unit-I   (15 Hours)

Issue of Equity shares – Issue at Par, Premium and at Discount – Forfeiture and Re-issue (including Pro-rata allotment) Surrender of shares – Right Issue.

Unit -II   (15 Hours)
Redemption of Preference shares- Issue of Debentures – Par , Premium and Discount - Redemption of Debentures- Ex Interest & Cum Interest Quotations –Conversion Method – Installment Method - Sinking Fund Method

Unit-III   (14 Hours)

Underwriting of shares- Definition and Meaning- Purpose and Importance of Underwriting –Complete Underwriting – Partial Underwriting -Firm underwriting – Valuation of Shares- Need for Valuation of Shares – Factors Affecting Valuation of Shares- Methods of Valuation of shares: Net Assets Method, Yield Method, Fair Value- Valuation of Goodwill –Factors Affecting Goodwill –Methods of Valuation of Goodwill : Average Profit Method, Weighted Average, Super Profit Method, Annuity Method, Capitalisation Method

Unit-IV   (14 Hours)

Preparation of Final Accounts of companies- Profits prior to incorporation –   Preparation of Managerial Remuneration Calculation.

Unit-V   (14 Hours)

Liquidation of Companies- Liquidators final Statement- Deficiency Account.

Course Outcome

CO1: Acquire the conceptual knowledge on issue of shares

CO2: Explaining Redemption of preference shares and issues of debentures

CO3: Familiarizing with underwriting of shares and valuation of goodwill

CO4: Have a comprehensive knowledge about the latest provisions of the Companies Act.

CO5: Describing Liquidators final statement and deficiency account

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H						H	
CO2		H				M		
CO3	L					M		
CO4		H					H	
CO5			L					H

Text Book

1) T.S.Reddy and Murthy, Corporate Accounting, Volume 1, Revised Edition, Margham Publications, Year 2017.

Reference Books

1) S N Maheshwari & Suneel K Maheshwari, Corporate Accounting, Vikas Publishing, Year 2013.

2) R.S. Singal, Corporate Accounting, Latest Edition 2011, VK Publication, Year 2011

B.Com (PA) Degree Examination – Syllabus for Candidates admitted from the academic year 2019-2020 Onwards

FOURTH SEMESTER
PART III – CORE-10 - COST ACCOUNTING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective

On successful completion of this course, the student should be well versed in the concepts, methods and principles in cost accounting.

Unit-I (15 Hours)
Cost Accounting – Definition – Meaning and Scope , Advantages and Limitations of Cost Accounting– Concept and Classification —– Types and Methods of Cost – Elements of Cost Preparation of Cost Sheet and Tender- Difference

Unit-II (15 Hours)
Material Control: Need for Material Control -Levels of material Control – Economic Order Quantity – ABC analysis – Perpetual inventory – Purchase and stores Control: Purchasing of Materials – Procedure and documentation involved in purchasing – Requisition for stores –Stores Control – Methods of valuing material issue.

Unit-III (14 Hours)
Labour: System of wage payment – Methods and Incentives Schemes - Idle time – Control over idle time – Labour turnover. Overhead – Classification of overhead – allocation and absorption of overhead.

Unit-IV (14 Hours)
Process costing – Features of process costing – process losses, wastage, scrap, normal process loss – abnormal loss, abnormal gain. (Excluding inter process profits and equivalent production)-Job Costing- Batch Costing.

Unit-V (14 Hours)
Operating Costing - Contract costing – Reconciliation of Cost and Financial accounts.

Note: Distribution of Marks: Theory 20% and Problems 80%

Course Outcome

CO1: Explaining the basic concept of cost and how costs are presented in financial statements

CO2: Demonstrate how material costs are added at each stage of the production cycle.

CO3: Demonstrate how labor and overhead costs are added to a product at each stage of the production

cycle.

CO4: Gaining knowledge in Process costing, Job costing and Batch costing.

CO5: Understanding the basic concept of operating costing and contract costing.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H		M				M	
CO2	L			M				
CO3	M						L	
CO4			M				M	
CO5		H				L		

Text Book

1) Jain.S.P and Narang.K.L , Cost Accounting, Revised Edition, Kalyani Publishers, Year 2014.

Reference Books

1) Ashish Kalra, Cost Accounting, IGP Publications, Year 2015.
2) Pillai.R.S.N and Bagavathi.V , Cost Accounting, Reprint, Sultan Chand & Sons , Year 2013.

B.Com (PA) Degree Examination – Syllabus for Candidates admitted from the academic year 2019-2020 Onwards

FOURTH SEMESTER
PART III – CORE-11 – PRACTICAL AUDITING

Maximum CIA: 50
Maximum CE: 50
Total Hours: 60

Course Objective

To understand objective and concepts of auditing and gain working knowledge of generally accepted auditing procedures and of techniques and skills needed to apply them in audit.

Unit-I   (12 Hours)

Auditing – Origin – Definition – Objectives – Types – Advantages and Limitations – Qualities of an Auditor – Audit Evidence – Audit Procedure – Audit Programmes – Audit Working papers – Test checking.

Unit-II   (12 Hours)

Internal Control – Internal Check and Internal Audit –Audit Note Book – Vouching – Vouching of Cash Book – Vouching of Trading Transactions – Vouching of Impersonal Ledger.

Unit-III   (12 Hours)

Verification and Valuation of Assets and Liabilities – Auditor's position – Depreciation – Reserves and Provisions – Secret Reserves. Investigation: Meaning of Investigation- Definition – Objectives of Investigation – Audit of Computerised Accounts –Investigation under the provisions of Companies Act – Internal Control Process

Unit-IV   (12 Hours)

Audit of Joint Stock Companies –Appointment of Company Auditor-Qualification and Disqualifications – Rights and Duties- Role and Power of Auditor – Liabilities of a Company Auditor – Share Capital and Share Transfer Audit – Preparation of Audit Report – Professional Ethics of an Auditor

Unit-V (Hands on Training)   (12 Hours)

Engagement letter – Practical auditing of Payments/Receipts/Purchase/Sales – Difference between Vouching and Verification – Process of verification of Assets and Liabilities – Audit Report procedure and specimen – Special Audits (Practical procedure of different industries.

Course Outcome

CO1: Understanding the basic auditing principles, concepts, planning an audit and due diligence.

CO2: Illustrating the steps required to perform Internal control and Internal check, Vouching and Verification and Valuation of Assets and Liabilities.

CO3: Illustrating the steps required to perform of Valuation of Assets and Liabilities.

CO4: Gaining knowledge in Audit of joint stock companies and professional ethics of an auditor.

CO5: Giving Hands on training relating to Auditing.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M						M	
CO2		H				L		
CO3			M		M			
CO4				H			H	
CO5			M			M		

Text Book

1) Tandon.B.N, Practical Auditing, 15th edition, Sultan Chand & Sons, Year 2012.

Reference Books

1) Spicer and Pegler, Auditing, 11th Edition, Vikas publishing House, 2010.

2) Kamal Gupta, Auditing , 12th edition, Tata Mc Graw Hill, 2011.

B.Com (PA) Degree Examination – Syllabus for Candidates admitted from the academic year 2019-20 Onwards

FOURTH SEMESTER
PART III – CORE-12 - INDUSTRIAL AND LABOUR LAW

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective

Enabling the students to know about the Industrial and Labour law.

Unit-I (12 Hours)

Factories Act 1948 - Provision Relating to Health, Safety, Welfare-Employment of Children and Young People- Provisions relating to Child Labour-Adult Welfare and Women Workers and its working environment – Factory inspector: Duties and Powers.

Unit-II (12 Hours)

Payment of Wages Act, 1936:Minimum Wage Act: Objectives and Provisions - Fixation of wage periods - Time payment deduction and fines - Maintenance of records and registers – Inspectors: Labour union and practices in India.

Unit-III (12 Hours)

Payment of Bonus Act, 1965: Objectives and Provisions- Role and Powers- Amendments- Eligiblity-Computation and determination of Bonus - Eligibility and payment - Provisions for new companies.

Unit-IV (12 Hours)

Employee's Provident Fund Act 1952 – objectives and provisions – Application of the Act – Definitions – scheme - Employee's state Insurance Act 1948: object registration of factories and establishments of ESI, Standing Committee and Medical Benefit Council- Provisions relating to contribution - inspectors – their functions and disputes - benefits - adjudication of disputes and claims-offences and penalties.

Unit-V (12 Hours)

Workers Compensation Act, 1923: objectives and provisons- highlights- Employer's liability for compensation- Amount of compensation- Methods of calculating wages – Review, distribution of compensation - Notice and claims – Commissions relating to workmen's compensation.

Course Outcome

CO1: Acquiring the conceptual knowledge in Factories Act

CO2: Explaining payment of wages Act and legal provisions

CO3: Familiarizing with payment of bonus act and provisions for new companies

CO4: Have a comprehensive knowledge about the latest EPF and ESI and provisions

CO5: Describing Workers compensation act and liability for compensation

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H						L	
CO2			L			M		
CO3		H					M	
CO4			L				H	
CO5			M			H		

Text Book

1) N.D.kapoor, Elements of Industrial Law, Revised Edition, Sultan Chand & Sons, Year 2013.

Reference Books

1) N.D.kapoor, Elements of Mercantile Law, Revised Edition, Sultan Chand & Sons, Year 2014.

2) S. N. Mishra, Labour and Industrial Law, 27th Edition, Central Law publications, Year 2013.

B.Com (PA) Degree Examination – Syllabus for Candidates admitted from the academic year 2019-2020 Onwards

FOURTH SEMESTER

PART IV – SBC - II – MANAGEMENT OF FINANCIAL MARKETS AND SERVICES

Maximum Marks: 75
Total Hours: 36

Course Objective

On successful completion of this course, the student should know about the methods of financing by this agencies and the key role played by them in Corporate Financing.

Unit-I   (7 Hours)

Financial Markets – Structure of Financial Markets –Money Market in India – Indian Capital Markets – Difference between Money Market and Capital Market –Participants and instruments of money market and capital market.

Unit-II   (7 Hours)

Markets for Corporate Securities – New Issue Markets – Functions- Issue Mechanism – Merchant Banking - Role - Functions of Merchant Bankers in India – Under writing- Role- Features

Unit-III   (7 Hours)

Secondary Markets – Stock Exchange – Role of Secondary Market – Trading in Stock Exchange functions – Various Speculative Transactions – Role of SEBI – Regulation of Stock Exchange.

Unit-IV   (7Hours)

Mutual fund – meaning and definition- features – types of mutual fund- SEBI guidelines on mutual fund- Present status of mutual fund.

Unit-V   (8 Hours)

New Modes of Financing –Venture Capital – Dimension Functions – Venture Capital in India – Factoring – Types – Modus Operandi of Factoring – Factoring as Source of Finance- Credit Rating Agencies and CRISIL.

Course Outcome

CO1: Acquiring the conceptual knowledge on Financial Markets

CO2: Explaining market for corporate securities

CO3: Familiarizing with the concept secondary market and the role of SEBI

CO4: Have a comprehensive knowledge about the latest Mutual funds and SEBI Guidelines

CO5: Describing New modes of Financing and CRISIL.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H				M			
CO2		L				H		
CO3		H					H	
CO4		L					M	
CO5		M					M	

Text Book

1) Gardon and Natarajan.K, Financial Markets and Services, 9th Edition, Himalaya Publications, Year 2015.

Reference Books

1) P.Pandian, Financial Markets and Services, 1st Edition, Sultan Chand & Sons, Year 2010.
2) Dr.S.Guruswamy, Financial Markets and Institutions, 4th Edition, Vijay Nicole Imprints Pvt Ltd, Year 2015.

B.Com (PA) Degree Examination – Syllabus for Candidates admitted from the academic year 2019-2020 Onwards

FOURTH SEMESTER

PART IV –SBC - II - EXIM TRADE & FOREX MANAGEMENT

Maximum CE: 75
Total Hours: 36

Course Objective

    Enabling the students to know about the EXIM Trade & FOREX Management

Unit-I   (7 Hours)

International Trade and Globalization - Introduction- Meaning - Emerging global economy - Process of globalization - Drivers of globalization - Trends in international trade, trade in-services - Review of international Business Environment.

Unit-II   (7 Hours)

Export Marketing and Management - Introduction-definition and segmentation - importance of export marketing -benefits from export marketing - export market planning and strategy demand - management-obstacles to exporting pricing.

Unit-III   (7 Hours)

Foreign Trade Control and Exim Policy - Objectives and strategies of foreign trade policy- EXIM regulations - EXIM bank - objectives role safeguards required in EXIM business import regulations–export and import of goods and services- Realization and repatriation of foreign exchange procedure for payment of import.

Unit-IV   (7 Hours)

Balance of Payment - Balance of Trade - Components of Balance of Payments - Balance of Payment disequilibrium – Methods of correcting disequilibrium.

Unit-V   (8 Hours)

Forex Management: Nature- Significance and Scope of Forex management – Foreign exchange Market and its Structure- Foreign Exchange Rate and its Determination- Exchange Rate Quotes- Types of Exchange rates- Forex Trading.

Course Outcome

CO1: Acquiring the conceptual knowledge in International Trade and Globalization

CO2: Explaining Export Marketing and Management and obstacles to exporting pricing

CO3: Familiarizing with Foreign Trade Control and EXIM Policy

CO4: Have a comprehensive knowledge about the Balance of Payment and Balance of Trade

CO5: Describing FOREX Management and FOREX Trading

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1			M				L	
CO2		H				M		
CO3			H				H	
CO4		L					H	
CO5			M					L

Text Book
   1) Francis Cherunilam, International Trade and Export Management, 4th Edition, Sultan Chand & Sons, Year 2010.

Reference Books
   1) Esha Sharma, Foreign exchange management, 1st Edition, USP, Year 2011.
   2) Sangeet Kedia and Abhishek Mittal, Financial Treasury and Forex Management, Pooja Law Publishing, Year 2013.

B.Com (PA) Degree Examination – Syllabus for Candidates admitted from the academic year 2019-2020 Onwards

FOURTH SEMESTER
PART III – ALC- II - CONTEMPORARY ISSUES IN BUSINESS

Maximum CE: 100

Course Objective

Unit-I
Knowledge Management: concept, Knowledge Creation and Knowledge Architecture, Knowledge Transfer and Knowledge Sharing, related issues (Information asymmetry, information overflow, etc.), Information and Communications technologies – Concept and Application.

Unit-II
Issues in Banking: Technology Inclusion in Banking, Financial Inclusion and Banking, Global Perspectives of Banking, Ban assurance, Concept and Genesis of Micro Financing.

Unit-III
Quality Management: Definitions – TQM framework, benefits, awareness and obstacles-Quality – vision, mission and policy statements -Customer Focus – customer perception of quality, translating needs into requirements, customer retention-Dimensions of product and service quality, Cost of quality.

Unit-IV
Marketing Management: Concepts of E-Marketing, Social Marketing, Green Marketing, Services Marketing, Global Marketing and Rural Marketing.

Unit-V
Customer Relationship Management: Definition of CRM – Need - CRM from a business strategy perspective -Relevance of strategic CRM -Customer value management approach -Evolution and growth of CRM.

Course Outcome

CO1: Acquiring the conceptual knowledge on Knowledge management

CO2: Explaining the Technology Inclusion in Banking and Ban assurance

CO3: Familiarizing with Quality Management and TQM framework

CO4: Have a comprehensive knowledge about recent trends in marketing

CO5: Describing CRM and Customer Value management approach .

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1		M						L
CO2		M					L	
CO3			M			L		
CO4				M			L	
CO5				L		L		

Reference Books

1) Dale H.Besterfield et al, Total Quality Management, Third edition, Pearson Education, Year 2004.

2) Phatak, Deepak B, Kochhar, Sameer and Chandrashekhar R, Financial Inclusion, Academic Foundation, Year 2012.

3) Philip Kotler, Marketing Management, 15th Edition, Prentice Hall of India Ltd, Year 2015.

4) Tapan K Panda, Knowledge Management, Excel Books India, Year 2010.

5) V.Kumar, Customer Relationship Management - Concept, Strategy, and Tools, Springer Berlin Heidelberg, Year 2010.

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

THIRD SEMESTER
CERTIFICATE COURSE – ADVERTISING AND SALES PROMOTION

Total Hours: 30

Course Objective:
To familiarize the student with the practice of promoting market for products through advertisements and sales promotion.

Unit I   (6Hours)

Advertising – Origin and Development –Advertising- an element of Marketing mix- Objectives – Advertising and Salesmanship – Role and Importance – Planning for Advertisement communication process

Unit II   (6 Hours)

Advertisement – Kinds of Advertisements– Economic and social affects of advertising – Advertising mix – Advertising budget and relevant decisions.

Unit III   (6 Hours)

Advertising Agencies -Role – Types of Advertising – Measuring the effectiveness of Advertisement - Managing agency -Evaluation of Advertising

Unit IV   (6 Hours)

Sales Promotion – Objectives – Advantages - Tools and their effectiveness – Aggressive selling.

Unit V   (6 Hours)

Sales promotion –Objectives- Planning, implementation Control-Consumer sales promotion-Trade sales promotion-Measuring the effectiveness of promotion company- Evaluation of Sales Promotion

Text Books:

1. S.A.Chunawalla , Advertising and Sales Promotion Management, Himalaya Publishing House; Sixth Edition edition (2015)
2. Mr.PankhuriBhagat , Advertising & Sales Promotion ,SBPD Publishing

   House (2015)

Reference Books :

1. Mr. RituNarang ,Advertising, Selling & Promotion, Pearson Education(2020)

THIRD SEMESTER
CERTIFICATE COURSE – PRACTICAL BANKING

Total Hours: 30

Course Objective

The objective of this course is to acquaint students with the theoretical and practical aspects of modern banking.

Unit-I   (6 Hours)

Definition of Banker and Customer-General Relationship-Special Relationship-Nationalized Banks-Private Banks -Evolution of Commercial Banks-Functions of modern Commercial Banks.

Unit-II   (6 Hours)

Opening of New Bank Account-Precautions-Types-Savings Account-Current Account-Fixed Deposit-Recurring Deposit-Cumulative Deposit-TL-Cash Credit-Overdraft-Joint Account- KYC-Closure of bank Account.

Unit-III   (6 Hours)

Negotiable Instruments-Meaning-Characteristics- Bills of Exchange-Promissory Note- Cheque-Features- Crossing of a Cheque- Cancellation of Cheque –Types of Crossing- Endorsement-Dishonour of a Cheque – Stop the Payment of a Cheque - Demand Draft.

Unit-IV   (6 Hours)

Funding of Corporate seeds-Types of Finance-Seed Capital-Bank Finance of seed capital -Venture Capital- Procedures for loans.

Unit-V   (6 Hours)

Electronic Payments: CIBIL-Concept of Security-Primary vs Collateral-Application Forms-Annexure-Electronic Payment-NEFT-RTGS-IMPS- Cardless withdrawals

Text Book

1. Sundaram and Varshney , Banking Theory Law and Practice, 20th Revised Edition,

Sultan Chand & Sons,Year 2014.

Reference Books

1.H.R. Gupta, Practical Banking in India, Gyan Publishing House, 2011.
2.Gurusamy, S., Banking Theory: Law and Practice, 2[nd]Edition, Tata McGraw Hill, Year 2010.

All UG Degree Examination-Syllabus -for Candidates admitted from the Academic Year 2019– 2020 onwards

THIRD SEMESTER

CERTIFICATE COURSE- ENTREPRENEURSHIP DEVELOPMENT PROGRAMME

Total Hours : 30

Course Objectives :

To enable the students to learn the fundamentals of being a good entrepreneur and the Concept of entrepreneurship.

Unit I   (6 Hours)

Concept of Entrepreneurship : Definition Nature and characteristics of entrepreneurship – function and type of entrepreneur. Development of women entrepreneur and rural entrepreneur.

Unit II   (6 Hours)

The start-up process, Project identification – Business Idea – Sources of Business Idea – Selection of the product – project formulation - evaluation , Project Report.

Unit III   (6 Hours)

Institutional services to entrepreneurs – DIC, SIDO, NSIC, SISI, SIDCO and KVIC, Institutional finance to entrepreneurs : IFCI, SFC, IDBI, ICICI, TIIC and SIPCOT.

Unit IV   (6 Hours)

Incentives and subsidies – Subsidised services – subsidy for market - Transport – seed capital assistance - Taxation benefit to SSI.

Unit V   (6 Hours)

Industrial Sickness- Symptoms- Remedies – Causes.

Text Book

1. Gupta.C.B and Srinivasan N.P, Entrepreneurial Development, 4th Edition 2005, Sultan Chand and Co., New Delhi.

Reference Book

1. Saravanavel.P, Entrepreneurial Development, 2nd edition, Essae Chandra Institute, 2005, Mumbai.

All UG Degree Examination-Syllabus -For Candidates admitted from the Academic Year 2019–2020 onwards

FOURTH SEMESTER

CERTIFICATE COURSE- E-COMMERCE

Total Hours : 30

Course Objectives :

Enabling the Students to Acquire Theoretical knowledge to be successful in E-Commerce.

Unit I   (6 Hours)

E Commerce: The Revolution is just beginning ,E Commerce: A Brief History-Electronic Commerce-Electronic Commerce Models-Types of Electronic Commerce-Value Chains in Electronic Commerce-E-Commerce in India-Introduction to E-Business-Internet-World Wide Web-Internet Architectures-Internet Applications-Web Based tools for Electronic Commerce.

Unit II   (6 Hours)

E-Commerce Business models and concepts-The Internet and World Wide Web - E Commerce Business models, Major Business to consumer (B2C) Business models, Major Business to Business (B2B) business models, Business models in emerging Ecommerce areas, Intranet-Composition of Intranet- Business Applications on Intranet-Extranets Electronic Data Interchange-Components of Electronic Data Interchange-Electronic Data Interchange (Communication Process).

Unit III   (6 Hours)

Security Threats to E-Business- Security Overview- Electronic Commerce Threats-Encryption-Cryptography- Public Key and Private Key Cryptography- Digital Signatures-Digital Certificates-Security Protocols over Public Networks- HTTP- SSL- Firewall as Security Control- Public Key Infrastructure (PKI) for Security- Prominent Cryptographic Applications.

Unit IV   (6 Hours)

Electronic Payment System- Concept of Money-Electronic Payment System- Types of Electronic Payment Systems-Smart Cards and Electronic Payment Systems- Infrastructure Issues in EPS, Electronic Fund Transfer.

Unit V   (6 Hours)

Ecommerce Marketing concepts –Online Retailing and Services-Consumer online: The Internet Audience and Consumer Behavior-Basic Marketing concepts-Internet Marketing–The Service sector of offline and online, Online financial services-online travel services-Online career –Social networks and Online communities, Online auctions, E Commerce Portals

Text Book

1. Whitley, David. E-Commerce Strategy, Technologies and Applications. Tata McGraw Hill, Reprint 2014.

Reference Books:

1. C.Laudon, E- Commerce :Business Technology Society, 4th Edition, Pearson Education, Reprint 2011.
2. Balaji, Kamlesh K and Nag, Debjani, E-Commerce: The Cutting Edge of Business, Tata McGraw Hill, Publishing Company Ltd., New Delhi. Reprint 2011.

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

FOURTH SEMESTER

CERTIFICATE COURSE – OFFICE MANAGEMENT

Total Hours :30

Course Objective:

To prepare Students in managing the day-to-day activities related to administration activities in offices.

Unit I (6 Hours)

Office and office Management – meaning of office, function of office, primary and administrative functions, importance of office. Relation of office with other departments of business Organization. Concept of paperless office, virtual office, back and front office, open and private office.

Unit II (6 Hours)

Filing and Indexing – Meaning and importance of filing, essential of good filing system. Centralized and decentralized filing system. Meaning, need and types of indexing used in the business organization.

Unit III (6 Hours)

Office forms– Meaning and types of forms used in business organization, advantages, forms controls, objectives, form designing, principles of forms designing and specimens of forms used in office. Office Record Management – Meaning, importance of record keeping management, principles of record management and types of records kept in a business organization- Office Automation

Unit IV (6 Hours)

Office Machines and equipments – Importance, objectives of office machines.Office6Safety and Security – Meaning, importance of office Safety, safety hazards and steps to improve office safety. Security hazards and steps to improve office security.

Unit V (6 Hours)

Measurement of Office Work – Importance, purpose, difficulty in measuring office work.

Different ways of measurement, setting of work standards, benefits of work standards.

Techniques of setting standards. Office Manuals – Meaning, need, types of office manuals and steps in preparing of office manuals.

Text Books

1.Chhabra, T.N., Modern Business Organisation, New Delhi, DhanpatRai& Sons.

Reference Books

1.P.K. Ghosh, "Office Management", Sultan Chand & Sons. New Delhi

2.R.K. Chopra, Office Management, Himalaya Publishing House

All UG Degree Examination – Syllabus for Candidates admitted from the Academic Year 2019-2020 onwards.

FOURTH SEMESTER

CERTIFICATE COURSE - PRINCIPLES OF INSURANCE

Total Hour: 30 hours

Course Objective:

The student gains the ability to apply the knowledge and understanding, in simple situations, to the operation, on sound financial lines of life insurance companies.

Unit I   (6 Hours)

Insurance: Meaning, Functions - Role and Importance of Insurance – Essentials of contract of insurance Principles of insurance.

Unit II   (6 Hours)

Life Insurance – Meaning, Nature – Various Policies - Procedure for taking life Insurance policy-Surrender and revival of policy - Assignment and Nomination – Procedures, - Settlement of claim – Loan on policy

Unit III   (6 Hours)

General Insurance- Fire Insurance, Marine insurance , Health Insurance , Personal accident Insurance , Motor Insurance and miscellaneous Insurance – Characteristics , Procedure for claim.

Unit IV   (6 Hours)

Agent- Meaning, Procedures for Becoming an Agent: Pre- requisite for obtaining a license: Duration of license; Cancellation or suspension/termination of agency

Appointment; Code of conduct; Unfair practices. Functions of the Agent

Unit V   (6 Hours)

IRDA - Mission - Composition of Authority - Duties, Powers and Functions - Powers of Central Government in IRDA Functioning.

Text Book:

1. M.N. Mishra, "Insurance –Principles and Practice", S.Chand & Company Ltd., New Delhi, 2016.

Reference Book:

1. B.S Bodla, M.C. Garg & K.P. Singh,"Insurance -Fundamentals, Environment & Procedures" , Deep & Deep Publications Pvt. Ltd., New Delhi, 2014 (Last Edition)
2. P.Periysamy, Principles and Practice of Insurance, Himalaya Publication House, Year -2017

Department of B.Com CS
Regulations for B.Com CS
(Effective from the academic year 2019-2020 onwards)

Introduction

The Department of B.Com Corporate Secretary ship started in 1994.

Objective:

To equip the students with accounting methods formatted for the Corporate Bodies from the time of their inception till their liquidation.

Eligibility:

A pass in Higher Secondary Examination conducted by Tamilnadu or an equivalent examination, with Commerce as one of the subjects of study and Accountancy.

Duration of UG Programme

The course shall extend over a period of three years comprising of six semesters, with two semesters per year. There shall not be less than ninety instructional days during each semester. Examination shall be conducted at the end of each semester for the respective subject.

Vision

➢ To make the students a more Responsible Citizen of the Nation.
➢ To produce the talented professionals & technicians to meet the challenges of the modern world.
➢ To develop the personality and communication skill of the student and to make them excel in corporate knowledge.

Mission

➢ To provide quality education and to inculcate ethical and social values in the minds of students.
➢ To make students innovative and society centered.
➢ To produce graduates and entrepreneurs trained to face the challenges of the corporate sector with a global perspective.
➢ To train them with skills for self-employment.

Programme Outcome:

The graduates will be able to

PO1: Have complete knowledge of Finance, Accounting, Taxation, Information Technology, Business laws and other.

PO2: Equip with professional, inter personal and entrepreneurial skills.

PO3: Gear up with updated knowledge in implementing business practices

PO4: Evaluate environmental factors that influence business operation

PO5: Prepare for post graduate studies and to achieve success in their professional careers.

Programme Specific Outcome:

PSO1: Serving as bases for Professional programmes such as ACS, ICWA and CMA.

PSO2: Create the students well versed in few areas of interest such as Accounting, Labor Legislation, Company Law and Taxation**.**

PSO3: Build in student transcribing skills needed in positions such as Executive Secretary ,Manager and Administrative Assistant. and to Impart Students in Learning Multi Disciplinary knowledge through Projects and Industrial Training and providing a sustainable competitive edge in meeting the Industrial needs.

BCOM CS
Scheme of Examination (CBCS and OBE Pattern)
For the Candidates admitted from the Academic year 2019-2020 onwards

Part	Sub Code	Subject Title	Ins.Hrs/Week	Dur. Hrs.	CIA	CE	Total	Credit
					Examination			
SEMESTER I								
I	19LATA01/ 19LAHI01/ 19LAMY01/ 19LAFR01	Language – I	5	3	30	70	100	3
II	19ENG001	English –I	5	3	30	70	100	3
III	19BCS101	Core 1 Fundamentals of Accounting	6	3	30	70	100	4
III	19BCS102	Core 2 Management Concepts	6	3	30	70	100	4
III	19BCSID1	IDC 1 Managerial Economics	6	3	30	70	100	4
IV	19UFCA01	Foundation Course I : EVS #	2	2	-	50	50	2
		Total	**30**				**550**	**20**
SEMESTER II								
I	19LATA02/ 19LAHI02/ 19LAMY02/ 19LAFR02	Language –II	5	3	30	70	100	3
II	19ENG002	English – II	5	3	30	70	100	3
III	19BCS201	Core 3 Financial Accounting - I	6	3	30	70	100	4
III	19BCS202	Core 4 Law of Insurance	6	3	30	70	100	4
III	19BCSID2	IDC 2 – Fundamentals of Information Technology	6	3	30	70	100	4
IV	19UFCA02	Foundation Course II: Value Education #	2	2	-	50	50	2
		Total	**30**				**550**	**20**
SEMESTER III								
III	19BCS301	Core 5 Financial Accounting -II	6	3	30	70	100	4
III	19BCS302	Core 6 Elements of Business Laws	5	3	30	70	100	4
III	19BCS303	Core 7 Company Law & Secretarial Practice –I	5	3	30	70	100	4
III	19BCS304	Core 8 Corporate Practice- I	4	3	40	60	100	4
III	19BCSID3	IDC 3 Business Mathematics	5	3	30	70	100	4
IV	19BCSSBI/ 19BCSSB2	SBC I Principles of Marketing/ Entrepreneurial Development Progranm	3	3	-	75	75	3
IV	19BTA001/ 19ATA001/	EDC I: Basic Tamil-I/ Advanced Tamil-I /	2	2	-	50	50	2

	19BCSED1	EDC : Multimedia #						
		Total	**30**				**625**	**25**
SEMESTER IV
III	19BCS401	Core 9 Corporate Accounting-I	6	3	30	70	100	4
III	19BCS402	Core 10Company Law and Secretarial Practice –II	5	3	30	70	100	4
III	19BCS403	Core 11 General Law	5	3	30	70	100	4
III	19BCS404	Core 12 Corporate Practice -II	4	3	40	60	100	4
III	19BCSID4	IDC 4 Business Statistics	5	3	30	70	100	4
IV	19BCSSB3/ 19BCSSB4	SBC II Corporate Communication/Human Resource Management #	3	3		75	75	3
IV	19BTA002/ 19ATA002 19EDC002	EDC II: Basic Tamil-II / Advanced Tamil-II / EDC: Communicative English #	2	2	—	50	50	2
V	19NSS001/ 19NCC001/ 19SPT001/ 19EXT001	NCC/NSS/Sports/Extension Activities @	—	—	50	-	50	2
		Total	**30**				**675**	**27**
SEMESTER V
III	19BCS501	Core 13 Corporate Accounting-II	6	3	30	70	100	4
III	19BCS502	Core 14 Cost Accounting	5	3	30	70	100	4
III	19BCS503	Core 15 Industrial and Labour Laws	5	3	30	70	100	4
III	19BCS504	Core 16 Corporate Governance	4	3	30	70	100	4
III	19BCSP01	IDC Lab I Ms Office and Tally	5	3	40	60	100	4
III	19BCSE01/ 19BCSE02/ 19BCSE03	Elective I	5	3	30	70	100	4
III	19BCSITI	Institutional Training	-	-	-	-	-	-
		Total	**30**				**600**	**24**
SEMESTER VI
III	19BCS601	Core 17 Accounting For Management	6	3	30	70	100	4
III	19BCS602	Core 18 Corporate& Economic Law	5	3	30	70	100	4
III	19BCS603	Core 19 Securities Law and Financial Markets	5	3	30	70	100	4
III	19BCSE04/ 19BCSE05/ 19BCSE06	Elective II	5	3	30	70	100	4
III	19BCSE07/ 19BCSE08/ 19BCSE09	Elective III	5	3	30	70	100	4

III	9BCSPR1	Project and Viva Voce	4	3	50	50	100	4
		Total	**30**				**600**	**24**
		Total					**3600**	**140**

\# No Continuous Internal Assessment (CIA) and only Comprehensive Examination (CE)

@ No Continuous Internal Assessment (CIA) and Comprehensive Examination (CE) IDC-Inter Disciplinary Courses, EDC-Extra Inter Disciplinary Courses, SBC-Skill Based Courses

List of Skill Based Courses:

Sem	Code	Subject Title	Credits
		SBC I	
III	19BCSSB1	Principles of Marketing	3
III	19BCSSB2	Entrepreneurial Development Program	3
		SBC II	
IV	19BCSSB3	Corporate Communication	3
IV	19BCSSB4	Human Resource Management	3

List of Elective Courses:

Sem	Code	Subject Title	Credits
		Elective I	
V	19BCSE01	Taxation I	4
V	19BCSE02	Financial Management	4
V	19BCSE03	Organisational Behaviour	4
		Elective II	
VI	19BCSE04	Taxation - II	4
VI	19BCSE05	Investment Management	4
VI	19BCSE06	Retail Business Management	4
		Elective III	
VI	19BCSE07	Auditing Practice and Principles	4
VI	19BCSE08	Working Capital Management	4
VI	19BCSE09	Business Environment	4

List of Extra Disciplinary Courses:

Sem	Code	Subject Title	Credits
III	19BCSED1	**EDC 1:** Multimedia	2
IV	19EDC002	**EDC 2:** Communicative English	2

List of Additional Credit Courses

Sem	Code	Subject Title	Credits
III	19BCSAC1	Principles of International Trade	2
IV	19BCSAC2	Export and Import Trade Procedures	2
V	19BCSAC3	International Facilitating International Trade	2

Summary

Part	No of Papers	Total Credits	Total Marks
I	2	6	200
II	2	6	200
III –Core	20	80	2000
III – IDC	4	16	400
III – Elective	3	12	300
III –Project	1	4	100
IV –Foundation Course	2	4	100
IV – EDC	2	4	100
IV – Skill Based Course	2	6	150
V – Extension Activities	-	2	50
Total	**38**	**140**	**3600**

REGULATIONS FOR BOARD OF COMMERCE WITH CORPORATE SECRETARYSHIP
(FOR UG COURSES ONLY)
(Effective from the Academic Year 2019-2020 onwards)

1. Submission of Record Note Books for practical examinations

Candidates appearing for practical examinations should submit Bonafide Record Note Books prescribed for practical examinations, Otherwise the candidate shall not be permitted to appear for the Practical Examinations.

2. Ratio of Comprehensive Examination, Pre- Model and Model Examinations Marks for UG and PG Courses

Part	Internal Assessment	External Assessment	Total Marks
I (Languages)	30	70	100
II (English)	30	70	100
III(Core, IDC)	30	70	100
IV (SBC)	-	75	75
IV (EDC/Foundation Course)	-	50	50
V (NCC/NSS/Sports/Ext. Activity)	50	-	50

3. Project Work Mark Distribution

Particulars	IA	CE	Total
Project Work (UG)	50	50	100
Project Work (PG)	100	100	200
Project Work(M.Sc(CS)/M.Sc(ECS)	150	100	250
Project Work (M.Com/MIB)	50	100	150

4. Practical Mark Distribution for all UG and PG Courses

Internal -40 External-60 Total Marks -100

5. Break up for Internal Marks

S. No	Internal Marks	Distribution of Marks
1	Pre Model Examination	70
2	Model Examination	70
3	Seminar	30
4	Attendance	10
Total		**180/6=30**

6. Seminar Split up

S.NO	Seminar split up	Marks
1	Content	10
2	Flow of the presentation	10
3	Stage management and Body language	10
	Total	**30**

7. Attendance Break up

S.NO	Attendance split up	Marks
1	65% to 74%	4
2	75% - 80%	6
3	81% - 90%	8
4	91% - 100%	10

8. Internal Marks for Practical (Maximum 40)

Maximum Marks : 40		
S No	Internal Marks	Distribution of Marks
1	For Completion of the Practical List	20
2	Test –I	10
3	Test –II	10
	Total	**40**

9. External Marks for Practical (Maximum 60)

Maximum Marks : 60		
S. No	Comprehensive Examination	Distribution of Marks
1	Record	10
2	Program – I Algorithm Coding Execution	5 10 10 TOTAL (25)
3	Program – II Algorithm Coding Execution	5 10 10 TOTAL (25)
	Total	**60**

10. Internal Marks for Corporate Practical (Maximum 40)

Maximum Marks : 40		
S No	Internal Marks	Distribution of Marks
1	For Completion of the Practical List	20
2	Test –I	10
3	Test –II	10
Total		**40**

11. External Marks for Corporate Practical (Maximum 60)

Maximum Marks : 60		
S. No	Comprehensive Examination	Distribution of Marks
1	Record	10
2	Practice– I Description Form Filling	5 10 TOTAL (15)
3	Practice– I Description Form Filling	5 10 TOTAL (15)
4	Viva Voce	20
Total		**60**

12. Internal and External Marks for Project Work

S.No	Internal Marks	Distribution of Marks
1	**INTERNAL** Review –I Review –II Documentation & Final Review	 10 10 30 **Total (50)**
2	**EXTERNAL** Presentation Viva	 30 20 **Total (50)**
Total		**100**

13. Pattern of Question Paper

For Pre model Test, Model and Comprehensive Examination under – Graduate and Post- Graduate Courses.

Maximum Marks : 70 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×4=20)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 75 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×5=25)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 50 / Time 2 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×3=15)	Each question carries four marks	Internal Choice
Section – C	(5×5=25)	Each question carries eight marks	Internal Choice
Maximum Marks : 100 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Short Answers
Section – B	(5×8=40)	Each question carries eight marks	Internal Choice
Section – C	(5×10=50)	Each question carries ten marks	Internal Choice

Note:
1. The questions should be numbered sequentially, running through the Sections A, B and C.
2. The maximum marks are 70/75

Note:

1. The questions should be numbered continuously running through the Sections A, B and C.
2. Questions should be evenly distributed among the unit in the syllabus in all the sections of the Question paper
3. While framing questions with internal choice the questions must be identified as (a) or (b). (e.g 11. a or b). Further, the internal choice must be from the same unit.
4. The Controller of the Examinations shall arrange for the setting of question papers on the basis the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies
The following are the distribution of marks for Comprehensive Examinations and CIA for Theory, Practical and Project.

14.Conduct of Practical Examinations:

Practical Examinations shall be conducted with one Internal Examiner and one External Examiner   and the Question Paper for practical examination shall be set by both Internal and External examiners.

15. Institutional Training:

Each student in the UG II year shall compulsorily undergo Institutional Training in the V th Semester for 15 days. Training shall be done individually for the purpose of Course completion.

Note: Students who fails to complete their Practical Examination/ Project VivaVoce/ Institutional Training in the concern Semester they can appear in the subsequent Semesters

16. Certificate Course

In the academic year 2019-2020 the following inter disciplinary certificate courses has been introduced. The candidates shall opt for any one of the following course respectively during III and IV th semester of their study.

List of Certificate CoursesS.No	Semester	Subject Title
1	III	Advertisement and Sales Promotion
2		Practical Banking
3		Entrepreneurship
4	IV	E-Commerce
5		Office Management
6		Principles of Insurance

B.Com[Corporate Secretaryship] Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards

FIRST SEMESTER
PART III: CORE 1 – FUNDAMENTALS OF ACCOUNTING

Maximum CIA :30
Maximum CE: 70
Total Hours: 72

Course Objectives: On Successful completion of this course, the student should have understood concepts and conventions of accounting and basic accounting framework.

Unit –I   (14 Hours)
Meaning and scope of Accounting, Basic Accounting Concepts and Conventions -Objectives of Accounting - Accounting Transactions - Double Entry Book keeping - Journal, Ledger, Preparation of Trial Balance - Preparation of Subsidiary Book.

Unit – II   (14Hours)
Final Accounts with adjustments – Closing stock, outstanding expenses, unexpired or prepaid expenses, accrued income, Interest on Capital and Drawings-additional bad debts-Provision-Creations of various reserves.

Unit – III   (14Hours)
Classification of errors - Rectification of errors - Preparation of Suspense Account. Bank Reconciliation Statement (Only simple problems).

Unit – IV   (15Hours)
Bill of Exchange-parties to bill of exchange – Distinction between bill and promissory note-Recording transaction relating to bill- Recording bill transaction in journal and ledger-Dishonor of bill – Renewal of bill-Average due date- Average due date on basis of calculation of interest – Account current-Product Method-Red Ink Interest Method-Daily Balance Method.

Unit – V   (15Hours)
Consignment – features – Accounting treatment of consignment transaction – Entries in books of Consignee – Entries in books of consignor. Joint venture – meaning – Treatment when separate book is maintained – Entries when separate book is not maintained- Sale of goods on approval or return basis. Professional Accounting- introduction.

NOTE : Distribution of marks : Theory 20% and Problems 80%

Course Outcomes**:**
  ➢ Preparing Financial Statements in accordance with appropriate standards.
  ➢ Preparing Ledger accounts using double entry book keeping and record journal entries Accordingly.

- ➤ Acquiring Knowledge in preparation of Bank Reconciliation statements from incomplete statement .
- ➤ Acquiring Knowledge in preparation of Negotiable Instruments.
- ➤ Understanding the accounting system with double entry system .

Text Book
1. T. S. Reddy and Murthy, Financial Accunting, 3rd Edition, Margham Publications, Year-2016, Chennai.

Reference Books

1. N.Vinayakam, P.L.Mani, K.L.Nagarajan, Principles of Accountancy, 8th Edition, S.Chand & Company Ltd., Year- 2012, New Delhi.
2. S.P.Jain ,K.L.Narang, Financial Accounting,6th Edition , Kalyani publishers, Year- 2012, New Delhi.

B.Com[Corporate Secretaryship] Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards

FIRST SEMESTER
PART III: CORE 2 – MANAGEMENT CONCEPTS

Maximum CIA :30
Maximum CE: 70
Total Hours: 72

Course Objective:
     To enable the students to acquire basic theoretical knowledge in Principles of Management.

Unit – I   (14Hours)
Introduction to management- meaning – Administration vs. Management –Management, Science or an art –Theories of Management - Taylor, Fayol, peter F.Drucker – Levels and Functions of management.

Unit – II   (15Hours)
Planning: Meaning and Definition – Nature of Planning – Objectives – Importance – Steps in Planning – Types of Planning – Essentials of sound plan –Methods of Planning.

Unit – III   (14Hours)
Organizing: Meaning and Definition – Types of Organization – Organizational structure – Span of Control – Delegation: Delegation and Decentralization – Line and Staff relationship.

Unit – IV   (14 Hours)
Directing: Nature and purpose of Directing – Essentials elements of directing – Supervision – Motivation Theories- Maslow's Theory and Herzberg's Theory– Decision Making – Leadership- Staffing- recruitment process- selection: training and development.

Unit – V   (15Hours)
Co-Ordinating: Definition – Features – Need for Co-Ordination – Elements of Co-Ordination – Types of Co-Ordination. Controlling: Definition – Characteristics of control – Steps in Controlling – Processes, Techniques-PERT/CPM-Total Quality Management. Techniques of control – Effective control.

Course Outcome:
- Acquiring Knowledge in management Principles and compare the contributions of managerial scientist
- Ensuring knowledge in Planning coordination and decision making process.

- ➢ Ensuring Knowledge in the components of direction, leadership ,motivation and communication
- ➢ Acquiring Knowledge in Leadership Theories.
- ➢ Ensuring Knowledge in Implementation of management techniques and control techniques

Text Book

1. Gupta C.B, Management Principles and Practice, 19th Edition, SultanChand&Sons, Year-2010, New Delhi.

Reference Books

1. Dinkar Pagare, Principles of Management, 19th Edition, S.Chand & Company Ltd., Year-2011, New Delhi.
2. L.M Prasad, Principles of Management, 5th Edition, SultanChand&Sons., Year- 2011, New Delhi.

B.Com[Corporate Secretaryship] Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards

FIRST SEMESTER
PART III: IDC 1 – MANAGERIAL ECONOMICS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objectives:
To understand and appreciate the basic economics and their applications to the business.

Unit- I   (14Hours)
Introduction to Economics: Definition, nature and scope of Economics –Economic theories applied to business analysis-decision making in business –objectives of a business firm.

Unit- II   (15Hours)
Demand and supply functions: Meaning and determinants of demand – distinctions of demand –Law of demand –Elasticity of demand – supply concepts – Equilibrium.

Unit- III   (14Hours)
Consumer behavior: Meaning of utility –Law of Diminishing Marginal Utility – Equi-Marginal Utility – Indifference curve analysis –Definition –properties –consumer's surplus-consumer's equilibrium.

Unit- IV   (14Hours)
Production and cost analysis : meaning and concepts of production –factors of production and production function – law of variable proportion –law of returns to scale – producer's equilibrium – Economies of scale – Theories of wages, Rent, Interest.

Unit -V   (15hours)
Market structure and pricing: Types of competition –perfect competition –Monopoly – Monopolistic competition – Oligopoly – price and output determination under different competitive market conditions.

Course Outcomes:
  ➢ Understanding the basic elements of Managerial Economics aspects, nature and decision making.
  ➢ Acquiring the Knowledge about law of demand, supply forecasting.
  ➢ Acquiring the Knowledge the theories of profit, profit maximization and analysis of breakeven point.

- Ensuring Knowledge about law of diminishing proportion, product function, economies of scale.
- Gaining Knowledge about pricing policy.

Text Book

1. Sankaran.S, Managerial Economics, 2rd Edition, Margaham Publication, Year- 2010, Chennai.

Reference Books

1. R.Meenakshi, Managerial Economics, 2nd Edition, Sultan Chand and Publications. Year- 2007, New Delhi.
2. R.L.Varshney and K.L.Maheswari, Managerial Economics, 15th Edition, Sultan Chand and Publications., Year- 2000, New Delhi.

B.Com[Corporate Secretaryship] Degree Examination – Syllabus for candidates admitted from the academic year2019 – 2020 onwards

SECOND SEMESTER
PART III: CORE 3 – FINANCIAL ACCOUNTING I

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective:

To give an insight into the basics of accounting concepts and principles to prepare students to have the foot hold in accounts
.

Unit I   (15 Hours)
Depreciation Accounting – Meaning – Characteristics –Causes –Objectives –Basics factors affecting the amount of depreciation –Methods of recording depreciation –Straight line method- Diminishing balance method –Annuity method –Insurance policy method –Reserves and provisions-Distinction between Reserves and Provisions-Types of Reserves.

Unit II   (15 Hours)
Accounting from in complete record or single entry system, Meaning, Features, Limitation-Difference between Single entry and Double entry –Ascertainment of profit –Net worth method –Difference between balance sheet and Statement of affairs- Conversion Method

Unit III   (15 Hours)
Hire Purchase and Installment Purchase System-Definition –Some important terms –Main features –Installment purchase system –Distinction between Hire purchase and Installment system –Accounting treatment for hire purchase system –Calculation of Interest –Default and Repossession-Hire purchase trading accounting –Debtors method-Stock and Debtors method-Installment purchase system-Meaning –Accounting treatment

Unit IV   (15 Hours)
Branch Accounts –Meaning –Objects –Types of Branches-Dependent Branches –Accounting in respect of Dependent Branches –Debtors system-Goods are Invoiced at cost –Goods are Invoiced at selling price –Stock and Debtors system –Final accounts system-Departmental Accounting –Need for Departmental accounting –Difference between Departmental and Branches –Departmentalization of expenses-Apportionment of expenses-Interdepartmental Transfer at selling price –Stock Reserve.

Unit V   (12 Hours)
Self balancing ledgers and Sectional Balancing –Debtors ledger –creditors ledger-General ledger-procedure of Self balancing –Adjustment accounts-Advantages of self balancing system-Important points to note –Self balancing accounts at a glance – Sectional balancing system-Total Debtors accounts. IFRS, Meaning- need for IFRS- Challenges for adopting IFRS in India.

NOTE : Distribution of marks : Theory 20% and Problems 80%

Course Outcome:

- ➢ Acquiring Knowledge in preparation of various Depreciation methods.
- ➢ Ensuring the knowledge in preparation of Incomplete Records.
- ➢ Acquiring Knowledge in preparation of Hire purchasing.
- ➢ Acquiring Knowledge on the system of Branch accounts and its system and to understand the scope of Departmental accounting .
- ➢ Ensuring the knowledge in preparation of Self Balancing legers and to know the various concepts in IFRS.

Text Book
1.T. S. Reddy and Murthy, Financial Accunting, 3rd Edition, Margham Publications, Year-2016, Chennai.

Reference Books
1.N.Vinayakam, P.L.Mani, K.L.Nagarajan, Principles of Accountancy, 8th Edition, S.Chand & Company Ltd., Year- 2012, New Delhi.
2.S.P.Jain ,K.L.Narang, Financial Accounting,6th Edition , Kalyani publishers, Year- 2012, New Delhi.

B.Com[Corporate Secretaryship] Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards

SECOND SEMESTER
PART III: CORE 4 – LAW OF INSURANCE

Maximum CIA :30
Maximum CE: 70
Total Hours: 72

Course Objective:
 To Enable students to acquire theoretical knowledge to be successful in Law of Insurance

Unit I   (15 Hours)
Insurance Generic Overview – Meaning and Definition of Insurance – Purpose and Need of Insurance – The Business of Insurance – Pooling of Rises and Resources – Contract of Insurance – Condition Necessary for a Contract – principles and practices of an insurance contract – important terminology parties in insurance contract – Role of Insurance in Economic Development – IRDA Act ,1938.

Unit II   (15 Hours)
Types of Insurance – (Personal , Commercial , Health , Life , Etc) – History of Insurance – Types of Insurance Companies – Business Units in an Insurance Company – Insurance Regulators in India – Reinsurance Concepts.

Unit III   (14 Hours)
Life Insurance – Insight to Insurance – Important Terminologies in a Life Insurance Policy – Parties in a Life Insurance Policy – Individual Life Insurance Plans – Supplementary Benefits – Policy Provisions – Ownerships Rights – Life Insurance Policy Life Cycle (New Business & Underwriting , Policy Servicing , Claims , Etc.,) , Popular Life Insurance Plans in India.

Unit IV   (14 Hours)
Property and Casualty Insurance – Non – Life Insurance Concepts – Hazards, Perils, Catastrophe, Property Damage & Business Interruption, Policy , Exclusions , Indemnity , Deductibles , Retention , Salvage , Subrogation , Insurance Providers – Co- Insurance, Captive Insurance – Underwriting Process – Policy Servicing Process – Claims Process – Property Insurance Plans .

Unit V   (14 Hours)
Risk Management – Concept of Risks – Risks Management- Basic Concepts - (Hazards, Perils, Assets, Etc) – Types of Risks - Risk Identification – Sources of Risks – Factors affecting Risks - Risk Evaluation – Risk Avoidance.

Course Outcome**:**
  ➢ Understanding the nature, principles and regulatory frame work of insurance
  ➢ Acquiring Knowledge in various terminologies in life insurance
  ➢ Identifying the various Insurance policies
  ➢ Understanding the procedure of claiming process in insurance.
  ➢ Identifying various types of risk and how it can be avoided.

Text Book
1. M.N. Mishra, Insurance Principles and Practice, 3rd Edition, Sultan Chand and Company Ltd Publications, Year- 2016, New Delhi.

Reference Books
1. N.Vinayakam, P.L.Mani, K.L.Nagarajan, Principles and Practice of Insurance, 8th Edition, S.Chand & Company Ltd., Year- 2012, New Delhi.
2. P.Periysamy, Principles and Practice of Insurance, Himalaya Publication House.,

B.Com[Corporate Secretaryship] Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards

SECOND SEMESTER
PART III: IDC 2 – FUNDAMENTALS OF INFORMATION TECHNOLOGY

Maximum CIA :30
Maximum CE:70
Total Hours: 72

Course Objective:
    To acquire basic knowledge of computers

Unit I   (15 Hours)
Introduction-Types of Data-Text Data-Image Data-Audio data-Video Data-Simple Organization of Computers-Data Processing using computers-Desktop Computers-Data Acquisition

Unit II   (12 Hours)
Input Devices: Keyboard-Character Reader-Magnetic Ink Character Reader-Barcodes-Number System-Output Devices

Unit III   (15 Hours)
Data Storage: Introduction-Storage Cell-Physical Devices used as Storage Cells-Random access Memory –Read Only Memory-Secondary storage-CDROM-Archival Store

Unit IV   (15 Hours)
Database-Organizing a Database-Structure of a Database-Database Management System-Use of Spreadsheets-Overview of Spreadsheets-Output of Spreadsheets

Unit V   (15 Hours)
Computer Software-Computer Networks: Introduction-Local Area Network (LAN)-Application of LAN-Wide Area Network (WAN)-Internet

Course Outcomes
  ➢ Acquiring Knowledge about Basic Concepts in Computers.
  ➢ Ensuring Knowledge about Input and Output Devices.
  ➢ Understanding the Concepts in Data Storage.
  ➢ Acquiring knowledge about the basic concepts of Database.
  ➢ Acquiring knowledge about types of Networks.

Text Book
1. V. Rajaraman, Introduction to Information Technology, 3rd Edition, Sami Publications, Year-2016, New Delhi.

Reference Books
1. Arun Bayeja, Introduction to information Technology, 8th Edition, Kalpaz Publications Ltd., Year- 2012, New Delhi.
2. R.Parameswaran, Introduction to information Technology, Sultan Chand and Company Ltd Publications, Year- 2016, New Delhi.

B.Com Corporate Secretaryship Degree Examination – Syllabus – for candidates admitted from the Academic Year 2019 – 2020 onwards.

THIRD SEMESTER
PART III – CORE 5- FINANCIAL ACCOUNTING II

MaximumCIA :30
Maximum CE: 70
Total Hours: 72

Course Objective:
    To train the students in solving advanced problems in Accounting.

Unit – I   (14 Hours)
Introduction – Admission of Partner – Treatment of Goodwill – Revaluation of Assets and Liabilities – Calculation of Ratios for Distribution of Profits – Capital Adjustments.

Unit – II   (15 Hours)
Retirement and Death of a partner – Calculation of Gaining Ratio - Revaluation of Assets and Liabilities – Calculation of Ratios for Distribution of Profits – Capital Adjustments. [Memorandum Method Excluded] – Mode of Payments - Joint Life Policy

Unit – III   (15 Hours)
Dissolution – Insolvency of partners - Insolvency of One and Two Partners – Garner Vs. Murray – Deficiency A/C – Piecemeal Distribution-Proportionate Capital Method – Maximum loss method

Unit – IV   (14 Hours)
Insolvency Accounts - Meaning of Insolvent – Relevant Acts – Difference between Balance sheet and Statement of Affairs – Preparation of statement of affairs – Deficiency Accounts

Unit – V   (14 Hours)
Fire Claims for Loss of stock – Computation of Claim- Gross profit Ratio-Normal Loss – Abnormal Loss-Average clause

Course Outcome:
    CO1: Acquiring Knowledge in Admission of partner, Revaluation of assets and liabilities and capital adjustment.
    CO2: Ensuring the knowledge in Retirement of a partner, Distribution of Cash and Close the books of the Firm.
    CO3: Ensuring the knowledge in Preparation of statement of affairs and various Deficiency Accounts.
    CO4: Acquiring Knowledge in Preparation of statement of affairs and various Deficiency Accounts.
    CO5: Ensuring the Knowledge in Fire Claims for Loss of Stock and Normal and Abnormal Loss

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1				M		H		
CO2	H							
CO3	M							M
CO4		M						
CO5			M				L	

Text Book
1. R.S.Reddy and Moorthy, Financial Accounting, 6th Edition 2011,Margham Publication, Year-2015.

Reference Books
1. R.L.Gupta, Advanced Accountancy Theory , Methods and Applications, Volume 1,1st Edition, Sulthan Chand & Co, Year 2013.

2. Amitabha Mukherjee, Advanced Accountancy, Volume 1, Mc.Graw Hill Education India Pvt Ltd, Year 2011.

B.Com Corporate Secretaryship Degree Examination – Syllabus – for candidates admitted from the Academic Year 2019 – 2020 onwards.

THIRD SEMESTER
PART III – CORE-6 - ELEMENTS OF BUSINESS LAWS

MaximumCIA :30
Maximum CE: 70
Total Hours: 60

Course Objective:
      Enabling the students to know about the essentials elements of Law.

Unit I   (12 Hours)
Sources of Law- Law of Contract – Nature –Kinds - Essentials of Valid Contract Offer-Acceptance- Intention to create Legal Relations – Considerations- Capacity to a Contract.

Unit II   (12 Hours)
Free Consent – Mistake – Misrepresentations – Fraud – Coercion and Undue Influence – Lawful Object – Agreement not declared Void – Legal Formalities.

Unit III   (12 Hours)
Contingent Contract – Performance of Contract – Remedies for Breach of Contract – Quasi Contracts.

Unit IV   (12 Hours)
    Special Contracts – Indemnity and Guarantee – Agency – Bailment and Pledge.

Unit V   (12 Hours)
Law relating Sale of Goods Act – 1930 – Right of Unpaid Seller – Caveat Emptor – Auction Sale - Condition and Guarantees – Sales and Agreement to Sales.

Course Outcome**:**
    CO1:Recognize types of contracts, including formation and modification of contracts

    CO2:Identify the concepts behind free consent, mistake and misrepresentation

    CO3:Understanding the performance of contract.

    CO4:Explore the concept of Indemnity and guarantee.

    CO5:Recall the features of Sale of Goods Act 1930

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1	H						H	
CO2			M				M	
CO3				H				L
CO4					M			
CO5				M				

Text Book

1. N.D.Kapoor, Elements of Mercantile law, All India 13th Edition- reprint, sulthan chand and Sons, Year2014, New Delhi

Reference Books

1. N.D.Kapoor,General & Commercial Law Text, sulthan chand and Sons, Year 2012, New Delhi.
2. Business Laws - M.V. Dhandapani, Sultan Chand and Sons.

B.Com Corporate Secretaryship Degree Examination – Syllabus – for candidates admitted from the Academic Year 2019 – 2020 onwards.

THIRD SEMESTER
PART III – CORE 7- COMPANY LAW AND SECRETARIAL PRACTICE-I

MaximumCIA :30
Maximum CE: 70
Total Hours: 60

Course Objective:
   Enabling the students to know about the Company Law.

Unit I   (12 Hours)
Companies Act 2013 – Definition – Characteristics – Kinds of Companies – Doctrine of Lifting the Corporate Veil-Incorporate and Commencement of Business- Promotion of a Company- Company Secretary – Appointment, Legal Position –Qualification – Duties And Liabilities of A Secretary.

Unit II   (12 Hours)
Memorandum of Association- Forms – Contents – Procedures for Alteration – Secretarial Duties – Articles of Association – Forms and Contents- Procedures for Alteration- Doctrine of Indoor Management- Doctrine of Constructive notice- Distinguish between Memorandum and Articles.

Unit III   (12 Hours)
Prospectus – Definition-Deemed Prospectus-Shelf Prospectus Red-herring Prospectus-Contents – Statement in Lieu of Prospectus – Legal Formalities –Secretarial Duties with regard to Prospectus.

Unit IV   (12 Hours)
Share Capital – Kinds of Capital – Alteration – Reduction – Issue and Allotment of Shares - Share Certificate – Transfer and Transmission of Shares – Share Warrant and its differences with Share Certificate-Secretarial Duties.

Unit V   (12 Hours)
Borrowing Powers – Methods of Borrowing – Mortgages and Charges – Registration of Charges – Legal Provisions - Secretarial Duties with regard to Borrowing.

Course outcome:

   CO1:Acquiring Knowledge in Various Kinds of companies and duties and liabilities of company secretary
   CO2:Ensuring the knowledge in Legal procedure of memorandum of association and Articles of association and different alteration in their contents
   CO3:Acquiring Knowledge in various types of prospectus and the secretarial duties.
   CO4:Understanding the effective transfer and transmission of shares.
   CO5:Gaining Knowledge about Borrowing powers and Registration charges

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1	H					H		
CO2							H	
CO3								H
CO4	M						M	
CO5								

Text Book

1. N.D.Kapoor, Company Law and Secretarial Practice, 13th Edition, Sulthan chand and Co, Year 2016

Reference Books

1. P.P.S. Gogna, A Textbook of Company Law, Latest edition, sulthan chand and Co, Year 2015.
2. K.L. Maheswari, R.K. Maheswari, Company Law and Secretarial Practice,New Royal BookCompany,2013.

B.Com Corporate Secretaryship Degree Examination – Syllabus – for candidates admitted from the Academic Year 2019 – 2020 onwards.

THIRD SEMESTER
PART III: CORE 8 –CORPORATE PRACTICE –I

Maximum CIA :40
Maximum CE: 60
Total Hours:48

Course Objective:

Impairing professional skills in Corporate Sector

1. Banking Formalities[Instruments used in Banking]

2. Manufacturing Trading Account

3. DEMAT Account[ONLINE]And REMAT Account

4. PAN Card and GST Registration

5. ONLINE Booking- Shopping

Course outcome**:**
CO 1:To familiarize with the basic concepts and practice of banking
CO 2:To understand the basic concepts and processes used to determine product costs,To be able to interpret cost accounting statements, and To be able to analyze and evaluate information for cost ascertainment, planning,control and decision making
 CO 3:To give exposure about Demat and Remat account and the procedures, Rules concerning it.
CO 4:To familiarize the concept of PAN Card and GST and the procedure for registration.
CO 5:Understand the basic concepts and technologies used in the field of management information systems; Be aware of the ethical, social, and security issues of information system

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1	H					M		
CO2		M					M	
CO3			M					M
CO4				L			L	
CO5					M		L	

B.Com Corporate Secretaryship Degree Examination – Syllabus – for candidates admitted from the Academic Year 2019 – 2020 onwards.

FOURTH SEMESTER
PART III – CORE 9-CORPORATE ACCOUNTING - I

MaximumCIA :30
Maximum CE: 70
Total Hours: 72

Course Objective:
Enabling students to acquire accounting knowledge to be successful in Companies.

Unit I   (12 Hours)
Issue of Equity shares – Issue at Par, Premium– Forfeiture and Re-issue [including Pro-rata allotment] Surrender of shares – Right Issue, Bonus Issue

Unit II   (14Hours)
Issue of Preference shares - Redemption of Preference shares – Table showing capital profit & revenue profit- Simple problems in Redemption of Preference shares, Underwriting of shares –Complete Underwriting – Partial Underwriting -Firm underwriting .

Unit III   (14Hours)
Issue of Debentures – Par , Premium and Discount - Redemption of Debentures- Ex Interest & Cum Interest Quotations –Conversion Method – Installment Method.

Unit IV   (12Hours)
Valuation of Goodwill –Factors Affecting Goodwill –Methods of Valuating Goodwill – Shares-Methods of valuating Shares.-Liquidation of Companies

Unit V   (12 Hours)
Profits prior to incorporation – Preparation of Final Accounts of companies – Preparation of Profit and Loss Appropriation Account - –Schedule III of Companies Act 2013-Balance Sheet –Statement of P&L account.

Course outcome**:**
   CO1 :Enabling the students to understand the features of Shares and Debentures and Understand the treatment regarding issue of bonus shares and treatment of prior period profits
   CO 2:Develop an understanding about redemption of Preference Shares, methods of Underwriting.
   CO 3:To provide knowledge on Redemption of Debentures and methods of Interest quotations
   CO 4:To give an exposure on Goodwill and to calculate the value of Goodwill and shares to the company

CO 5:Develop knowledge on drafting Final Accounts of Companies, and Profits prior to incorporation.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1				M		H		
CO2	H							
CO3	M							M
CO4		M						
CO5			M				L	

Text Book

 1. T.S.Reddy and Murthy, Corporate Accounting, Volume 1, revised edition ,Margham Publications, Year 2013.

Reference Books
1. S N Maheshwari&Suneel K Maheshwari, Corporate Accounting, Vikas Publishing, Year 2013.
2. R.S. Singal, Corporate Accounting, Latest Edition 2011,VK Publication, Year 2011.

B.Com Corporate Secretaryship Degree Examination – Syllabus – for candidates admitted from the Academic Year 2019 – 2020 onwards.

FOURTH SEMESTER
PART III – CORE-10- COMPANY LAW AND SECRETARIAL PRACTICE – II

MaximumCIA :30
Maximum CE: 70
Total Hours: 60

Course Objective:
Enabling students to acquire theoretical knowledge to be successful in Company Law.

Unit I   (12 Hours)
Company Meeting – Kinds of Meetings – Requisites of a Valid Meeting – Agenda –Minutes – Quorum – Proxy – Voting – Poll – Motion and Resolution – Secretarial Duties in connection with Meetings.

Unit II   (12 Hours)
Directors – Appointment – Qualification – Removal – Casual Vacancy – Types of Directors, Powers, Duties, Liabilities, Statutory Provisions, Register of director and their share holdings – Managing Director – Appointment –Statutory provisions of Managing Director– Rights And Duties – Secretarial Duties-KMP(Key Managerial Personnel)

Unit III   (12 Hours)
Books of Accounts and Registers – Inspections – Annual Returns – Circulation And Filing – Directors Report – Appointment of Auditors – Qualification of Auditors – Auditors Report – Removable of Auditors – Secretarial Duties.

Unit IV   (12 Hours)
Dividend – Definition – Statutory Provision – Power of Board of Directors Regarding Dividend – Interim Dividend – Unclaimed Dividend-IEPF(Investor Education protection Fund) – Dividend Warrant – Payment of Interest out of Capital – Secretarial Duties in connection with Dividend.

Unit V   (12 Hours)
Winding Up – Meaning – Modes of Winding Up – Petitions for Winding Up – Consequences of Winding Up – Appointment of Official Liquidator – Duties of Secretary in respect of each Winding Up-NCL(National Company Law Tribunal)

Course outcome:

   CO1: Acquiring Knowledge in provisions of Companies Act relating to meetings, resolutions and Company Management.
   CO2: Ensuring the knowledge in manager and managing director duties and liabilities.
   CO3: Understanding the auditors qualification and appointment and various types of circulation and filing.

CO4: Gaining knowledge about Power of Board of Directors Regarding Dividend and IEPF.

CO5: Acquiring Knowledge in Companies act relating to winding up, Liquidator and National law Tribunal.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1			H			M		
CO2							M	
CO3					H			M
CO4								
CO5	M							L

Text Book
1. N.D.Kapoor, Company Law and Secretarial Practice, 13th Edition, Sulthan Chand and Co, Year 2014.

Reference Books
1. P.P.S. Gogna, A Textbook of Company Law, Latest edition, Sulthan Chand and Co, Year 2015.
2. K.L. Maheswari, R.K. Maheswari, Company Law and Secretarial Practice,New Royal Book Company, 2

B.Com Corporate Secretaryship Degree Examination – Syllabus – for candidates admitted from the Academic Year 2019 – 2020 onwards.

FOURTH SEMESTER
PART III – CORE 11- GENERAL LAW

MaximumCIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective**:**
        Enabling students to acquire theoretical knowledge to be successful in General Laws.

Unit I   (12 Hours)
Constitution of India – Nature of Indian Constitution – Fundamentals Rights – Directive principles of state policy – Freedom of Trade , Commerce and Intercourse – Constitutional provision relating to State Monopoly.

Unit II   (12 Hours)
Transfer of property Act - Important Definitions – Movable and Immovable Property- Properties Which Cannot Be Transferred – Rule against Properties – Lis- Pendence – Provisions Relating To Sale –Mortgage-Charge –Lease-Gift And Actionable Claim.

Unit III   (12 Hours)
Registration Act - Registrable Documents – Compulsory and Optional – Time and Place of Registration – Consequences of Non-Registration – Description of Property – Miscellaneous Provisions.

Unit IV   (12 Hours)
Stamp Act - Methods of Stamping – Consequences of Non-Stamping – Impounding of Instruments- Construction of Instruments for Detention of Stamp Duty Payable – Adjudication Allowances and Refund – Penal Provisions.

Unit V   (12 Hours)
Right to Information Act 2005 – Definitions – Features – Objectives – Public Authorities and their Obligations – Designation of Public Officers [PIO] and their Duties – Request for Obtaining Information – Exemption from disclosure are excluded – Information Commission and their Powers – Appellate authorities – penalties – Jurisdiction of courts – role of central / State governments.

Course Outcome**:**
    CO1: Understanding the Indian Constitution
    CO2: To familiarize in Transfer of Property Act.
    CO3: Understanding the procedure of registration of document.
    CO4: Acquiring Knowledge in Stamp Act and the consequences of non registration.
    CO5: To get the exposure in Right to Information Act 2005.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1			H			M		
CO2							M	
CO3					H			M
CO4								
CO5	M							L

Text Book.
1. N.D Kapoor and Rajni Abbi, General and Commercial Laws, 4th Edition, Sultan chand and Co, Year 2010, New Delhi.

Reference Book.
1.Taxman.S, General and Commercial Laws, 2nd Edition, Taxman's Publications Private Ltd, Year- 2007.

B.Com Corporate Secretaryship Degree Examination – Syllabus – for candidates admitted from the Academic Year 2019 – 2020 onwards.
FOURTH SEMESTER
PART III: CORE 12 –CORPORATE PRACTICE –II

Maximum CIA :40
Maximum CE: 60
Total Hours:48

Course Objective:

Impairing professional skills in Corporate Sector

1. Registration for small scale Industries[Registration of MSME and NABARD]

2. Deed of Partnership/LLP[Limited Liability Partnership 2008]

3. Formation of Incorporation of Companies

4. DIN Formalities[Directors Identification Number]

5. Export and Import Procedure Documents [EXIM]

Course Outcome:
 CO 1:To familiarize with the concept relating to SSI and practical procedures relating to formation of SSI.
 CO 2:To understand the concepts of partnership and procedures for registration.
 CO 3:Demonstrate comprehensive and accurate knowledge and understanding of those areas of company law.
 CO 4:To make aware on the concept of Director Identification Number (DIN).
 CO 5:To demonstrate the complete procedures AND laws relating to EXIM.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1	H					M		
CO2		M					M	
CO3			M					M
CO4				L			L	
CO5					M		L	

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THIRD SEMESTER
PART IV – SBC I - PRINCIPLES OF MARKETING

Maximum CE: 75
Total Hours: 36

Course Objective:
        On successful completion of this CORE the students should have basic knowledge of marketing and its functions.

Unit I   (8 Hours)
Introduction to Market - Meaning, Definition and Concept – Traditional and modern marketing - Role and importance of Market - Classification of Market, Marketing function - Marketing process.

Unit II   (7 Hours)
Marketing mix - Product mix – meaning of products, Dimension of product mix– Expansion and Contraction – PLC – Price mix, Importance of price – Pricing Objectives -Kinds of pricing – methods of price determination.
.
Unit III   (7 Hours)
Promotion - Advertisement – Personal Selling and Sale promotion.Place mix-Meaning of Channels of Distribution - Importance of channels of distribution –Classification — Franchise-Functions of middlemen- Elimination of middlemen.

Unit IV   (7 Hours)
Market Segmentation – Benefits – Bases – Requisites of sound market segmentation – Market Segments and marketing mix – Buyer Behaviour – Significance – Buying Process – Steps in Buying Process – Buyer Behaviour Models.

Unit V   (7 Hours)
Recent trends in marketing – E-marketing, E-Payment- Organic marketing, Green marketing, CRM –Ethics in marketing and Market research.,

Course Outcome**:**

    CO1:Define the term marketing and explain its role and importance in an individual firm

    and the overall economy.

    CO2:Acquiring Knowledge about product and pricing strategy.

    CO3:Analyze advertising and Define personal selling

    CO4:Identifying the market segmentation and buyer behaviour .

    CO5:Understanding the recent trends in marketing

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1	M					H		
CO2		M					M	
CO3			M				H	
CO4								M
CO5								M

Text Book.

1. C.B.Gupta, Principles of Marketing, Sulthan Chand & Co, Year 2013, New Delhi.

Reference Book.

1. R.S.N. Pillai and Bagavathi, Modern Marketing Principles and Practices, Sulthan Chand & Co, Year 2010.

B.Com Corporate Secretaryship Degree Examination – Syllabus – for candidates admitted from the Academic Year 2019 – 2020 onwards.

THIRD SEMESTER
PART IV – SBC I- ENTREPRENEURIAL DEVELOPMENT PROGRAM

Maximum Marks: 75
Total Hours : 36

Course Objectives :

To enable the students to learn the fundamentals of being a good entrepreneur and the Concept of entrepreneurship, Knowledge about the financing institutions, project report, incentives and subsidies.

Unit I (8 Hours)
Concept of entrepreneurship : Definition Nature and characteristics of entrepreneurship – function and type of entrepreneur. Development of women entrepreneur and rural entrepreneur – self employment- Problem of Women Entrepreneur.

Unit II (7 Hours)
The start-up process, Project identification – Business Idea – Sources of Business Idea – Selection of the product – project formulation - evaluation – feasibility analysis, Project Report.

Unit III (7 Hours)
Institutional services to entrepreneurs – DIC, SIDO, NSIC, SISI, SIDCO and KVIC, Institutional finance to entrepreneurs : IFCI, SFC, IDBI, ICICI, TIIC and SIPCOT.

Unit IV (7 Hours)
Incentives and subsidies – Subsidised services – subsidy for market - Transport – seed capital assistance - Taxation benefit to SSI role of entrepreneur in export promotion and import substitution.

Unit V (7 Hours)
Industrial Sickness- Symptoms- Remedies – Causes.

Course outcome:
    CO1:Acquiring Knowledge in Development of women entrepreneur and rural
    entrepreneur, characteristics of entrepreneurship.
    CO2:Ensuring the knowledge in various Project identification ,Report and Business
    Idea.

CO3:Gaining Knowledge about the parameters to assess opportunities and constraints for new business ideas
CO4:Gaining Knowledge about Institutional services and finance to entrepreneurs.
CO5:Understanding the Incentives and subsidies and Small Scale Industry.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1			H			M		
CO2							M	
CO3					H			M
CO4								
CO5	M							L

Text Book.
1. Gupta.C.B and Srinivasan N.P, Entrepreneurial Development, 4th Edition 2005, Sultan Chand and Co., New Delhi.

Reference Book.
1. Saravanavel.P, Entrepreneurial Development, 2nd edition, Essae Chandra Institute, 2005, Mumbai.

B.Com Corporate Secretaryship Degree Examination – Syllabus – for candidates admitted from the Academic Year 2019 – 2020 onwards.

FOURTH SEMESTER
PART IV — SBC II- CORPORATE COMMUNICATION

Maximum CE: 75
Total Hours: 36

Course Objective :

On the successful completion of this paper the students should have developed their written and oral Business Communication Skills in the day to day business world.

Unit I   (8 Hours)
Meaning of Communication – Objectives – Types – Barriers – Composition of sentences – Structure of Business Letter - Effective Business Letter - Enquiries and Replies.

Unit II   (7 Hours)
Layout of a business letters- Orders and Execution Letters- Sales Letters- Circulars- Claims and Adjustments- Collection Letters- Credit and status Enquiries.

Unit III   (7 Hours)
Banking Correspondence – Insurance Correspondence- Agency Correspondence- Application for appointment- Company Secretarial Correspondence(including Agenda, Minutes and Report Writing).

Unit IV   (7 Hours)
Meaning of Report- Preparing Report- Qualities and functions of a Good Report- Business Report- Types of Report- Reports by individuals- Reports by committee- Reports by sub-committee- Minutes Vs Reports- Drafting Resolution and minutes of company meetings.

Unit V   (7 Hours)
Drafting of company meetings notices- Letters to the editor of newspapers- Management Information Systems- Introduction- Need – Definition- Objectives- Components- Differing information for management levels- areas- stages of MIS Design- Guidelines for effective design- current trend.

Course Outcome:
    CO1:Understanding the various types of communication.
    CO2:To familiarize in various business correspondence.
    CO3:To get the exposure in bank, Insurance, corporate secretary correspondence.
    CO4:Identifying various types of report and its importance.
    CO5:To gain knowledge in Management Information System.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1			M			H		
CO2			M					M
CO3								
CO4								
CO5					M			M

Text Book.

1. Rajendra Pal and Koralakhalli .J.S, Essentials of Business Communication, 2nd Edition, Sultan Chand and Co, Year-2002, New Delhi.

Reference Books

1. Ramesh M.S. and Pattanshett, Business Communication, 1st Edition , TMH Publishing House,2000,Mumbai .
2. Rai Urmila, Business Communication, 11th Edition, Himalaya Publication, Year-1999, New Delhi.

B.Com Corporate Secretaryship Degree Examination – Syllabus – for candidates admitted from the Academic Year 2019 – 2020 onwards.

FOURTH SEMESTER
PART IV – SBC II – HUMAN RESOURCE MANAGEMENT

Maximum CE: 75
Total Hours: 36

Course Objectives:
    To enable students learn the various concepts and functions of HRM

Unit I`   (8 Hours)
 Introduction - Evolution of HRM –- Importance of HRM- Personnel Management vs Human Resource Management- Strategic Human Resource Management.

Unit II   (7 Hours)
Employment Planning and Forecasting -Job analysis- – Process of Job analysis – Job description- Job specification.

Unit III   (7 Hours)
Interview, Common Interviewing Mistakes, Designing and Conducting the Effective Interview, Small Business Application, Computer Aided Interview

Unit IV   (7 Hours)
 Job Evaluation-.Performance Appraisal- Essential characteristics of an effective appraisal system

Unit V   (7 Hours)
Industrial Relations- Trade Unions- Collective Bargaining- Employee grievance.

Course Outcome:

CO 1: Explain the importance of human resources and their effective management in organizations and To be aware of the role, functions and functioning of human resource department of the organizations.

CO 2: Nature and use of Job analysis information, Steps in job analysis, Methods of Collecting Job analysis Information, Writing job descriptions and job specifications.

CO 3: To Design and formulate various HRM processes such as Recruitment, Selection, Training.

CO 4: Development ,Performance appraisals and Reward Systems, Compensation Plans and Ethical Behavior and Design a performance appraisal and a reward system for the organization

CO 5: To acquire knowledge about various Labour Laws, Responsibilities and rights of Employers and Employees

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1			H			M		
CO2							M	
CO3					H			M
CO4								
CO5	M							L

Text Books.
1. VSP Rao, Human Resource Management : Text And Cases, First Edition, Excel Books , New Delhi- 2010
2. Aswathappa.K, Human Resource & personnel Management- Text and Cases, Tata McGraw-Hill publishing Company ltd, New Delhi,2012.

Reference Books.
1.Gary Dessler –Human Resource Management, 7th Edition, Prentice Hall Of India Private Ltd, 2006, New Delhi.
2.Dr. R. Venkatapathy And AssissiMenacheri, Industrial Relations &Labour Welfare, Adithya Publication, Cbe 2001

B.Com Corporate Secretaryship Degree Examination – Syllabus – for candidates admitted from the Academic Year 2019 – 2020 onwards.

THIRD SEMESTER
PART-III - ALC-I - PRINCIPLES OF INTERNATIONAL TRADE

Maximum CE: 100

Course Objectives:
To enable the students to learn about the International Trade and its principles.

Unit I
The global Economy – Perspective on the theory of International Trade – The importance of International trade – Counter Trade – Forms of Counter Trade – Reasons for Growth of Counter Trade – Global Trade and Developing Countries.

Unit II
International commodity Agreements – Quota agreements, Buffer stock Agreements – Carts – State Trading – Bilateral and Multilateral contracts. Gains from Trade – Terms of Trade –Factors influencing the terms of trade.

Unit III
Tariff – Meaning – Tariffs, Taxes and Distortions – Imports Tariffs and Export Taxes – Export Subsidies – Arguments for free Trade – Arguments for protection – Demerits of protection – Trade barriers.

Unit IV
International Investments – Types of Foreign Investment – significance of Foreign Investments – Limitations and Dangerous of Foreign Capital – Factors affecting International Investment – Foreign Investment by Indian companies.

Unit V
Multinational Corporation – Definition and Meaning – Importance of MNCS – benefits of MNCs – Criticism – Globalizations – Meaning – stages – Essential conditions for Globalization – Implications and Importance of Globalization – Benefits – Obstacles to Globalization in India – Factors favoring Globalization.

Text Book
1. International Trade and Export Management – Francis Cherunilam Himalaya publication 2010

Reference Book

1. International Trade – Theory and Evidence – By James R.Markusen, James R.Melvin, William H.Kaempfer & Keith E.Maskus. 1 edition McGraw-Hill

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FOURTH SEMESTER
PART-III - ALC-II - EXPORT AND IMPORT TRADE PROCEDURES
Maximum CE: 100

Course Objectives:
To enable the students to learn about the procedures of Export and Import.

Unit I
Exports – Recent measures to boost Country's Exports – Rules for successful exporting – Preliminaries for starting export business – Deemed exports and its benefits – Finance for Exports.

Unit II
Different Categories of exporters - Registration of Exports – Appointing Overseas agents – Obtaining an export license – Arranging finance for exports – Packing goods for exports – Marketing goods for export.

Unit III
Excise procedure – Insuring goods against Marine risks – Preparing export documents – Institutional support for Exports – Compulsory quality control and pre-shipment Inspection – Labeling – Shipping and customs clearance of goods.

Unit IV
Import Trade law in India – Preliminaries for starting Import Business – Registration of Importers – arranging finance for Import – Arranging letter of Credit for Imports – Balance of
Payments – Liberalization of Imports.

Unit V
Retirement of Import Documents and RBI's directives for making payment for Imports – Customs clearance of Imported Goods and payments of customs Duty – Imports under special
schemes.

Text Book.
1. Export management – P.K. Khurana Galgotia Publishing 2011

Reference Books
1 Export Management – T.A.S. Balagobal Himalaya publishing house.
2. A Guide on Export Policy, Procedure and Documentation – M.I.Mahajan – Snow white Publications

Bachelor of Computer Applications Degree Examination-Syllabus -For Candidates admitted from the Academic Year 2018– 2019 onwards

FOURTH SEMESTER
PART IV – EDC 2- BANKING THEORY

Maximum CE:50
Total Hours:24

Course Objective :
    To Familiarize the students with the Banking Theory

Unit I   (5 Hours)
Bank- Meaning and Definition- Features- Classification of Banks- Functions of Commercial Banks- Relationship between Banker and Customer.

Unit II   (5 Hours)
Types of Bank Accounts- Procedure for opening and closing of bank accounts-Operation of Bank Accounts

Unit – III   (5 Hours)
Special type of Customer- Types of Loans and Advances- Procedures to apply for loan. pass- Pay in slip-statement of accounts- Debit and Credit Card- Meaning- Advantage and disadvantage.

Unit – IV   (5 Hours)
Negotiable Instruments: Cheque – Essential Features of Valid Cheque – Crossing – Types of Crossing- Material Alteration- Endorsement of cheque- Circumstances in which a banker should refuse payment.

Unit – V   (4 Hours)
Recent Trends in Indian Banking- Internet Banking- ATM- Electronic Fund Transfer- Core Banking Solutions- Tele banking- E-Banking-NEFT-RTGS-SWIFT Code.

Course Outcome**:**
    CO1: Clearly Demonstrate a comprehension of the principles of banking law and its relationship to banks and customers.
    CO2:Evaluate the procedure to open a bank account.
    CO3:To explore the various kinds of loan and advances issued by banks.
    CO4:To familiarize the Negotiable instruments like cheque.
    CO5:Explore the recent trends in Indian banking

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1			H			M		
CO2							M	
CO3					H			M
CO4								
CO5	M							L

Text Book.
1. Sundharam and Varshney, Banking theory Law and Practice, Sultan Chand & Sons., 2014, New Delhi.

Reference Book.
1 Shekhar K.C & Lekshmy Shekhar, Banking theory Law and Practices, 21st Edition, Vikas publishing House, 2013, New Delhi.

BSC [Computer Technology] Degree Examination – Syllabus – for candidates admitted from the Academic Year 2018 – 2019 onwards

THIRD SEMESTER
PART III: IDC 3 –ENTERPRISE RESOURCE PLANNING

MaximumCIA :30
Maximum CE:70
Total Hours:60

Course Objective :

  To Familiarize the students with the Enterprise Resource Planning

Unit 1   (12 Hours)
Introduction to ERP: Defining ERP, Origin and Need for an ERP System, Benefits of an ERP System, Reasons for the Growth of ERP Market, Reasons for the Failure of ERP Implementation: Roadmap for successful ERP implementation.

Unit 2   (12 Hours)
ERP Implementation Life Cycle: ERP Tools and Software, ERP Selection Methods and Criteria, ERP Selection Process, ERP Vendor Selection, ERP Implementation Lifecycle, Pros and cons of ERP implementation, Factors for the Success of an ERP Implementation

Unit 3   (12 Hours)
ERP: A Purchasing Perspective: Role of ERP in Purchasing, Purchase Module: Features of purchase module; Benefits of purchase module, ERP Purchase System

Unit 4   (12 Hours)
ERP: Sales and Distribution Perspective: Role of ERP in Sales and Distribution, Sub-Modules of the Sales and Distribution Module:Master data management, Order management, Warehouse management, Shipping and transportation, Billing and sales support, foreign trade, Integration of Sales and Distribution Module with Other Modules

Unit 5   (12 Hours)
ERP: An CRM Perspective: Role of ERP in CRM, Concept of CRM: Objectives of CRM; Benefits of CRM; Components of CRM, Types of CRM: Operational CRM, Analytical CRM, Sales intelligence CRM, Collaborative CRM, Sub-Modules of CRM: Marketing module; Service module; Sales module.

Course Outcome
 CO1: Understand the basic concepts of ERP.
 CO 2. Identify different technologies used in ERP.
 CO 3. Understand and apply the concepts of ERP Manufacturing Perspective and ERP
         Modules.
 CO 4. Discuss the benefits of ERP
 CO 5. Understand and implement the ERP life cycle

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1				M		H		
CO2	H							
CO3	M							M
CO4		M						
CO5			M				L	

Text Book

1. Mary Sumner Enterprise Resource Planning, 1st Edition Pearson Bengaluru

Reference Book

1.Ellen Monk , Bret Wagner Concepts in Enterprise Resource Planning 4th edition Cengage Learning USA

BSC [Information Technology] Degree Examination – Syllabus – for candidates admitted from the Academic Year 2018 – 2019 onwards
THIRD SEMESTER
PART III: IDC 3 –ENTERPRISE RESOURCE PLANNING

Maximum CIA :30
Maximum CE:70
Total Hours:60

Course Objective :

To Familiarize the students with the Enterprise Resource Planning

Unit 1   (12 Hours)
Introduction to ERP: Defining ERP, Origin and Need for an ERP System, Benefits of an ERP System, Reasons for the Growth of ERP Market, Reasons for the Failure of ERP Implementation: Roadmap for successful ERP implementation.

Unit 2   (12 Hours)
ERP Implementation Life Cycle: ERP Tools and Software, ERP Selection Methods and Criteria, ERP Selection Process, ERP Vendor Selection, ERP Implementation Lifecycle, Pros and cons of ERP implementation, Factors for the Success of an ERP Implementation

Unit 3   (12 Hours)
ERP: A Purchasing Perspective: Role of ERP in Purchasing, Purchase Module: Features of purchase module; Benefits of purchase module, ERP Purchase System

Unit 4   (12 Hours)
ERP: Sales and Distribution Perspective: Role of ERP in Sales and Distribution, Sub-Modules of the Sales and Distribution Module:Master data management, Order management, Warehouse management, Shipping and transportation, Billing and sales support, foreign trade, Integration of Sales and Distribution Module with Other Modules

Unit 5   (12 Hours)
ERP: An CRM Perspective: Role of ERP in CRM, Concept of CRM: Objectives of CRM; Benefits of CRM; Components of CRM, Types of CRM: Operational CRM, Analytical CRM, Sales intelligence CRM, Collaborative CRM, Sub-Modules of CRM: Marketing module; Service module; Sales module.

Course Outcome
 CO1: Understand the basic concepts of ERP.
 CO 2. Identify different technologies used in ERP.
 CO 3. Understand and apply the concepts of ERP Manufacturing Perspective and ERP Modules.
 CO 4. Discuss the benefits of ERP
 CO 5. Understand and implement the ERP life cycle

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1				M		H		
CO2	H							
CO3	M							M
CO4		M						
CO5			M				L	

Text Book

1. Mary Sumner Enterprise Resource Planning, 1st Edition Pearson Bengaluru

Reference Book

1.Ellen Monk , Bret Wagner Concepts in Enterprise Resource Planning 4th edition Cengage Learning USA

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

THIRD SEMESTER

CERTIFICATE COURSE – ADVERTISING AND SALES PROMOTION

Total Hours: 30

Course Objective:
To familiarize the student with the practice of promoting market for products through advertisements and sales promotion.

Unit I   (6Hours)

Advertising – Origin and Development –Advertising- an element of Marketing mix-Objectives – Advertising and Salesmanship – Role and Importance – Planning for Advertisement communication process

Unit II   (6 Hours)

Advertisement – Kinds of Advertisements– Economic and social affects of advertising – Advertising mix – Advertising budget and relevant decisions.

Unit III   (6Hours)
Advertising Agencies -Role – Types of Advertising – Measuring the effectiveness of Advertisement - Managing agency -Evaluation of Advertising

Unit IV   (6 Hours)

Sales Promotion – Objectives – Advantages - Tools and their effectiveness – Aggressive selling.

Unit V   (6 Hours)

Sales promotion –Objectives- Planning, implementation Control-Consumer sales promotion-Trade sales promotion-Measuring the effectiveness of promotion company- Evaluation of Sales Promotion

Text Books:

1. S.A.Chunawalla , Advertising and Sales Promotion Management, Himalaya Publishing House; Sixth Edition edition (2015)
2. Mr.PankhuriBhagat , Advertising & Sales Promotion ,SBPD Publishing House (2015)

Reference Books :

1. Mr. RituNarang ,Advertising, Selling & Promotion, Pearson Education(2020)

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

THIRD SEMESTER
CERTIFICATE COURSE – PRACTICAL BANKING

Total Hours: 30

Course Objective

The objective of this course is to acquaint students with the theoretical and practical aspects of modern banking.

Unit-I   (6 Hours)

Definition of Banker and Customer-General Relationship-Special Relationship-Nationalized Banks-Private Banks -Evolution of Commercial Banks-Functions of modern Commercial Banks.

Unit-II   (6 Hours)

Opening of New Bank Account-Precautions-Types-Savings Account-Current Account-Fixed Deposit-Recurring Deposit-Cumulative Deposit-TL-Cash Credit-Overdraft-Joint Account-KYC-Closure of bank Account.

Unit-III   (6 Hours)

Negotiable Instruments-Meaning-Characteristics- Bills of Exchange-Promissory Note-Cheque- Features- Crossing of a Cheque- Cancellation of Cheque –Types of Crossing-Endorsement- Dishonour of a Cheque – Stop the Payment of a Cheque - Demand Draft.

Unit-IV   (6 Hours)

Funding of Corporate seeds-Types of Finance-Seed Capital-Bank Finance of seed capital - Venture Capital- Procedures for loans.

Unit-V   (6 Hours)

Electronic Payments: CIBIL-Concept of Security-Primary vs Collateral-Application Forms-Annexure-Electronic Payment-NEFT-RTGS-IMPS- Cardless withdrawals

Text Book
   1. Sundaram and Varshney , Banking Theory Law and Practice, 20th Revised Edition, Sultan Chand & Sons,Year 2014.

Reference Books
   1.H.R. Gupta, Practical Banking in India, Gyan Publishing House, 2011.
   2.Gurusamy, S., Banking Theory: Law and Practice, 2nd Edition, Tata McGraw Hill, Year 2010.

All UG Degree Examination-Syllabus -for Candidates admitted from the Academic Year 2019– 2020 onwards

THIRD SEMESTER
CERTIFICATE COURSE- ENTREPRENEURSHIP

Total Hours : 30

Course Objectives :

To enable the students to learn the fundamentals of being a good entrepreneur and the Concept of entrepreneurship.

Unit I   (6 Hours)

Concept of Entrepreneurship : Definition Nature and characteristics of entrepreneurship – function and type of entrepreneur. Development of women entrepreneur and rural entrepreneur.

Unit II   (6 Hours)

The start-up process, Project identification – Business Idea – Sources of Business Idea – Selection of the product – project formulation - evaluation , Project Report.

Unit III   (6 Hours)

Institutional services to entrepreneurs – DIC, SIDO, NSIC, SISI, SIDCO and KVIC, Institutional finance to entrepreneurs : IFCI, SFC, IDBI, ICICI, TIIC and SIPCOT.

Unit IV   (6 Hours)

Incentives and subsidies – Subsidised services – subsidy for market - Transport – seed capital assistance - Taxation benefit to SSI.

Unit V   (6 Hours)

Industrial Sickness- Symptoms- Remedies – Causes.

Text Book

1. Gupta.C.B and Srinivasan N.P, Entrepreneurial Development, 4th Edition 2005, Sultan Chand and Co., New Delhi.

Reference Book

1. Saravanavel.P, Entrepreneurial Development, 2nd edition, Essae Chandra Institute, 2005, Mumbai.

All UG Degree Examination-Syllabus -For Candidates admitted from the Academic Year 2019– 2020 onwards

FOURTH SEMESTER
CERTIFICATE COURSE- E-COMMERCE

Total Hours : 30

Course Objectives :

Enabling the Students to Acquire Theoretical knowledge to be successful in E-Commerce.

Unit I   (6 Hours)

E Commerce: The Revolution is just beginning ,E Commerce: A Brief History-Electronic Commerce-Electronic Commerce Models-Types of Electronic Commerce-Value Chains in Electronic Commerce-E-Commerce in India-Introduction to E-Business-Internet-World Wide Web-Internet Architectures-Internet Applications-Web Based tools for Electronic Commerce.

Unit II   (6 Hours)

E-Commerce Business models and concepts-The Internet and World Wide Web - E Commerce Business models, Major Business to consumer (B2C) Business models, Major Business to Business (B2B) business models, Business models in emerging Ecommerce areas, Intranet-Composition of Intranet- Business Applications on Intranet-Extranets Electronic Data Interchange-Components of Electronic Data Interchange-Electronic Data Interchange (Communication Process).

Unit III   (6 Hours)

Security Threats to E-Business- Security Overview- Electronic Commerce Threats-Encryption- Cryptography- Public Key and Private Key Cryptography- Digital Signatures-Digital Certificates- Security Protocols over Public Networks- HTTP- SSL- Firewall as Security Control- Public Key Infrastructure (PKI) for Security- Prominent Cryptographic Applications.

Unit IV   (6 Hours)

Electronic Payment System- Concept of Money-Electronic Payment System- Types of Electronic Payment Systems-Smart Cards and Electronic Payment Systems- Infrastructure Issues in EPS, Electronic Fund Transfer.

Ecommerce Marketing concepts –Online Retailing and Services-Consumer online: The Internet Audience and Consumer Behavior-Basic Marketing concepts-Internet Marketing– The Service sector of offline and online, Online financial services-online travel services-Online career –Social networks and Online communities, Online auctions, E Commerce Portals

Text Book

1. Whitley, David. E-Commerce Strategy, Technologies and Applications. Tata McGraw Hill, Reprint 2014.

Reference Books:

1. C.Laudon, E- Commerce :Business Technology Society, 4th Edition, Pearson Education, Reprint 2011.
2. Balaji, Kamlesh K and Nag, Debjani, E-Commerce: The Cutting Edge of Business, Tata McGraw Hill, Publishing Company Ltd., New Delhi. Reprint 2011.

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

FOURTH SEMESTER

CERTIFICATE COURSE – OFFICE MANAGEMENT

Total Hours :30

Course Objective:

To prepare Students in managing the day-to-day activities related to administration activities in offices.

Unit I   (6 Hours)

Office and office Management – meaning of office, function of office, primary and

administrative functions, importance of office. Relation of office with other departments of

business Organization. Concept of paperless office, virtual office, back and front office, open

and private office.

Unit II   (6 Hours)

Filing and Indexing – Meaning and importance of filing, essential of good filing

system. Centralized and decentralized filing system. Meaning, need and types of indexing

used in the business organization.

Unit III   (6 Hours)

Office forms– Meaning and types of forms used in business organization, advantages,

forms controls, objectives, form designing, principles of forms designing and specimens of

forms used in office. Office Record Management – Meaning, importance of record keeping

management, principles of record management and types of records kept in a business

organization- Office Automation

Unit IV   (6 Hours)

Office Machines and equipments – Importance, objectives of office machines.Office6Safety

and Security – Meaning, importance of office Safety, safety hazards and steps to improve office safety. Security hazards and steps to improve office security.

Unit V   (6 Hours)

Measurement of Office Work – Importance, purpose, difficulty in measuring office work. Different ways of measurement, setting of work standards, benefits of work standards. Techniques of setting standards. Office Manuals – Meaning, need, types of office manuals and steps in preparing of office manuals.

Text Books

1.Chhabra, T.N., Modern Business Organisation, New Delhi, DhanpatRai& Sons.

Reference Books

1.P.K. Ghosh, "Office Management", Sultan Chand & Sons. New Delhi

2.R.K. Chopra, Office Management, Himalaya Publishing House

All UG Degree Examination – Syllabus for Candidates admitted from the Academic Year 2019-2020 onwards.

FOURTH SEMESTER
CERTIFICATE COURSE - PRINCIPLES OF INSURANCE

Total Hour: 30 hours

Course Objective:
The student gains the ability to apply the knowledge and understanding, in simple situations, to the operation, on sound financial lines of life insurance companies.

Unit I (6 Hours)
Insurance: Meaning, Functions - Role and Importance of Insurance – Essentials of contract of insurance Principles of insurance.

Unit II (6 Hours)
Life Insurance – Meaning, Nature – Various Policies - Procedure for taking life Insurance policy- Surrender and revival of policy - Assignment and Nomination – Procedures, - Settlement of claim – Loan on policy

Unit III (6 Hours)
General Insurance- Fire Insurance, Marine insurance , Health Insurance , Personal accident Insurance , Motor Insurance and miscellaneous Insurance – Characteristics , Procedure for claim.

Unit IV (6 Hours)
Agent- Meaning, Procedures for Becoming an Agent: Pre- requisite for obtaining a license: Duration of license; Cancellation or suspension/termination of agency
Appointment; Code of conduct; Unfair practices. Functions of the Agent

Unit V (6 Hours)
IRDA - Mission - Composition of Authority - Duties, Powers and Functions - Powers of Central Government in IRDA Functioning.

Text Book:
1. M.N. Mishra, "Insurance –Principles and Practice", S.Chand & Company Ltd., New Delhi, 2016.

Reference Book:
1. B.S Bodla, M.C. Garg & K.P. Singh,"Insurance -Fundamentals, Environment & Procedures" , Deep & Deep Publications Pvt. Ltd., New Delhi, 2014 (Last Edition)
2. P.Periysamy, Principles and Practice of Insurance, Himalaya Publication House, Year -2017

Regulations for B.Com IT
(Effective from the academic year 2019-2020 onwards)

Introduction
The department of B.Com Information Technology started in 2009.

Objective:
To equip the students with accounting methods formatted for the Corporate Bodies from the time of their inception till their liquidation.

Eligibility:
A pass in Higher Secondary Examination conducted by Tamilnadu or an equivalent examination, with Commerce as one of the subjects of study and Accountancy

Duration of UG Programme
The course shall extend over a period of three years comprising of six semesters, with two semesters per year. There shall not be less than ninety instructional days during each semester. Examination shall be conducted at the end of each semester for the respective subject

Vision
- To make the students a more Responsible Citizen of the Nation.
- To produce the talented professionals & technicians to meet the challenges of the modern world.
- To develop the personality and communication skill of the student and to make them excel in corporate knowledge.

Mission
- To provide quality education and to inculcate ethical and social values in the minds of students.
- To make students innovative and society centered.
- To produce graduates and entrepreneurs trained to face the challenges of the corporate sector with a global perspective.
- To train them with skills for self-employment.

Programme Outcomes
The graduates will be able to

PO1: Have complete knowledge of Finance, Accounting, Taxation, Information Technology, Business laws and other.

PO: 2 Equip with professional, inter personal and entrepreneurial skills.

PO: 3 Gear up with updated knowledge in implementing business practices

PO: 4 Evaluate environmental factors that influence business operation

PO: 5 Prepare for post graduate studies and to achieve success in their professional careers.

Programme Specific Outcomes (PSOs)

PSO: 1 Serving as bases for Professional programmes such as ACS, ICWA and CMA.

PSO: 2 Create the students well versed in few areas of interest such as Accounting, Labor Legislation, Company Law and Taxation**.**

PSO: 3 Build in student transcribing skills needed in positions such as Executive Secretary ,Manager and Administrative Assistant. and to Impart Students in Learning Multi Disciplinary knowledge through Projects and Industrial Training and providing a sustainable competitive edge in meeting the Industrial needs.

BCOM IT
Scheme of Examination(OBE pattern)
For the Candidates Admitted From the Academic year 2019-2020 onwards

Part	Sub Code	Subject Title	Ins.Hrs/Week	Dur. Hrs.	CIA	CE	Total	Credits
						Examination		
SEMESTER I								
I	19LATA01/ 19LAHI01/ 19LAMY01/ 19LAFR01	Language – I Tamil/Hindi/Malayalam/French	5	3	30	70	100	3
II	19ENG001	English –I	5	3	30	70	100	3
III	19BCI101	Core 1 Financial Accounting -I	6	3	30	70	100	4
III	19BCI102	Core 2 Introduction to Information Technology	6	3	30	70	100	4
III	19BCIID1	IDC 1 Managerial Economics	6	3	30	70	100	4
IV	19UFCA01	Foundation Course I : EVS #	2	3	-	50	50	2
		Total	**30**				**550**	**20**
SEMESTER II								
I	19LATA02/ 19LAHI02/ 19LAMY02/ 19LAFR02	Language–II Tamil/Hindi/Malayalam/French	5	3	30	70	100	3
II	19ENG002	English – II	5	3	30	70	100	3
III	19BCI201	Core 3 Financial Accounting -II	6	3	30	70	100	4
III	19BCIP01	Core Lab 1 [Information Technology Lab]	6	3	40	60	100	4
III	19BCIID2	IDC 2 Principles of Marketing	6	3	30	70	100	4
IV	19UFCA02	Foundation Course II: Value Education #	2	2	-	50	50	2
		Total	**30**				**550**	**20**
SEMESTER III								
III	19BCI301	Core 4 Financial Accounting-III	5	3	30	70	100	4
III	19 BCI302	Core 5 Networking Management	5	3	30	70	100	4
III	19BCI303	Core 6 Programming With C++ [Theory]	5	3	30	70	100	4
III	19BCIP02	Core Lab 2 Computer Application Practical's [C++]	5	3	40	60	100	4
III	19BCIID3	IDC 3 Business Mathematics	5	3	30	70	100	4
IV	19BCISB1/ 19BCISB2	SBC I Corporate Communication/ E- Business #	3	3	-	75	75	3
IV	19BTA001/ 19ATA001/ 19BCIED1	EDC-I :Basic Tamil -I/ Advanced Tamil-I / Multimedia #	2	2	-	50	50	2
		Total	**30**				**625**	**25**

		SEMESTER IV						
III	19BCI401	Core 7 Corporate Accounting	5	3	30	70	100	4
III	19BCI402	Core 8 Company Law & Secretarial Practice	5	3	30	70	100	4
III	19BCI403	Core 9 Database Management System	5	3	30	70	100	4
III	19BCIP03	Core Lab 3 Database Management System Lab	5	3	40	60	100	4
III	19BCIID4	IDC 4 Business Statistics	5	3	30	70	100	4
IV	19BCISB3/ 19BCISB4	SBC II Corporate Practice/ Brand Management #	3	3	-	75	75	3
IV	19BTA002/ 19ATA002 19EDC002	EDC- II: Basic Tamil-II / Advanced Tamil-II / Communicative English #	2	2	-	50	50	2
V	19NSS001/ 19NCC001/ 19SPT001/ 19EXT001	NCC/NSS/Sports/ Extension Activities @	-	-	50	-	50	2
		Total	**30**				**675**	**27**
		SEMESTER V						
III	19BCI501	Core 10 Cost Accounting	6	3	30	70	100	4
III	19BCI502	Core 11 Taxation -I	6	3	30	70	100	4
III	19BCI503	Core 12 Legal Business Concepts	3	3	30	70	100	4
III	19BCI504	Core 13 Software Development In Visual Basic	5	3	30	70	100	4
III	19BCIP04	Core Lab 4 Software Development In Visual Basic Lab	5	3	40	60	100	4
III	19BCIE01/ 19BCIE02/ 19BCIE03	Elective I	5	3	30	70	100	4
III	19BCIIT1	Institutional Training	-	-	-	-	-	-
		Total	**30**				**600**	**24**
		SEMESTER VI						
III	19BCI601	Core 14 Accounting for Management	6	3	30	70	100	4
III	19BCI602	Core 15 HTML	5	3	30	70	100	4
III	19BCIP05	Core Lab 5 [HTML Lab]	5	3	40	60	100	4
III	19BCIE04/ 19BCIE05/ 19BCIE06	Elective II	5	3	30	70	100	4
III	19BCIE07/ 19BCIE08/ 19BCIE09	Elective III	5	3	30	70	100	4
III	19BCIPR1	Project and Viva Voce	4	3	50	50	100	4
		Total	**30**				**600**	**24**

	Total	3600	140

No Continuous Internal Assessment (CIA) and only Comprehensive Examination (CE)
@ No Continuous Internal Assessment (CIA) and Comprehensive Examination (CE) IDC-Inter Disciplinary Courses, EDC-Extra Inter Disciplinary Courses, SBC-Skill Based Courses

List of Skill Based Courses

Sem	Code	Subject Title	Credits
SBC I			
III	19BCISB1	Corporate Communication	3
III	19BCISB2	E Business	3
SBC II			
IV	19BCISB3	Commerce Practical	3
IV	19BCISB4	Brand Management	3

List Elective Courses

Sem	Code	Subject Title	Credits
Elective I			
V	19BCIE01	E-Commerce	4
V	19BCIE02	Corporate Finance	4
V	19BCIE03	Organizational Behavior	4
Elective II			
VI	19BCIE04	Financial Management	4
VI	19BCIE05	Software Engineering	4
VI	19BCIE06	Corporate Governance	4
Elective III			
VI	19BCIE07	Multimedia & its applications	4
VI	19BCIE08	Investment Management	4
VI	19BCIE09	Working Capital Management	4

List of Extra Disciplinary Courses

Sem.	Subject Code	Subject Name	Credits
III	19BTA001	Basic Tamil-I	2
III	19ATA001	Advanced Tamil-I	2
III	19BCIED1	Multimedia	2
IV	19BTA002	Basic Tamil-II	2
IV	19ATA002	Advanced Tamil-II	2
IV	19EDC002	Communicative English	2

List of Additional Credit Papers

Sem.	Subject Code	Subject Name	Credits
III	19BCIAC1	Human Resource Management	2
IV	19BCIAC2	Entrepreneurial Development Program	2
V	19BCIAC3	Institutions Facilitating International Trade	2

Summary			
Part	**No of Papers**	**Total Credits**	**Total Marks**
I	2	6	200
II	2	6	200
III –Core	20	80	2000
III – IDC	4	16	400
III – Elective	3	12	300
III –Project	1	4	100
IV –Foundation Course	2	4	100
IV – EDC	2	4	100
IV – SBC	2	6	150
V – NSS/NCC/Sports/Ext.Activity	-	2	50
Total	**38**	**140**	**3600**

REGULATIONS FOR BOARD OF COMMERCE WITH INFORMATION TECHNOLOGY
(FOR UG COURSES ONLY)
(Effective from the Academic Year 2019-2020 onwards)

1. Submission of Record Note Books for practical examinations

Candidates appearing for practical examinations should submit Bonafide Record Note Books prescribed for practical examinations, Otherwise the candidate shall not be permitted to appear for the Practical Examinations.

2. Ratio of Comprehensive Examination, Pre- Model and Model Examinations Marks for UG and PG Courses

Part	Internal Assessment	External Assessment	Total Marks
I (Languages)	30	70	100
II (English)	30	70	100
III(Core, IDC)	30	70	100
IV (SBC)	-	75	75
IV (EDC/Foundation Course)	-	50	50
V (NCC/NSS/Sports/Ext. Activity)	50	-	50

3. Project Work Mark Distribution

Particulars	IA	CE	Total
Project Work (UG)	50	50	100
Project Work (PG)	100	100	200
Project Work(M.Sc(CS)/M.Sc(ECS)	150	100	250
Project Work (M.Com/MIB)	50	100	150

4. Practical Mark Distribution for all UG and PG Courses

Internal -40 External-60 Total Marks -100

5. Break up for Internal Marks

S. No	Internal Marks	Distribution of Marks
1	Pre Model Examination	70
2	Model Examination	70
3	Seminar	30
4	Attendance	10
Total		**180/6=30**

6. Seminar Split up

S.NO	Seminar split up	Marks
1	Content	10
2	Flow of the presentation	10
3	Stage management and Body language	10
	Total	**30**

7. Attendance Break up

S.NO	Attendance split up	Marks
1	65% to 74%	4
2	75% - 80%	6
3	81% - 90%	8
4	91% - 100%	10

8. Internal Marks for Practical (Maximum 40)

	Maximum Marks : 40	
S No	**Internal Marks**	**Distribution of Marks**
1	For Completion of the Practical List	20
2	Test –I	10
3	Test –II	10
	Total	**40**

9. External Marks for Practical (Maximum 60)

	Maximum Marks : 60	
S. No	**Comprehensive Examination**	**Distribution of Marks**
1	Record	**10**
2	Program – I Algorithm Coding Execution	5 10 10 TOTAL (**25**)
3	Program – II Algorithm Coding Execution	5 10 10 TOTAL (**25**)
	Total	**60**

10. Internal Marks for Corporate Practical (Maximum 40)

Maximum Marks : 40		
S No	Internal Marks	Distribution of Marks
1	For Completion of the Practical List	20
2	Test –I	10
3	Test –II	10
	Total	40

11. External Marks for Corporate Practical (Maximum 60)

Maximum Marks : 60		
S. No	Comprehensive Examination	Distribution of Marks
1	Record	10
2	Practice – I Description Form Filling	5 10 TOTAL (15)
3	Practice – II Description Form Filling	5 10 TOTAL (15)
4	Viva Voce	20
	Total	60

12. Internal and External Marks for Project Work

S.No	Internal Marks	Distribution of Marks
1	**INTERNAL** Review –I Review –II Documentation & Final Review	 10 10 30 **Total (50)**
2	**EXTERNAL** Presentation Viva	 30 20 **Total (50)**
	Total	100

13. Pattern of Question Paper

For Pre model Test, Model and Comprehensive Examination under – Graduate and Post-Graduate Courses.

Maximum Marks : 70 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×4=20)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 75 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×5=25)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 50 / Time 2 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×3=15)	Each question carries four marks	Internal Choice
Section – C	(5×5=25)	Each question carries eight marks	Internal Choice
Maximum Marks : 100 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Short Answers
Section – B	(5×8=40)	Each question carries eight marks	Internal Choice
Section – C	(5×10=50)	Each question carries ten marks	Internal Choice

Note:

1. The questions should be numbered sequentially, running through the Sections A, B and C

2. The maximum marks are 70/75

Note:

1. The questions should be numbered continuously running through the Sections A, B and C.

2. Questions should be evenly distributed among the unit in the syllabus in all the sections of the Question paper

3. While framing questions with internal choice the questions must be identified as (a) or (b). (e.g 11. a or b). Further, the internal choice must be from the same unit.

4. The Controller of the Examinations shall arrange for the setting of question papers on the basis the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies

The following are the distribution of marks for Comprehensive Examinations and CIA for Theory, Practical and Project.

14. Conduct of Practical Examinations:

Practical Examinations shall be conducted with one Internal Examiner and one External Examiner and the Question Paper for practical examination shall be set by both Internal and External examiners.

15. Institutional Training:

Each student in the UG II year shall compulsorily undergo Institutional Training in the V th Semester for 15 days. Training shall be done individually for the purpose of Course completion.

Note: Students who fails to complete their Practical Examination/ Project VivaVoce/ Institutional Training in the concern Semester they can appear in the subsequent Semesters

16. Certificate Course

In the academic year 2019-2020 the following inter disciplinary certificate courses has been introduced. The candidates shall opt for any one of the following course respectively during III and IV th semester of their study.

S.No	Semester	Subject Title
1	III	Advertisement and Sales Promotion
2		Practical Banking
3		Entrepreneurship Development Programme
4	IV	E-Commerce
5		Office Management
6		Principles of Insurance

B.Com [Information Technology] Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards

FIRST SEMESTER
PART III: CORE 1 – FINANCIAL ACCOUNTING – I

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objectives: On Successful completion of this course, the student should have understood concepts and conventions of accounting and basic accounting framework.

Unit –I   (14 Hours)
Meaning and scope of Accounting, Basic Accounting Concepts and Conventions -Objectives of Accounting - Accounting Transactions - Double Entry Book keeping - Journal, Ledger, Preparation of Trial Balance - Preparation of Subsidiary Book.

Unit – II   (14Hours)
Final Accounts with adjustments – Closing stock, outstanding expenses, unexpired or prepaid expenses, accrued income, Interest on Capital and Drawings-additional bad debts-Provision-Creations of various reserves.

Unit – III   (14Hours)
Classification of errors - Rectification of errors - Preparation of Suspense Account. Bank Reconciliation Statement (Only simple problems).

Unit – IV   (15Hours)
Bill of Exchange-parties to bill of exchange – Distinction between bill and promissory note-Recording transaction relating to bill- Recording bill transaction in journal and ledger- Dishonor of bill – Renewal of bill-Average due date- Average due date on basis of calculation of interest – Account current-Product Method-Red Ink Interest Method-Daily Balance Method.

Unit – V   (15Hours)
Consignment – features – Accounting treatment of consignment transaction – Entries in books of Consignee – Entries in books of consignor. Joint venture – meaning – Treatment when separate book is maintained – Entries when separate book is not maintained- Sale of goods on approval or return basis. Professional Accounting- introduction.

NOTE : Distribution of marks : Theory 20% and Problems 80%

Course Outcomes:
   ➢ Preparing Financial Statements in accordance with appropriate standards.
   ➢ Preparing Ledger accounts using double entry book keeping and record journal

entries Accordingly.

- ➢ Acquiring Knowledge in preparation of Bank Reconciliation statements from incomplete statement .
- ➢ Acquiring Knowledge in preparation of Negotiable Instruments.
- ➢ Understanding the accounting system with double entry system .

Text Book

1. T. S. Reddy and Murthy, Financial Accunting, 3rd Edition, Margham Publications, Year- 2016, Chennai.

Reference Books

1. N.Vinayakam, P.L.Mani, K.L.Nagarajan, Principles of Accountancy, 8th Edition, S.Chand & Company Ltd., Year- 2012, New Delhi.
2. S.P.Jain ,K.L.Narang, Financial Accounting,6th Edition , Kalyani publishers, Year- 2012, New Delhi.

B.Com [Information Technology] Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards
FIRST SEMESTER
PART III: CORE 2 – INTRODUCTION TO INFORMATION TECHNOLOGY

Maximum CIA: 30
Maximum CE: 70
Total Hours:72

Course Objectives:
Enabling the students to acquire the Knowledge about Microsoft Office and provides an overview of C Programming.

Unit- I   (15 Hours)
MS Word: Creating a new Document- Finding and replacing formatting-checking Spelling and Grammar-Adding headers and Footers-Arranging Text in columns-inserting a table of contents-Creating a Table-Modifying and Formatting a table-Creating a Form letter. MS Excel: Creating a simple formula-Editing a Formula-Performing Calculation using Functions-Entering data-Selecting ranges-Editing entries-Formatting entries-Simple Calculation-More calculation-Creating Chart.

Unit- II   (12 Hours)
MS Power point: Creating a new Presentation- choosing a Template-Adding actions Buttons-Creating slide transitions-Adding animation-timing a presentation-setting up a slide show-Creating a custom slide show.MS Access: Creating a database-working with a table-Creating table using a wizard-Working with table in Design view-Specifying data types and field properties-Planning and defining Table Relationships-Filtering out Records-creating a query using a wizard-Creating a form using wizard-Editing Data in a form-Creating report using a wizard.

Unit -III   (15 Hours)
Overview of C-Introduction-Character Set-C Tokens-Keyword and Identifiers-Constant-Variables-Data Types-Declaration of Variables-Assigning Values to Variables-Defining Symbolic Constants-Operators-Arithmetic Expression-Evaluation of Expressions- Precedence of Arithmetic Operators-Type Conversion in Expression.

 Unit-IV   (15 Hours)
Decision Making and Branching: Decision Making with IF Statements- the Switch Statements-the: Operator-the GOTO Statement –Decision Making and Looping-Jumps in Loops-Arrays-Character and String Handling-String Handling Functions-Table of Strings.

Unit- V   (15 Hours)

ANSI Functions-Return Values and Their Types-Function Calls and Declaration-No Arguments and No Return Values-Arguments But No Return Values- No Arguments But Returns a Value-Functions That Return Multiple Values-Recursion- Structures & Union.

Course Outcomes:
- ➢ Ensuring Knowledge about MS Word and Excel to create professional business documents.
- ➢ Ensuring the Knowledge about PowerPoint and Ms Access.
- ➢ Understanding the basic concept of C Programming, and its different modules
- ➢ Acquire knowledge about the basic concept that includes conditional and looping expressions, Arrays, Strings, Functions.
- ➢ Ensuring the Knowledge about Functions in C.

Text Book
1. E.Balagurusamy, Programming in ANSI C, 7th Edition, Tata McGraw Hill, Year- 2016, New Delhi.
2. Microsoft office XP simply visual 1st Edition,BPB publications,Year-2001,New Delhi

Reference Books
1. V.Rajaraman, Introduction to Information Technology, 3rd Edition, Sami Publications., Year- 2018, New Delhi.
2. Yashavant Kanetkar, Let us C, 11th Edition, Kalyani publishers, Year-2016.

B.Com [Information Technology] Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards

FIRST SEMESTER
PART III: IDC 1 – MANAGERIAL ECONOMICS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objectives:
To understand and appreciate the basic economics and their applications to the business.

Unit- I   (14Hours)
Introduction to Economics: Definition, nature and scope of Economics –Economic theories applied to business analysis-decision making in business –objectives of a business firm.

Unit- II   (15Hours)
Demand and supply functions: Meaning and determinants of demand – distinctions of demand – Law of demand –Elasticity of demand – supply concepts – Equilibrium.

Unit- III   (14Hours)
Consumer behavior: Meaning of utility –Law of Diminishing Marginal Utility – Equi- Marginal Utility – Indifference curve analysis –Definition –properties –consumer's surplus- consumer's equilibrium.

Unit- IV   (14Hours)
Production and cost analysis : meaning and concepts of production –factors of production and production function – law of variable proportion –law of returns to scale – producer's equilibrium – Economies of scale – Theories of wages, Rent, Interest.

Unit -V   (15hours)
Market structure and pricing: Types of competition –perfect competition –Monopoly – Monopolistic competition – Oligopoly – price and output determination under different competitive market conditions.

Course Outcomes:
  ➢ Understanding the basic elements of Managerial Economics aspects, nature and decision making.
  ➢ Acquiring the Knowledge about law of demand, supply forecasting.
  ➢ Acquiring the Knowledge the theories of profit, profit maximization and analysis of breakeven point.

➢ Ensuring Knowledge about law of diminishing proportion, product function, economies of scale.
➢ Gaining Knowledge about pricing policy.

Text Book
1. Sankaran.S, Managerial Economics, 2rd Edition, Margaham Publication, Year- 2010, Chennai.

Reference Books
1. R.Meenakshi, Managerial Economics, 2nd Edition, Sultan Chand and Publications. Year- 2007, New Delhi.
2. R.L.Varshney and K.L.Maheswari, Managerial Economics, 15th Edition, Sultan Chand and Publications., Year- 2000, New Delhi.

B.Com [Information Technology] Degree Examination – Syllabus – for candidates admitted from the academic year 2019 – 2020 onwards
SECOND SEMESTER
PART III: CORE 3 – FINANCIAL ACCOUNTING II

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective:

To give an insight into the basics of accounting concepts and principles to prepare students to have the foot hold in accounts
.
Unit I   (15 Hours)
Depreciation Accounting – Meaning – Characteristics –Causes –Objectives –Basics factors affecting the amount of depreciation –Methods of recording depreciation –Straight line method-Diminishing balance method –Annuity method –Insurance policy method –Reserves and provisions-Distinction between Reserves and Provisions-Types of Reserves.
 Unit II   (15 Hours)
Accounting from in complete record or single entry system, Meaning, Features, Limitation-Difference between Single entry and Double entry –Ascertainment of profit –Net worth method –Difference between balance sheet and Statement of affairs- Conversion Method
Unit III   (15 Hours)
 Hire Purchase and Installment Purchase System-Definition –Some important terms –Main features –Installment purchase system –Distinction between Hire purchase and Installment system –Accounting treatment for hire purchase system –Calculation of Interest –Default and Repossession-Hire purchase trading accounting –Debtors method-Stock and Debtors method-Installment purchase system-Meaning –Accounting treatment
Unit IV   (15 Hours)
Branch Accounts –Meaning –Objects –Types of Branches-Dependent Branches –Accounting in respect of Dependent Branches –Debtors system-Goods are Invoiced at cost –Goods are Invoiced at selling price –Stock and Debtors system –Final accounts system-Departmental Accounting –Need for Departmental accounting –Difference between Departmental and Branches –Departmentalization of expenses-Apportionment of expenses-Interdepartmental Transfer at selling price –Stock Reserve.
Unit V   (12 Hours)
Self balancing ledgers and Sectional Balancing –Debtors ledger –creditors ledger-General ledger-procedure of Self balancing –Adjustment accounts-Advantages of self balancing system-Important points to note –Self balancing accounts at a glance – Sectional balancing system-Total Debtors accounts. IFRS, Meaning- need for IFRS- Challenges for adopting IFRS in India.

NOTE : Distribution of marks : Theory 20% and Problems 80%

Course Outcome:
   ➢ Acquiring Knowledge in preparation of various Depreciation methods.
   ➢ Ensuring the knowledge in preparation of Incomplete Records.

- ➢ Acquiring Knowledge in preparation of Hire purchasing.
- ➢ Acquiring Knowledge on the system of Branch accounts and its system and to understand the scope of Departmental accounting .
- ➢ Ensuring the knowledge in preparation of Self Balancing legers and to know the various concepts in IFRS.

Text Book
1.T. S. Reddy and Murthy, Financial Accunting, 3rd Edition, Margham Publications, Year-2016, Chennai.

Reference Books
1.N.Vinayakam, P.L.Mani, K.L.Nagarajan, Principles of Accountancy, 8th Edition, S.Chand & Company Ltd., Year- 2012, New Delhi.
2.S.P.Jain ,K.L.Narang, Financial Accounting,6th Edition , Kalyani publishers, Year- 2012, New Delhi.

B.Com[Information] Degree Examination – Syllabus for candidates admitted from the academic year 2019– 2020 onwards
SECOND SEMESTER
PART-III – CORE PRACTICAL –1 [INFORMATION TECHNOLOGY LAB]

Maximum CIA: 40
Maximum CE: 60
Total Hours: 60

Course Objective:
Enabling the students to acquire practical knowledge to be successful in Ms Office and C.

MS – Word

1.Type a paragraph and Perform:
  ❖ Font using font size, font style, line spacing etc.
  ❖ Insert page numbers at the bottom right alignment
  ❖ Insert header consisting of date and time, insert footer consisting of page Numbers.
  ❖ Change the paragraph into two or three columns
  ❖ Check the spelling and grammar
  ❖ Use bullets and numbering
  ❖ Use drop cap
  ❖ Find and replace a word
2. Prepare a college day invitation using borders and shading option, word art and pictures.
3. Using mail merge, draft a shareholder's meeting letter for 5 members.

MS – Excel
4. Enter the semester marks and calculate total auto-sum, average and result using function wizard. Calculate Mean, Median, and Mode.
5. Calculate Simple and Compound Interest.

MS – PowerPoint.
6. Design slide for a product of your choice, includes the picture of the product and demonstration and working (minimum three slides)
7. Create different slides in PowerPoint with organizational chart and present a slideshow using Custom animation and slide transition.
MS – Access
8. Create a Student database with the following Tables:
     i). Students Personal Details ii) Students Mark Details
     Perform the following:
          a). Relate the Tables
          b). Create a query to the students passed in all subjects.
          c). Create a form and report

 9. Writing a Program to Generate Fibonacci Series.
10. Writing a Program to calculate simple and compound interest.
11. Writing a Program to Find the Factorial of the Given Number Using Recursive Function.
12. Programming to Sort the Given Set of Number in Ascending Order.

B.Com [Information Technology] Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards

SECOND SEMESTER
PART III: IDC2 – PRINCIPLES OF MARKETING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective:
On the successful completion of this paper the students should have required the basic knowledge of marketing and its functions.

Unit -I   (14 Hours)
Introduction to Market - Meaning, Definition and Concept – Traditional and modern marketing - Role and importance of Market - Classification of Market, Marketing function - Marketing process .

Unit- II   (15 Hours)
Product mix – meaning of products, Product mix – Strategies – PLC – Price mix, Importance of price – Pricing Objectives -Kinds o f pricing – methods of price determination.

Unit- III   (15 Hours)
Promotion - Advertisement – Personal Selling and Sale promotion - Distribution - Importance of channels of distribution – Meaning – Functions of middlemen – Elimination of middlemen.

Unit- IV   (14 Hours)
Market Segmentation – Benefits – Bases – Requisites of sound market segmentation — Buyer Behaviour – Significance – Buying Process – Steps in Buying Process – Buyer Behaviour Models.

Unit- V   (14 Hours)
Recent trends in marketing – E-marketing, direct marketing, online marketing, organic marketing, green marketing and market research.

Course Outcomes:
  ➢ Understanding the Concept of Marketing Function.
  ➢ Ensuring Knowledge about pricing .
  ➢ Ensuring Knowledge in the Concept of Advertising and its functions.
  ➢ Understanding the Market segmentation and its Concepts.
  ➢ Updating the Recent Trends in Marketing.

Text Book
1. Philip Kotler, Gary Armstrong Principles of Marketing, 5th Edition, Prentice Hall of India Pvt Ltd, Year- 2010, New Delhi.

Reference Books
1. Gupta.C.B and Rajan Nair.N, Marketing Management, 8th Edition Sultan Chand and Sons., Year- 2012, New Delhi.
2. Varshney R.L and Gupta S.L, Marketing Management, Sultan Chand and Sons., Year- 2012, New Delhi

B.Com Information Technology Degree Examination – Syllabus – for candidates admitted from 2019 – 2020 onwards
THIRD SEMESTER
PART III – CORE-4- FINANCIAL ACCOUNTING III

MaximumCIA :30
Maximum CE: 70
Total Hours: 60

Course Objective:
        To train the students in solving advanced problems in Accounting.

Unit – I   (12 Hours)
Introduction – Admission of Partner – Treatment of Goodwill – Revaluation of Assets and Liabilities – Calculation of Ratios for Distribution of Profits – Capital Adjustments.

Unit – II   (12 Hours)
Retirement and Death of a partner – Calculation of Gaining Ratio - Revaluation of Assets and Liabilities – Calculation of Ratios for Distribution of Profits – Capital Adjustments. [Memorandum Method Excluded] – Mode of Payments - Joint Life Policy

Unit – III   (12 Hours)
Dissolution – Insolvency of partners - Insolvency of One and Two Partners – Garner Vs. Murray – Deficiency A/C – Piecemeal Distribution-Proportionate Capital Method –Maximum loss method

Unit – IV   (12 Hours)
Insolvency Accounts - Meaning of Insolvent – Relevant Acts – Difference between Balance sheet and Statement of Affairs – Preparation of statement of affairs – Deficiency Accounts

Unit – V   (12 Hours)
Fire Claims for Loss of stock – Computation of Claim- Gross profit Ratio-Normal Loss – Abnormal Loss-Average clause

Course Outcome:
    CO1: Acquiring Knowledge in Admission of partner, Revaluation of assets and liabilities and capital adjustment.
    CO2: Ensuring the knowledge in Retirement of a partner, Distribution of Cash .
    CO3: Ensuring the knowledge in Preparation of statement of affairs and various Deficiency Accounts.
    CO4Acquiring Knowledge in Preparation of statement of affairs and various Deficiency Accounts.
    CO5:Ensuring the Knowledge in Fire Claims for Loss of Stock and Normal and Abnormal Loss

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1				M		H		
CO2	H							
CO3	M							M
CO4		M						
CO5			M				L	

Text Book

1. R.S.Reddy and Moorthy, Financial Accounting, 6th Edition 2011,Margham Publication, Year-2015.

Reference Books

1. R.L.Gupta, Advanced Accountancy Theory , Methods and Applications, Volume 1,1st Edition, Sulthan Chand & Co, Year 2013.

2. Amitabha Mukherjee, Advanced Accountancy, Volume 1, Mc.Graw Hill Education India Pvt Ltd, Year 2011.

B.Com Information Technology Degree Examination – Syllabus – for candidates admitted from 2019 – 2020 onwards
THIRD SEMESTER
PART III – CORE-5-NETWORKING MANAGEMENT

MaximumCIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
        Enabling Students to acquire theoretical knowledge in fundamental concepts of data communications.

Unit I   (12 Hours)
Network-Basic Concepts of Networking, Data Communication Concepts and Applications- Components of Data Communications- Trends in Computer Communications and Networking- Network Applications.

Unit II   (12 Hours)
Fundamentals of Data Communications and Networking- Architectures- Devices and Circuits- Data Link Layer-Media Access Control, Error Control in Networks.

Unit III   (12 Hours)
Networking- Network Layer and its Protocols- Network Addressing and Routing- Local Area Network (LAN)- LAN Components-Selecting a LAN- Improving LAN Performance.

Unit IV   (12 Hours)
Back Bone Networks- Backbone Network Components-FDDI- Metropolitan Area Network (MAN) and Wide Area Network (WAN)

Unit V   (12 Hours)
Network Management- Designing of Business Networks- Network Security.

COURSE OUTCOME:
    CO 1: Demonstrate Data Communications System and its components.
    CO 2: Summarize functionalities of different Layers and Networking Literature
    CO3: Identify and Analysis of basic protocols of computer networks, and how they can be
             used to assist in network design and implementation
    CO4: Identify and Analysis of basic protocols of computer networks, Identify the
             development and history of routing Protocols.
    CO: 5 Identify and Analysis of basic protocols of Business networks, and how they can be
             used to assist in network design and implementation.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1	H					M		
CO2		M					M	
CO3			M					M
CO4				L			L	
CO5					M		L	

Text Book
1. Jerry, Fitzgerald And Alan,Dennis,Business Data Communications and Networking, John Wiley &SonsReprint 2012

Reference Books
1. David A Stamper , Business Data Communications, Addison Wesley, 2013
2. Bagad V.S and Dhotre I.A, Computer Networks,1st Edition, TCH publications Pvt Ltd, 2012.

B.Com [Information Technology] Degree Examination – Syllabus for Candidates admitted from the academic year 2019-20 onwards
THIRD SEMESTER
PART III- CORE-6- PROGRAMMING WITH C++

MaximumCIA :30
Maximum CE: 70
Total Hours: 60

Course Objective:

     Enabling the Students to Acquire the OOPS concept and various syntaxes used in C++.

Unit – I   (12 Hours)
Introduction to C++- Input and Output in C++: OOP Paradigm – Concepts- Benefits- Object Oriented Languages and Applications - Formatted and Unformatted Console I/O Operations. Formatted Console I/O Operations-Bit Fields-Manipulators C++. Declarations: Parts of C++ Program- Type of Tokens-Data Types in C++-Type Casting –constants-Operators in C and C++.

Unit – II   (12 Hours)
Control Structures –Function in C++: Parts of Function-Inline Functions Overloading-classes and Objects: Classes in C++-Declaring Objects-Defining Member Function-Static Member Variables and Function- Static Object-Friend Function-Overloading Member Function.

Unit -III   (12 Hours)
Constructors and Destructors-Operator Overloading Unary-Binary Operators-Overloading with Friend Function-Type Conversion- Inheritance – Single Inheritance – Multiple Inheritance – Hierarchical- Hybrid Inheritance – Polymorphism – Pointers – Virtual Functions –Virtual Base Classes-Abstract Classes.

Unit –IV   (12 Hours)
Pointer and Arrays-C++ and Memory Models-the New and Delete Operator-Dynamic Objects-Binding in C++-Polymorphism and Virtual Functions. Exception Handling-Working with Strings

Unit –V   (12 Hours)
Files: File Stream Classes-File Modes-Binary and ASCII Files-Command Line Arguments Templates: Definition of Class Template –Normal Function Template-Inheritance-Difference between Templates and Macros.

Course Outcome

CO1: Understand the object oriented program concepts and data types in C++

CO2: Understand the parts of functions and types of functions such as friend function and static function

CO3: Ability to know about the operator overloading and types of inheritance.

CO4: Ability to demonstrate the use of polymorphism and virtual functions

CO5: Understand the types of file stream classes and use of templates.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1	H					M		
CO2		M					M	
CO3			M					M
CO4				L			L	
CO5					M		L	

Text Book
1. Balaguruswamy, "Object Oriented Programming with C++-Tata McGraw Hill Publishers Ltd., 1995, New Delhi.

Reference Books
1. Report Lafore, "Object Oriented Programming with C++" 1994, Galgotha.
2. Herbert Schilt, "C++- The Complete Reference, 3rd Edition, Tata McGraw Hill, Pub Ltd, 1999.
3. YeswantKanetkar, "Let us C++", BPB Publications, 1999

B.Com [Information Technology] Degree Examination – Syllabus for Candidates admitted from the academic year 2019-20 onwards
THIRD SEMESTER
PART III-CORE LAB -2- COMPUTER APPLICATION PRACTICAL'S [C++]

MaximumCIA: 40
Maximum CE: 60
Total Hours: 60

Course Objective**:**   To inculcate knowledge on C++ Programming concepts.

1. Write a C++ program to calculate basic arithmetic operations on two complex numbers using menu driven approach.
2. Write a C++ program to generate student mark list using class, and write member functions to read values, to compute total of 5 subjects, percentage obtained by the student and display grade based on the percentage of marks obtained.
3.   Write a C++ program to calculate depreciation under straight line method and diminishing Balance method [using class, defining member functions inside and outside the class].

4. Write a C++ Program to Create Class- Which Consists of EMPLOYEE Detail Like E Number E Name Department- Basic- Salary- and Grade. Write a Member Function to Get and Display Them. Derive a Class PAY from the Above Class and Write a Member Function to Calculate DA- HRA and PF Depending on the Grade.

5. Create Two Classes Which Consist of Two Private Variable Variables One Float and One Integer Variable in Each Class. Write Member Functions to Get and Display Them. Write Friend Function Common to Both the Classes and Display the Result.

6. Write a C++ Program Using Function Overloading to Read Two Matrices of Different Data Types Such As Integers and Floating Point Numbers Find Out the Sum of the Above Two Matrices Separately and Display the Sum of These Arrays Individually.

7. Write a C++ Program to Read an Integer Number and Find the Sum of All the Digits Until It Reduces to a Single Digit Using Constructors- Destructors and Inline Member's Functions.

8. Write a C++ Program to Create a Class SHAPE Which Consists of Two VIRTUAL FUNCTIONS Calculate Area O and Calculate Perimeter O to Calculate Area and Perimeter of Various Figures. Derive Three Classes SQUARE- RECTANGLE. TRIANGLE from Class Shape and Calculate Area and Perimeter of Each Class Separately and Display the Result.

9. Create a Class STRING. Write Member Functions to Initialize Get and Display Strings Overload the + Operator to Concatenate Two Strings Overload the Operator to Compare

Whether Two Strings Are Equal. Write a Member Functions to Find the Length of the String.

10. Write a C++ Program to Check Whether the Given String Is a Palindrome or Not Using Pointers.

11. Write a C++ Program to Create a File and to Display the Contents of That File with Line Numbers.

12. Write a C++ Program to merge two different files into a single file.

Course Outcome

CO1: Provides a thorough introduction to the C++ programming language

CO2: Understand basic structure of the C++ Programming ,declaration and usage of variables

CO3: Write C++ programs using constructors and destructors and inline functions.

CO4: Write C++ programs using operators and perform operator overloading.

CO5: write C++ programs using concepts of files.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1	H					M		
CO2		M						M	
CO3			M					M
CO4				L			L	
CO5					M		L	

Text Book
1. Balaguruswamy , "Object Oriented Programming With C++ , Tata McGraw Hill Publishers Ltd., 1995, New Delhi..

Reference Books
1. Robert Lafore , "Object oriented Programming in C++" , 1994, Galgotia.
2. Herbert Schilt , "C++ -The Complete Reference-3rd Edition, Tata McGraw Hill , Pub– Ltd, 1999.
3. Yeswant Kanetkar , "Let us C++" , BPB Publications, 1999.

B.Com Information Technology Degree Examination – Syllabus – for candidates admitted from 2019 – 2020 onwards
FOURTH SEMESTER
PART III – CORE –7- CORPORATE ACCOUNTING

MaximumCIA :30
Maximum CE: 70
Total Hours: 60

Course Objective:
Enabling students to acquire theoretical knowledge to be successful in Corporate Accounting.

Unit I   (12 Hours)
Issue of Equity shares – Issue at Par, Premium– Forfeiture and Re-issue [including Pro-rata allotment] Surrender of shares – Right Issue, Bonus Issue

Unit II   (12Hours)
 Issue of Preference shares - Redemption of Preference shares – Table showing capital profit & revenue profit- Simple problems in Redemption of Preference shares, Underwriting of shares – Complete Underwriting – Partial Underwriting -Firm underwriting.

Unit III   (12Hours)
Issue of Debentures – Par , Premium and Discount - Redemption of Debentures- Ex Interest & Cum Interest Quotations –Conversion Method – Installment Method.

Unit IV   (12Hours)
Valuation of Goodwill –Factors Affecting Goodwill –Methods of Valuating Goodwill –Shares-Methods of valuating Shares.-Liquidation of Companies

Unit V   (12 Hours)
Profits prior to incorporation – Preparation of Final Accounts of companies – Preparation of Profit and Loss Appropriation Account - –Schedule III of Companies Act 2013-Balance Sheet – Statement of P&L account.

Course outcome**:**
   CO1: Enabling the students to understand the features of Shares and Debentures and understand the treatment regarding issue of bonus shares and treatment of prior period profits
   CO 2: Develop an understanding about redemption of Preference Shares, methods of Underwriting.
   CO 3: To provide knowledge on Redemption of Debentures and methods of Interest quotations
   CO 4: To give an exposure on Goodwill and to calculate the value of Goodwill and shares to the company
   CO 5: Develop knowledge on drafting Final Accounts of Companies, and Profits prior to incorporation.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1				M		H		
CO2	H							
CO3	M							M
CO4		M						
CO5			M				L	

Text Books

 1. T.S.Reddy and Murthy, Corporate Accounting, Volume 1, revised edition ,Margham
 Publications, Year 2013.

Reference Books
1. S N Maheshwari&Suneel K Maheshwari, Corporate Accounting, Vikas Publishing,
 Year 2013.
2. R.S. Singal, Corporate Accounting, Latest Edition 2011,VK Publication, Year 2011.

B.Com Information Technology Degree Examination – Syllabus – for candidates admitted from 2019 – 2020 onwards
FOURTH SEMESTER
PART III – CORE-8- COMPANY LAW AND SECRETARIAL PRACTICE

MaximumCIA :30
Maximum CE: 70
Total Hours: 60

Course Objective:
        Enabling the students to know about the Company Law.

Unit I   (12 Hours)
Company Act 2013 – Definition – Characteristics – Kinds of Companies – Doctrine of Lifting the Veil- Promotion of a Company- Incorporation and Commencement of Business ,Company Secretary – Appointment , Legal Position –Qualification – Duties And Liabilities of a Secretary.

Unit II   (12 Hours)
Memorandum of Association- Forms – Contents – Procedures for Alteration – Secretarial Duties – Articles of Association – Forms and Contents- Procedures for Alteration-Doctrine of Indoor Management- Distinguish between Memorandum And Articles.

Unit III   (12Hours)
Prospectus – Definition-Deemed Prospectus-Shelf Prospectus- Red-Herring Prospectus-Contents – Statement in Lieu of Prospectus – Legal Formalities –Secretarial Duties with regard to Prospectus.

Unit IV   (12 Hours)
Share Capital – Kinds of Capital – Alteration – Reduction – Issue and Allotment of Shares -Share Certificate – Share Warrant, Difference Between Share Certificate and Share Warrant, Transfer and Transmission of Shares – Secretarial Duties.

Unit V   (12 Hours)
Borrowing Powers – Methods of Borrowing – Mortgages and Charges – Registration of Charges – Legal Provisions - Secretarial Duties with regard to Borrowing.

Course outcome:
        CO1: Acquiring Knowledge in Various Kinds of companies and duties and liabilities of

                 company secretary

        CO2: Ensuring the knowledge in Legal procedure of memorandum of association and

                 Articles of association and different alteration in their contents

        CO3: Acquiring Knowledge in various types of prospectus and the secretarial duties.

        CO4: Understanding the effective transfer and transmission of shares, Share Warrants

        CO5: Gaining Knowledge about Borrowing powers and Registration charges

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1	H					H		
CO2		L					H	
CO3			M					H
CO4	M						M	
CO5								H

Text Books
1.N.D.Kapoor, Company Law and Secretarial Practice, 13th Edition, Sulthan Chand and Co, Year 2016

Reference Books
1.P.P.S. Gogna, A Textbook of Company Law, Latest edition,sulthanchand and Co, Year 2015.

2.K.L. Maheswari, R.K. Maheswari, Company Law and Secretarial Practice, New Royal Book Company, 2013.

B.Com [Information Technology] Degree Examination – Syllabus for Candidates admitted from the academic year 2019-20 onwards

FOURTH SEMESTER
PART III- CORE-9- DATABASE MANAGEMENT SYSTEM

Maximum CIA :30
Maximum CE:70
Total Hour:60

Course Objective:
        Enabling Students to Acquire Theoretical knowledge to be successful in Database Management System.

Unit I   (12 Hours)
Database System Architecture - Basic Concepts: Database System, Operational Data, Data Independence, and Architecture of DBMS- Role of Database Administrator-Storage Structure: Representation of data. Data Structures and Corresponding Operators: Introduction to Relational Approach, Hierarchical Approach, Network Approach.

 Unit II   (12 Hours)
Relational Approach- Data Structures- Domain- Attributes- Keys- Relational algebra: Introduction, traditional set operation, special relational operations.

Unit III   (12 Hours)
Database Designing- Normalization- Types- Good and Bad Decomposition-Boyce Codd Normal Form- Basic Principles of RDBMS .

Unit IV   (12 Hours)
Hierarchical Approach: IMS data structure. Physical database, database description, Hierarchical sequence. External level of IMS: Logical Databases, the program communication block. IMS data manipulation: Defining the program communication block: DL/I Examples.

Unit V   (12 Hours)
Network Approach-Architecture of DBTG-External Level of DBTG-Data Manipulation.

Course Outcome

CO1: Able to describe data models, schemas and architecture of DBMS

CO2: Acquiring knowledge about the working of   relational algebra operators and types of keys

        in DBMS

CO3: Gaining knowledge about the types of normalization

CO4: Able to understand the structure of hierarchical database

CO5: understanding the structure of network database

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1	H					M		
CO2		M					M	
CO3			M					M
CO4				L			L	
CO5					M		L	

Text Book

1. C.J. Date, "An Introduction to Database system",
2. Abraham Ailberschatz, Henry F. Korth, S. Sudarshan "Database System Concepts.

Reference Books

1. RaghuRamakrishnan and Gehrke Johannes, Database Management Systems, 3 rd Edition-McGrawHill, 2003.
2. R.Panneer Selvam, Database Management Systems, 1 st Edition PHI Pvt Ltd, 2002.
3. C.J.Date and Addision, An Introduction to Database Systems , 7 th Edition, Wesley Publications, 2000.

B.Com [Information Technology] Degree Examination – Syllabus for Candidates admitted from the academic year 2019-20 onwards

FOURTH SEMESTER
PART III CORE LAB 3 DATABASE MANAGEMENT SYSTEM LAB

Maximum CIA :40
Maximum CE:60
Total Hour:60

Course Objective**:**   Enabling Students to Acquire Practical knowledge to be successful in DBMS using oracle.

1. Create a table "Company" with the following fields and insert the values for 10 employees.

Field Name	*Field Type*	*Field size*
Company Name	Character	15
Proprietor	Character	15
Address	Character	25
Supplier Name	Character	15
No of employees	Number	4
GP Percent	Number	6 with 2 decimal places

Queries:
a] Display all the records of the company which are in the ascending order of GP percent.
b] Display the name of the company whose supplier name is "Telco".
c] Display the details of the company whose GP percent is greater than 20 and
Order by GP Percent.
d] Display the detail of the company having the employee ranging from 300 to 1000.
e] Display the name of the company whose supplier is same as the Tata's.

2. Create a table named "Employee" with the following fields and insert the values.

Field Name	*Field Type*	*Field Size*
Employee Name	Character	15
Employee Code	Number	6
Address	Character	25
Designation	Character	15
Grade	Character	1
Date of Joining	Date	
Salary	Number	10 with 2 decimal places

Queries
a] Display the name of the employee whose salary is greater than Rs.10-000
b] Display the details of employees in ascending order according g to Employee Code.
c] Display the total salary of the employees whose grade is "A"
d] Display the details of the employee earning the highest salary.
e] Display the names of the employees who earn more than "Ravi"

3. Create a table "Student" with the following fields and insert the values:

Field Name	*Field Type*	*Field Size*
Student Name	Character	15
Gender	Character	6
Roll No	Character	10
Department Name	Character	15
Address	Character	25
Percentage	Number	4 with 2 decimal places

Queries:
a] Calculate the average percentage of students.

455

b] Display the names of the students whose percentage is greater than 80.
c] Display the details of the student who got the highest percentage.
d] Display the details of the students whose percentage is between 50 and 70.
e] Display the details of the students whose percentage is greater than the
Percentage of the roll no=12CA01.

4. Create a table "Product" with the following fields and insert the values:

Field Name	*Field Type*	*Field Size*
Product No	Number	6
Product Name	Character	15
Unit of Measure	Character	15
Quantity	Number	6 with decimal places
Total Amount	Number	8 with decimal places

Queries:
a] Using update statements calculate the total amount and then select the record.
b] Select the records whose UNIT of measure is "Kg".
c] Select the records whose quantity is greater than 10 and less than or equal to 20.
d] Calculate the entire total amount by using sum operation.
e] Calculate the number of records whose UNIT price is greater than 50 with count operation.

5. Create the table PAYROLL with the following fields and insert the values:

Field Name	*Field Type*	*Field Size*
Employee No	Number	8
Employee Name	Character	8
Department	Character	10
Basic Pay	Number	8 with 2 decimal places
HRA	Number	6 with 2 decimal places
DA	Number	6 with 2 decimal places
PF	Number	6 with 2 decimal places
Net Pay	Number	8 with 2 decimal places

Queries:
a] Update the records to calculate the net pay.
b] Arrange the records of the employees in ascending order of their net pay.
c] Display the details of the employees whose department is "Sales".
d] Select the details of employees whose HRA>= 1000 and DA<=900.
e] Select the records in descending order.

6. Create a Table Publisher and Book with the following fields:

Field Name	*Field Type*	*Field Size*
Publisher Table:		
Publisher Code	Varchar	5
Publisher Name	Varchar	10
Publisher city	Varchar	12
Publisher State	Varchar	10
Book Table:		
Title of book	Varchar	15
Book Code	Varchar	5
Book Price	Varchar	5

Queries:
a] Insert the records into the table publisher and book.
b] Describe the structure of the tables.
c] Show the details of the book with the title "DBMS".
d] Show the details of the book with price>300.
e] Show the details of the book with publisher name "Kalyani".
f] Select the book code- book title- publisher city is "Delhi".
g] Select the book code- book title and sort by book price.

h] Count the number of books of publisher starts with "Sultan chand".
i] Find the name of the publisher starting with "S".

7. Create a table Deposit and loan with the following fields:

Field Name	*Field Type*	*Field Size*
Deposit Table:		
Account No	Varchar	6
Branch Name	Varchar	15
Customer Name	Varchar	20
Balance Amount	Varchar	10
Loan Table:		
Loan Number	Varchar	7
Account No	Varchar	6
Loan Amount	Varchar	6

Queries:
a] Insert the records into the table.
b] Describe the structure of the table.
c] Display the records of Deposit and Loan.
d] Find the number of loans with amount between 10000 and 50000.
e] List in the alphabetical order the names of all customers who have a loan at the Coimbatore branch.
f] Find the average account balance at the Coimbatore branch.
g] Update deposits to add interest at 5% to the balance.
h] Arrange the records in descending order of the loan amount.
i] Find the total amount of deposit in 'Erode' branch.

8. Create a flight and reservation table with the following fields:

Field Name	*Field Type*	*Field Size*
Flight Table:		
Flight Number	Varchar	10
Flight Name	Varchar	20
Country	Varchar	20
Flight Date	Date	
Reservation:		
Flight Number	Varchar	10
PNR No	Varchar	10
Passenger Name	Varchar	20
Date of Journey Date		
Date of Reservation	Date	
Boarding Place	Varchar	20
Passenger Table:		
PNR No	Varchar	10
Flight Number	Varchar	10
Passenger Name	Varchar	20
Age	Number	
Gender	Char	
Ph.No	Number	
Date of Journey	Date	
Departure	Varchar	20
Arrival Place	Varchar	20

Queries:
1] Alter the table and set relevant key constraint.
2] Sort the passenger list by the date of journey
3] Find the names of all the passengers reserved for the flight named "SPICEJET"
4] Find the total number of female passengers reserved on 27th July 2012

5] Display the passenger details and reservation details using nested query.
6] Display the reservation details of the flight "AIR 21085" using complex query.

9. Create a project database with given relations:
Project (Project#, Project Name, Chief Architect)
Employee(Empno#,Empname,Designation,Salary)
Assigned (Project#, Empno)

Queries:
1] Identify and set the primary key with concerned relations
2] Get details of employees working on both projects IHL and CME
3] Get names of all the employees who are assigned to the projects designed by the chief architect 'GORKY'
4] Get employee numbers of employees who work at least all those projects that employee 'KAWAS' works on.

10. Create a library database with relevant fields
Library (Book Code, ISBN NO, Title, Author, Co-Author, Publisher, Edition, Price, No of volumes, type)
Queries:
1] Get the details of the book with minimum number of copies.
2] Alter the table and set primary key constraint.
3] Find the book title, author name, co author with ISBN NO 'Qe234903'
4] Find the total number of volumes available in the library.

11. Create a supplier part database with the following table names and field names.
1] Supplier table S (S#,sname, status,city)
2] Part table P(P#,pname,color,weight,city)
3] Project table PR(PR#, Pname,Pcity)
4] Shipment table SP(S#,P#,PR#,Qty)

Queries:
1] Get the part number for parts, such that no other parts has a smaller weight value. Use appropriate aggregate function if necessary.
2] Get S# values for suppliers who supplied to projects BT and IMS
3] Change the color of all red parts to orange.

12. Create a college table with relevant fields and create a view on college table which contains five fields Dept code, Dept name, HOD, Number Staff and Students

Course Outcome

CO1: Describe the basic queries to create table, insert values into the table and display the values from the table

CO2: Explain the basic   working of update queries

CO3: Explain the basic concepts of working of sub queries and nested queries

CO4: Design table with primary key and foreign key constraints

CO5: Familiar with basic concepts of creation of views.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1	H					M		
CO2		M					M	
CO3			M					M
CO4				L			L	
CO5					M		L	

Text Book

1. Leon Alexisand Leon Mathews, Database Management Systems, 2 nd Edition, Vikas Publiching House, 2001.

Reference Books

1. RaghuRamakrishnan and Gehrke Johannes**,** Database Management Systems, 3 rd Edition, McGrawHill, 2003.
2. R.Panneer Selvam, Database Management Systems, 1 st Edition PHI Pvt Ltd, 2002.
3. C.J.Date and Addision**,** An Introduction to Database Systems, 7 th Edition, Wesley Publications, 2000.
4. Mark L.Gillenson, Fundamentals of DBMS, John Wiley India Pvt Ltd, 2008.
5. Atul Kahate, Introduction to DBMS, Pearson Education, 2006.

B.Com Information Technology Degree Examination – Syllabus – for candidates admitted from 2019 – 2020 onwards
THIRD SEMESTER
PART IV – SBC I – CORPORATE COMMUNICATION

Maximum CE: 75
Total Hours: 36

Course Objective :

On the successful completion of this paper the students should have developed their written and oral Business Communication Skills in the day to day business world.

Unit I   (8 Hours)
Meaning of Communication – Objectives – Types – Barriers – Structure of Business Letter - Effective Business Letter - Enquiries and Replies.

Unit II   (7 Hours)
Layout of a business letters- Orders and Execution Letters- Sales Letters- Circulars- Claims and Adjustments- Collection Letters- Credit and status Enquiries.

Unit III   (7 Hours)
Banking Correspondence – Insurance Correspondence- Agency Correspondence- Application for appointment- Company Secretarial Correspondence(including Agenda, Minutes and Report Writing).

Unit IV   (7 Hours)
Meaning of Report- Preparing Report- Qualities and functions of a Good Report- Business Report- Types of Report- Reports by individuals- Reports by committee- Reports by sub-committee- Minutes Vs Reports- Drafting Resolution and minutes of company meetings.

Unit V   (7 Hours)
Drafting of company meetings notices- Letters to the editor of newspapers- Management Information Systems- Introduction- Need – Definition- Objectives- Components- Differing information for management levels- areas- stages of MIS Design- Guidelines for effective design- current trend.

Course Outcome**:**

   CO1: Understanding the various types of communication.

   CO2: To familiarize in various business correspondence.

   CO3: To get the exposure in bank, Insurance, corporate secretary correspondence.

   CO4: Identifying various types of report and its importance.

   CO5: To gain knowledge in Management Information System.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1			M			H		
CO2			M					M
CO3								
CO4								
CO5					M			M

Text Book

1. Rajendra Pal and Koralakhalli .J.S, Essentials of Business Communication, 2nd Edition, Sultan Chand and Co, Year-2002, New Delhi.

Reference Books

1. Ramesh M.S. and Pattanshett, Business Communication, 1st Edition , TMH Publishing House,2000,Mumbai .
2. Rai Urmila, Business Communication, 11th Edition, Himalaya Publication, Year-1999, New Delhi.

B.Com Information Technology Degree Examination – Syllabus – for candidates admitted from 2019 – 2020 onwards

THIRD SEMESTER
PART IV – SBC I – E-BUSINESS

Maximum CE: 75
Total Hours: 36

Course Objective: Enabling the Students to Acquire Theoretical knowledge to be successful in e-business.

Unit I   (8 Hours)
Introduction to E-Business- Electronic Business- Electronic Commerce- Electronic Commerce Models- Types of Electronic Commerce-Value Chains in Electronic Commerce- E-Commerce in India- Internet.

Unit II   (7 Hours)
Intranet- Composition of Intranet- Business Applications on Intranet- Extranets Electronic Data Interchange- Components of Electronic Data Interchange-Electronic Data Interchange(Communication Process).

Unit III   (7 Hours)
Security Threats to E-Business- Security Overview- Electronic Commerce Threats-Encryption-Cryptography- Public Key and Private Key Cryptography- Digital Signatures-Digital Certificates.

Unit IV   (7 Hours)
Electronic Payment System- Concept of Money-Electronic Payment System- Types of Electronic Payment Systems.

Unit V   (7 Hours)
E-Business communication-Importance of E-Technology - E-Business conferencing-Audio conferencing-Tele conferencing-Video Conferencing-Advantages and disadvantages of types of conferencing-Need for Electronic mail-Meaning-Nature- Application and uses of E-mail-E-Business advertising-Marketing an E-Business

Course Outcome

CO1: Understand the concept of E-Business and describe the types of e-commerce

CO2: Understand the concepts of intranet, extranet and working of Electronic data interchange

CO3: To understand and identify security issues of E-Business

CO4: Able to handle electronic payment technology and requirements for internet based payments

CO5: Understand the concept of WEB Based Business and advertising

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1	H					H		
CO2							H	
CO3								H
CO4	M						M	
CO5					L			

Text Book

1.Whitley, David. E-Commerce Strategy, Technologies and Applications. TataMcGraw Hill,2000.

Reference Books

1.Schneider Gary P. and Perry, James T ,Electronic Commerce. Thomson Learning, 2000.

2.Bajaj, Kamlesh K and Nag, Debjani, E-Commerce: The Cutting Edge of Business, Tata McGraw Hill, Publishing Company Ltd., New Delhi. 1999.

B.Com Information Technology Degree Examination – Syllabus – for candidates admitted from 2019 – 2020 onwards
FOURTH SEMESTER
PART IV – SBC II – COMMERCE PRACTICAL

Maximum CE: 75
Total Hours: 36

Course Objective:

 Impairing professional skills in Corporate Sector

1. Banking Formalities[Instruments used in Banking]

2. Manufacturing Trading Account

3. DEMAT Account[ONLINE]And REMAT Account

4. PAN Card and GST Registration

5. ONLINE Booking- Shopping

6. Registration for small scale Industries[Registration of MSME and NABARD]

Course outcome**:**
CO 1:To familiarize with the basic concepts and practice of banking
CO 2:To understand the basic concepts and processes used to determine and to interpret cost accounting statements, and to evaluate information for cost ascertainment, planning, control and decision making
 CO 3:To give exposure about Demat and Remat account and the procedures, Rules concerning it.
CO 4:To familiarize the concept of PAN Card and GST and the procedure for registration.
CO 5:Understand the basic concepts and technologies used in the field of management information systems; Be aware of the ethical, social, and security issues of information system

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1	H					M		
CO2		M					M	
CO3			M					M
CO4				L			L	
CO5					M		L	

BCom Information Technology Degree Examination-Syllabus-For candidates admitted from 2019-2020 Onwards

FOURTH SEMESTER
PART IV – SBC II – BRAND MANAGEMENT

Maximum CE: 75
Total Hours: 36

Course Objective

   To teach the importance of brand and its impacts among the customers

Unit I   (8 Hours)
Introduction- Basic understanding of brands – concepts and process – significance of a brand – brand mark and trade mark – different types of brands – family brand, individual brand, private brand – selecting a brand name – functions of a brand – branding decisions – influencing factors.

Unit II   (7 Hours)
Brand Associations: Brand vision – brand ambassadors – brand as a personality, as trading asset,Brand extension – brand positioning – brand image building.

Unit III   (7 Hours)
Brand Impact: Branding impact on buyers – competitors, Brand loyalty – loyalty programmes – brand equity – role of brand manager – Relationship with manufacturing - marketing- finance - purchase and R & D – brand audit

Unit IV   (7 Hours)
Brand Rejuvenation: Brand rejuvenation and re-launch, brand development through acquisition takes over and merger – Monitoring brand performance over the product life cycle. Co-branding.

Unit V   (7 Hours)
Brand Strategies: Designing and implementing branding strategies

Course outcome:

   CO1:Ensuring the knowledge in objectives and functions of management.

   CO2:Acquiring Knowledge in recruiting, selecting retail personnel and supervision.

   CO3:Understanding Financial dimensions and ongoing budgeting process.

   CO4:Gaining Knowledge about computerization and outsourcing.

   CO5:Ensuring the knowledge in ethical values in relation to customers

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1	H					H		
CO2							H	
CO3								H
CO4	M						M	
CO5			L					

Text Book
1.S.Ramesh Kumar, "Managing Indian Brands", Vikas publishing House (P) Ltd., New Delhi,2012.

Reference Books
1.Jean Noel, Kapferer, "Strategic brand Management", The Free Press, New York, 2012.
2. Paul Tmeporal, Branding in Asia, John Wiley & sons (P) Ltd., New York, 2010.

B.Com Information Technology Degree Examination – Syllabus – for candidates admitted from 2019 – 2020 onwards.
THIRD SEMESTER
PART III –ALC I – HUMAN RESOURSE MANAGEMENT

Maximum CE: 100

Course Objectives:
To enable students learn the various concepts and functions of HRM

Unit I`
Introduction - Evolution of HRM –- Importance of HRM- Personnel Management vs Human Resource Management- Strategic Human Resource Management.

UNIT II
Employment Planning and Forecasting -Job analysis- – Process of Job analysis – Job description- Job specification.

Unit III
Interview, Common Interviewing Mistakes, Designing and Conducting the Effective Interview, Small Business Application, Computer Aided Interview

UNIT IV
Job Evaluation-.Performance Appraisal- Essential characteristics of an effective appraisal system

Unit V
Industrial Relations- Trade Unions- Collective Bargaining- Employee grievance.

Text Books
1. VSP Rao, Human Resource Management : Text And Cases, First Edition, Excel Books , New Delhi- 2010
2. Aswathappa.K, Human Resource & personnel Management- Text and Cases, Tata McGraw-Hill publishing Company ltd, New Delhi,2012.

Reference Books
1.Gary Dessler –Human Resource Management, 7th Edition, Prentice Hall Of India Private Ltd, 2006, New Delhi.
2.Dr. R. Venkatapathy And AssissiMenacheri, Industrial Relations &Labour Welfare, Adithya Publication, Cbe 2001

B.Com Information Technology Degree Examination – Syllabus – for candidates admitted from 2019 – 2020 onwards .
FOURTH SEMESTER
PART III –ALC II - ENTREPRENEURIAL DEVELOPMENT PROGRAM

Maximum CE: 100

Course Objectives :

To enable the students to learn the fundamentals of being a good entrepreneur and the Concept of entrepreneurship, Knowledge about the financing institutions, project report, incentives and subsidies.

Unit I

Concept of entrepreneurship : Definition Nature and characteristics of entrepreneurship – function and type of entrepreneur. Development of women entrepreneur and rural entrepreneur – self employment- Problem of Women Entrepreneur.

Unit II

The start-up process, Project identification – Business Idea – Sources of Business Idea – Selection of the product – project formulation - evaluation – feasibility analysis, Project Report.

Unit III

Institutional services to entrepreneurs – DIC, SIDO, NSIC, SISI, SIDCO and KVIC, Institutional finance to entrepreneurs : IFCI, SFC, IDBI, ICICI, TIIC and SIPCOT.

Unit IV

Incentives and subsidies – Subsidised services – subsidy for market - Transport – seed capital assistance - Taxation benefit to SSI role of entrepreneur in export promotion and import substitution.

Unit V
Industrial Sickness- Symptoms- Remedies – Causes.

Text Book
   1. Gupta.C.B and Srinivasan N.P, Entrepreneurial Development, 4th Edition 2005, Sultan Chand and Co., New Delhi.

Reference Book
   1. Saravanavel.P, Entrepreneurial Development, 2nd edition, Essae Chandra Institute, 2005, Mumbai.

Bachelor of Computer Applications Degree Examination-Syllabus -For Candidates admitted from 2018– 2019 onwards
FOURTH SEMESTER
PART IV – EDC 2- BANKING THEORY

Maximum CE:50
Total Hours:24

Course Objective :
    To Familiarize the students with the Banking Theory

Unit I   (5 Hours)
Bank- Meaning and Definition- Features- Classification of Banks- Functions of Commercial Banks- Relationship between Banker and Customer.

Unit II   (5 Hours)
Types of Bank Accounts- Procedure for opening and closing of bank accounts-Operation of Bank Accounts

Unit – III   (5 Hours)
Special type of Customer- Types of Loans and Advances- Procedures to apply for loan. pass- Pay in slip-statement of accounts- Debit and Credit Card- Meaning- Advantage and disadvantage.

Unit – IV   (5 Hours)
Negotiable Instruments: Cheque – Essential Features of Valid Cheque – Crossing – Types of Crossing- Material Alteration- Endorsement of cheque- Circumstances in which a banker should refuse payment.

Unit – V   (4 Hours)
Recent Trends in Indian Banking- Internet Banking- ATM- Electronic Fund Transfer- Core Banking Solutions- Tele banking- E-Banking-NEFT-RTGS-SWIFT Code.

Course Outcome**:**
    CO1: Clearly Demonstrate a comprehension of the principles of banking law and its
            relationship to banks and customers.
    CO2:Evaluate the procedure to open a bank account.
    CO3:To explore the various kinds of loan and advances issued by banks.
    CO4:To familiarize the Negotiable instruments like cheque.
    CO5:Explore the recent trends in Indian banking

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1			H			M		
CO2							M	
CO3					H			M
CO4								
CO5	M							L

Text Book

1. Sundharam and Varshney, Banking theory Law and Practice, Sultan Chand & Sons., 2014, New Delhi.

Reference Books

1   Shekhar K.C & Lekshmy Shekhar, Banking theory Law and Practices, 21st   Edition, Vikas publishing House, 2013, New Delhi.

BSC [Computer Technology] Degree Examination – Syllabus – for candidates admitted from the Academic 2018 – 2019 onwards

THIRD SEMESTER

PART III: IDC 3 –ENTERPRISE RESOURCE PLANNING

MaximumCIA :30
Maximum CE:70
Total Hours:60

Course Objective :
   To Familiarize the students with the Enterprise Resource Planning

Unit 1   (12 Hours)
Introduction to ERP: Defining ERP, Origin and Need for an ERP System, Benefits of an ERP System, Reasons for the Growth of ERP Market, Reasons for the Failure of ERP Implementation: Roadmap for successful ERP implementation.

Unit 2   (12 Hours)
ERP Implementation Life Cycle: ERP Tools and Software, ERP Selection Methods and Criteria, ERP Selection Process, ERP Vendor Selection, ERP Implementation Lifecycle, Pros and cons of ERP implementation, Factors for the Success of an ERP Implementation

Unit 3   (12 Hours)
ERP: A Purchasing Perspective: Role of ERP in Purchasing, Purchase Module: Features of purchase module; Benefits of purchase module, ERP Purchase System

Unit 4   (12 Hours)
ERP: Sales and Distribution Perspective: Role of ERP in Sales and Distribution, Sub-Modules of the Sales and Distribution Module:Master data management, Order management, Warehouse management, Shipping and transportation, Billing and sales support, foreign trade, Integration of Sales and Distribution Module with Other Modules

Unit 5   (12 Hours)
ERP: An CRM Perspective: Role of ERP in CRM, Concept of CRM: Objectives of CRM; Benefits of CRM; Components of CRM, Types of CRM: Operational CRM, Analytical CRM, Sales intelligence CRM, Collaborative CRM, Sub-Modules of CRM: Marketing module; Service module; Sales module.

Course Outcome
 CO1: Understand the basic concepts of ERP.
 CO 2. Identify different technologies used in ERP.
 CO 3. Understand and apply the concepts of ERP Manufacturing Perspective and ERP
         Modules.
 CO 4. Discuss the benefits of ERP
 CO 5. Understand and implement the ERP life cycle

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1				M		H		
CO2	H							
CO3	M							M
CO4		M						
CO5			M				L	

Text Book

1. Mary Sumner Enterprise Resource Planning, 1st Edition Pearson Bengaluru

Reference Book

1.Ellen Monk , Bret Wagner Concepts in Enterprise Resource Planning 4th edition Cengage Learning USA

BSC [Information Technology] Degree Examination – Syllabus – for candidates admitted from the Academic 2018 – 2019 onwards

THIRD SEMESTER

PART III: IDC 3 –ENTERPRISE RESOURCE PLANNING

MaximumCIA :30
Maximum CE:70
Total Hours:60

Course Objective :

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Introduction to ERP: Defining ERP, Origin and Need for an ERP System, Benefits of an ERP System, Reasons for the Growth of ERP Market, Reasons for the Failure of ERP Implementation: Roadmap for successful ERP implementation.

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Unit 3   (12 Hours)
ERP: A Purchasing Perspective: Role of ERP in Purchasing, Purchase Module: Features of purchase module; Benefits of purchase module, ERP Purchase System

Unit 4   (12 Hours)
ERP: Sales and Distribution Perspective: Role of ERP in Sales and Distribution, Sub-Modules of the Sales and Distribution Module:Master data management, Order management, Warehouse management, Shipping and transportation, Billing and sales support, foreign trade, Integration of Sales and Distribution Module with Other Modules

Unit 5   (12 Hours)
ERP: An CRM Perspective: Role of ERP in CRM, Concept of CRM: Objectives of CRM; Benefits of CRM; Components of CRM, Types of CRM: Operational CRM, Analytical CRM, Sales intelligence CRM, Collaborative CRM, Sub-Modules of CRM: Marketing module; Service module; Sales module.

Course Outcome
CO1: Understand the basic concepts of ERP.
CO 2. Identify different technologies used in ERP.
CO 3. Understand and apply the concepts of ERP Manufacturing Perspective and ERP Modules.
CO 4. Discuss the benefits of ERP
CO 5. Understand and implement the ERP life cycle

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PS03
CO1				M		H		
CO2	H							
CO3	M							M
CO4		M						
CO5			M				L	

Text Book

1. Mary Sumner Enterprise Resource Planning, 1st Edition Pearson Bengaluru

Reference Book

1.Ellen Monk , Bret Wagner Concepts in Enterprise Resource Planning 4th edition Cengage Learning USA

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

THIRD SEMESTER
CERTIFICATE COURSE – ADVERTISING AND SALES PROMOTION

Total Hours: 30

Course Objective:

To familiarize the student with the practice of promoting market for products through advertisements and sales promotion.

Unit I   (6Hours)

Advertising – Origin and Development –Advertising- an element of Marketing mix- Objectives – Advertising and Salesmanship – Role and Importance – Planning for Advertisement communication process

Unit II   (6 Hours)

Advertisement – Kinds of Advertisements– Economic and social affects of advertising – Advertising mix – Advertising budget and relevant decisions.

Unit III   (6Hours)

Advertising Agencies -Role – Types of Advertising – Measuring the effectiveness of Advertisement - Managing agency -Evaluation of Advertising

Unit IV   (6 Hours)

Sales Promotion – Objectives – Advantages - Tools and their effectiveness – Aggressive selling.

Unit V   (6 Hours)

Sales promotion –Objectives- Planning, implementation Control-Consumer sales promotion-Trade sales promotion-Measuring the effectiveness of promotion company- Evaluation of Sales Promotion

Text Books:

1. S.A.Chunawalla , Advertising and Sales Promotion Management, Himalaya Publishing House; Sixth Edition edition (2015)
2. Mr.PankhuriBhagat , Advertising & Sales Promotion ,SBPD Publishing House (2015)

Reference Books :

1. Mr. RituNarang ,Advertising, Selling & Promotion, Pearson Education(2020)

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

THIRD SEMESTER

CERTIFICATE COURSE – PRACTICAL BANKING

Total Hours: 30

Course Objective

The objective of this course is to acquaint students with the theoretical and practical aspects of modern banking.

Unit-I   (6 Hours)

Definition of Banker and Customer-General Relationship-Special Relationship-Nationalized Banks-Private Banks -Evolution of Commercial Banks-Functions of modern Commercial Banks.

Unit-II   (6 Hours)

Opening of New Bank Account-Precautions-Types-Savings Account-Current Account-Fixed Deposit-Recurring Deposit-Cumulative Deposit-TL-Cash Credit-Overdraft-Joint Account-KYC-Closure of bank Account.

Unit-III   (6 Hours)

Negotiable Instruments-Meaning-Characteristics- Bills of Exchange-Promissory Note- Cheque-Features- Crossing of a Cheque- Cancellation of Cheque –Types of Crossing- Endorsement-Dishonour of a Cheque – Stop the Payment of a Cheque - Demand Draft.

Unit-IV   (6 Hours)

Funding of Corporate seeds-Types of Finance-Seed Capital-Bank Finance of seed capital -Venture Capital- Procedures for loans.

Unit-V   (6 Hours)

Electronic Payments: CIBIL-Concept of Security-Primary vs Collateral-Application Forms-Annexure-Electronic Payment-NEFT-RTGS-IMPS- Cardless withdrawals

Text Book
    1. Sundaram and Varshney , Banking Theory Law and Practice, 20th Revised Edition,

    Sultan Chand & Sons,Year 2014.
Reference Books

    1.H.R. Gupta, Practical Banking in India, Gyan Publishing House, 2011.

    2.Gurusamy, S., Banking Theory: Law and Practice, 2ndEdition, Tata McGraw Hill, Year

    2010.

All UG Degree Examination-Syllabus -for Candidates admitted from the Academic Year 2019– 2020 onwards

THIRD SEMESTER
CERTIFICATE COURSE- ENTREPRENEURSHIP DEVELOPMENT PROGRAMME

Total Hours : 30

Course Objectives :

To enable the students to learn the fundamentals of being a good entrepreneur and the Concept of entrepreneurship.

Unit I   (6 Hours)

Concept of Entrepreneurship : Definition Nature and characteristics of entrepreneurship – function and type of entrepreneur. Development of women entrepreneur and rural entrepreneur.

Unit II   (6 Hours)

The start-up process, Project identification – Business Idea – Sources of Business Idea – Selection of the product – project formulation - evaluation , Project Report.

Unit III   (6 Hours)

Institutional services to entrepreneurs – DIC, SIDO, NSIC, SISI, SIDCO and KVIC, Institutional finance to entrepreneurs : IFCI, SFC, IDBI, ICICI, TIIC and SIPCOT.

Unit IV   (6 Hours)

Incentives and subsidies – Subsidised services – subsidy for market - Transport – seed capital assistance - Taxation benefit to SSI.

Unit V   (6 Hours)

Industrial Sickness- Symptoms- Remedies – Causes.

Text Book

1. Gupta.C.B and Srinivasan N.P, Entrepreneurial Development, 4th Edition 2005, Sultan Chand and Co., New Delhi.

Reference Book

1. Saravanavel.P, Entrepreneurial Development, 2nd edition, Essae Chandra Institute, 2005, Mumbai.

All UG Degree Examination-Syllabus -For Candidates admitted from the Academic Year 2019– 2020 onwards

FOURTH SEMESTER
CERTIFICATE COURSE- E-COMMERCE

Total Hours : 30

Course Objectives :

Enabling the Students to Acquire Theoretical knowledge to be successful in E-Commerce.

Unit I   (6 Hours)

E Commerce: The Revolution is just beginning ,E Commerce: A Brief History-Electronic Commerce-Electronic Commerce Models-Types of Electronic Commerce-Value Chains in Electronic Commerce-E-Commerce in India-Introduction to E-Business-Internet-World Wide Web-Internet Architectures-Internet Applications-Web Based tools for Electronic Commerce.

Unit II   (6 Hours)

E-Commerce Business models and concepts-The Internet and World Wide Web - E Commerce Business models, Major Business to consumer (B2C) Business models, Major Business to Business (B2B) business models, Business models in emerging Ecommerce areas, Intranet-Composition of Intranet- Business Applications on Intranet-Extranets Electronic Data Interchange-Components of Electronic Data Interchange-Electronic Data Interchange (Communication Process).

Unit III   (6 Hours)

Security Threats to E-Business- Security Overview- Electronic Commerce Threats-Encryption-Cryptography- Public Key and Private Key Cryptography- Digital Signatures-Digital Certificates- Security Protocols over Public Networks- HTTP- SSL- Firewall as Security Control- Public Key Infrastructure (PKI) for Security- Prominent Cryptographic Applications.

Unit IV   (6 Hours)

Electronic Payment System- Concept of Money-Electronic Payment System- Types of Electronic Payment Systems-Smart Cards and Electronic Payment Systems- Infrastructure Issues in EPS, Electronic Fund Transfer.

Unit V   (6 Hours)

Ecommerce Marketing concepts –Online Retailing and Services-Consumer online: The Internet Audience and Consumer Behavior-Basic Marketing concepts-Internet Marketing–The Service sector of offline and online, Online financial services-online travel services-Online career – Social networks and Online communities, Online auctions, E Commerce Portals

Text Book

1. Whitley, David. E-Commerce Strategy, Technologies and Applications. Tata McGraw Hill, Reprint 2014.

Reference Books:

1. C.Laudon, E- Commerce :Business Technology Society, 4th Edition, Pearson Education, Reprint 2011.
2. Balaji, Kamlesh K and Nag, Debjani, E-Commerce: The Cutting Edge of Business, Tata McGraw Hill, Publishing Company Ltd., New Delhi. Reprint 2011.

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

FOURTH SEMESTER

CERTIFICATE COURSE – OFFICE MANAGEMENT

Total Hours :30

Course Objective:

To prepare Students in managing the day-to-day activities related to administration activities in offices.

Unit I   (6 Hours)

Office and office Management – meaning of office, function of office, primary and administrative functions, importance of office. Relation of office with other departments of business Organization. Concept of paperless office, virtual office, back and front office, open and private office.

Unit II   (6 Hours)

Filing and Indexing – Meaning and importance of filing, essential of good filing system. Centralized and decentralized filing system. Meaning, need and types of indexing used in the business organization.

Unit III   (6 Hours)

Office forms– Meaning and types of forms used in business organization, advantages, forms controls, objectives, form designing, principles of forms designing and specimens of forms used in office. Office Record Management – Meaning, importance of record keeping management, principles of record management and types of records kept in a business organization- Office Automation

Unit IV   (6 Hours)

Office Machines and equipments – Importance, objectives of office machines.Office6Safety and Security – Meaning, importance of office Safety, safety hazards and steps to improve office safety. Security hazards and steps to improve office security.

Unit V   (6 Hours)

Measurement of Office Work – Importance, purpose, difficulty in measuring office work. Different ways of measurement, setting of work standards, benefits of work standards. Techniques of setting standards. Office Manuals – Meaning, need, types of office manuals and steps in preparing of office manuals.

Text Books

1.Chhabra, T.N., Modern Business Organisation, New Delhi, DhanpatRai& Sons.

Reference Books

1.P.K. Ghosh, "Office Management", Sultan Chand & Sons. New Delhi

2.R.K. Chopra, Office Management, Himalaya Publishing House

All UG Degree Examination – Syllabus for Candidates admitted from the Academic Year 2019-2020 onwards.

FOURTH SEMESTER

CERTIFICATE COURSE - PRINCIPLES OF INSURANCE

Total Hour: 30 hours

Course Objective:

The student gains the ability to apply the knowledge and understanding, in simple situations, to the operation, on sound financial lines of life insurance companies.

Unit I   (6 Hours)

Insurance: Meaning, Functions - Role and Importance of Insurance – Essentials of contract of insurance Principles of insurance.

Unit II   (6 Hours)

Life Insurance – Meaning, Nature – Various Policies - Procedure for taking life Insurance policy- Surrender and revival of policy - Assignment and Nomination – Procedures, - Settlement of claim – Loan on policy

Unit III   (6 Hours)

General Insurance- Fire Insurance, Marine insurance , Health Insurance , Personal accident Insurance , Motor Insurance and miscellaneous Insurance – Characteristics , Procedure for claim.

Unit IV   (6 Hours)

Agent- Meaning, Procedures for Becoming an Agent: Pre- requisite for obtaining a license: Duration of license; Cancellation or suspension/termination of agency

Appointment; Code of conduct; Unfair practices. Functions of the Agent

Unit V   (6 Hours)

IRDA - Mission - Composition of Authority - Duties, Powers and Functions - Powers of Central Government in IRDA Functioning.

Text Book:

1. M.N. Mishra, "Insurance –Principles and Practice", S.Chand & Company Ltd., New Delhi, 2016.

Reference Book:

1. B.S Bodla, M.C. Garg & K.P. Singh,"Insurance -Fundamentals, Environment & Procedures" , Deep & Deep Publications Pvt. Ltd., New Delhi, 2014 (Last Edition)
2. P.Periysamy, Principles and Practice of Insurance, Himalaya Publication House, Year -2017

Department of Commerce Computer Applications
Regulations for B.Com (Computer Applications)
(Effective from the Academic Year 2019-2020 onwards)

Introduction:

The department of Commerce Computer Applications started the UG Programme in the year 2001.

The UG Programme is Bachelor of Commerce Computer Applications

Objective:

With the knowledge in Commerce and computer the students are trained so as to fare well in competitive examinations and to get placed in reputed IT companies

Eligibility: UG Programme

A pass in Higher Secondary Examination conducted by Tamilnadu or an equivalent examination, for the study.

Duration of UG Programme

The course shall extend over a period of three years comprising of six semesters, with two semesters per year. There shall not be less than ninety instructional days during each semester. Examination shall be conducted at the end of each semester for the respective subject

Vision:

A centre of excellence, capable of empowering seekers of Commerce with Computer Applications knowledge through holistic education

Mission:

To create worthy citizens by providing holistic, qualitative, values based education and make them real life problem solvable members of global society.

Program Outcomes (PO)

The graduates will be able to

PO1: Have complete knowledge of Finance, Accounting, Taxation, Information Technology, Business laws and other.

P02: Equip with professional, inter personal and entrepreneurial skills.

P03: Gear up with updated knowledge in implementing business practices

P04: Evaluate environmental factors that influence business operation.

P05: Prepare for post graduate studies and to achieve success in their professional careers.

Programme Specific Outcomes (PSO)

PSO1: Serving as bases for Post Graduate Programme.

PS02: Create the students well versed in few areas of interest such as Accounting, Taxation, and Auditing.

PS03: Generate the students in Computer based field areas such as Software Developer, Software Application and Web Designer.

BACHELOR OF COMMERCE (COMPUTER APPLICATIONS)

Scheme of Examination (CBCS Pattern and OBE Pattern)

Syllabus for Candidates admitted for the Academic Year 2019-2020 onwards

Part	Sub Code	Subject Title	Ins.Hrs/Week	Dur. Hrs.	CIA	CE	Total	Credit
		SEMESTER I						
I	19LATA01/HI01/MY01/FR01	Language – I	5	3	30	70	100	3
II	19ENG001	English –I	5	3	30	70	100	3
III	19BCC101	Core I Financial Accounting -I	6	3	30	70	100	4
III	19BCC102	Core II Office Automation and C Programming	6	3	30	70	100	4
III	19BCCID1	IDC 1 Managerial Economics	6	3	30	70	100	4
IV	19UFCA01	Foundation Course I : EVS #	2	2	-	50	50	2
		Total	30				550	20
		SEMESTER II						
I	19LATA02/HI02/MY02/FR02	Language –II	5	3	30	70	100	3
II	19ENG002	English – II	5	3	30	70	100	3
III	19BCC201	Core III - Financial Accounting -II	6	3	30	70	100	4
III	19BCCP01	Core Practical – I Office Automation and C Programming Lab	6	3	40	60	100	4
III	19BCCID2	IDC 2 Principles of Management	6	3	30	70	100	4
IV	19UFCA02	Foundation Course II: Value Education #	2	2	-	50	50	2
		Total	30				550	20
		SEMESTER III						
III	19BCC301	Core IV- Financial Accounting -III	5	3	30	70	100	4
III	19BCC302	Core V - Principles of Marketing	5	3	30	70	100	4
III	19BCC303	Core VI- Programming in C++	5	3	30	70	100	4
III	19BCCP02	Core Practical - II : Programming in C++ and TALLY Lab	5	3	40	60	100	4
III	19BCCID3	IDC 3 Business Mathematics	5	3	30	70	100	4
IV	19BCCSB1/ 19BCCSB2	SBC-I TALLY and GST #	3	3	-	75	75	3
IV	19BTA001/ 19ATA001/ 19BCCED1	EDC 1:Basic Tamil - I /Advanced Tamil - I / Human Resource Management #	2	2	-	50	50	2
III	19BCCPR1	Institutional Training	-	-	-	-	-	-
		Total	30				625	25

		SEMESTER IV						
III	19BCC401	Core VII- Corporate Accounting	5	3	30	70	100	4
III	19BCC402	Core VIII- Mercantile Law	5	3	30	70	100	4
III	19BCC403	Core IX- Data Base Management System	5	3	30	70	100	4
III	19BCCP03	Core Practical - III : Data Base Management System Lab	5	3	40	60	100	4
III	19BCCID4	IDC 4 Business Statistics	5	3	30	70	100	4
IV	19BCCSB3/ 19BCCSB4	SBC - II Introduction to Multimedia #	3	3	-	75	75	3
IV	19BTA002/ 19ATA002/ 19EDC002	EDC 2:BT/AT/Communicative English #	2	2	-	50	50	2
V	19NSS001/ 19NCC001/ 19SPT001/ 19EXT001	NCC/NSS/Sports/Extension Activities @			50		50	2
		Total	30				675	27
		SEMESTER V						
III	19BCC501	Core X- Cost Accounting	5	3	30	70	100	4
III	19BCC502	Core XI- Income Tax Law and Practice	5	3	30	70	100	4
III	19BCC503	Core XII- Entrepreneurial Development	5	3	30	70	100	4
III	19BCC504	Core XIII – Visual Basic.Net	5	3	30	70	100	4
III	19BCCP04	Core Practical - IV : Visual Basic.Net Lab	5	3	40	60	100	4
III	19BCCE01/02/ 03	Elective - I: Banking and Insurance Law	5	3	30	70	100	4
III	19BCCPR2	Research Project	-	-	-	-	-	-
		Total	30				600	24
		SEMESTER VI						
III	19BCC601	Core XIV: Management Accounting	5	3	30	70	100	4
III	19BCC602	Core XV: Web Designing and Networking	5	3	30	70	100	4
III	19BCCP05	Core Practical - V: Web Designing and Networking Lab	5	3	40	60	100	4
III	19BCCE04/ E05/06	Elective - II : Investment Management	5	3	30	70	100	4
III	19BCCE07/08/ 09	Elective - III : Principles of Auditing	5	3	30	70	100	4
III	19BCCPR3	Project and Viva Voce	5	3	50	50	100	4
		Total	30				600	24
		Total					3600	140

For Candidates admitted from the Academic year 2019 - 2020 onwards
No Continuous Internal Assessment (CIA) only Comprehensive Examination (CE)
@ No Continuous Internal Assessment (CIA) and Comprehensive Examination (CE)

IDC-Inter disciplinary Course, EDC – Extra Disciplinary Course, SBC – Skill Based Courses

	CODE	List of Skill Based Courses
SBC-I	19BCCSB1	TALLY and GST
	19BCCSB2	Customer Relationship Management
SBC-II	19BCCSB3	Introduction to Multimedia
	19BCCSB4	Human Psychology

List of Elective Papers		
	CODE	List of Elective Papers
ELECTIVE –I	19BCCE01	Banking and Insurance Law
	19BCCE02	Retail Business Management
	19BCCE03	Corporate Communication
ELECTIVE –II	19BCCE04	E-Commerce
	19BCCE05	Principles of International Trade
	19BCCE06	Investment Management.
ELECTIVE –III	19BCCE07	Principles of Auditing
	19BCCE08	Advertising and Sales Promotion
	19BCCE09	Brand Management

List of Extra Disciplinary Courses

Sem	Code	Subject Title
III	19BTA001/19ATA001/19BCCEDI	Basic Tamil – I / Advanced Tamil I / Human Resource Management
IV	19BTA002/19ATA002/19BCCEDC2	Basic Tamil –II / Advanced Tamil II / Communicative English

List of Additional Credit Papers

Sem	Code	Subject Title	Marks	Credits
III	19BCCAC1	Principles of International Trade	100	2
IV	19BCCAC2	Business Finance	100	2
V	19BCCAC3	Export and Import Trade Procedures	100	2

Summary of the Programme			
Part	No of Papers	Total Credits	Total Marks
I – Language	2	6	200
II – English	2	6	200
III –Core	20	80	2000
III – IDC	4	16	400
III – Elective	3	12	300
III –Project	1	4	100
IV –Foundation Course	2	4	100
IV – EDC	2	4	100
IV – Application Oriented Course	2	6	150
V – Extension Activities	-	2	50
Total	38	140	3600

REGULATIONS FOR B.Com (CA)
(CBCS Pattern and OBE Pattern)
(Effective from the Academic Year 2019-2020 onwards)

1. **Submission of Record Note Books for practical examinations**

   Candidates appearing for practical examinations should submit Bonafide Record Note Books prescribed for practical examinations, Otherwise the candidate shall not be permitted to appear for the Practical Examinations.

2. **Ratio of Comprehensive Examination, Pre- Model and Model Examinations Marks for UG and PG Courses**

Part	Internal Assessment	External Assessment	Total Marks
I (Languages)	30	70	100
II (English)	30	70	100
III(Core, IDC)	30	70	100
IV (SBC)	-	75	75
IV (EDC/Foundation Course)	-	50	50
V (NCC/NSS/Sports/Ext. Activity)	50	-	50

3. **Project Work Mark Distribution**

Particulars	IA	CE	Total
Project Work (UG)	50	50	100
Project Work (PG)	100	100	200
Project Work(M.Sc(CS)/M.Sc(ECS)	150	100	250
Project Work (M.Com/MIB)	50	100	150

4. **Practical Mark Distribution for all UG and PG Courses**

   Internal - 40   External- 60   Total Marks -100

5. **Break up for Internal Marks**

S. No	Internal Marks	Distribution of Marks
1	Pre Model Examination	70
2	Model Examination	70
3	Seminar	30
4	Attendance	10
Total		**180/6=30**

6. Seminar Split up

S.NO	Seminar split up	Marks
1	Content	10
2	Flow of the presentation	10
3	Stage management and Body language	10
	Total	**30**

7. Attendance Break up

S.NO	Attendance split up	Marks
1	65% to 74%	4
2	75% - 80%	6
3	81% - 90%	8
4	91% - 100%	10

8. Internal Marks for Practical (Maximum 40)

Maximum Marks : 40		
S No	**Internal Marks**	**Distribution of Marks**
1	For Completion of the Practical List	20
2	Test –I	10
3	Test –II	10
	Total	**40**

9. External Marks for Practical (Maximum 60)

Maximum Marks : 60		
S. No	**Comprehensive Examination**	**Distribution of Marks**
1	Record	10
2	Program – I Algorithm Coding Execution	5 10 10 TOTAL (25)
3	Program – II Algorithm Coding Execution	5 10 10 TOTAL (25)
	Total	**60**

10. Internal and External Marks for Project Work

S.No	Internal Marks	Distribution of Marks
1	**INTERNAL** Review –I Review –II Documentation & Final Review	 10 10 30 **Total (50)**
2	**EXTERNAL** Presentation Viva	 30 20 **Total (50)**
	Total	**100**

The distribution of Marks among the various components for IA and CE for Theory, Practical and Project Work is given in detail in the respective Schemes of Examination and Regulation of the different UG and PG Courses, duly passed in their respective Board of Study.

11. Pattern of Question Paper

For Pre model Test, Model and Comprehensive Examination under – Graduate and Post- Graduate Courses.

Maximum Marks : 70 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×4=20)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 75 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×5=25)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 50 / Time 2 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×3=15)	Each question carries four marks	Internal Choice
Section – C	(5×5=25)	Each question carries eight marks	Internal Choice
Maximum Marks : 70 / Time 3 Hrs (MBA)			
Section – A	(10×2=20)	Each question carries two mark	Short Answers
Section – B	(5×7=35)	Each question carries seven mark	Internal Choice
Section – C	(1×15=15)	Each question carries fifteen mark	Compulsory Question

Note:

1. The questions should be numbered sequentially, running through the Sections A, B and C.

2. The maximum marks are 70/75

Note:

1. The questions should be numbered continuously running through the Sections A, B and C.

2. Questions should be evenly distributed among the unit in the syllabus in all the sections of the Question paper

3. While framing questions with internal choice the questions must be identified as (a) or (b). (e.g 11. a or b). Further, the internal choice must be from the same unit.

4. The Controller of the Examinations shall arrange for the setting of question papers on the basis the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies

The following are the distribution of marks for Comprehensive Examinations and CIA for Theory, Practical and Project.

12. Project and Viva Voce:

Each student in the UG second and final year shall compulsorily undergo Institutional Training in the 3rd semester, Commerce Research Project Work in the 5th and Application project in 6th Semester. Projects shall be done individually. Project Coordinators shall allocate the project title and the guide for each group. Project work shall be done only in the lab provided by the college, including Project Record Preparation. Project Reviews shall be conducted twice in the semester in which the progress of project work shall be strictly evaluated by respective Project Guides and Project Coordinators. Viva-Voce shall be conducted only in the presence of Industrialists or Academicians. Out of the Total of 100 marks, 50% of mark shall be allocated for IA and 50% for CE Project Viva Voce.

13. Institutional Training:

All the candidates should undergo institutional training during the III Semester Comprehensive Examination in order to complete the Degree. He/she should submit the report to the Department and attend the viva voce examination conducted by the department.

14. Research Projects:

All the candidates should undergo the Research projects during the V Semester Comprehensive Examination in order to complete the Degree. He/she should submit the report to the Department and attend the viva voce examination conducted by the department.

15. Certificate Courses

In the academic year 2019-2020 the following inter disciplinary certificate courses has been introduced. The candidates shall opt for any one of the following course respectively during III and IV th semester of their study.

S.NO	SEM	Subject Title
1	III	Advertisement and Sales Promotion
2		Practical Banking
3		Entrepreneurship Development Programme
4	IV	E-Commerce
5		Office Management
6		Principles of Insurance

B.Com (CA) Degree Examination - Syllabus for the candidates admitted from the academic year 2019-2020 onwards

FIRST SEMESTER

PART III : CORE I - Financial Accounting - I

Maximum CIA : 30
Maximum CE : 70
Total Hours   : 72

Course Objective:
To enable the students to learn principles, Conventions and concepts of Accounting.

Unit - I   **(15 Hours)**
Accounting Concepts and Accounting Conventions–Journal –Ledger–Trial Balance

Unit - II   **(15 Hours)**
Final Accounts – Trading, Profit and loss account – Balance sheet – Adjustments –
Errors and rectification – Classification of errors - AS 1, 5.

Unit - III   **(15 Hours)**
Average due date – Bills of exchange (trade bills only)-Bank Reconciliation Statement

Unit - IV   **(15 Hours)**
Consignment– Features – Distinction between sale and consignment – Account Sales –
Accounting treatment of consignment Transactions – Consignor's books– Consignee's
books. Joint Venture – Features – Distinction between Joint venture and consignment -
Distinction between Joint venture and Partnership – Accounting treatment of joint
venture – when separate set of books of accounts is kept

Unit – V   **(12 Hours)**
Introduction to IFRS – GAAP – Human Resource Accounting and Inflation Accounting – Social
Responsibility Accounting and Environmental Accounting.

Course Outcome:

➤ Providing a strong foundation in fundamental accounting concepts and conventions.

➤ Explains the various elements of financial statements and relevant accounting standards.

➤ To teach about techniques in Average due date, bill of exchange and BRS.

➤ To learn about basic concepts of Consignments and Joint venture.

➤ To inculcate the knowledge of international financial reporting standards.

Note: Distribution of Marks between Problems and Theory shall be 80% and 20%.

Text Book:

1. Reddy T.S and Murthy.A, Financial Accounting, Reprint 2017, Margham Publications, Chennai.

Reference Books:

1. S.P.Jain & K.L.Narang, Principles Of Accountancy, Reprint 2013, Kalyani Publishers, New Delhi.

2. Gupta.R.L, Gupta.V.K, Shukla.M.C, Financial Accounting, 9th Edition, 2014, Sultan Chand and sons, New Delhi.

3. S.P.Jain & K.L.Narang, Advanced Accountancy, Volume - I Edition- 2010, Kalyani Publishers, New Delhi.

B.Com (CA) Degree Examination - Syllabus for the candidates admitted from the academic year 2019-2020 onwards

FIRST SEMESTER

PART III : CORE II- Office Automation And C Programming

Maximum CIA : 30
Maximum CE : 70
Total Hours   : 72

Course Objective:

After the successful completion of the course the students should have knowledge about concepts and principles of information technology.

Unit - I   **(15 Hours)**

Introduction to Computer system Architecture –Hardware: Input Output and Storage Devices -Software: System Software and Applications Software- Programming Languages: Machine Language – Assembly Language – Higher level Languages-Language Translators: Compiler-Assemble-Interpreter - Importance of computers in business.

Unit - II   **(15 Hours)**

Data and Information – Date processing – Date Storage and Data Retrieval capabilities – Number systems and Conversions –Flowcharts - Steps in Developing a Computer Program-Operating system: UNIX, LINUX and Windows family – Networking: LAN,MAN,WAN – Email and its use-WWW – Mobile computers.

Unit - III   **(15 Hours)**

Introduction to MS-Office-Word-Document preparation-Excel-problem solving-charts-PowerPoint Presentation-Access-Databases-Forms and Reports-Management Information System – Decision support system – Expert system – Computer based information system – Expert system- Computer Related jobs in Business.

Unit – IV   **(15 Hours)**

Overview of C-Introduction-Character Set-C Tokens-Keyword and Identifiers-Constant-Variables-Data Types-Declaration of Variables and Constants-Assigning Values to Variables-Defining Symbolic Constants-Operators-Arithmetic Expression-Evaluation of Expressions-Precedence of Arithmetic Operators-Type Conversion in Expression.

Unit – V   **(12 Hours)**

Decision Making and Branching: Decision Making with IF Statements- The Switch Statements- Decision Making and Looping-Arrays-String Handling Functions. Functions-Return Values and Their Types-Function Calls and Declaration-No Arguments and No Return Values-Arguments But No Return Values- No Arguments But Returns a Value -Recursion-Functions Function with Arrays and Strings.

Course Outcome:

- ➢ Explain the organization and working principle of computer hardware components.

- ➢ Explain the Data processing, operating system and networking concepts

- ➢ To teach about Ms Office Programs
- ➢ To learn about basic concepts of C programming
- ➢ Summarize the decision making and looping statements

Text Books:
1. B.Ram, Computer fundamentals: Architecture of organization,3rd edition, new age,International publisher,New Delhi
2. C.Balagurusamy, Designing in ANSI C, 5th Edition, Tata Mc Graw Hill Publishing Company, 2007, New Delhi.

Reference Books:

1. Henry C. Lucas. Jr.**,** Information Technology, Strategy decision making for Managers,1st Edition, John Wiley & Sons [Asia] Pvt. Ltd, Year-2015, Singapore.
2. Leon Alexis, Leon Mathews, Fundamental of Information Technology, 1st Edition, Visas Publishing House, Year-2014.
3. V. Rajaraman, Introduction to Information Technology,3rd edition, Sami Publications,
4. Holzner Steve**,** C-Designing The Accessible Guide Professional Designing **,** 3rd Edition

B.Com [Computer Applications] Degree Examination – Syllabus for Candidates admitted from the academic year 2019 – 2020 onwards
FIRST SEMESTER
PART III :IDC I- Managerial Economics

Maximum CIA: 30
Minimum CE : 70
Total Hours : 72

Course Objectives:
On the successful completion of the course, Students will demonstrate their knowledge of the fundamental and managerial concepts of economics and also students will be able to make decisions wisely using cost-benefit analysis.

Unit - I   **(15 Hours)**
Introduction to Economics: definition, nature and scope of Economics –Economic theories applied to business analysis-decision making in business –objectives of a business firm.

Unit - II   **(15 Hours)**
Demand and supply functions: Meaning of demand – determinants of demand – distinctions of demand –Law of demand –Elasticity of demand – supply concepts – Equilibrium.

Unit - III   **(15 Hours)**
Consumer behavior: Meaning of utility –Law of Diminishing Marginal Utility – Equi- Marginal Utility – Indifference curve analysis –Definition –properties –consumer's surplus- consumer's equilibrium.

Unit - IV   **(12 Hours)**
Production and cost analysis : meaning and concepts of production –factors of production and production function – law of variable proportion –law of returns to scale – producer's equilibrium – Economies of scale

Unit - V   **(15 Hours)**
Market structure and pricing: Types of competition –perfect competition –Monopoly – Monopolistic competition – Oligopoly – price and output determination under different competitive market conditions.

Course Outcome:
  ➢ Providing a strong knowledge in various economic theories.
  ➢ Explains the various concepts in demand and supply.
  ➢ To familiarize in consumer behaviour.
  ➢ To learn about basic concepts of production and cost analysis.
  ➢ To inculcate the knowledge in types of competition and markets.

Text Book:
1. Shankaran S Business Economics - Margham Publications Ch -17 - 2012, 3 rd Edition
2. Sundharam KPM Sundharam E N - Business Economics - Sultan Chand & Sons - New Delhi – 02-2015 Edition.

Reference Books:
1. Chaudhary C.M -Business Economics-RBSA Publishers - Jaipur -03 - 2015 Edition
2. Mehta P.L - Managerial Economics – Analysis, Problems & Cases, Sultan Chand & Sons - New Delhi -02, 2015,14 th Edition.

B.Com [Computer Applications] Degree Examination – Syllabus for Candidates admitted from the academic year 2019-2020 onwards

SECOND SEMESTER
PART III : CORE – III Financial Accounting - II

Maximum CIA: 30
Minimum CE : 70
Total Hours : 72

Course Objectives:
To train the students in solving advanced problems in Accounting.

Unit - I (14 Hour)
Accounting for depreciation – Meaning, Characteristics, Causes and Objectives – Needs – Methods Straight line method, Diminishing balance method, Annuitymethod, Sinking fund or Depreciation fund method, Insurance policy method, Revaluation method, Depletion method, Machine Hour rate method - Reserves and Provisions – Difference between provision and reserve – types of reserve – Provision for repairs and renewals.

Unit - II (14 Hour)
Single entry system- meaning and features- Ascertainment of profit- Net worth method- conversion method- Distinction between Statement of affairs method and conversion method.

Unit - III (15 Hour)
Hire purchase and Installment System, Including Hire purchase Trading Account- Features- Distinction between Hire purchase and Installment System- Accounting treatment for Hire purchase System –Calculation of interest- Default and Repossession- Hire purchase Trading Account- Debtors method – Stock and Debtors method- Installment System- Accounting treatment.

Unit - IV (15 Hour)
Branch Accounts (Excluding Foreign Branches) – Dependent and Independent Branches – Accounting treatment in Dependent branches- Debtors system- Stock and debtors system- Wholesale branch- final accounts system- Independent Branches- Departmental Accounts – Transfer at cost or selling prices- Need- Departmentalization of expenses- Apportionment of expenses- Inter-departmental transfer- Stock reserves.

Unit - V (14 Hour)
 Self balancing and Sectional balancing ledger- Meaning and advantages- Accounting aspects and transfers- Debtors ledger- Creditors ledger- General Ledger- Procedure of self balancing- journal entries for self balancing- Transfer and set-off.

Course Outcome:
- ➢ Learning about Methods of calculation of Depreciation.
- ➢ Explains the concepts of single entry system.
- ➢ To teach about the hire purchase and installment system.
- ➢ To learn about basic concepts of branch accounts and department accounts.
- ➢ To inculcate the knowledge of Self balancing and Sectional balancing ledger.

Note : Distribution of Marks between problems and theory shall be 80% and 20%.

Text Book:
1. Reddy T.S and Murthy.A, Financial Accounting, Reprint 2017, Margham Publications, Chennai.

Reference Books:
2. S.P.Jain & K.L.Narang, Principles Of Accountancy, Reprint 2013, Kalyani Publishers, New Delhi.
3. Gupta.R.L, Gupta.V.K, Shukla.M.C, Financial Accounting, 9th Edition, 2014, Sultan Chand and sons, New Delhi.
4. S.P.Jain & K.L.Narang, Advanced Accountancy, Volume - I Edition- 2010, Kalyani Publishers, New Delhi.

B.Com (CA) Degree Examination – Syllabus for the candidates admitted from the academic year 2019 – 2020 onwards

SECOND SEMESTER
PART III :CORE PRACTICAL - I Office Automation And C Programming

Maximum CIA : 40
Maximum CE : 60
Total Hours : 72

Course Objective: To acquire knowledge on editor, spread sheet, presentation software and C Programming skills.

MS-Word

1. Write a covering Letter to apply for a Job in a Company in MS-Word. Prepare your Curriculum Vitae in MS-Word and perform the following operations: Bold, Underline, Font size, style, background color, text color, line spacing, spell check, alignment, header, footer, inserting pages, page number, find and replace.

2. Mail Merge: Prepare an invitation to invite Share holders for Annual General Meeting.

3. MS-Excel
   Prepare bank customer statement in customer name, account number and find simple and compound interest.

4. Prepare mark list of your class (minimum 5 subjects) and perform the following operations: Data entry, total, average, result and ranking by using arithmetic, logical functions and sorting, prepare the result analysis chart.

MS-PowerPoint

5. Create a slide show presentation for a product of your choice. The slides must include name, brand name, type of product, characteristics, special features, price, special offers and etc. The presentation should be in Automatic mode.
   1.Use bar chart(X-axis, Y-axis).
   2.Use different presentation template different transition effect for each slide.

MS-Access

6. Prepare a payroll for employee database of an organization with following details: Employee Id, name, Date of birth, Department and designation, date of appointment, Basic pay, Dearness allowance , House rent allowance ,Deductions to calculate Gross pay and Net pay using Queries.
   C Programming

7. Write a program to take input of name, roll no and marks obtained by a student in 5 Subjects of 100 marks each and display the name, roll no with Grade secured.

8. Write a C program to sort the given number in ascending order.

9.   Write a C program to print Diamond pattern of stars.

10.   Write a C program to find the factorial of given number using recursive function.

11.   Write a C program to display the inventory of items in a store or shop.The inventory maintains details such as name,price,quantity and manufacturing date of each item..

12.   Write a C program to convert from decimal to binary, octal and hexadecimal values.

Course Outcome:
- ➢ Understand the logic for a given problem.
- ➢ Solve the problems.
- ➢ Know the alternative ways of providing solution to a problem.
- ➢ Learn the methods of iteration or looping and branching.
- ➢ Apply all the concepts that have been covered in the theory course.

B.Com (CA) Degree Examination – Syllabus for the candidates admitted from the academic year 2019 – 2020 onwards
SECOND SEMESTER
PART III: IDC 2 -Principles Of Management

Maximum CIA: 30
Minimum CE : 70
Total Hours : 72

Course Objectives : To enable the students for acquiring knowledge on basic management concept.

Unit –I [15 Hours]
Basic concepts of management: Definition –. Functions of Management: Planning – Concept, Nature, Management by objectives; Organization Structure – Concept, Principles, Centralization, Decentralization, Span of Management; Organizational Effectiveness

Unit –II [15 Hours]
Creativity and Innovation - Motivation and Satisfaction - Motivation Theories -Leadership Styles - Leadership theories– Organization Culture - types of culture – Managing cultural diversity
.

Unit –III [14 Hours]
Management and Society – Concept, External Environment, CSR, Corporate Governance, Ethical Standards People Management – Overview, Job design, Recruitment & Selection, Training & Development, Stress Management
.

Unit –IV [14 Hours]
Customer Management – Market Planning & Marketing Mix. Managerial Competencies – Communication, Team Effectiveness, Conflict Management, Entrepreneurship, & Supply Chain Management, TQM, Kaizen & Six Sigma

Unit – V [14 Hours]
Decision making: Concept, Nature, Process, Tools & techniques Managing Productivity - Cost Control - Purchase Control - Quality Control - Planning operations.

Course Outcome:

➢ Its relate, discuss, understand, and present management principles, processes and procedures in consideration of their effort on individual actions

➢ To bring about effective writing skills in commercial world.

➢ To participate, summarize and/or lead class discussions, case problems and situations from both the text and student experience

➢ To knowledge and understanding of the Principles of Management will enable the student manager and/ or employee and gain valuable insight into the workings of business and other organizations.

➢ To provide an insight into the different types of techniques in decision making and other managing concept

Text Books:

1.Management: Principles, Processes & Practices – Bhat, A & Kumar, A (OUP).

2. Essentials for Management – Koontz, Revised edition, Tata McGraw Hill (TMH)

3.Stephen P. Robbins and Mary Coulter, 'Management', Prentice Hall of India,8th edition.

Reference Books:

1.Management – Stoner, James A. F. (Pearson)

2.Management - Ghuman, Tata McGraw Hill(TMH)

3.Charles W L Hill, Steven L McShane, 'Principles of Management', Mcgraw Hill

Education, Special Indian Edition, 2007.

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B.Com [CA] Degree Examination – Syllabus for Candidates admitted from the Academic Year 2019-20 onwards.

THIRD SEMESTER
PART III – CORE IV- FINANCIAL ACCOUNTING - III

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To train the students in solving advanced problems in Partnership Accounting.

Unit – I   (12 Hour)
Introduction – Admission of Partner – Adjustment in the Profit Sharing Ratio – Calculation of Sacrificing Ratio – Treatment of Goodwill – Premium and Revaluation Method – Revaluation of Assets and Liabilities – Calculation of Ratios for Distribution of Profits – Capital Adjustments. [Memorandum Method Excluded]

Unit – II   (13 Hour)
Retirement of a Partner – Adjustment in the Profit Sharing Ratio – Calculation of Gaining Ratio Distinction between Gaining Ratio and Sacrificing Ratio – Treatment of Goodwill - Revaluation of Assets and Liabilities – Calculation of Ratios for Distribution of Profits – Capital Adjustments. [Memorandum Method Excluded] – Retirement cum Admission.

Unit – III   (12 Hour)
Dissolution – Modes of Dissolution – Treatment of Goodwill on Dissolution – Journal entries of dissolution.

Unit – IV   (12 Hour)
Insolvency of partner –Capital ratio under fixed and Fluctuating Capital Method –Garner Vs. Murray-Insolvency of all partners-Deficiency Accounts –Piecemeal Distribution-Proportionate capital and maximum loss method.

Unit – V   (11 Hour)
Conversion of partnership into company - Insolvency Accounts-Difference between Insolvency of Individual Partnership firm-Preparation of Statement of Affairs –Deficiency Accounts-Difference between Balance sheet and statement of affairs.
Note: Distribution of Marks between Problems and Theory shall be 80% and 20%.

Course Outcome:

CO 1: Determine the adjustment in admission of new partner
CO 2: Explain the Accounting Treatment in retirement of partner.
CO 3: Understanding about the treatment of Goodwill Of Partnership firms
CO 4: Modes of Dissolution and Insolvency
CO 5: Describing about the insolvency of Individual and partnership firm

CO/PO/PSOs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M			M	L	H	M	
CO2	M	H	M	L		H		M
CO3	L	H	M	H		H	M	
CO4		H	M	H	M	H	M	
CO5	L	M	M	H				

Text Book:

1. Reddy T.S and Murthy.A, Financial Accounting, Reprint 2019, Margham Publications, Chennai.

Reference Books:

2. S.P.Jain & K.L.Narang, Principles Of Accountancy, Reprint 2017, Kalyani Publishers, New Delhi.
3. Gupta.R.L, Gupta.V.K, Shukla.M.C, Financial Accounting, Revised Edition, 2016, Sultan Chand and sons, New Delhi.
4. S.P.Jain & K.L.Narang, Advanced Accountancy, Volume – Revised Edition- 2017, Kalyani Publishers, New Delhi.

B.Com [CA] Degree Examination – Syllabus for Candidates admitted from the Academic Year 2019-20 onwards.

THIRD SEMESTER
PART III - CORE- V: PRINCIPLES OF MARKETING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Objective: To acquire the basic knowledge of marketing and its function, modern principles and state regulation of marketing concepts.

Unit- I   (11 Hours)
Introduction to Market – Meaning - Definition of Market and Marketing – Classification of Market – Marketing Vs Selling – Role and Importance of Marketing –– Marketing Process – Marketing Trends.

Unit - II   (12 Hours)
Functions of Marketing – Functions of Exchange – Selling – Buying - Functions of Physical Supply – Transportation; Storage – Facilitating Functions – Financing – Risk Bearing – Standardization and Grading – Market Information.

Unit - III   (13 Hours)
Consumer Behavior - Meaning, Need for Consumer Behavior –Consumerism - Consumer Rights – Concept of Consumer Protection Act - Factors influencing Consumer Behavior – Cultural – Social – Personal – Psychological factors – Market Segmentation - New product development and consumer adoption process.

Unit - IV   (12 Hours)
Product Decisions: Concept of a product; Classification of products; Major product decisions; Product line and product mix; Branding; Packaging and labeling; Product life cycle –Price Mix – Importance – Kinds of Pricing – Pricing Objectives – Methods of Price Determination – Pricing Strategies – Promotion Mix .

Unit - V   (12 Hours)
 Direct Marketing Vs Online Marketing – Concept of Market Research and Marketing Information Systems – Multi Level Marketing - Marketing Regulations – Agmark – Green Marketing – Digital Marketing (Social Media, Multiple Messaging Apps like Face book messenger, WhatsApp, Viber).

Course Outcome:

CO1: Demonstrate understanding of marketing terminology and concepts.
CO2: Identify wants and environmental factors that shape marketing activity for certain target markets.
CO3: Demonstrate knowledge of the individual components of a marketing mix.
CO4: Demonstrate knowledge of key business communication strategies with in the Marketing field.
CO5:Identify the organisational processes involved in the planning, implementation and control of marketing activities

CO/PO/PSOs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H	M	M	L	M		L	
CO2	H	M	H	M	H	M		
CO3	M	L	M	L	L			M
CO4	H	M	H	L	L		L	
CO5	H	L	M	L	M		L	

Text Books:

1. R.S.N.Pillai and Bhagavathi, Modern Marketing- Principles and Practice, Reprint 2016, S.Chand & Sons, New Delhi
2. Saxena, Rajan, Marketing Management, TataMcGraw Hill, New Delhi.
3. McCarthy, E.J Basic Marketing: A managerial approach, Irwin, New York.

Reference Books:

1. Varshney R.L and Gupta, Marketing Management, Revised Edition, 2017, Sultan Chand and Sons, New Delhi.
2. R. Jayaprakash Reddy, Marketing Management, Revised Edition, 2016, JBA, New Delhi.

B.Com [CA] Degree Examination – Syllabus – for candidates admitted Academic year from 2019-20 onwards

THIRD SEMESTER
PART III-CORE VI: PROGRAMMING IN C++

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To understand and enable the students gain knowledge of OOPS and improves the C with object-oriented features.

Unit- I   [12 Hours]
Introduction to C++ programming - C++ Program structure - OOP Paradigm and Concepts-Benefits- Object Oriented Languages and Applications - Input/output Operations - Tokens-Data Types -Type Casting -Declarations of Variables and Constants –symbolic constants-Operators

Unit - II   [12 Hours]
Decision making and Looping statements-Arrays and Strings- C++Functions-The Main function -Recursion-Inline Functions-Function Overloading-Friend function-Virtual Function-Classes -Declaring Objects-Defining Member Function-Nesting of Member Function-Static Member Function- Static Objects.

Unit -III   [12 Hours]
Overloading with Friend Function-Overloading Member Function – Constructors-Destructors-Operator Overloading- Inheritance – Single Inheritance – Multiple Inheritance – Hierarchical- Hybrid Inheritance –Virtual Base classes-Abstract classes.

Unit -IV   [12 Hours]
Pointers – this Pointer-Pointer to derived classes-Virtual Functions –Polymorphism-Formatted and unformatted I/O Operations- Data Abstraction-Data Encapsulation.

Unit -V   [12 Hours]
Files- File Stream Classes-Opening and closing a file-Binary and ASCII Files- Dynamic Memory- New and delete Operators -Dynamic Memory Allocation for Arrays and Objects-Exception handling—Templates.

Course Outcome:

CO1: Understand how C++ improves C with object-oriented features.

CO2: Understand the features of C++ supporting object oriented programming

CO3: Understand how to produce object-oriented software using C++

CO4: Understand how to apply the major object-oriented concepts to implement object oriented programs in C++, encapsulation, inheritance and polymorphism

CO5: Understand advanced features of C++ specifically stream I/O, templates and operator overloading

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M					L		
CO2	L							H
CO3				M				H
CO4			L		M			H
CO5		M					L	

Text Book
1. Balaguruswamy, "Object Oriented Programming with C++"Fifth Edition-Tata McGraw Hill Publishers Ltd., 2018, New Delhi.

Reference Books
1. Brian W. Kernighan" The C Programming Language ", 2nd Edition, 2015.
2. Herbert Schilt, "C++- The Complete Reference, 4th Edition, Tata McGraw Hill, Pub Ltd.2017.
3. Bjarne Stroustrup, "he C++ Programming Language" 4Th Edition, 2016.

B.Com [CA] Degree Examination – Syllabus – for candidates admitted Academic year from 2019-20 onwards

THIRD SEMESTER
PART III CORE LAB II - PROGRAMMING IN C++ and TALLY

Maximum CIA: 40
Maximum CE: 60
Total Hours: 60

Course Objective:
   To inculcate the application knowledge on C++ and TALLY Programming concepts.

1. Write a C++ program to calculate depreciation under straight line method and diminishing Balance method (using class, defining member functions inside and outside the class).

2. Write a C++ Program to Find the Union of Two Sets.

3. Write a program to prepare the invoice from the data are customer number, customer name and address, date of sale, description, quantity, unit price, discount percentage, sales tax percentage.

4. Write a C++ Program to Create Class- Which Consists of EMPLOYEE Detail Like E Number E Name Department- Basic- Salary- and Grade. Write a Member Function to Get and Display Them. Derive a Class PAY from the Above Class and Write a Member Function to Calculate DA- HRA and PF Depending on the Grade.

5. Create Two Classes Which Consist of Two Private Variable Variables One Float and One Integer Variable in Each Class. Write Member Functions to Get and Display Them. Write Friend Function Common to Both the Classes and Display the Result.

6. Write a C++ Program Using Function Overloading to Read Two Matrices of Different Data Types Such As Integers and Floating Point Numbers Find Out the Sum of the Above Two Matrices Separately and Display the Sum of These Arrays Individually.

7. Write a C++ Program to Read an Integer Number and Find the Sum of All the Digits until It Reduces to a Single Digit Using Constructors- Destructors and Inline Member's Functions.

8. Write a C++ Program to Create a Class SHAPE Which Consists of Two VIRTUAL FUNCTIONS Calculate Area O and Calculate Perimeter O to Calculate Area and Perimeter of Various Figures. Derive Three Classes SQUARE- RECTANGLE.

TRIANGLE from Class Shape and Calculate Area and Perimeter of Each Class Separately and Display the Result.

9. Write a C++ program for simple banking processes like Deposit, Withdraw and balance enquiry details. The program uses Classes and objects.

10. Write a C++ Program to merge two different files into a single file.

11. Company creation-Ledger creation-group creation and Accounting Voucher.

12. Introduction to GST getting started with GST-Goods.

Course Outcome:

CO1: Apply the concepts of object-oriented programming.

CO2: Implement advanced use of overloading functions in C++ programming.

CO3: Apply virtual and pure virtual function & complex programming situations

CO4: Apply how to implement copy constructors and class member functions

CO5: Illustrate the process of data file manipulations using C++.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1		M					H	
CO2			M			H		
CO3		L						H
CO4					L			H
CO5	H	L		M				M

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THIRD SEMESTER
PART IV – SBC I: TALLY AND GST

Maximum CIA: NA
Maximum CE: 75
Total Hours: 36

 Course Objectives: To enable the students to learn GST principles, To train the students in solving problems in Accounting through Tally.

Unit I   (7 Hours)

Types of accounts – Golden rules of accounts – Accounting Concepts and Principles – Conventions – Double Entry systems of Book Keeping- Modes of Accounting- Financial Statements, , Recording Transactions.

Unit II   (7 Hours)

Inventory in tally ERP 9- stock groups , stock categories, godowns, locations units of measures - Creating Inventory master for national traders. Central Sales Tax (CST) Basics Central Sales Tax (CST) Enabling CST in Tally-ERP 9-Recording Interstate Transactions in Tally-ERP 9 Payment of CST-CST Reports.

Unit III   (7 Hours)

Introduction - Stages of Evolution of Goods and Services Tax - Methodology of GST – Subsuming of taxes- constitutional background **-** Benefits of implementing GST- Structure of GST-

Unit IV   (8 Hours)

Central Goods and Services Tax - State Goods and Services Tax - Important concepts and definitions under CGST Act and IGST Act-GSTN - GST council – Structure, Power and Functions.

Unit - V   (7 Hours)

Accounting Vouchers Inventory Vouchers Invoicing- Value Added Tax (VAT) Configuring VAT in Tally.ERP 9 Creating Masters-Entering Transactions**-**Accounting for Return of Goods Rate Difference in Purchase.

Course Outcome:

CO1: Providing a strong foundation in fundamental accounting concepts and conventions.

CO2: Providing practical knowledge accounting process with practical examples and entries in tally

CO3: Gives the knowledge about the growth perspective of economy

CO4: The wider understanding about taxation system procedures of the state.

CO5: Enhance the knowledge of technical aspects of Tally.

CO/PO/PSOs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H					H	M	
CO2	M							
CO3		H			M			
CO4		M					L	
CO5			H	H		M		

Text Book:

   1. Indirect Taxes - Vinod K Singania,Taxmann's Publications, New Delhi

   2. Indirect Taxes - H.C Mehrotra, Sahitya Bhavan Publications, New Delhi

Reference Books:

   1. Illustrated Guide to Goods and Service Tax- C A Rajat Mohan- Bharat Publications

   2. All about GST- V S Datey- Taxmann Publication

B.Com (CA) Degree Examination - Syllabus for the candidates admitted from the academic year 2019-2020 onwards

FOURTH SEMESTER
SBC-I - CUSTOMER RELATIONSHIP MANAGEMENT

Maximum CIA: NA
Maximum CE: 75
Total Hours: 36

Course Objective:
On the successful completion of the course the students should have Understood Relationship Marketing, Sales Force Automation and Database Marketing.

Unit I   (7 Hour)

CRM – Overview and evolution of the concept – CRM and Relationship marketing – CRM strategy – Importance of customer divisibility in CRM.

Unit II   (7 Hour)

Overview of Relationship marketing – Basis of building relationship – Types of relationship marketing – Customer life cycle.

Unit III   (7 Hour)

Sales Force Automation – Contact management – Concept – Enterprise Marketing Management – core beliefs – CRM in India.

Unit IV   (7 Hour)

Value Chain – concept – Integration Business Management – Benchmarks and Metrics – Culture change – Alignment with customer eco system – Vendor selection.

Unit V   (7 HOUR)

Database Marketing – Prospect database – Data warehouse and Data Mining – Analysis of customer relationship technologies – Best practices in marketing Technology – Indian scenario.

Course Outcome:

CO1.To identify the fundamental needs and importance of maintaining a good customer relationship.

CO2. To understand the Customer relationship management concepts, techniques and strategies.

CO3. To elucidate the students with the successful framework of CRM and its implementation in an organization.

CO4. To use strategic customer acquisition and retention techniques in CRM with an introduction of CRM software packages.

CO5. To analyse the customer satisfaction by implementing CRM practices, strategies and technologies thereby, to retain customers as well as to achieve long term profitability.

CO/PO/PSOs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H					L	M	
CO2	M		H					L
CO3		M			H		L	
CO4	M		H					L
C05	M			H		L		

Text Books:

1. Shajahan.S, Relationship Marketing, 8th edition, Mc Graw Hill, New Delhi.

Reference Books:

1. Paul Green Berg, Customer Relationship Management, Tata Mc Graw Hill, New Delhi.

2.Francies Buttle, Customer Relationship Management,2rd edition, Buttorworth-Heinemann, USA.

B.Com [CA] Degree Examination – Syllabus for Candidates admitted from the Academic Year 2019-20 onwards.

THIRD SEMESTER
PART IV - EDC- I HUMAN RESOURCE MANAGEMENT

Maximum CIA: NA
Maximum CE: 50
Total Hours: 24

Course Objective:
On the successful completion of this paper, the students would have acquired the preliminary knowledge in Human Resource Management.

Unit - I   [4 Hours]

Human Resource Management- Definition, Objectives, Scope and Functions of HRM- Evolution and Development of HRM

Unit - II   [5 Hours]

Job Analysis- Job Description- Job Specification. Recruitment, Sources - Selection Process- Placement and Induction- Training and Development.

Unit - III   [5 Hours]

Performance Appraisal – Need, Importance and Methods - Job Evaluation – Methods – Career Planning – Features – Career Planning – Need – Career Planning Vs Human Resource Planning.

Unit - IV   [5 Hours]

 Wages and Salary Administration – Elements of Wage and Salary System - Payment of Wages Act1936 – Wage Policy – Wage Policy in India – State Regulation of Wages

Unit - V   [5 Hours]
Grievance Handling, Forms, Measurement Techniques and Steps – Collective Bargaining, Features, Types and Process - Employee's Participation.

Course outcome:

CO1: The paper provides the basis concept of management and veritable means of human resource management.

CO2: Human resource management has some specific roles to play in an organization, job description.

CO3: The goals of human resource management in education are to develop the workers and to contribute to goal achievement, Appraisal, and career development.

CO4: Knowledge about the wages and welfare measures of employees.

CO5: Know about the Grievance Handling, Measurement Techniques and Steps and Employee's Participation.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M						M	
CO2		M		L			M	
CO3			H				H	
CO4			M		M		M	
CO5						M		

Text Book:

    1. V.S.P. Rao, Human Resource Management, Revised Edition, 2017, Excel Books, New Delhi.

Reference Books:

1. K.Aswathappa, Human Resource Management, Revised Edition 2017, Tata Mc-Graw Hill, New Delhi
2. Dr.J.Jayasankaran, Human Resource Management, Reprint 2016, Margham Publishers, Chennai.
3. L.M.Prasad. Human Resource Management, Reprint 2017, Sultan Chand & Sons, New Delhi.

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FOURTH SEMESTER

PART III – CORE VII: CORPORATE ACCOUNTING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To enable the students understand the fundamental procedures in the preparation of Company Accounts.

Unit - I   [12 Hours]
Share Capital- Terms of Issue of Equity shares – Issue at Par, Premium and at Discount – Under Subscription and Over Subscription-Pro-rata Allotment- Calls in Arrears and Calls in Advance- Forfeiture and Re-issue [including Pro-rata allotment] .

Unit - II   [12 Hours]
Preference Shares – kinds - Issue of Preference Shares – Redemption of Preference Shares-conditions for Redemption-Redemption out of fresh issue - Computation of Cash available for Redemption- Transfer to Capital Redemption Reserve

Unit - III   [11 Hours]
Debentures - Types of Debentures - Issue of Debentures at Par , Premium and Discount Redemption of debentures –Methods of Redemption (Theory only) – Difference between shares and Debentures: Underwriting of Shares–Needs- Types- Complete and Partial Underwriting- Firm Underwriting.

Unit - IV   [12 Hours]
Profits Prior to Incorporation – Meaning – Treatment - Basis of Apportionment – Calculation of Managerial Remuneration - Calculation of Net Profit - Preparation of Final Accounts of Companies with Managerial Remuneration.

Unit - V   [13 Hours]
Valuation of Goodwill - Methods for Valuation of Goodwill - Valuation of Shares - Methods for Valuation of Shares - Liquidation of Companies – Meaning –Preparation of Liquidators Final Statement – Preparation of Statement of Affairs and Deficiency Account.

Note: Distribution of Marks between Problems and Theory shall be 80% and 20%.

Course Outcome:

CO1: Enabling the students to understand the features of Shares and its issue.

CO2: Develop an understanding about redemption of Preference Shares

CO3: Develop an understanding about issue and redemption of debentures.

CO4: To give an exposure to the company final accounts

CO5: Students can get an idea about Good will and Liquidation of companies

CO/PO/PSOs	PO1	PO2	PO3	PO4	PSO1	PSO2	PSO3
CO1	M	H	H	M	H	M	
CO2	M	H		L			L
CO3	M	M	H	M		L	
CO4	H		M		L	M	
CO5	L	H	M	M	M	L	

Text Book:
1. Reddy T.S and Murthy.A, Corporate Accounting, Revised Edition, 2019, Margham Publications, Chennai.

Reference Books:
1. S.P.Jain & K.L.Narang, Corporate Accounting , Reprint 2016, Kalyani Publishers, New Delhi.
2. Gupta R.L. and Radhaswamy M, Corporate Accounts , Theory Method and Application-15th Revised Edition 2017, Sultan Chand and Co., New Delhi.
3. Shukla M.C., Grewal T.S. and Gupta S.L., Advanced Accountancy, Revised Edition 2016, Sulthan Chand and sons, New Delhi

B.Com [CA] Degree Examination – Syllabus for Candidates admitted from the Academic Year 2019-20 onwards.
FOURTH SEMESTER
PART III-CORE VIII – MERCANTILE LAW

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To provide the Ability to apply concepts, principles and theories to understand simple business laws. To create Awareness of the global business laws and its impacts on business.

Unit I   [12 Hours]
Sources of Law – Indian contract Act 1872 – Essential Elements of Valid Contract – Kinds of Contracts - Offer and Acceptance – Legal Rules relating to Offer and Acceptance – Revocation of Offer and Acceptance - Consideration – Essentials of Valid Consideration

Unit II   [12 Hours]
Capacity to Contract – Law relating to Minor, Unsound Mind – Persons Disqualified by Law – Free Consent- Coercion-Undue influence – Fraud- Misrepresentation and Mistake.

Unit III   [12 Hours]
 Performance of Contract – Modes of Performance – Quasi-Contract – Discharge of Contract –Modes of Discharge - Remedies for Breach of Contract.

Unit IV   [12 Hours]
Special Contracts - Indemnity and Guarantee – Rights of Indemnity Holder – Rights and Liabilities of Surety.- Bailment and Pledge – Contract of Agency.

Unit V   [12 Hours]
Sale of Goods Act 1930 – Sale and Agreement to Sell – Implied Conditions and Warranties – Rights of unpaid seller.

Course Outcomes:

CO1: To enable students to become familiar with the basic principles of law of contract
CO2: Demonstrate and understanding of the legal environment of business.
CO3: Define relevant legal terms in business and understand the capacity of parties to enter in to a contact
CO4: Appreciate the relevance of business law to individuals and business to perform the contract
CO5: Identify the fundamental legal principles behind contractual agreements

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1		H			H	H		
CO2		M	H					
CO3	H		H	M			M	H
CO4	H			H	M			H
CO5		M			L			

Text Book
1. R.S.N. Pillai & Bagavathi, Business Law, Reprint 2017, Sulthan Chand, New Delhi

Reference Books

1. N.D. Kapoor, Business Law, Reprint 2017, Sulthan Chand & Sons, New Delhi.
2. M.C.Kuchhal & Vivek Kucchal, Business and Industrial Law, Reprint 2016, Sulthan Chand & Sons, New Delhi.
3. N.D. Kapoor, Mercantile Law, Reprint 2017, Sulthan Chand & Sons, New Delhi.

B.Com [CA] Degree Examination – Syllabus – for candidates admitted Academic year from 2019-20 onwards

FOURTH SEMESTER

PART III-CORE IX: DATABASE MANAGEMENT SYSTEM

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:

      The objective of the course is to present an introduction to database management systems, with an emphasis on how to organize, maintain and retrieve - efficiently, and effectively - information from a DBMS.

Unit 1   (12 Hours)

Database System Architecture - Basic Concepts: Data System, Operational Data, Data Independence, Architecture for a Database System, Distributed Databases, Storage Structures: Representation of Data. Data Structures and Corresponding Operators: Introduction, Relation Approach, Hierarchical Approach, Network Approach.

Unit 2   (12 Hours)

Relational Approach: Relational Data Structure: Relation, Domain, Attributes, Key, Entity Relationship Diagram. Relational Algebra - Introduction, Traditional Set Operation. Attribute names for derived relations - Special Relational Operations.

Unit 3   (12 Hours)

Embedded SQL: Introduction – Query by Example – Retrieval operations, Built-in Functions, update operations- QBE Dictionary. Normalization: Functional dependency, First, Second, Third normal forms, Relations with more than one candidate key, Good and bad decomposition.

Unit 4   (12 Hours)

Hierarchical Approach: IMS data structure - Physical Database, Database Description- Hierarchical sequence Network Approach: Architecture of DBTG System.

Unit 5   (12 Hours)

Distributed data bases – structure of distributed databases – Trade offs in Distributing the database – Transparency and autonomy – distributed query processing – recovery in distributed systems – commit protocols – security and integrity violations – authorization and views – security specification – encryption – Statistical databases

Course Outcome:

CO1: Describe the fundamental elements of relational database management systems
CO1: Explain the basic concepts of relational data model, entity-relationship model,
    relational database design, relational algebra and SQL.
CO1: Design ER-models to represent simple database application scenarios
CO1: Convert the ER-model to relational tables, populate relational database and formulate
    SQL queries on data.
CO1: Improve the database design by normalization.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO 1	PSO 2	PSO3
CO1	M				M		L	H
CO2	L						H	
CO3			L			H		
CO4							H	M
CO5		M		L	M		L	

Text book:

1. Henry F.Korth, and Abraham Silberschatz,, Sudarshan ─Database system Concepts,
   McGraw Hill, 6th Edition, 2013

Books for Reference:

1. C.J.Date -An introduction to Database Systems, Seventh Edition
2. Bipin C Desai -An introduction to Database Systems

B.Com [CA] Degree Examination – Syllabus – for candidates admitted Academic year from 2019-20 onwards

FOURTH SEMESTER

CORE LAB -III - DATA BASE MANAGEMENT SYSTEM LAB

Maximum CIA: 40
Maximum CE: 60
Total Hours: 60

Course Objective:
The major objective of this lab is to provide a strong formal foundation in database concepts, technology and practice to the participants to groom them into well-informed database application developers.

1. Create a company database with the following fields and performing queries.

Field name	Field type	Size
Company name	varchar	20
Proprietor	varchar	15
Address	varchar	20
Supplier name	character	10
No of employees	number	5
GP percent	Number	6, 2

   a) Display employee-names as ascending order.
   b) Display the name of the company whose supplier name is TATA.
   c) Display all the details of the company whose GP percent greater than 70.
   d) Display the details of the company having employee ranging from 1000 to 1200.
   e) Display the details of the company whose proprietor is same as the Telco.

2. Create a payroll database the following fields and performing queries.

Field name	Field type	Size
Emp_no	varchar	5
EMP name	character	15
Department	varchar	10
Date of join	date	
Basic pay	number	6,2
DA	number	6,2
HRA	number	6,2
PF	number	6,2
Net pay	number	6,2

   a) Display the employee details those are 'sales' department
   b) Display the employee names that are getting HRA above 4000.
   c) Delete the employee details whose join before apr 2000
   d) Display the employee whose names starts with 'S'
   e) Display the employee id and mane that's getting highest salary.

3. Create a student database with the following fields and the performing queries.

Field name	Field type	Size
Stu name	character	15
Roll no	varchar	10
Dept	character	10

Gender	character	6
Date of birth	date	
Marks %	number	5, 2

a) Display the student details those are fails (below 40).
b) Display the student names and roll number except 14BCC030.
c) Update mark value 75 to roll number 14BCC13
d) Find the number of 'Female' students.
e) Order the student details based on marks

4. Create a employee table with the given fields and perform the following queries.

Field name	Field type	Size
EMP code	varchar	10
EMP name	varchar	15
Address	character	15
Designation	varchar	10
Date of joining.	Date	
Grade	character	10
Salary	number	8, 2

a) Arrange the employees as per their grade level.
b) Display the detail of the employees whose earning lowest salary.
c) Find the no of employees who's joined before 2010.
d) Display the employee details whose grade under 'A' with designation as manager
e) Find the employees total salary value.

5. Create a table product with the given fields fields and performs the following queries.

Field name	Field type	Size
Product no	number	8
Product name	character	15
Unit of measure	character	10
Quantity	number	6, 2
Total amount.	Number	8, 2

a) Calculate the average quantity of product.
b) Display records whose quantity greater than or equal 20.
c) Select the records whose unit of measure is "kg".
d) Display the details those getting either quantity above 200 total amount below 2000
e) Find the number of products those are 'meter' unit.

6. Create a college database with relevant fields

Field name	Field type	Size
College name	character	15
Course	character	10
No of students	number	6
No of students passed	number	6
Pass percentage	Number	6, 2
Organization	varchar	10
Placed students	number	6

a) Alter the table.
b) Count the number of students were placed on 'Wipro'.
c) Update the placement those getting below 50%.
d) Find the numbers of students were placed in BCOM (CA).

e) Display the detail which course having highest pass percentage.

7. Create a table 'publisher 'and 'book' with relevant fields

      Publisher table:

Field name	Field type	Size
Publisher code	varchar	8
Publisher name	varchar	10
Publisher city	character	12
Publisher state	character	10
ISBN	varchar	8

      Book table:

Title	varchar	15
Author	character	10
Publisher name	varchar	10
Book code	varchar	6
Prize	number	4, 2

a) Display the details of the book with the title 'DBMS'
b) Display the details of the book with publisher name as 'MacMillan'
c) Select the book code, title, publisher name from 'Delhi'.
d) Display the publisher details of 'programming in C++'.
e) Find the average book prize from publisher state 'Tamilnadu'

8. Create a table Deposit and Loan with relevant fields.

      Deposit table:

Field name	Field type	Size
Account no	varchar	16
Customer name	character	12
Bank name	character	10
Branch name	varchar	10
Balance amount	number	8, 2

      Loan table:

Account no	varchar	16
Loan number	varchar	16
Loan amount	number	8, 2
Bank name	character	10
Branch name	character	10

a) List the customer name whose getting loan from 'city union bank'.
b) Find the customer name to having minimum balance amount
c) Update deposits to add interest at 5% to the balance.
d) Display the details whose having loan above 2lakhs and balance below 2lakhs.
e) Find the number of customer whose getting loan above 5lakhs.

9. Create a table supplier part table with relevant fields

      Supplier table:

Field name	Field type	Size

Supplier number	varchar	16
Supplier name	character	12
Part number	number	14
Address	varchar	12
Supplier city	character	10

Part table:

Part number	varchar	14
Part name	character	16
Quantity	number	6, 2
Price	number	6, 2
Total	number	8, 2

a) Display the part name and supplier name from supplier city 'erode 'or 'Chennai'.
b) Display the part number and part name those prize not less than 400.
c) Find the average prize.
d) Change prize whose supplier city 'pune'.
e) Delete the details whose prize is greater than average prize.

10. Create a table producer, agent and customer with relevant fields.

Producer table:

Field name	Field type	Size
Producer id	varchar	10
Producer name	character	12
Part number	number	14
Address	varchar	12
City	character	10

Agent table:

Agent id	varchar	8
Agent name	character	12
Part number	varchar	12
Address	varchar	14
Phone number	number	12

Customer table:

Customer id	varchar	10
customer name	character	16
Agent id	varchar	8
Address	varchar	14
Part number	number	14

a) Display the agent id, phone number and customer name whose producer city 'Salem'.
b) Display the name of the agent whose producer names same as the 'Telco'.
c) Display producer names and customer names.
d) Display part number and address whose producer city 'Tirupur'
e) Find the agent name and phone number whose customer address 'kuniyamuthur'.

11. Create a table Flight, Reservation and passenger with relevant fields.

Flight table:

Field name	Field type	Size
Flight number	varchar	10

Flight name	character	12
Country	character	10
Flight date	date	

Reservation table:

Flight number	varchar	10
Passenger name	character	12
Date of journey	date	
Date of Reserve	date	
PNR Number	varchar	10
Boarding place	varchar	15

Passenger table:

PNR Number	varchar	10
Passenger name	character	12
Flight number	varchar	10
Age	number	3
Gender	character	6
Phone number	number	14
Date of journey	date	
Departure	varchar	15
Arrival place	varchar	15

a) Alter the table and set relevant key constraint.
b) Sort the passenger list by the date of journey.
c) Find the total number of Female passengers.
d) Display the name of passengers whose reserved for 'Spicejet'.
e) Get the passenger details whose reserved Indian Flight

12. Create a table project, employee and Assigned with relevant fields.

Project table:

Field name	Field type	Size
Organization	varchar	10
Project id	varchar	10
Project name	varchar	12
Project lead	character	14
No of members	number	4

Employee table:

Employee id	varchar	8
Employee name	character	12
Project id	varchar	10
Designation	varchar	12
Salary	number	8, 2
Phone number	number	12

Assigned table:

Project id	varchar	10
Employee id	varchar	8
Assigned date	date	
Employee name	character	12

a) Find the average salary of employees whose involve in 'AT&T' project.
b) Get the details of employee working on more than one project.
c) Find the total salary of project lead.

d) Get the name of employee who is having the project lead 'Siva'.

e) Display the employee name & Project name those assigned date before Aug-2017.

Course Outcome:

CO1	Transform an information model into a relational database schema and to use a data definition language and/or utilities to implement the schema using a DBMS.
CO2	Use an SQL interface to create, manipulate, maintain, and query a database.
CO3	Formulate query, using SQL, solutions to a broad range of query and data update problems.
CO4	Populate and query a database using SQL DML/DDL commands.
CO5	Demonstrate a rudimentary understanding of programmatic interfaces to a database and be able to use the basic functions of one such interface.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1		M					H	
CO2			M			H		
CO3		L				H		
CO4					L		H	
CO5		L						M

B.Com (CA) Degree Examination – Syllabus for candidates admitted from the academic year 2019- 20120 onwards

THIRD SEMESTER

PART IV: SBC II: INTRODUCTION TO MULTIMEDIA

Maximum CIA: NA
Maximum CE: 75
Total Hours: 36

Course Objectives:

To enable the students to be multimedia literates, this will give the knowledge of various media technology.

UNIT I   (7 Hours)

Introduction: What is Multimedia - Where to use Multimedia-Introduction to making Multimedia-Basic Software Tools-Text Editing and Word Processing Tools-Painting and Drawing Tools-3D Modeling and Animation Tools-Image Editing Tools-Sound Editing Tools Animation, Video and Digital Movie Tools.

UNIT II   (7 Hours)

Text - The Power of Meaning-About Fonts and Faces-Using Text in Multimedia-Computers and Text-Font Editing and Design Tools-Hypermedia and Hyper Text.

UNIT III   (8 Hours)

Sound-The Power of Sound-Multimedia System Sounds-MIDI versus Digital Audio-Digital Audio-Making MIDI Audio-Audio File Formats-Adding sound to Multimedia Projects-Production

UNIT IV   (7 Hours)

Images before start to Create-Making Still Images-Color-Image File Formats-Animation-The Power of Motion-The Principles of Animation-Making Animations That Work.

UNIT V   (7 Hours)

Video-Using Video-How Video Works-Broadcast Video standards-Integrating computers and Television-Shooting and Editing Video-Video Tips-Recording Formats-Digital Video.

Course Outcome:

CO1: Understand about basic of multimedia and various multimedia tools

CO2: Apply the various text format using font editing and design.

CO3: Understand the concepts of MIDI with various projects

CO4: Apply the various images with colors for animations.

CO5: Analyze the audio and video formats to display the digital video.

CO/PO &PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4
CO1	M						M		H
CO2		H		L				M	
CO3			L					L	
CO4			M		M			M	
CO5						L			M

Text Book:

1. Tay Vaughan, "Multimedia Making It Work" - Fifth Edition, 2001, Tata McGraw-Hill Publications (Unit I - V).

Reference Book:

1."Multimedia Computing, Communications & Application" - Ralf Steinmetz,Klara Nahrstedt, 14thEdition – 2013 , Pearson Education.

2."Digital Multimedia"- Nigel Chapman,Jenny Chapman, 2nd Edition, John Wiley & Sons Ltd., 2004.

B.Com (CA) Degree Examination - Syllabus for the candidates admitted from the academic year 2019-2020 onwards

FOURTH SEMESTER
PART IV - SBC-II - HUMAN PSYCHOLOGY

Maximum CIA: NA
Maximum CE: 75
Total Hours: 36

Course Objective: To understand basic concepts, issues and debates in the field of psychology.

Unit- I   (7 Hours)
Introduction to Psychology: Origin of psychology- Scope of psychology- Brief history of modern scientific psychology- Branches of psychology- Development of psychology in India.

Unit – II   (8 Hours)
Critical thinking in Psychology: Psychological disorders - Causes of Social anxiety - Causes of increasing depression among the youth - Panic attacks and anxiety disorder- physical symptoms of a mental disorder-The effects of medication on mental health - Effects of depression on mental health - How can drugs affect our youth's mental health in the long run.

Unit – III: (7 Hours)
Mind and Consciousness: Awareness and consciousness, States of mind: Nature of consciousness, Functions of consciousness, and changes in consciousness: dream and sleep.

Unit IV: (7 Hours)
Motivation and Emotion: Definition of motivation, Motivational concepts: Need, Instinct, drive, incentives, Drive reduction theory- Primary and secondary motives - Motivation of hunger and eating, sexual motivation.

Unit – V: (7 Hours)
Social Psychology**:** Social issues involving or related to culture - social depression - social anxiety affect people - Gender roles in our society - Gender discrimination and its causes-Effect of marital disputes on children-violent video games affect children and their brain development.

Course Outcome:
CO1: To able to understand basic principles of Psychology.
CO2: To able to understand major concepts, different perspectives of Psychology.
CO3: Understand the Psychological way of thinking.
CO4: To develop comprehensive understanding of interdisciplinary issues and aspects of society.
CO5: To understand roll of biological base in human behavior.

CO/PO/PSOs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H					H	M	
CO2	M		H					
CO3		H			M		L	
CO4	H	M						L
C05	M		L	H		M		

Text Book:

1. Baron, R.A. Psychology: The Essential Science. New York: Allyn & Bacon

Reference Books:

1. Mishra, B. K. Psychology: The study of human behaviour. New delhi: Prentice Hall of India.
2. Santrock, J. W. Educational Psychology, New Delhi, Tata McGraw Hill.

BCA Degree Examination – Syllabus for Candidates admitted from the Academic Year 2019-20 onwards.

THIRD SEMESTER
PART III – IDC III- BUSINESS ACCOUNTING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To train the students in solving advanced problems in Partnership Accounting.

Unit I   (12 Hour)
Introduction – Meaning of Accounting – Definition – Objectives of Accounting- Advantages of Accounting- Limitations of Accounting-Accounting Concepts and Conventions.

Unit II   (12 Hour)
Journal – Ledger – Trial Balance – Subsidiary Books

Unit III   (12 Hour)
Trading Account – Profit and Loss Account – Balance sheet With Simple Adjustments-Difference between a Trial Balance and Balance Sheet - Difference between a Profit and Loss Account and Balance Sheet.

Unit IV   (12 Hour)
Average Due Date - Meaning –Benefits of   Determination of Due Date – Average due date as basis for calculation of Interest- Average due date as basis for calculation of Interest on Drawings.

Unit V   (12 Hour)
Bank Reconciliation Statement-Meaning – Causes for determination between cash book and passbook. Method of preparation of Bank Reconciliation Statement

Course Outcome:

CO1: Providing a strong foundation in fundamental accounting concepts and conventions.

CO2: Explains the various elements of financial statements and relevant accounting

         standards.

CO3: To teach about techniques in Average due date, bill of exchange and BRS.

CO4: To learn about basic concepts of Consignments and Joint venture.

CO5: To inculcate the knowledge of international financial reporting standards.

CO/PO/PSOs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H					H	M	
CO2	M							
CO3		H			M			
CO4		M						L
CO5			L	H		M		

Text Book
1. Reddy T.S and Murthy.A, Financial Accounting, Reprint 2018, Margham Publications, Chennai.

Reference Books
1.S.P.Jain & K.L.Narang, Principles Of Accountancy, Reprint 2017, Kalyani Publishers, New Delhi.
2.Gupta.R.L, Gupta.V.K, Shukla.M.C, Financial Accounting, Revised Edition, 2016, Sultan Chand and sons, New Delhi.
3.S.P.Jain & K.L.Narang, Advanced Accountancy, Volume – I Revised Edition- 2017, Kalyani Publishers, New Delhi.

B.Sc(CS) Degree Examination – Syllabus for Candidates admitted from the Academic Year 2019-20 onwards.
THIRD SEMESTER
PART III – IDC IV- BUSINESS ACCOUNTING -

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: To train the students in solving advanced problems in Partnership Accounting.

Unit I   (12 HOUR)
Introduction – Meaning of Accounting – Definition – Objectives of Accounting- Advantages of Accounting- Limitations of Accounting-Accounting Concepts and Conventions.

Unit II   (12 HOUR)
Journal – Ledger – Trial Balance – Subsidiary Books

Unit III   (12 HOUR)
Trading Account – Profit and Loss Account – Balance sheet With Simple Adjustments-Difference between a Trial Balance and Balance Sheet - Difference between a Profit and Loss Account and Balance Sheet.

Unit IV   (12 HOUR)
Average Due Date - Meaning –Benefits of   Determination of Due Date – Average due date as basis for calculation of Interest- Average due date as basis for calculation of Interest on Drawings.

Unit V   (12 HOUR)
Bank Reconciliation Statement-Meaning – Causes for determination between cash book and passbook. Method of preparation of Bank Reconciliation Statement

Course Outcome:
CO1:   Providing a strong foundation in fundamental accounting concepts and conventions.

CO2:   Explains the various elements of financial statements and relevant accounting standards.

CO3:   To teach about techniques in Average due date, bill of exchange and BRS.

CO4:   To learn about basic concepts of Consignments and Joint venture.

CO5:   To inculcate the knowledge of international financial reporting standards.

CO/PO/PSOs	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H					H	M	
CO2	M							
CO3		H	M		M			
CO4		M						L
C05				H		M		

Text Book
1. Reddy T.S and Murthy.A, Financial Accounting, Reprint 2018, Margham
   Publications, Chennai.

Reference Books
1. S.P.Jain & K.L.Narang, Principles Of Accountancy, Reprint 2017, Kalyani
   Publishers, New Delhi.
2. Gupta.R.L, Gupta.V.K, Shukla.M.C, Financial Accounting, Revised Edition, 2016,
   Sultan Chand and sons, New Delhi.
3. S.P.Jain & K.L.Narang, Advanced Accountancy, Volume - I Revised Edition-
   2017, Kalyani Publishers, New Delhi.

BACHELOR OF COMMERCE (COMPUTER APPLICATIONS)
Scheme of Examination (CBCS Pattern)
Syllabus for the Academic Year 2020-2021 for the
Candidates admitted for Academic Year 2018-2019

Part	Sub Code	Subject Title	Ins.Hrs/ Week	Dur. Hrs.	CIA	CE	Total	Credit
						Examination		
SEMESTER I								
I	16LAT001/ 15LAF001/ 15LAM001/ 18LAHI01	Language – I	5	3	30	70	100	3
II	16ENGOO1	English –I	5	3	30	70	100	3
III	18BCC101	Core I: Financial Accounting -I	6	3	30	70	100	4
III	18BCC102	Core –II: Office Automation , C and Tally	6	3	30	70	100	4
III	18BCCID1	IDC -I: Managerial Economics	6	3	30	70	100	4
IV	18UFCA01	Foundation Course- I : Environmental Studies #	2	2	-	50	50	2
		Total	30				550	20
I	15LAT002/ 15LAF002/ 15LAM002/ 18LAHI02	Language –II	5	3	30	70	100	3
II	16ENGOO2	English – II	5	3	30	70	100	3
III	18BCC201	Core- III: Financial Accounting -II	6	3	30	70	100	4
III	18BCCP01	Core Practical – I : MS Office, C and Tally Lab	6	3	40	60	100	4
III	18BCCID2	IDC- I: Principles of Management	6	3	30	70	100	4
IV	18UFCA02	Foundation Course -II: Value Education #	2	2	-	50	50	2
		Total	30				550	20
SEMESTER III								
III	18BCC301	Core – 4: Financial Accounting -III	5	3	30	70	100	4
III	18BCC302	Core – 5: Principles of Marketing	5	3	30	70	100	4
III	18BCC303	Core-6: Programming in C++	5	3	30	70	100	4
III	18BCCP02	Core Lab-II : Programming in C++ Lab	5	3	40	60	100	4
III	15BCCID3	IDC 3 :Business Mathematics	5	3	30	70	100	4
IV	18BCCAO1/O2	AOC - 1 : Corporate Communication	3	3	-	75	75	3
IV	16BTA001/ 16ATA001/ 18BCCED1	EDC- I :BT-I/ AT-I/ Human Resource Management #	2	2	-	50	50	2
III	19BCCPR1	Institutional Training	-	-	-	-	-	-

		Total	30				625	25

		SEMESTER IV						
III	18BCC401	Core 7- Corporate Accounting	5	3	30	70	100	4
III	18BCC402	Core 8- Mercantile Law	5	3	30	70	100	4
III	18BCC403	Core 9- DBMS	5	3	30	70	100	4
III	18BCCP03	Core Lab-III : DBMS (ORACLE) Lab	5	3	40	60	100	4
III	15BCCID4	IDC 4 Business Statistics	5	3	30	70	100	4
IV	18BCCAO3/O4	AOC 2 -Mobile Computing	3	3	-	75	75	3
IV	16BTA002/ 16ATA002/ 15EDC002	EDC 2:Basic Tamil / Advanced Tamil / Communicative English #	2	2	-	50	50	2
V	*15NSS001/NCC001/15SPT/EXT001*	NCC/NSS/SPORTS/Extension Activities @			50		50	2
		Total	30				675	27

		SEMESTER V						
III	18BCC501	Core 10: Cost Accounting	5	3	30	70	100	4
III	18BCC502	Core 11: Income Tax Law and Practice	5	3	30	70	100	4
III	18BCC503	Core 12: Entrepreneurial Development	5	3	30	70	100	4
III	18BCC504	Core 13 : Visual Programming	5	3	30	70	100	4
III	18BCCP04	Core Lab-IV :Visual Programming Lab	5	3	40	60	100	4
III	18BCCE01/ 02/03	Elective I: Banking and Insurance Law	5	3	30	70	100	4
III	19BCCPR2	Research Project	-	-	-	-	-	-
		Total	30				600	24

		SEMESTER VI						
III	18BCC601	Core 14: Management Accounting	5	3	30	70	100	4
III	18BCC602	Core 15: Internet and Html Programming	5	3	30	70	100	4
III	18BCCP05	Core Lab V: HTML Programming	5	3	40	60	100	4
III	18BCCE04/ 18BCCE05/ 18BCCE06	Elective - II : Investment management	5	3	30	70	100	4
III	18BCCE07/ 08/09	Elective - III : Principles of Auditing	5	3	30	70	100	4
III	19BCCPR3	Project and Viva Voce	5	3	40	60	100	4
		Total	30				600	24
		Total					3600	140

No Continuous Internal Assessment (CIA) , only Comprehensive Examination(CE)
@ No Continuous Internal Assessment (CIA) and Comprehensive Examination (CE)

IDC- Inter disciplinary Course, EDC – Extra Disciplinary Course,
AOC – Application Oriented Courses.

List of Application Oriented Papers

Part	Code	List of AOC Papers
AOC -I	18BCCA01	Corporate Communication
	18BCCA02	Industrial Law
AOC-II	18BCCA03	Mobile Computing
	18BCCA04	Cyber Law

List of Elective Papers

Part	Code	List of AOC Papers
ELECTIVE -I	18BCCE01	Banking and Insurance Law
	18BCCE02	Management Information Systems
	18BCCE03	Retail Business Management
ELECTIVE –II	18BCCE04	E-Commerce
	18BCCE05	Principles of International Trade
	18BCCE06	Investment Management.
ELECTIVE -III	18BCCE07	Principles of Auditing
	18BCCE08	Network Management.
	18BCCE09	Brand Management

List of Additional Credit Papers

Sem	Code	Subject Title	Marks	Credits
III	19BCCAC1	Principles of International Trade	100	2
IV	18BCCAC2	Business Finance	100	2
V	19BCCAC3	Export and Import Trade Procedures	100	2

Summary			
Part	Number of Papers	Total Credits	Total Marks
I – Language	2	6	200
II - English	2	6	200
III –Core	20	80	2000
III – IDC	4	16	400
III – Elective	3	12	300
III -Project	1	4	100
IV –Foundation Course	2	4	100
IV – EDC	2	4	100
IV – Application Oriented Course	2	6	150
V – Extension Activities	-	2	50
Total	38	140	3600

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FIFTH SEMESTER

PART III - CORE 10: COST ACCOUNTING

Maximum CIA: 30
Maximum CE: 70
Total Hour: 60

Objective: To enable the student to have a thorough knowledge on the cost accounting principles and the methods of accounting for cost.

Unit- I   [12Hour]

Cost Accounting – Definition – Meaning and Scope – Concept and Classification – Costing an aid to Management — Types and Methods of Cost – Preparation of Cost Sheet – Cost accounting vs Financial accounting

Unit - II   [12Hour]

Material Control: Need for Material Control – Levels of material Control [Maximum, Minimum and Reorder Level] – Economic Order Quantity. Purchase and stores Control. Methods of valuing material issue [FIFO, LIFO, Simple Average Method, Weighted Average Method and Standard Price and Base Stock Method].

Unit – III   [12 Hour]

Labour: Systems of wage payment [Piece Rate, Time Rate, Taylor's Differential Piece Rate System, Rowan's plan, – Idle time – Control over idle time – Labour turnover.

Unit - IV   [12 Hour]

Process costing – Features of process costing – process losses, wastage, scrap, normal process loss – abnormal loss, abnormal gain.

Unit - V   [12 Hour]

Marginal Costing – Meaning, Definition, Benefits and Limitations of Marginal Costing – Break Even Analysis.

     NOTE: Distribution of marks: Theory 20% and Problems 80%

Text Book

1. Jain.S.P and Narang.K.L , Cost Accounting Princilpes and Practice, 12th edition, Kalyani Publishers, 2015, New Delhi.

Reference Books

1. T.S.Reddy and Y.Hari Prasad Reddy, Cost Accounting Margham Publications, Chennai, 2018.

2. Pillai.R.S.N and Bagavathi.V , Cost Accounting, 9th edition, S. Chand and Company,2015

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FIFTH SEMESTER
PART III CORE 11: INCOME TAX LAW AND PRACTICE

Maximum CIA: 30
Maximum CE: 70
Total Hour: 60

Objective :
To familiarize the students with the basic provisions of the Income -Tax

Unit I   [12Hour]
Income tax-Definition of Income tax – Tax Planning-Authorities – Assessment year - previous year-Assesses Scope of Income-Charge of tax Residential status-Exempted Income.

Unit II   [12 Hour]
Heads of income- Income from salaries – Income from house property.

Unit III   [12 Hour]
Profits and Gains of business or Profession – Income from other sources.

Unit IV   [12 Hour]
Capital gains- Exception and Provisions - Deductions from Gross Total Income – Set -off and Carry Forward of losses

Unit V   [12Hour]
Aggregation of Income- Computation of tax Liability- Assessment of Individuals –
E – Filing.

NOTE: Distribution of marks: Theory 20% and Problems 80%

TEXT BOOK

   1.Gaur.V.P and Narang.D.B, Puja Gahai,Rajeev Puri , Income Tax , Revised edition,
     Kalyani Publishers , 2020, New Delhi.

REFERENCE BOOKS

   1. Hariharan.N, Income Tax, Revised edition, Tata McGraw hill, 2020, New Delhi.
   2. Singhania, Income Tax Revised edition, Tax Mann Publishers, New Delhi – 2020.

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FIFTH SEMESTER
PART III -CORE 12: ENTREPRENEURIAL DEVELOPMENT

Maximum CIA: 30
Maximum CE: 70
Total Hour: 60

Objectives: To enable the students to learn the fundamentals of being a good entrepreneur and the Concept of entrepreneurship, Knowledge about the financing institutions, project report, incentives and subsidies.

Unit - I [12 Hour]

Concept of Entrepreneurship: Definition Nature and Characteristics Of Entrepreneurship– Function and Type Of Entrepreneurship - Development Of Women Entrepreneur & Rural Entrepreneur – Self Employment of Women - Problem of Women Entrepreneur.

Unit–II [12 Hour]
The Start–Up Process, Project Identification–Selection of the Product–Project Formulation- Evaluation – Feasibility Analysis - Project Report.
Unit - III [13 Hour]
Institutional service to entrepreneur –DIC, SIDO, NSIC, SISI, SSIC, SIDCO, IIC, KUIC and commercial bank - Institutional finance to entrepreneurs: IFCI, SFC, IDBI, ICICI, TIIC, SIDCS, LIC and GIC, UTI, SIPCOT –SIDBI

Unit - IV [12 Hour]
Incentives and Subsidies–Subsidies Services –Subsidy for Market - Transport –Seed Capital Assistance -Taxation Benefit to SSI - Role of Entrepreneur in Export Promotion and Import Substitution - Industrial Sickness- Symptoms- Remedies – Causes.

Unit –V [11 Hour]
Franchising – Meaning – Definition – Types- Advantages – Evaluation of Franchise Agreement Industrial Sickness- Symptoms- Remedies – Causes

Text Book:
1. S. Khanka, Entrepreneurial Development
2. P. Saravanavel,. Entrepreneurial Development –5th edition, Essae Chandra Institute, 2015

Reference Books:
1. Gupta.C.B and Srinivasan N.P, Entrepreneurial Development, Revised Edition 2017 SultanChand and Co., New Delhi.

2. Renu Arora & S.KI.Sood, Fundamentals of Entrepreneurship and Small Business

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FIFTH SEMESTER

PART III-CORE 13: VISUAL PROGRAMMING

Maximum CIA: 30
Maximum CE: 70
Total Hour: 6

Objectives: To enable the students to learn the computer programming using Visual Basic.Net. It emphasis on the fundamentals of structured design, development testing and implementation.

Unit I   [12 Hour]
        Introduction To .NET, .NET Framework Features & Architecture, CLR, Common Type System, MSIL, Assemblies and Class Libraries. Introduction To Visual Studio, Project Basics, Types Of Project In .Net, IDE Of VB.NET- Menu Bar, Toolbar, Solution Explorer, Toolbox, Properties Window, Form Designer, Output Window, Object Browser. The Environment Editor Tab, Format Tab, General Tab, Docking Tab. Visual Development & Event Drive Programming -Methods and Events.

Unit II   [12 Hour]
        Data Types-Keywords, Declaring Variables and Constants, Operators, Understanding Scope and accessibility of variables, Conditional Statements-, Looping Statement- Operators-Arrays-Types of Arrays-Control Array, Collections, Subroutines, Functions, Passing Variable Number Of Argument Optional Argument, Returning Value From Function.

Unit-III   [12 Hour]
        Properties, Events and Methods of Form, Label, Textbox, List Box, Combo Box, Radio Button, Button, Check Box, Progress Bar, Date Time Picker, Calendar, Picture Box, Scrollbar, Scrollbars, Group Box, Tooltip, Timer

Unit IV   [12 Hour]
        Menus and toolbars- Menu Strip, Tool Strip, Status Strip, Built-In Dialog Boxes – Open File Dialogs, Save File Dialogs, Font Dialogs, Color Dialogs, Print Dialogs, Input Box, Message Box, Interfacing With End user- Creating MDI Parent and Child, Functions and Procedures- Built-In Functions- Mathematical and String Functions, User Defined Functions and Procedures.

Unit V   [12 Hour]
        Object Oriented Programming- Creating Classes , Objects, Fields, Properties, Methods, Events , Constructors and destructors, Exception Handling- Modals, Statements,

Data Access withADO.Net – What are Databases?, Data Access with Server Explorer ,Data Adapter and Datasets, ADO.NET Objects and Basic SQL-Data Base Applications

Text Book:

1. Visual Basic.Net Black Book by Steven HolznerDreamtech Press the Complete Reference Visual Basic .NET Jeffery R. Shapiro Tata McGraw Hills.

Reference Books:

1. Practical Database Programming with Visual Basic.NET by Ying Bai,2012 Edition, Wiley Publication.
2. Programming VB.NET by Dave Grundgeiger, O'Reilly publications 1st edition
3. Beginning VB.NET, 2nd Edition by Richard Blair, Jonathan Crossland.
4. Microsoft Visual Basic .NET Deluxe Learning Edition by Michael Halvorson, Microsoft Press publications.

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FIFTH SEMESTER

PART III-CORE LAB IV – VISUAL PROGRAMMING LAB

Maximum CIA: 40
Maximum CE: 60
Total Hour: 60

Objective: Impairing professional skills in Visual Basics designing after the successful completion of the course the student must be able to develop an application using Visual Basic.Net.

1. Develop a VB.Net Form to calculate area and perimeter of circle using constant declaration.

2. Develop a VB.Net Form to prepare student mark statement using conditional statement.

3. Develop a VB.Net Form to sort the numbers by declaring array function.

4. Develop a VB.Net Form for adding menus and sub-menus in an application

5. Develop a VB.Net form in to Calculate your age using Calendar and DTP control.

6. Designing a form to display advertisement banner using image control with string function.

7. Develop a VB.Net application to perform timer based quiz.

8. Designing a VB.Net Form to display simple calculator using control array.

9. Develop a VB.Net database application to store the detail of students using ADO.NET.

10. Develop a VB.Net database application to display pay slip for an employee using ADO.NET.

11. Develop a VB.Net database application to display Super market bill using ADO.NET to insert, modify .update and delete operations.

12. Develop a VB.Net database application to display bank customer statement using ADO.NET to insert, modify .update and delete operations.

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FIFTH SEMESTER
PART – III ELECTIVE I: BANKING AND INSURANCE LAW

Maximum CIA: 30
Maximum CE: 70
Total Hour: 60

Objective: To enable the students to have better understanding and knowledge on Banking functions and Instruments. To Gain the knowledge of different kinds of Insurance and the regulating authority

Unit – I   [12Hour]
Banker and Customer – Definition – Relationship - Functions of Commercial Banks – Deposits – Loans offered – Recent Developmnets in banking : ATM, Credit card, Debit card, NEFT,RTGS,Internet banking.

Unit - II   [12Hour]
Negotiable Instruments Act 1881 – Definition and Features : Promissory Note , Bill of Exchange, and Cheque – Crossing of Cheque – Endorsement - Material Alteration – Payment of cheques: Circumstances for dishonour -Types of crossing - Precautions and Statutory Protection of Paying and Collecting Banker.

Unit – III   [12Hour]
Insurance : Meaning , Functions - Role and Importance of Insurance – Essentials of contract of insurance- Principles of Insurance: Classification of Insurance Based on Nature, Business and Risk

Unit - IV   [12Hour]
Life Insurance – Meaning, Nature – Various Policies - Prodcedure for taking life Insurance policy- Surrender and Revival of policy - Assignment and Nomination – Procedures- Settlement of claim - Reinsurance General Insurance- Fire Insurance , Marine insurance , Health Insurance and Personal accident Insurance - Characteristics .

Unit –V   [12Hour]
IRDA -Mission -Composition of Authority -Duties, Powers and Functions - Powers of Central Government in IRDA Functioning

Text Books:
1. Varshney, "Banking Theory, Law and Practice", Sultan & Chand Ltd, 2016
2. M.N. Mishra, "Insurance –Principles and Practice", S.Chand & Company Ltd., New Delhi, 2018.

Reference Books:

1. M.L. Tannan,"Banking Law and Practice", Thacker & Co Ltd,2018
2. B.S Bodla, M.C. Garg & K.P. Singh,"Insurance -Fundamentals, Environment & Procedures" , Deep & Deep Publications Pvt. Ltd., New Delhi, 2014 (Last Edition).

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FIFTH SEMESTER
PART – III ELECTIVE I: MANAGEMENT INFORMATION SYSTEM

Maximum CIA: 30
Maximum CE: 70
Total Hour: 60

Objective: After the successful completion of the course the student must be aware of utilization of business information for decision making.

Unit I   [12 Hour]
Management Information System : Meaning–Features –Requisites of an effective MIS–MIS Model Components –Subsystems of an MIS–Role and Importance –Corporate Planning for MIS–Growth of MIS in an Organization -Centralization Vs. Decentralizations of MIS. support –Limitations of MIS.

Unit II   [12 Hour]
System Concepts–Elements of System-Characteristics of system-Types of System–Categories of Information System –System Development Life Cycle –System Enhancement.

Unit III   [12 Hour]
Information Systems in Business and Management: Transaction Processing System: Information Repeating and Executive Information System.

Unit IV   [12 Hour]
Database Management Systems –Conceptual Presentation –Client Server Architectures Networks –Business Process Re–Engineering [BPR].

Unit V   [12 Hour]
Functional Management Information System: Financial –Accounting–Marketing-Production –Human resource –Business Process Outsourcing.

Text Book**:**
1.Gorden B. Davis & Margrethe H. Olson, "Management Information System",Mc Graw–Hill Publishing, New Delhi.

Reference Books:

1. Aman Jindal,"Management Information System", Kalyani Publishers, New Delhi, 2013.
2. Dr. S.P. Rajagopalan, "Management Information System", Margham Publications, Chennai

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FIFTH SEMESTER
PART – III ELECTIVE I: RETAIL BUSINESS MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hour: 60

Objective:
On successful completion of this course, the student should be well versed in the principles involved in managing the retail business.

Unit I   [12 Hour]
Nature and Significance of Management – Objectives of Management - Functions of Management - Setting up a Retail Organization- Factors to be considered in Planning, Assessing a Retail Organization.

Unit II   [12 Hour]
Human Resources Environment of Retailing- Recruiting and Selecting Retail Personnel. Compensating Retail Personnel, Supervision of Retail Personnel.

Unit III   [12 Hour]
Financial Dimensions of Operations Management – Profit Planning – Asset Management- Preliminary Budget Decisions and Ongoing Budgeting Process.

Unit IV   [12 Hour]
Operational Dimensions – Store Security – Insurance– Credit Management – Computerization - Outsourcing – Risk Management.

Unit V   [12 Hour]
Ethics in Retail Management – Ethical Values –Social Responsibility, Ethical Values in relation to Customers, CommUnity & General Public, Employees, Business Partners and Shareholders – Consumerism.

Text Book:

1. Retail Management - Gribson G. Vedamani, Jaico publishing House, 2018

Reference Books:

1.. Retailing Management Text & Cases- Swapna Pradhan, The Mc Graw- Hill Companies, 2016
2.. Retail Management Strategic Approach - Barry, Berman, Joel R Evam- Pearson Education (Singapore) 2015 .

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SIXTH SEMESTER
PART III- CORE 14: MANAGEMENT ACCOUNTING

Maximum CIA: 30
Maximum CE: 70
Total Hour: 60

Objective:
To enable the students understand the practical usage of Management Accounting

Unit I [10Hour]
Management Accounting – Meaning, Definition, Nature, Scope, Functions, Objectives, Importance and Limitations of Management Accounting – Comparison of Management Accounting with Financial and Cost Accounting – Management Accountant – Qualification, Duties and Liabilities of a Management Accountant.

Unit II [13 Hour]
Financial Statement Analysis and Interpretation – Common Size Statement Analysis, Comparative Statement Analysis and Trend Analysis. Working Capital Management- Meaning Definition- Determinants of working capital.

Unit III [12 Hour]
Ratio Analysis – Liquidity Ratios – Activity Ratios – Profitability Ratios – Solvency Ratios – Preparation of Balance Sheet.

Unit IV [13 Hour]
Funds Flow Statement –Schedule of changes in working capital – Preparation of Funds Flow Statement.–Preparation of Cash Flow Statement.

Unit V [12 Hour]
Budgeting and Budgetary Control – Definition – Importance, Essentials – Classification of Budgets –Cash Budget, Sales Budget, Purchase Budget, Production Budget, Production Cost Budget, Flexible Budget and capital budgeting

NOTE : Distribution of marks : Theory 20% and Problems 80%

Text Book:
1.Shashi K. Gupta and R.K. Sharma, Neeti Gupta, Management Accounting, Revised Edition, Kalyani Publishers, 2017, New Delhi.

Reference Books:
1. Dr. R. Ramachandran and Dr. R. Srinivasan, Management Accounting – Theory, Problems and Solutions,14th Revised Edition, Sri Ram Publications, 2018, Trichy.
2. S.N. Maheswari. and S.K.Maheswari, A Text Book of Accounting for Management, Vikas Publishing House, 2017, Mumbai.

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SIXTH SEMESTER

PART III-CORE 15: INTERNET AND HTML PROGRAMMING

Maximum CIA: 30
Maximum CE: 70
Total Hour: 60

Unit I [12 Hour]

Networking-LAN-MAN-WAN-Internet access-Configuration the machine for TCP/IP Account-Internet Addressing-IP Address-Domain name-Uniform Resource Locator-Inter Protocol-Internet Service- -E-mail messages-Customizing Email programs-Managing mails-Address Book-   E-mail and its uses-Gopher-WAIS

Unit II [12 Hour]

Web page-Hyper text-Hyper link-world wide web-Web index-Web browsing-web search engine-Web meta-Meta search site-Directories and Indexes- Specified Directories-Telnet-FTP-HTTP-mobile Computers.

Unit-III [12 Hour]

HTML-HTML tags-Basics-Setup and display a webpage-Heading-Pre Format text-Comment-Special Character-Text Format-Font style-color-Sup script and Super script-Margins-Lists-Images.

Unit IV [12 Hour]

Tables-Alignment-Column and row group-Text Wrapping-Cell space-Cell padding-Nested Table-Links - Create Keyboard Shortcuts-Tables-Table border-Caption-Color-Background Image.

Unit V [12 Hour]

Frame-Link to Frame-Scroll bars-Nested Frame-Inline frames -Form-Setup a Form-Textbox-check Box-Radio Bottom-Menu-Organizing Form elements-Label from Elements- -Handling Audios and Videos.

Text Book:
1. Craigaldred," Learn Basic HTML and Web Designers- A beginners guide", Kindle Edition, 2015.

Reference Books:
1.Mike McGrath, "HTML in Easy Steps", 2009 Publications.
2.Jeremy Keith , "HTML5 For Web Designers", 2014 Publications.
3. Thomas A. Powell, "HTML & CSS: The Complete Reference", Fifth Edition, 1 Jan 2018.

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SIXTH SEMESTER

PART III CORE LAB V - HTML PROGRAMMING

Maximum CIA: 40
Maximum CE: 60
Total Hour: 60

Objective: Impairing professional skills in Internet and Web designing

1. Creating a program using HTML Tag to display the lists of departmental stores.

2. Design a webpage to display image and text using HTML tag for advertisement of a company

3. Creating a table to display list of products using HTML tag.

4. Creating a document using formatting and alignment to display sales letter

5. Design a webpage for our College with minimum five links using HTML

6. Creating Web pages for a business organization using HTML image links and internal links.

7. Creating a website of your department using formatted HTML Tags and Frames.

8. Creating a resume using HTML tag.

9. Creating a document using form to support local processing of order form.

10. Create a form for university exam fee payment.

11. Create a Multiform for quiz portal.

12. Creating a multiform document to display Survey Report.

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SIXTH SEMESTER

PART III-ELECTIVE II: E- COMMERCE

Maximum CIA: 30
Maximum CE: 70
Total Hour: 60

Objective: On the successful completion of this paper the students should have gained knowledge about E.Commerce Trade and legal provisions.

Unit I   [12 Hour]

Telecommunication Networks : Introduction - LAN - WAN- Internet - What is Electronic Commerce - Brief history of Electronic Commerce - Advantages and Limitations of Electronic Commerce - Types of Electronic commerce - Integrating Electronic Commerce- Key questions for Management

Unit II   [12 Hour]

The Internet and the World Wide Web: The Internet Today - History of the Web - Unique benefits of the Internet - Internet Architecture - World Wide Web - Concepts and Technology - Creating Web pages - Launching a Business on the Internet.

Unit III   [12 Hour]

Electronic Payment Systems: Overview of the Electronic payment Technology - Requirements for Internet Based payments - Electronic payment Medias - Electronic commerce and banking.

Unit IV   [12 Hour]

E-security: Security in the cyberspace - Designing for security - Virus - Security Protection and Recovery - Encryption - The Basic Algorithm System - Authentication and Trust - Key management - Internet Security Protocols and Standards - Other Encryption issues.

Unit V   [12 Hour]

Web based Business: Business-to-Business Electronic Commerce-Intranets and Extranets - Intranets and Supply Chain Management - Legal and Ethical issues - Case studies.

Text books:
1. Elias. M. Awad, "Electronic Commerce", Prentice - Hall of India Pvt Ltd, 2016.
2. Ravi Kalakos, Andrew B. Whinstone, "Electronic Commerce - A Manager's guide", Addison - Wesley, 2017

Reference Books:
1. Efraim Turban, Jae Lee, David King, H.Michael Chung, ―Electronic Commerce – A Managerial Perspective", Addison - Wesley, 2017.
2. Elias M Award, ―Electronic Commerce from Vision to Fulfillment‖, 3rd Edition, PHI, 2016

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SIXTH SEMESTER
PART III-ELECTIVE-II: PRINCIPLES OF INTERNATIONAL TRADE

Maximum CIA: 30
Maximum CE: 70
Total Hour: 60

Objective: On the successful completion of this paper the students should have gained knowledge about International Trade and legal provisions.

Unit I   (12 Hour)
The Global Economy – Perspective on the Theory of International Trade – The Importance of International Trade – Counter Trade – Forms of Counter Trade – Reasons for Growth of Counter Trade – Global Trade and Developing Countries.
Unit II   (12 Hour)
International Commodity Agreements – Quota Agreements, Buffer Stock Agreements – Carts – State Trading – Bilateral and Multilateral contracts. Gains from Trade – Terms of Trade – Factors Influencing the Terms of Trade.
Unit III   (12 Hour)
Tariff – Meaning – Tariffs, Taxes and Distortions – Imports Tariffs and Export Taxes – Export Subsidies – Arguments for Free Trade – Demerits of Protection – Trade Barriers – Basic Concept of Balance of Payment.
Unit IV   (12 Hour)
International Investments – Types of Foreign Investment – Significance of Foreign Investments – Limitations and Dangers of Foreign Capital – Factors affecting International Investment – Foreign Investment by Indian companies.
Unit V   (12 Hour)
Multinational Corporation – Definition and Meaning – Importance of MNCS – Benefits of MNCs – Criticism – Globalizations – Meaning – Stages – Essential Conditions for Globalization – Implications and Importance of Globalization – Benefits – Obstacles to Globalization in India – Factors Favoring Globalization.

Text Book
 1. G.S.Batra & R.C.Dangwal, International Business - New trends, Reprint 2017, Deep & Deep Publications Private ltd, New Delhi.

Reference Book:
  1. Justin Paul, International Business, 5th Edition 2018 , PHI learning Private limited, New Delhi.
  2. Roger Bennett, International Business, 2016, Pearson, New Delhi.
  3. Vyuptakesh Sharan, International Business: Concept, Environment And Strategy,2016, Pearson, New Delhi.

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SIXTH SEMESTER
PART III- ELECTIVE II: INVESTMENT MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hour: 60

Objective: To explain the concept of investments with special reference to securities market.

Unit-I   [12Hour]
Investment – Meaning – Nature – Types – Features – Factors Influencing Investments – Risk and Return – Financial Markets – Financial Institutions.

Unit-II   [12Hour]
Capital Market and Stock Exchange in India – Structure – Primary Markets and Secondary Markets – Mechanics of Trading – SEBI and Its Role.

Unit-III   [12Hour]
Investment Alternatives: Bonds – Preference and Equity Shares – LIC – UTI – Mutual Funds – National Saving Scheme.

Unit-IV   [12 Hour]
Fundamental and Technical Analysis and Evaluation: Economic Analysis – Industrial Analysis – Company Analysis – Technical Analysis.

Unit-V   [12 Hour]
Portfolio Analysis and Management – Scope – Types – Portfolio Evaluation – Portfolio Selection – Portfolio Revision.
        Distribution of Marks: 80%for Theory, 20% for Problem

Text Books
    1. Dr. Preeti Singh- Investment Management- Himalaya Publishing House Pvt.
    2. Investment Management, V.K.Bhall, 2017 Edition, S. Chand and Co.

Reference Books
    1. Alexander- Gordon J. and Sharpe, William, Fundamental of Investment, Prentice Hall Inc- Englewood Cliffs [Pearson Education], New Jersey.
    2. Ballad- V. K, Investment Management Security Analysis and Portfolio Management, 8th Edition- Sulthan and Chand, 2017, New Delhi.

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SIXTH SEMESTER
PART III- ELECTIVE-III: PRINCIPLES OF AUDITING

Maximum CIA: 30
Maximum CE: 70
Total Hour: 60

Objective: On successful completion of this paper the students should have gained knowledge about auditing functions and classifications and acquired knowledge about vouching and verification of assets.

Unit I   [10 Hour]
Orgin of Auditing – Definition of Auditing – Objectives of Auditing- Tax Audit and Management Audit.

Unit II   [14 Hour]
Classification of Audit –Scope and nature of Statutory Audit and continous Audit – Periodical Audit, Partial Audit, Balance sheet Audit, Performance Audit and Proprietary Audit.

Unit III   [10 Hour]
Qualification of an Auditor – Appointment of an Auditor – Duties, Rights and Liabilities of an Auditor.

Unit IV   [14 Hour]
Audit plan- Developing an Audit plan- Vouching – Meaning – Objectives, Importance of Voucher – Types of Vouchers.

Unit V   [12 Hour]
Verification and valuation of Assets and Liabilities – Audit Approach- EDP and mechanical system- Audit with the aid of computers- Recent trends in Auditing.

Text Books
1. Tandon.B.N, Practical Auditing, Revised edition, S Chand Company Ltd, 2018, New Delhi.
2. Aruna Jha, Auditing (University Edition), Taxmann Publication Pvt Ltd, 3rd Edition 2016

Reference Books
1. F.R.M De Paula, The Principles of Auditing-the English language Society and Sir Isaac Pitman and Sons Ltd,London,2016
2. Spicer and Pegler, Practical Auditing, Vikas publishing House, 2016, New Delhi.

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SIXTH SEMESTER

PART III- ELECTIVE III: NETWORK MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hour: 60

Objective: The paper aims to combine the fundamental concepts of data communications

Unit - I   [12 Hour]
Data Communication Concepts and Applications: Introduction to Data Communications, Components of Data Communications, Trends in Computer Communications and Networking, Network Applications.

Unit - II   [12 Hour]
Fundamentals of Data Communications and Networking: Physical Layer: Architectures, Devices and Circuits, and Data Transmission., Data Link Layer: Media Access Control, Error Control in Networks.

Unit - III   [12 Hour]
Networking: Network Layer: Network Protocols, Network Addressing and Routing. Local Area Network (LAN): LAN Components, Ethernet, Token Ring, Selecting a LAN, Improving LAN Performance

Unit - IV   [12 Hour]
Back Bone Networks: Backbone Network Components, Fast Ethernet, FDDI. Metropolitan Area Network (MAN) & Wide Area Network (WAN): Dialed Circuit Services, Dedicated Circuit Services, Circuit-switched and Packet-switched Services, Improving MAN &WAN Performance.

Unit - V   [12 Hour]
Network Management: Design of Business Networks, Network Management, and Network, Security.

Text book:
1. Jerry, FitzGerald and Alan, Dennis (2016). Business Data Communications & Networking. John Wiley & Sons.

Reference books:
1.. Tanenbaum, A. S. (2016). Computer Networks. Pearson Education.
2.. David A Stamper (2017). Business Data Communications. Addison Wesley.

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SIXTH SEMESTER
PART III- ELECTIVE III: BRAND MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hour: 60

Objective: To teach the importance of brand and its impacts among the customers

Unit I   [12 Hour]
Introduction-Basic understanding of brands –concepts and process –significance of a brand –Brand mark and trade mark –different types of brands –family brand, individual brand, private brand –selecting a brand name –functions of a brand –branding decisions –influencing factors.

Unit II   [12 Hour]
Brand Associations: Brand vision –brand ambassadors –brand as a personality, as trading asset, Brand extension –brand positioning –brand image building

Unit III   [12 Hour]
Brand Impact: Branding impact on buyers –competitors, Brand loyalty –loyalty programmes –Brand equity –role of brand manager –Relationship with manufacturing-marketing-finance -Purchase and R & D –brand audit

Unit IV   [12 Hour]
Brand Rejuvenation: Brand rejuvenation and re-launch, brand development through acquisition takes over and merger –Monitoring brand performance over the product life cycle. Co-branding.

Unit V   [12 Hour]
Brand Strategies: Designing and implementing branding strategies

Text Book:

1. Lan Batey Asian Branding –"A great way to fly", Prentice Hall of India, Singapore 2016.
2.Jean Noel, Kapferer, "Strategic brand Management", The Free Press, New York.

References Books:
1. Kevin Lane Keller, "Strategic brand Management", Person Education, New Delhi, 2018.
2. Paul Tmeporal, Branding in Asia, John Wiley & sons (P) Ltd., New York.

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.
THIRD SEMESTER
CERTIFICATE COURSE – ADVERTISING AND SALES PROMOTION

Total Hours: 30

Course Objective:

To familiarize the student with the practice of promoting market for products through advertisements and sales promotion.

Unit I   (6Hours)
 Advertising – Origin and Development –Advertising- an element of Marketing mix-Objectives – Advertising and Salesmanship – Role and Importance – Planning for Advertisement communication process

Unit II   (6 Hours)
Advertisement – Kinds of Advertisements– Economic and social affects of advertising – Advertising mix – Advertising budget and relevant decisions.

Unit III   (6 Hours)
 Advertising Agencies - Role – Types of Advertising – Measuring the effectiveness of Advertisement - Managing agency -Evaluation of Advertising

Unit IV   (6 Hours)
 Sales Promotion – Objectives – Advantages - Tools and their effectiveness – Aggressive selling.

Unit V   (6 Hours)
Sales promotion –Objectives- Planning, implementation Control-Consumer sales promotion-Trade sales promotion-Measuring the effectiveness of promotion company- Evaluation of Sales Promotion

Text Books:

1. S.A.Chunawalla, Advertising and Sales Promotion Management, Himalaya Publishing House; Sixth Edition edition (2015)
2. Mr.Pankhuri Bhagat , Advertising & Sales Promotion ,SBPD Publishing House (2015)

Reference Books :

1. Mr. Ritu Narang , Advertising, Selling & Promotion, Pearson Education(2020)

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

THIRD SEMESTER
CERTIFICATE COURSE – PRACTICAL BANKING

Total Hours: 30

Course Objective:

    The objective of this course is to acquaint students with the theoretical and practical aspects of modern banking.

Unit-I

(6Hours)

Definition of Banker and Customer-General Relationship-Special Relationship-Nationalized Banks-Private Banks -Evolution of Commercial Banks-Functions of modern Commercial Banks.

Unit-II

(6Hours)

Opening of New Bank Account-Precautions-Types-Savings Account-Current Account-Fixed Deposit-Recurring Deposit-Cumulative Deposit-TL-Cash Credit-Overdraft-Joint Account-KYC-Closure of bank Account.

Unit-III

(6Hours)

Negotiable Instruments-Meaning-Characteristics- Bills of Exchange-Promissory Note-Cheque- Features- Crossing of a Cheque- Cancellation of Cheque –Types of Crossing-Endorsement- Dishonour of a Cheque – Stop the Payment of a Cheque - Demand Draft.

Unit-IV (6 Hours)

Funding of Corporate seeds-Types of Finance-Seed Capital-Bank Finance of seed capital - Venture Capital- Procedures for loans.

Unit-V

(6Hours)

Electronic Payments: CIBIL-Concept of Security-Primary vs Collateral-Application Forms-Annexure-Electronic Payment-NEFT-RTGS-IMPS- Cardless withdrawals

Text Book

1) Sundaram and Varshney , Banking Theory Law and Practice, 20th Revised Edition, Sultan Chand & Sons,Year 2014.

Reference Books

1) H.R. Gupta, Practical Banking in India, Gyan Publishing House, 2011.

2) Gurusamy, S., Banking Theory: Law and Practice, 2nd Edition, Tata McGraw Hill, Year 2010.

All UG Degree Examination-Syllabus -for Candidates admitted from the Academic Year 2019– 2020 onwards

THIRD SEMESTER

CERTIFICATE COURSE- ENTREPRENEURSHIP DEVELOPMENT PROGRAMME

Total Hours: 30

Course Objectives:

To enable the students to learn the fundamentals of being a good entrepreneur and the Concept of entrepreneurship.

Unit I

Concept of entrepreneurship : Definition Nature and characteristics of entrepreneurship – function and type of entrepreneur. Development of women entrepreneur and rural entrepreneur. (6 Hours)

Unit II

The start-up process, Project identification – Business Idea – Sources of Business Idea – Selection of the product – project formulation - evaluation , Project Report. (6 Hours)

Unit III

Institutional services to entrepreneurs – DIC, SIDO, NSIC, SISI, SIDCO and KVIC, Institutional finance to entrepreneurs : IFCI, SFC, IDBI, ICICI, TIIC and SIPCOT. (6 Hours)

Unit IV

Incentives and subsidies – Subsidised services – subsidy for market - Transport – seed capital assistance - Taxation benefit to SSI. (6 Hours)

Unit V

Industrial Sickness- Symptoms- Remedies – Causes. (6 Hours)

Text Book
1. Gupta.C.B and Srinivasan N.P, Entrepreneurial Development, 4th Edition 2005, Sultan Chand and Co., New Delhi.

Reference Book
1. Saravanavel.P, Entrepreneurial Development, 2nd edition, Essae Chandra Institute, 2005, Mumba

All UG Degree Examination-Syllabus -For Candidates admitted from the Academic Year 2019– 2020 onwards

FOURTH SEMESTER
CERTIFICATE COURSE- E-COMMERCE

Total Hours: 30

Course Objectives:
Enabling the Students to Acquire Theoretical knowledge to be successful in E-Commerce.

Unit I   (6 Hours)
E Commerce: The Revolution is just beginning ,E Commerce: A Brief History-Electronic Commerce-Electronic Commerce Models-Types of Electronic Commerce-Value Chains in Electronic Commerce-E-Commerce in India-Introduction to E-Business-Internet-World Wide Web-Internet Architectures-Internet Applications-Web Based tools for Electronic Commerce.

Unit II   (6 Hours)
E-Commerce Business models and concepts-The Internet and World Wide Web - E Commerce Business models, Major Business to consumer (B2C) Business models, Major Business to Business (B2B) business models, Business models in emerging Ecommerce areas, Intranet-Composition of Intranet- Business Applications on Intranet-Extranets Electronic Data Interchange-Components of Electronic Data Interchange-Electronic Data Interchange (Communication Process).

Unit III   (6 Hours)
Security Threats to E-Business- Security Overview- Electronic Commerce Threats-Encryption- Cryptography- Public Key and Private Key Cryptography- Digital Signatures-Digital Certificates- Security Protocols over Public Networks- HTTP- SSL- Firewall as Security Control- Public Key Infrastructure (PKI) for Security- Prominent Cryptographic Applications.

Unit IV   (6 Hours)
Electronic Payment System- Concept of Money-Electronic Payment System- Types of Electronic Payment Systems-Smart Cards and Electronic Payment Systems- Infrastructure Issues in EPS, Electronic Fund Transfer.

Unit V   (6 Hours)
Ecommerce Marketing concepts –Online Retailing and Services-Consumer online: The Internet Audience and Consumer Behavior-Basic Marketing concepts-Internet Marketing– The Service sector of offline and online, Online financial services-online travel services-Online career –Social networks and Online communities, Online auctions, E Commerce Portals

Text Book
  1. Whitley, David. E-Commerce Strategy, Technologies and Applications. Tata McGraw Hill, Reprint 2014.

Reference Books:
  1. C.Laudon, E- Commerce :Business Technology Society, 4th Edition, Pearson Education, Reprint 2011.
  2. Balaji, Kamlesh K and Nag, Debjani, E-Commerce: The Cutting Edge of Business, Tata McGraw Hill, Publishing Company Ltd., New Delhi. Reprint 2011.

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

FOURTH SEMESTER
CERTIFICATE COURSE – OFFICE MANAGEMENT

Total Hours: 30

Course Objective:

To prepare Students in managing the day-to-day activities related to administration activities in offices.

Unit I (6 Hours)

Office and office Management – meaning of office, function of office, primary and Administrative functions, importance of office. Relation of office with other departments of business Organization. Concept of paperless office, virtual office, back and front office, open and private office.

Unit II (6 Hours)

Filing and Indexing – Meaning and importance of filing, essential of good filing system. Centralized and decentralized filing system. Meaning, need and types of indexing used in the business organization.

Unit III (6 Hours)

Office forms– Meaning and types of forms used in business organization, advantages, forms controls, objectives, form designing, principles of forms designing and specimens of forms used in office. Office Record Management – Meaning, importance of record keeping management, principles of record management and types of records kept in a business organization- Office Automation

Unit IV (6 Hours)

Office Machines and equipments – Importance, objectives of office machines.Office6Safety and Security – Meaning, importance of office Safety, safety hazards and steps to improve office safety. Security hazards and steps to improve office security.

Unit V (6 Hours)

Measurement of Office Work – Importance, purpose, difficulty in measuring office work. Different ways of measurement, setting of work standards, benefits of work standards. Techniques of setting standards. Office Manuals – Meaning, need, types of office manuals and steps in preparing of office manuals.

Text Books
1.Chhabra, T.N., Modern Business Organisation, New Delhi, DhanpatRai& Sons.
Reference Books
1.P.K. Ghosh, "Office Management", Sultan Chand & Sons. New Delhi
2.R.K. Chopra, Office Management, Himalaya Publishing House

All UG Degree Examination – Syllabus for Candidates admitted from the Academic Year 2019-2020 onwards.

FOURTH SEMESTER
CERTIFICATE COURSE - PRINCIPLES OF INSURANCE

Total Hour: 30 hours

Course Objective:

The student gains the ability to apply the knowledge and understanding, in simple situations, to the operation, on sound financial lines of life insurance companies.

Unit I   [6 Hours]

Insurance: Meaning, Functions - Role and Importance of Insurance – Essentials of contract of insurance Principles of insurance.

Unit II   [6 Hours]

Life Insurance – Meaning, Nature – Various Policies - Procedure for taking life Insurance policy- Surrender and revival of policy - Assignment and Nomination – Procedures, - Settlement of claim – Loan on policy

Unit III   [6 Hours]

General Insurance- Fire Insurance, Marine insurance , Health Insurance , Personal accident Insurance , Motor Insurance and miscellaneous Insurance – Characteristics , Procedure for claim.

Unit IV   [6 Hours]

Agent- Meaning, Procedures for Becoming an Agent: Pre- requisite for obtaining a license: Duration of license; Cancellation or suspension/termination of agency

Appointment; Code of conduct; Unfair practices. Functions of the Agent

Unit V   [6 Hours]

IRDA - Mission - Composition of Authority - Duties, Powers and Functions - Powers of Central Government in IRDA Functioning.

Text Book:

1. M.N. Mishra, "Insurance –Principles and Practice", S.Chand & Company Ltd., New Delhi, 2016.

Reference Book:

1. B.S Bodla, M.C. Garg & K.P. Singh,"Insurance -Fundamentals, Environment & Procedures" , Deep & Deep Publications Pvt. Ltd., New Delhi, 2014 (Last Edition)
2. P.Periysamy, Principles and Practice of Insurance, Himalaya Publication House, Year -2017

B.Com [CA] Degree Examination – Syllabus for Candidates admitted from the academic year 2018-19 onwards.
THIRD SEMESTER
PART III – ALC 1- PRINCIPLES OF INTERNATIONAL TRADE

Maximum CE: 100

Course Objective: On the successful completion of this paper the students should have gained knowledge about International Trade and legal provisions.

Unit - I
The Global Economy – Perspective on the theory of International Trade – The importance of International trade – Counter Trade – Forms of Counter Trade – Reasons for Growth of Counter Trade – Global Trade and Developing Countries.

Unit - II
International commodity Agreements – Quota agreements, Buffer stock Agreements – Carts – State Trading – Bilateral and Multilateral contracts. Gains from Trade – Terms of Trade –Factors influencing the terms of trade.

Unit - III
Tariff – Meaning – Tariffs, Taxes and Distortions – Imports Tariffs and Export Taxes – Export Subsidies – Arguments for free Trade – Arguments for protection – Demerits of protection – Trade barriers.

Unit - IV
International Investments – Types of Foreign Investment – significance of Foreign Investments – Limitations and Dangerous of Foreign Capital – Factors affecting International Investment – Foreign Investment by Indian companies.

Unit -V
Multinational Corporation – Definition and Meaning – Importance of MNCS – benefits of MNCs – Criticism – Globalizations – Meaning – stages – Essential conditions for Globalization – Implications and Importance of Globalization – Benefits – Obstacles to Globalization in India – Factors favoring Globalization.

Text Book:
1.G.S.Batra & R.C.Dangwal, International Business - New trends, Reprint 2010, Deep & Deep Publications Private ltd, New Delhi.

Reference Books:
2.Justin Paul, International Business, 5th Edition 2011 , PHI learning Private limited, New Delhi.

3.Vyuptakesh Sharan, International Business: Concept, Environment And Strategy,2011, Pearson, New Delhi.

B.Com [CA] Degree Examination – Syllabus for Candidates admitted from the academic year 2019-20 onwards.

FOURTH SEMESTER
PART III – ALC II - BUSINESS FINANCE

Maximum CE: 100

Course Objectives:
On successful completion of this course, the student should be well versed in the concept of Business Finance and the Application of Finance to Business

Unit - I
Business Finance – Meaning – Concepts -Scope – Function of Finance – Traditional concepts Vs Modern Concepts

Unit - II
Financial Plan: Meaning – Concept – Objectives – Types – Steps – Significance – Fundamentals**.**

Unit - III
Capital Structure – Cardinal Principles – Trading on Equity – Cost of Capital – Concept – Importance – Calculation of Individual and Composite Cost of Capital.

Unit - IV
Sources and Forms of Finance: Equity Shares – Preference Shares – Bonds – Debentures - Fixed Deposits – Lease   Financing

Unit - V
Capitalization – Bases of Capitalization – Cost Theory – Earning Theory – Over Capitalization – Under Capitalization – Symptoms – Causes – Remedies – Watered Stock – Watered Stock Vs. Over Capitalization**.**

Text Books:
1. Prasanna Chandra – Fundamentals of Financial Managemnet , 1st Edition, Tata Mc Grawhill 2012.
2. Pandey I.M – Financial Management, 1st Edition, Vikas Publication,2015

Reference Books:
1. Khan M.Y and Jain P.K – Problems of Financial Management Text, Problems and Cases, 7th Edition, Tata Mc Grawhill 2014.

Department of BCA
Bachelor of Computer Applications
Regulations for BCA
(Effective from the academic year 2019-2020 onwards)

Introduction:

The department of BCA started the UG Programme in 1999.

Objective:

The objective of the department is successfully teaching variety of computer courses/languages using current technology, giving students hands on experience. We renew their professional skills and knowledge based activities, updating curriculum based guide lines.

Eligibility: UG Programme

Candidate for admission to the first year of the BCA degree course shall be required to have passed the higher secondary examination conducted by the Govt. of Tamil Nadu with any one of the following subjects: Mathematics / Computer Science / Statistics / Business mathematics or other examinations accepted as equivalent there to by the Syndicate, subject to such other conditions as may be prescribed there for.

Duration of UG Programme

The course shall extend over a period of three years comprising of six semesters, with two semesters per year. There shall not be less than ninety instructional days during each semester. Examination shall be conducted at the end of each semester for the respective subject.

Vision:

To create advanced centers of professional learning where pursuit of knowledge and excellence shall reign supreme, unfettered by the barriers of nationality, language, cultural and religion

Mission:

- The mission of the Computer Application department is to provide a complete environment to the students in theory and practical knowledge.

- The department fulfills its mission by pursuing excellences in teaching and learning in order to prepare students for successful career and life long education.

Program Outcomes:

After the completion of the under graduate programme in Bachelor of Computer Application, the graduates will be able to

PO1: Attain the core value in their respective area to meet out the global competitive edge.

PO2: Apply and update their skills towards their employability, entrepreneurship and its sustainability.

PO3: Realize their responsibility towards the society centre through ethical, social and human values.

PO4: Recognize the opportunities towards their up gradation and professional development in all spheres.

PO5: Ensure the quality in terms of all the aspects by the way of their contribution in work atmosphere.

Program Specific Outcomes:

PSO1: To equip the students to meet the requirement of Corporate world and Industry standard.

PSO2: To engage in professional development and to pursue post graduate education in the fields of Information Technology and Computer Applications
.

PSO3: To provide the students about computing principles and business practices in software solutions, outsourcing services, public and private sectors.

BACHELOR OF COMPUTER APPLICATIONS BOARD
SCHEME OF EXAMINATIONS (CBCS and OBE PATTERN)
For Candidates admitted during the academic year 2019-2020 onwards
Programme: BCA

Part	Sub Code	Subject Title	Ins.Hrs/Week	Dur. Hrs.	CIA	CE	Total	Credit
		SEMESTER I						
I	19LATA01/ 19LAHI01/ 19LAMY01/ 19LAFR01	Language –I Tamil-I/ Hindi-I/ Malayalam-I/ French-I	5	3	30	70	100	3
II	19ENG001	English –I	5	3	30	70	100	3
III	19BCA101	Core 1: Introduction to Office Automation	6	3	30	70	100	4
III	19BCAP01	Core Lab I: Office Automation and Internet Programming	6	3	40	60	100	4
III	19BCAID1	**IDC 1:** Numerical Methods and Statistics	6	3	30	70	100	4
IV	19UFCA01	**Foundation Course I** : EVS #	2	2	-	50	50	2
		Total	30				550	20
		SEMESTER II						
I	19LATA02/ 19LAHI02/ 19LAMY02/ 19LAFR02	Language –II Tamil-II/ Hindi-II/ Malayalam-II/ French-II	5	3	30	70	100	3
II	19ENG002	English – II	5	3	30	70	100	3
III	19BCA201	Core 2: Programming in C	6	3	30	70	100	4
III	19BCAP02	Core Lab 2: Programming in C	6	3	40	60	100	4
III	19BCAID2	**IDC 2:** Operations Research	6	3	30	70	100	4
IV	19UFCA02	**Foundation Course II**: Value Education #	2	2	-	50	50	2
		Total	30				550	20
		SEMESTER III						
III	19BCA301	Core 3: Object Oriented Programming with C++	5	3	30	70	100	4
III	19BCA302	Core 4: Operating System	5	3	30	70	100	4
III	19BCA303	Core 5 : Data Structures	5	3	30	70	100	4
III	19BCAP03	Core Lab 3: Data Structures and C++ Lab	5	3	40	60	100	4
III	19BCAID3	**IDC 3** : Business Accounting	5	3	30	70	100	4
IV	19BCASB1/ 19BCASB2	**SBC I:** Web Designing Using HTML/ Photoshop #	3	3	-	75	75	3
IV	19BTA001/ 19ATA001/ 19EDC002	**EDC 1:** Basic Tamil-I/Advanced Tamil-I /Communicative English #	2	2	-	50	50	2
		Total	30				625	25

		SEMESTER IV						
III	19BCA401	Core 6 : Java Programming	5	3	30	70	100	4
III	19BCA402	Core 7: Relational Database Management System	5	3	30	70	100	4
III	19BCAP04	Core Lab 4: Programming in Java	5	3	40	60	100	4
III	19BCAP05	Core Lab 5: RDBMS Lab	5	3	40	60	100	4
III	19BCAID4	**IDC 4** : Human Resource Management	5	3	30	70	100	4
IV	19BCASB3/ 19BCASB4	**SBC II** : Multimedia / Graphic Design using CorelDraw#	3	3	-	75	75	3
IV	19BTA002/ 19ATA002/ 19BCAED1	**EDC 2:** Basic Tamil-II /Advanced Tamil-II /Banking Theory#.	2	2	-	50	50	2
V	19NCC001/ 19NSS001/ 19SPT001/ 19EXT001	NCC/ NSS/ Sports / Extension Activities@	-	-	50	-	50	2
		Total	**30**				**675**	**27**

		SEMESTER V						
III	19BCA501	Core 8: .Net Programming	5	3	30	70	100	4
III	19BCA502	Core 9: Computer Networks	5	3	30	70	100	4
III	19BCA503	Core 10: Python Programming	5	3	30	70	100	4
III	19BCAP06	Core Lab 6: .Net Programming	5	3	40	60	100	4
III	19BCAP07	Core Lab7: Python Programming	5	3	40	60	100	4
III	19BCAE01/ 19BCAE02/ 19BCAE03	**Elective I**: E-Commerce / Client Server Computing / Software Engineering and Software Testing	5	3	30	70	100	4
		Total	**30**				**600**	**24**

		SEMESTER VI						
III	19BCA601	Core 11: Information Security	5	3	30	70	100	4
III	19BCA602	Core 12: PHP Programming	5	3	30	70	100	4
III	19BCAP08	Core Lab 8: PHP Programming Lab	5	3	40	60	100	4
III	19BCAE04/ 19BCAE05/ 19BCAE06	**Elective II**: Mobile Computing/ Introduction to Android Technology/ Cloud Computing	5	3	30	70	100	4
III	19BCAE07/ 19BCAE08/ 19BCAE09	**Elective III**: Software Project Management/ Web Technology/ Internet of Things	5	3	30	70	100	4
III	19BCAPR01	**Project and Viva Voce**	5	3	50	50	100	4
		Total	**30**				**600**	**24**
		Total					**3600**	**140**

For candidates admitted from the Academic year 2019-2020 onwards
\#   No Continuous Internal Assessment (CIA) , only Comprehensive Examination (CE)
@ No Continuous Internal Assessment (CIA) and Comprehensive Examination (CE)
IDC- Inter disciplinary Course, EDC – Extra Disciplinary course , SBC – Skill Based Course

List of Skill Based Courses

Sem	Code	Subject Title	Credits
		SBC I	
III	19BCASB1	Web Designing using HTML	**3**
III	19BCASB2	Photoshop	**3**
		SBC II	
IV	19BCASB3	Multimedia	**3**
IV	19BCASB4	Graphic Designing using CorelDraw	**3**

List of Elective Courses

Sem	Code	Subject Title	Credits
		Elective I	
V	19BCAE01	E-Commerce	4
V	19BCAE02	Client Server Computing	4
V	19BCAE03	Software Engineering and Software Testing	4
		Elective II	
VI	19BCAE04	Mobile Computing	4
VI	19BCAE05	Introduction to Android Technology	4
VI	19BCAE06	Cloud Computing	4
		Elective III	
VI	19BCAE07	Software Project Management	4
VI	19BCAE08	Web Technology	4
VI	19BCAE09	Internet Of Things	4

List of Extra Disciplinary Courses

Sem	Code	Subject Title	Credits
III	19EDC002	**EDC 1:** Communicative English	2
IV	19BCAED1	**EDC 2:** Banking Theory	2

List of Additional Credit Courses

Sem	Code	Subject Title	Credits
III	19BCAAC1	Linux OS	2
IV	19BCAAC2	Introduction to Computer Graphics	2
V	19BCAAC3	Flash	2

Summary of the Programme

Part	No of Papers	Total Credits	Total Marks
I	2	6	200
II	2	6	200
III –Core	20	80	2000
III – IDC	4	16	400
III – Elective	3	12	300
III –Project	1	4	100
IV –Foundation Course	2	4	100
IV – EDC	2	4	100
IV – Skill Based Course	2	6	150
V – Extension Activities	-	2	50
Total	**38**	**140**	**3600**

Regulations for Department of BCA
(Effective from the Academic Year 2019-2020 onwards)

1. Submission of Record Note Books for practical examinations

Candidates appearing for practical examinations should submit Bonafide Record Note Books prescribed for practical examinations, Otherwise the candidate shall not be permitted to appear for the Practical Examinations.

2. Ratio of Comprehensive Examination, Pre- Model and Model Examinations Marks for UG and PG Courses

Part	Internal Assessment	External Assessment	Total Marks
I (Languages)	30	70	100
II (English)	30	70	100
III(Core, IDC, Elective)	30	70	100
IV (SBC)	-	75	75
IV (EDC/Foundation Course)	-	50	50
V (NCC/NSS/Sports/Ext. Activity)	50	-	50

3. Project Work Mark Distribution

Particulars	IA	CE	Total
Project Work (UG)	50	50	100
Project Work (PG)	100	100	200
Project Work(M.Sc(CS)/M.Sc(ECS)	150	100	250
Project Work (M.Com/MIB)	50	100	150

4. Practical Mark Distribution for all UG and PG Courses

Internal -40 External-60 Total Marks -100

5. Break up for Internal Marks

S. No	Internal Marks	Distribution of Marks
1	Pre Model Examination	70
2	Model Examination	70
3	Seminar	30
4	Attendance	10
	Total	**180/6=30**

6. Seminar Split up

S.NO	Seminar split up	Marks
1	Content	10
2	Flow of the presentation	10
3	Stage management and Body language	10
	Total	**30**

7. Attendance Break up

S.NO	Attendance split up	Marks
1	65% to 74%	4
2	75% - 80%	6
3	81% - 90%	8
4	91% - 100%	10

8. Internal Marks for Practical (Maximum 40)

Maximum Marks : 40	
S No	Internal Marks	Distribution of Marks
1	For Completion of the Practical List	20
2	Test –I	10
3	Test –II	10
	Total	**40**

9. External Marks for Practical (Maximum 60)

Maximum Marks : 60		
S. No	Comprehensive Examination	Distribution of Marks
1	Record	10
2	Program – I Algorithm Coding Execution	5 10 10 TOTAL (25)
3	Program – II Algorithm Coding Execution	5 10 10 TOTAL (25)
	Total	**60**

10. Internal and External Marks for Project Work

S.No	Internal Marks		Distribution of Marks
1	**Internal**		
		Review –I	10
		Review –II	10
		Documentation & Final Review	30 **Total (50)**
2	**External**		
		Presentation	30
		Viva	20 **Total (50)**
	Total		**100**

The distribution of Marks among the various components for IA and CE for Theory, Practical and Project Work is given in detail in the respective Schemes of Examination and Regulation of the different UG and PG Courses, duly passed in their respective Board of Study.

11. Pattern of Question Paper

For Pre model Test, Model and Comprehensive Examination under – Graduate and Post-Graduate Courses.

Maximum Marks : 70 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×4=20)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 75 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×5=25)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 50 / Time 2 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×3=15)	Each question carries four marks	Internal Choice
Section – C	(5×5=25)	Each question carries eight marks	Internal Choice
Maximum Marks : 100 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×8=40)	Each question carries eight mark	Internal Choice
Section – C	(5×10=50)	Each question carries ten mark	Internal Choice

Note:

1. The questions should be numbered continuously running through the Sections A, B and C.

2. Questions should be evenly distributed among the unit in the syllabus in all the sections of the Question paper

3. While framing questions with internal choice the questions must be identified as (a) or (b). (e.g 11. a or b). Further, the internal choice must be from the same unit.

4. The Controller of the Examinations shall arrange for the setting of question papers on the basis the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies

The following are the distribution of marks for Comprehensive Examinations and CIA for Theory, Practical and Project.

12. Certificate Course

In the academic year 2019-2020 we are introducing certificate course on III and IV semester as an interdisciplinary course. The course title is as follows.

List of Certificate Course

S.No	Sem	Subject Title
1	III	Office Automation
2		Basics of Web Design
3		Basics of Animation Technique
4	IV	Linux OS
5		DTP
6		PC Hardware

BCA Degree Examination–Syllabus for Candidates admitted from the academic year 2019-2020 onwards.

FIRST SEMESTER
PART III-CORE 1: INTRODUCTION TO OFFICE AUTOMATION

Maximum CIA : 30
Maximum CE : 70
Total Hours: 72

Course Objective:

       To inculcate knowledge on computer fundamentals and office automation tools

Unit-I: (14 Hours)

Overview Of Computers And Programming - Electronic Computer Then And Now- Computer Hardware–Computer Software – Binary Systems - Digital Computers And Digital Systems, Binary Numbers, Number Base Conversion, Octal And Hexadecimal Numbers.

Unit-II: (14 Hours)

MS Word: Creating A New Document- Finding And Replacing Formatting-Checking Spelling And Grammar-Adding Headers And Footers-Arranging Text In Columns-Inserting A Table Of Contents-Creating A Table-Modifying And Formatting A Table-Creating A Form Letter.

Unit-III: (14 Hours)

MS Excel: Creating A Simple Formula-Editing A Formula-Performing Calculation Using Functions- Creating A Chart-Editing A Chart-Creating A List-Sorting Data In List- Inserting Page Breaks-Printing Worksheets.

Unit-IV: (15 Hours)

MS Power Point: Creating A New Presentation- Choosing A Template-Adding Action Buttons-Creating Slide Transitions-Adding Animation-Timing A Presentation-Setting Up A Slide Show-Creating A Custom Slide Show-Printing A Presentation.

Unit-V: (15 Hours)

MS Access: Creating A Database-Working With A Table-Creating Table Using A Wizard- Working With A Table In Design View-Specifying Data Types And Field Properties- Planning And Defining Table Relationships-Filtering Out Records-Creating A Query Using A Wizard-Creating A Form Using Wizard-Editing Data In A Form-Creating Report Using A Wizard. Creating Web Pages with Office XP Programs: Designing Web Pages-Opening Web Pages -Creating_Web Pages- Inserting Hyperlinks-Removing Hyperlinks-Enhancing Web Pages-Publishing Web Pages.

Course Outcome:

On the successful completion of the course, students will be able to

1. Acquire knowledge about basic knowledge about computer fundamentals.

2. Understand the concept of how to create and use word document.

3.Perform calculations using MS-Excel.

4.Present the content using MS-PowerPoint

5.Store and Retrieve the information using MS-Access and also gains some basic concepts of Internet.

Text Books:

1. Microsoft Office Xp Simply Visual Perspection, Inc. Edition 2001.

2.M.Morris Mano, Computer System Architecture , 3rd Edition , Pearson Prentice Hall, First Impression , 2007.

3. Jeri .R. Hanly, Elliot B.Koffman – Problem Solving and Program Design in C, 5th Edition, Second Impression 2009, Dorling Kindersley(India) Pvt Ltd., Pearson Education in South Asia.

Reference Book:

1. Fundamentals Of Computers by E Balagurusamy Published by Tata Mcgraw Hill Publishing Co Ltd-2015.

BCA Degree Examination–Syllabus for Candidates admitted from the academic year 2019-2020 onwards.

FIRST SEMESTER
PART III-CORE LAB 1: OFFICE AUTOMATION AND INTERNET PROGRAMMING

Maximum CIA : 40
Maximum CE : 60
Total Hours: 72

Course Objective:

To gain knowledge on MS-Office Tools and Basics of Internet.

1. Create A Time Table Document For BCA I Semester Using MS-Word.
2. Create A Document Using Mail Merge In Ms-Word.
3. Create A Document To Use Mathematical Equations In MS-Word.
4. Create A Presentation With Text And Images Effects Using MS-PowerPoint.
5. Create A Presentation To Display Our College Information Using Animation And Sound Effects Using MS-Power Point.
6. Create An Employee Work Details Using MS-Excel.
7. Create A Student Mark Details And Perform Sort And Filter Using Ms-Excel.
8. Create A Student Database In Ms-Access.
9. Create a) Queries Using Ms-Access,
      b) A Form To The Database For Giving The Input Using MS-Access.
10. Generate A Report For The Student Table Using MS-Access.
11. Display the information about Wonders of the world using Google Search Engine.
12. Create an email regarding leave application to HR of a company.

Course Outcome:

On the successful completion of the course, students will be able to

1: Learn and Implement Word Processing Skills such as Create and edit one page Word documents and Format and enhance Word documents.

2: Create and edit basic PowerPoint presentations Use template,animations etc.

3:Create and perform calculations using MS-Excel.

4:Performs operations on Database.

5: Identify and use Internet browser features , Use Search tools and Understand Internet Ethics

BCA Degree Examination–Syllabus for Candidates admitted from the academic year 2019-2020 onwards.

SECOND SEMESTER

PART III - CORE 2: PROGRAMMING IN C

Maximum CIA : 30
Maximum CE : 70
Total Hours: 72

Course Objective:

    To provide knowledge on how to analyze a problem and provide problem solving skills using C Language.

Unit – I   (14 Hours)
Overview of C language:-Constants, Variables and Data Types – Operators and Expressions-Decision Making and Branching

Unit – II   (14 Hours)
Decision Making and Looping- Arrays:-One Dimensional Array-Declaration And Initialization Of One Dimensional Arrays-Initializing Two Dimensional Arrays-Dynamic Arrays-More About Arrays-Character Arrays-Strings.

Unit – III   (14 Hours)
User Defined Functions-Elements of user defined functions-Category of functions-Recursion

Unit – IV   (15 Hours)
Structure And Union:- Defining A Structure-Defining Structure variables-Accessing Structure Members- Array Of Structures –Structures Within Structures. Unions. Pointers: Declaring Pointer Variables-Initialization Of Pointer Variables-accessing A Variable Through The Pointer-Chain Of Pointers- Pointer Increments And Scale Factor- Pointers And Character Strings-Array Of Pointers-Troubles with Pointers.

Unit – V   (15 Hours)
File Management in C-Defining and opening a file-closing a file-I/O operations on files-Random access to Files-Command Line arguments-Dynamic Memory Allocation: Dynamic Memory Allocation-Malloc, Calloc Free and Realloc.

Course Outcome:

On the successful completion of the course, students will be able to

    1: Get basic knowledge about the operators, expressions and I/O statements.

    2: Understand basic concepts on the looping statements, control statements.

    3: Gain knowledge about functions and its types.

    4:To impart knowledge on structures, union and file handling operations

5: To impart knowledge on file operation and Memory allocation.

Text Book:

1. E.Balagurusamy, Programming in ANSI C – Tata Mc Graw Hill – 6th edition-2012.

Reference Book:

1. Ashok N Kamthane,Programming in C 2nd Edition- Pearson Publication.

BCA Degree Examination–Syllabus for Candidates admitted from the academic year 2019-2020 onwards.

SECOND SEMESTER
PART III - CORE LAB 2: PROGRAMMING IN C

Maximum CIA : 40
Maximum CE : 60
Total Hours: 72

Course Objective: To provide the hands on experience on C Programming and improve the problem solving skills.

1. Write A Simple Program To Find The Size Of Different Basic Data Types In C.

2. Develop A C Program To Check Whether The Given Input Alphabet Is Vowel Or Not.

3. Develop A C Program To Generate And Print Armstrong Numbers

4. Develop A C Program To Perform Matrix Operations

   a) Addition Of Two Matrices b)Subtraction Of Two Matrices

   b) Transpose Matrix

5. Developing A C Program To Sort The Given Set Of Numbers In Ascending Order

6. Develop A C Program To Convert Decimal To Binary

7. Develop A C Program To Perform Basic Arithmetic Operations Using Pointers.

8. Develop A C Program To Perform String Operation

a) String Length

b) String Copy

c) String Compare

d) Reverse The String

9. Developing A C Program To Find The Factorial Of A Given Number Using Recursive Function.

10. Developing A C Program To Print The Student's Mark Sheet Assuming Rno, Name, And Marks In 5 Subjects In A Structure. Create An Array Of Structures And Print The Mark Sheet.

11. Developing A C Program Which Receives Two Filenames As Arguments And Check Whether The File Contents Are Same Or Not. If Same Delete The Second File.

12. Developing A C Program Which Takes A File As Command Line Argument And Copy It To Another File. At The End Of The Second File Write I) No. Of Chars II) No. Of Words And III) No. Of Lines.

Course Outcome:

On the successful completion of the course, students will be able to

1:To understand the basic concepts of C.

2:To learn how to design structure and union.

3:To understand the concept of pointers and functions.

4:To enhance the analyzing and problem solving skills for writing program.

5:To gain knowledge to use files and command line arguments.

BCA Degree Examination–Syllabus for candidates admitted from the academic year 2019-2020 onwards.

THIRD SEMESTER
PART III-CORE 3: OBJECT ORIENTED PROGRAMMING WITH C++

Maximum CIA : 30
Maximum CE : 70
Total Hours: 60

Course Objective:

  To inculcate knowledge on C++ programming concepts and OOPS Concepts.

Unit-I   (12 Hours)

Beginning To C++ - Basic Concepts of OOPS - Input And Output In C++ Formatted And Unformatted Console I/O Operations-Formatted Console I/O Operations-Bit Fields- Manipulators - C++ Declarations Parts Of C++ Program-Type Of Tokens - Data Types In C++ - Type Casting – Constants - Operators In C And C++.

Unit- II   (12 Hours)

Control Structures- Function In C++ Parts Of Function-Inline Functions - Functions Overloading - Classes and Objects Classes In C++ - Declaring Objects - Defining Member Function - Static Member Variables and Function - Static Object - Friend Function - Overloading Member Function.

Unit- III   (12 Hours)

Constructors And Destructors - Operator Overloading- Overloading Unary, Binary Operators - Overloading With Friend Function - Type Conversion - Inheritance Types Of Inheritance - Virtual Base Classes Abstract Classes.

Unit- IV   (12 Hours)

Pointer And Arrays - C++ And Memory Models -The New And Delete Operator - Dynamic Objects - Binding In C++ - Polymorphism And Virtual Functions.

Unit- V   (12 Hours)

Files File Stream Classes - File Modes - Binary And ASCII Files - Command Line Arguments -Templates Definition Of Class Template - Normal Function Template - Inheritance - Exception Handling - Working With Strings –STL

Course Outcome:

    CO1: Understand the features of C++ supporting object oriented programming.
    CO2: Learn about functions, Control Structures and Polymorphism concepts in C++.
    CO3: Apply the concepts of object-oriented programming.
    CO4: Understand about arrays,Objects and Virtual functions in C++.
    CO5: Illustrate the process of data file manipulations,Templates using C++.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO1	H		L		H	H		M
CO2		L		M			M	M
CO3	M	H			H	H	M	
CO4				M	L		H	
CO5				M	L	H		`H

Text Book:

1.Ashok N.Kamthane, Object-Oriented Programming With ANSI & Turbo C++ ,Pearson Education 2011.

Unit 1: Chapter 1 (1.1, 1.7) Chapter 2 (2.6,2.7,2.10,2.11,2.13)
Chapter3(3.1,3.2,3.3,3.7,3.14,3.15,3.17)
Unit 2: Chapter 4 (4.1-4.11) Chapter 5(5.3,5.11,5.12)
Chapter 6(6.4, 6.5, 6.9, 6.15, 6.16, 6.19, 6.26)
Unit 3: Chapter 7 (7.1, 7.2, 7.3) Chapter 8 (8.1-8.3, 8.6-8.8)
Chapter 9 (9.1, 9.4, 9.11, 9.14)
Unit 4: Chapter 10 (10.1-10.13) Chapter 11(11.2, 11.3, 11.8) Chapter 12(12.2, 12.4- 12.9)
Unit 5: Chapter 13 (13.1, 13.2, 13.6, 13.10, 13.13) Chapter 14(14.1-14.4)
Chapter 15(15.1-15.4) Chapter 16 (16.1-16.9) Chapter 17(17.2).

Reference Books:

1. Herbert Schildt, C++ A Beginner's Guide, Tata McGraw-Hill, Seventh Edition, 2013.

2. E.Balagurusamy, Object-Oriented Programming With C++, Tata McGraw-Hill Education, 6th Edition,2013.

BCA Degree Examination–Syllabus for candidates admitted from the academic year 2019-2020 onwards.

THIRD SEMESTER
PART III-CORE 4: OPERATING SYSTEM

Maximum CIA : 30
Maximum CE : 70
Total Hours: 60

Course Objective:

  To gain Knowledge on Operating System Concepts and functioning of modern Operating System.

Unit-I   (12 Hours)

Introduction: What Is Operating System?-Mainframe Systems-Desktop Systems-Multiprocessor System-Distributed System-Real Time System-Handheld System. Computer System Structures:-Computer System Operation-I/O Structure-Storage Structure- Storage Hierarchy.

Unit-II   (12 Hours)

Process Management: Process Concept-Process Scheduling-Operations on Process-Co Operating Process-Inter Process Communication-Communication in Client Server System. Threads:-Overview-Multithreading Models.

Unit-III   (12 Hours)

CPU Scheduling:-Basic Concepts-Scheduling Criteria-Scheduling Algorithm-Multiple Processor Scheduling-Real Time Scheduling. Semaphore:-Usage-Implementation. Deadlock:-System Model-Deadlock Characterization-Methods for Handling Deadlock-Deadlock Prevention-Deadlock Avoidance-Deadlock Detection-Recovery from Deadlock.

Unit-IV   (12 Hours)

Memory Management:-Introduction-Swapping-Contiguous Memory Allocation-Paging-Segmentation-Segmentation with Paging. Virtual Memory:-Introduction-Demand Paging-Page Replacement.

Unit-V   (12 Hours)

File-System Interface:-File concepts-Access methods-Directory structure. File System Implementation:-File System Structure-File System Implementation-Directory Implementation-Allocation Methods.

Course Outcomes:

  CO1: Gain Knowledge on fundamentals of Operating Systems.
  CO2: Learn the mechanisms of OS to handle processes and threads and their communication.
  C03: Acquires knowledge on Process and its Scheduling Mechanism.
  CO4: To learn the mechanisms involved in memory management in contemporary.
  CO5: Knows about File system and its implementations.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO1	H	M		M		H	H	M
CO2		L						
CO3	M		L		H		M	L
CO4		M		M	L			L
CO5		H			M		M	

Text Book:

1. Achyut Godbole, Operating Systems, 2nd Edition, Tata McGraw Hill ,2011.

        Unit 1: Chapter 1 (1.1,1.2, 1.3, 1.4, 1.5, 1.7, 1.8) Chapter 2 (2.1, 2.2, 2.3, 2.4)

        Unit 2: Chapter 4 (4.1-4.6) Chapter 5(5.2, 5.2)

        Unit 3: Chapter 6 (6.1-6.5) Chapter7 (7.4) Chapter 8 (8.1-8.7)

        Unit 4: Chapter 9 (9.1-9.6) Chapter 10(10.1-10.3)

        Unit 5: Chapter 11 (11.1-11.3) Chapter 12(12.1-12.4).

Reference Books:

1.Silberschatz,Galvin,Gagne, Operating Systems Concepts, 6th Edition, 2013.

2. William Stallings, Operating Systems, Internals and Design Principles, 6th Edition, Prentice Hall, 2010.

BCA Degree Examination–Syllabus for candidates admitted from the academic year 2019-2020 onwards.

THIRD SEMESTER
PART III-CORE 5: DATA STRUCTURES

Maximum CIA : 30
Maximum CE : 70
Total Hours: 60

Course Objective:

To impart the basic concepts of data structures and algorithms.

Unit-I   (12   Hours)
Basics Terminologies – Data Structures – Data Structure Operation – Algorithms - Algorithmic Notation – Control Structures – Complexity of Algorithm.

Unit- II   (12 Hours)
Stacks – Queues – Recursion -Stacks - Array Representation Of Stacks - Linked Representation Of Stacks - Polished Notation – Recursion –Towers Of Hanoi – Queues – Linked Representation Of Queues -D Queues - Priority Queues.

Unit-III   (12 Hours)
Linked List-Representation Of Linked List In Memory-Traversing A Linked List-Searching A Linked List-Memory Allocation-Insertion Into A Linked List-Deletion From A Linked List-Header Linked List-Two Way List.

Unit- IV   (12 Hours)
Trees: Introduction-Binary Tree-Representing Binary Trees In Memory-Traversing Binary Tree-Binary Search Tree-Searching And Inserting In Binary Search Tree-Graphs: Introduction-Graph Theory Terminology-Sequential Representation Of Graph-Operations On Graphs.

Unit- V   (12 Hours)
Sorting and Searching: Introduction-Sorting-Insertion Sort-Selection Sort-Merging-Merge Sort-bubble sort-quick sort .Linear Search- Binary Search.

Course Outcome:
   CO1: Ability to analyze algorithms and algorithm correctness.
   CO2: Gain Knowledge on Stack and Queue Operations.
   CO3: Knows about Linked List and its implementation.
   CO4: To have knowledge of trees and graphs concepts.
   CO5: Ability to summarize searching and sorting techniques.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO1	M	H		M		H		M
CO2		H	L	H	M		M	
CO3	H					M		
CO4	H	H		H	H		H	H
CO5		M			M		M	M

Text Book:

1.Seymour Lipchitz, "Data Structures", 6th edition, Tata McGraw Hill,2011.

      Unit 1: Chapter 1 (1.1-1.5) Chapter 2 (2.3, 2.4, 2.5)

      Unit 2: Chapter 6 (6.1-6.13)

      Unit 3: Chapter 5 (5.1-5.10)

      Unit 4: Chapter 7 (7.1-7.4, 7.7, 7.8) Chapter 8 (8.1-8.3, 8.6)

      Unit 5: Chapter 9 (9.1-9.8).

Reference Books:

1. Bhagat Singh T , Introduction to Data structures , Tata McGraw Hill, New Delhi,2010.

2. Trembley and Sorenson , Introduction To Data Structures With Applications, Mc Graw Hill,2012.

BCA Degree Examination–Syllabus for candidates admitted from the academic year 2019-2020 onwards.

THIRD SEMESTER
PART III-CORE LAB 3: DATA STRUCTURES & C++ LAB

Maximum CIA: 40
Maximum CE: 60
Total Hours: 60

Course Objective:

To impart knowledge on C++ programming by using Object Oriented Programming concept and Data structures concepts.

1. Create a program to read an integer number and find the sum of all the digits until it reduces to a single digit using constructors, destructors and inline member functions.
2. Create two classes which consist of two private variables, a integer and a float variable. Write member functions to get and display them. Write a FRIEND Function common to both classes, which takes the object of above two classes as arguments and the integer and float values of both objects separately and display the result.
3. Programming using Function Overloading to read two Matrices of different Data Types such as integers and floating point numbers. Find out the sum of the above two matrices separately and display the sum of these arrays individually.
4. Create a class STRING. Write a Member Function to initialize, get and display stings. Overload the Operator "+" to Concatenate two Strings, "= =" to Compare two strings and a member function to find the length of the String
5. Create a class which consists of EMPLOYEE Detail like ENumber, E-Name, Department, Basic, Salary, and Grade. Write a member function to get and display them. Derive a class PAY from the above class and write a member function to calculate DA, HRA and PF depending on the grade.
6. Create a program which takes a file as argument and copies in to another file with line numbers using Command Line Arguments.
7. Develop a C++ program to experiment the following operations of stack.
   a)Push   b)Pop   c)List
8. Develop a C++ program to create menu driven program to implement QUEUE to perform the following
   a)Insertion   b) Deletion   c)Modification   d)Listing of elements
9. Develop a C++ program to insert an element at the end of the list.
10. Develop a C++ program to insert nodes into binary tree and display the items in the following order:
    a) Preorder   b) Postorder   c) Inorder
11. Develop C++ program to demonstrate linear search.
12. Develop a C++ program to arrange set of numbers in ascending order using selection sort.

Course Outcome:

CO1: Ability to analyze constructor and destructors.
CO2: Gain Knowledge about function overloading and operator overloading.
CO3: Knows about Inheritance and Abstract classes.
CO4: To have knowledge of trees, stack and queue concepts.
CO5: Ability to summarize searching and sorting techniques.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO1	M	H			M	H		M
CO2	M		L	H			M	
CO3					H			M
CO4	H	H		H	H	H		
CO5	H		M	H		M	H	M

BCA Degree Examination–Syllabus for candidates admitted from the academic year 2019-2020 onwards.

THIRD SEMESTER
PART-IV-SBC I: WEB DESIGNING USING HTML

Maximum CE: 75
Total Hours: 36

Course Objective:

To gain Knowledge on designing web page using HTML Tags.

1. Write a HTML Program display a webpage using basic HTML tags.
2. Write a HTML Program to design a webpage using Formatting tags
3. Write a HTML Program to use different heading levels.
4. Write a HTML Program to display a webpage using ordered and un ordered list.
5. Write a HTML Program to create a page link using anchor tag.
6. Write a HTML Program to display the class time table using Table tags.
7. Write a HTML Program to display the image using img tag.
8. Write a HTML Program to display the student biodata using form tag.
9. Write a HTML Program to separate the webpage using frame tag.
10. Write a HTML Program to design a webpage using CSS.

Course Outcome:

CO1: Ability to design and create websites.

CO2: Gain Knowledge on CSS Script and using it to design a website.

CO3: Knows about HTML tags and its implementation.

CO4: To have knowledge of Lists and Tables in HTML.

CO5: Ability to Formatting style of a website and improve critical thinking skills.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO1	H		M		H		H	H
CO2		M		H	M			H
CO3	M	L				L	L	M
CO4		L	L			M		
CO5	H		L	H		H		M

BCA Degree Examination–Syllabus for candidates admitted from the academic year 2019-2020 onwards.

THIRD SEMESTER
PART-IV-SBC I: PHOTOSHOP

Maximum CE: 75
Total Hours: 36

Course Objective:

        To gain Knowledge on photo shop designing.

1. Create Sun Flower using Photoshop.
2. Create Water Drops using Photoshop.
3. Animate Plane Flying the Clouds using Photoshop.
4. Create Plastic Surgery for Nose using Photoshop.
5. Create See thru text using Photoshop.
6. Create Military Clothe using Photoshop.
7. Create Rollover Buttons using Photoshop.
8. Convert Black and White to Color Photo using Photoshop
9. Design a visiting card using Photoshop.
10. Design a Invitation card using Photoshop.

Course Outcome:

        CO1: Ability to analyze work with image editing and graphic design features.
        CO2: Gain Knowledge on basic Photoshop skills and concepts to develop graphics
        CO3: Knows about Layers and its implementation.
        CO4: To have knowledge of color correction and graphic options.
        CO5: Ability to summarize various editing tools.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO1	H		M	H		H		H
CO2		M			M		M	
CO3	H	L				L		M
CO4	M		L	L			M	
CO5		H	L		H		M	M

BCA Degree Examination–Syllabus for candidates admitted from the academic year 2019-2020 onwards.

FOURTH SEMESTER
PART III-CORE 6: JAVA PROGRAMMING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:

This course gives in-depth knowledge of JAVA language for creating safe robust object- oriented multithreaded interactive programs.

Unit- I   (12 Hours)
The Java Language - Variable Declarations and Arrays - Operators in Java - Control Statements.

Unit- II   (12 Hours)
Opening To Classes - Classes and Methods in Detail – Inheritance - Abstract Classes and Interfaces.

Unit- III   (12 Hours)
Exception Handling - Multithreaded Programming - Packages and Access Modifiers - Handling Strings.

Unit- IV   (12 Hours)
The Language Packages - Collections And Utilities - Input Output Classes – Networking.

Unit- V   (12 Hours)
Applets - AWT - Components and Containers - Layout Management and Event Handling

Course Outcome:

CO1: Acquire knowledge of the structure and model of the Java programming language

CO2: Create Java programs that solve simple business problems.

CO3: Explore various programming paradigms as well as principles of building object-oriented software

CO4: Develop Java applications with graphical user interface (GUI).

CO5: Implement the Concept of streams and file handling.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO1	H		L	M	H		H	
CO2		L	M			M	M	H
CO3	M				H			H
CO4		L		H			H	
CO5	M			M	L	M		`H

Text Book

1. "Introduction to Object Oriented Programming through JAVA" ISRB group, Tata McGraw Hill , 2008.

  Unit 1: Chapter 1, Chapter 3, Chapter 4, Chapter 5.
  Unit 2: Chapter 6, Chapter 7, Chapter 8, Chapter 9.
  Unit 3: Chapter 10, Chapter 11, Chapter 9, Chapter 15.
  Unit 4: Chapter 17, Chapter 18, Chapter 19, Chapter 20.
  Unit 5: Chapter 21, Chapter 22, Chapter 23, Chapter 24.

Reference Books

1. E.Balagurusamy, Programming With Java, 5th Edition, Tata McGraw Hill,2014.

2. Herbert Schildt, The Complete Reference JAVA 2,7th Edition, Tata McGraw Hill.2010.

BCA Degree Examination–Syllabus for candidates admitted from the academic year 2019-2020 onwards.

FOURTH SEMESTER
PART III-CORE 7: RELATIONAL DATABASE MANAGEMENT SYSTEM

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:

    To encourage the students to gain knowledge on RDBMS concepts and programming skills with Oracle.

Unit- I   (12 Hours)
INTRODUCTION: DBMS Applications – Purpose of Database System –View of Data – Database Models- Database Languages – Data Storage and Querying – Transaction Management – Database Architecture – Database Users and Administrator.

Unit- II   (12 Hours)
Relational Database : Structure of Relational Database – Database Schema – Keys – Fundamentals of Relational Algebraic Operations – Formal Definitions and Additional Relational Algebra Operations – Extended Relational Algebra Operations – Null Value – Modifications of Database – Relational Database Design : Features of Good Relational Design – Functional Dependency Theory – Normalization : 1NF – 2NF – 3NF and BCNF.

Unit- III   (12 Hours)
Entity Relationship Model – Constraints – Keys – Entity – Relationship Diagrams – ER Design issues – Weak Entity Sets – Extended ER Features. SQL : Data Definition – Structure of SQL Queries – Set Operators – Aggregate Functions – Null Values – Nested Sub Queries – Complex Queries – Views – Modification of the Database – Joint Relations – Integrity Constraints – Assertion.

Unit- IV   (12 Hours)
PL/SQL Programming : Fundamentals of PL/SQL – Block Structure – Data Types – Variable declaration – Assignment Operation – Bind Variable – Substitution Variable – Printing in PL/SQL – Arithmetic Operation – Control Structures – Nested Blocks – SQL in PL/SQL – Data Manipulation in PL/SQL – Transaction Control Statements.

Unit- V   (12 Hours)
PL/SQL Cursors – Implicit and Explicit Cursors – Cursor with Parameters – Cursor Variables – Exceptions – Types of Exceptions. PL/SQL Composite Data types : PL/SQL Records – PL/SQL Tables – PL/SQL Varrays – Procedures – Functions – Triggers.

Course Outcome:
    CO1: Describe the fundamental elements of relational database management systems.
    CO2: Explain the basic concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQL.
    CO3: Design ER-models to represent simple database application scenarios
    CO4: To gain knowledge about PL/SQL fundamentals and its structure.
    CO5: Have knowledge about PL/SQL cursors and exceptions.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO1	L	M			M	M		M
CO2		H	L			H	H	M
CO3		L	L		H			H
CO4	H			M			H	
CO5		M		H		H		H

Text Books:

1.Abraham Silberschatz, Henry F. Korth, S.Sudarshan, Database System Concepts –Mc-Graw Hill , 2006, International.

    Unit 1: Chapter 1 (1.1- 1.4, 1.8, 1.9, 1.11, 1.12).

    Unit 2: Chapter 2 (2.1-2.6), Chapter 7 (7.1, 7.4, 7.7).

    Unit 3: Chapter 6 (6.3-6.7) , Chapter 3 (3.2- 3.11), Chapter 4 (4.2).

2.Nilesh Shah, Database Systems Using Oracle- PHI- Publisher, Second Edition ,2008.

    Unit 4: Chapter 10 (10.1-10.5, 10.7-10.11), Chapter 11 (11.1-11.5).

    Unit 5: Chapter 12 (12.4, 12.9-12.12), Chapter 13 (13.1-13.4), Chapter 14(14.1, 14.2, 14.4).

Reference book:

1.Rajesh Narang, Database Management Systems , PHI – Publisher,2008.

BCA Degree Examination–Syllabus for candidates admitted from the academic year 2019-2020 onwards.

FOURTH SEMESTER
PART III-CORE LAB 4: PROGRAMMING IN JAVA

Maximum CIA: 40
Maximum CE: 60
Total Hours: 60

Course Objective:

To impart knowledge on Java Programming

1. Program for Merging Two Sorted Arrays.
2. Program For Multiple Inheritance
3. Program For Multithreading
4. Program for Creating Your Own Package.
5. Program For User Defined Exception
6. Program for Counting the Number of Characters, Words, Lines In The File.
7. Program to Identify the IP Address of the Local Machine.
8. Program That Displays a Digital Clock Using Applet.
9. Program for Designing Calculator Using Applet.
10. Program to calculate EBill using Java Frames
11. Applet program for handling mouse events
12. Program to display Student Details using AWT Components.

Course Outcome:

CO1: Use an IDE to write, compile, run and test simple object oriented java program.
CO2: Design and implement Applet and event handling mechanism in application programs.
CO3: Apply the concept of package and gain knowledge about Exception handling.
CO4: Use JFrames in graphical interactive application development.
CO5: Evaluate user requirement for software functionality.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO1	H	M	L		H	H		M
CO2		L		M		H		
CO3	M	H			H		M	H
CO4	M		L			M		
CO5		M		M	L		L	`H

BCA Degree Examination–Syllabus for candidates admitted from the academic year 2019-2020 onwards.

FOURTH SEMESTER
PART III-CORE LAB 5: RDBMS LAB

Maximum CIA: 40
Maximum CE: 60
Total Hours: 60

Course Objective:

To impart knowledge on Data Base and its applications

1. Create a table Student-master with the following fields client_no, name, address, city, state, pincode, remarks, bal_due with suitable data types

    a) Create another table supplier_table from client_master. Select all the fields and rename client_no with supplier_no and name with supplier_name.

    b) Insert data into client_master

    c) Insert data into supplier_master from client_master.

    d) Delete the selected row in the client_master.

2. Create a table sales_order with s_order_no and product_no as primary key. Set other fields to store client number, delivery address, delivery date,order status.

    a) Add a new column for storing salesman number using ALTER Command.

    b) Set the s_order_no as foregin key as column constraints.

    c) Set the s_order_no as foreign key as table constraints.

    d) Enforce the integrity rules using CHECK.

3. Create a table student_master with the following fields name, regno, dept and year with suitable data types. Use Select command to do the following.

    a) Select the student's name column.

    b) Eliminate the duplicate entry in table.

    c) Sort the table in alphabetical order.

    d) Select all the Students of a particular department.

4. Create a table sales_order_details with the s_order_no as primary key and with theFollowing fields: product_no, description, qty_ordered, qty_disp,product_rate, profit_percent, sell_price, supplier_name.

    a) Select each row and compute sell_price*.50 and sell_price*1.50 for each row selected.

    b) Select product_no, profit_percent, Sell_price where profit_per is not between 10 and 20 both inclusive.

    c) Select product_no, description, profit_percent, sell_price where profit_percent is not between 20 and 30.

    d) Select the suppliername and product_no where suppliername has 'r' or 'h' as second character.

5. Write a PL/SQL block to calculate Factorial and Fibonacci Series.

6. Write a PL/SQL block of code to calculate the area of a circle for a value of Radius & store calculated area in a table.

7. Create a table master_book to contain the information of magazine code, magazine name, publisher. Weekly/biweekly/monthly, price. Write PL/SQL block to perform insert, update, delete operations on the above table.

8. Create a table to contain phone number, user name, address of the phone user. Write a function to search for a address using phone numbers.

9. Create a table stock to contain the itemcode, itemname, current stock, date of last purchase. Write a stored procedure to seek for an item using item code and delete it, if the date of last purchase is before 1 year from the current date. If not, update the current stock.

10. Create a table to store the salary details of the employees in a company. Declare the Cursor to contain employee number, employee name and net salaryl. Use Cusor to update the employee salaries.

11.Create a table to contain the information about the voters in a particular constituency. Write a proper trigger to update or delete a row in the table.

12. Create a table to store the details of the Aluminums in an institution. Write a PL/SQL block to change address of particular alumni. Write proper exceptions and appropriate error messages.

Course Outcome:

      CO1: Develop a database application and use queries to retrieve data.

      CO2: Represent the database using ER diagrams.

      CO3: Apply normalization to database.

      CO4: To gain knowledge about project design and implementation.

      CO5: Have knowledge about PL/SQL, trigger and exceptions.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO1	H		L		H	H		H
CO2		L	M				M	M
CO3	M	H			H		H	
CO4				L	L	M		H
CO5	M			M			L	`H

BCA Degree Examination–Syllabus for candidates admitted from the academic year 2019-2020 onwards.

FOURTH SEMESTER
PART III-IDC-IV: HUMAN RESOURCE MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:

On the successful completion of this paper, the student will acquire knowledge in Role of a HR manager, Job description and Job analysis.

Unit- I   (12 Hours)

Human Resource Management - Definition - Objectives - Functions - Scope - Importance - HRM in India - Evolution of HRM - Computer Application in Human Resource Management - Quality of a good Human Resource Managers - Human Resource Planning - Job Analysis, Job description and Job Specification.

Unit-II   (12 Hours)

Recruitment and Selection - Sources of Recruitment - Selection Process - Test Types - Interview Types - Career Planning vs. Man Power Planning and succession Planning - Career Planning - Process - Career Development - Placement and Induction.

Unit-III   (12 Hours)

Training - Methods of Training - Executive Development - Performance Appraisal - Methods of Performance Appraisal - Transfers - Promotion - Wage & Salary Administration - Wage Boards and Pay Commission - Wage Incentive - Fringe Benefits - Employees Welfare - Safety and Health Measures - Grievance Procedures - Redressal of Grievances.

Unit- IV   (12 Hours)

Industrial Relations - Meaning & Characteristics Industrial Relations - Parties to Industrial relations - Nature of Trade Unions - Problems of Trade Union - Measures to Strengthen Trade Union Movement in India - Causes for Industrial Disputes - Settlement of Industrial Disputes.

Unit- V   (12 Hours)

Collective - Bargaining - Features - Pre-requisite of Collective Bargaining - Agreement at different levels - Workers Participation in Management - Objectives for Successful Participation.

Course Outcome:

CO1: Define, identify and applied principles of employee and labor relations, employment law, ethics.
CO2: Gain knowledge about HR's Role in organization.
CO3: Analyze the principles of metrics and measurements of HR.
CO4: To gain knowledge about the fundamentals of Trading and union.
CO5: Apply the principles of Workforce planning and talent management.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO1		H	M		H		M	
CO2				M		H	H	H
CO3		H			M			L
CO4	M		M			H		
CO5	M	H		M		M	M	L

Text Books:

1. Human Resource Management - Dr. C.B. Gupta - Sultan and Sons, 2014 Revised Edition.(UNIT   I,II)
    Unit 1: Chapter 11, Chapter 5.
    Unit 2: Chapter 6, Chapter

2. Human Resource and Personnel Management - K. Aswathappa - Tata Mc Graw Hill Publishing Co.
   Ltd,2013 Edition (UNIT   III,IV, V).
    Unit 3: Chapter 9, Chapter 10, Chapter 11.
    Unit 4: Chapter 22, Chapter 23.
    Unit 5: Chapter 24.

Reference Books

1. C.S. Venkata Rathnam & B.K. Srivastava, Personnel Management & Human Resources, TMPL,2010.
2. Dr. C.B. Memoria, Dr. Satish Memoria &S.V. Gankar –Dynamics of Industrial Relations, Himalaya
Publishing House,2013

BCA Degree Examination–Syllabus for candidates admitted from the academic year 2019-2020 onwards.

FOURTH SEMESTER
PART-IV-SBC- II: MULTIMEDIA

Maximum CE: 75
Total Hours: 36

Course Objective:

To inculcate knowledge on Media, Text, Image, Audio, Video, Animation and Internet.

Unit- I   (8 Hours)
Introduction: Where To Use Multimedia-Delivering Multimedia-Text: Using Text in Multimedia about Font and Font Faces-Font Editing and Design Tools-Hypermedia and Hypertext.

Unit-II   (8 Hours)
Image: Before You Start To Create- Making Still Images- Color- Image File Format- Sound: The Power Of Sound –Digital Audio- Midi Audio Midi Vs Digital Audio-Multimedia System Sounds-Audio File Formats-Adding Sound To Your Multimedia Project.

Unit- III   (8 Hours)
Animation – The Power Of Motion – Principle Of Animation -Animation By Computer –Making Animation That Work- Video- Using Video- How Video Works And Is Displayed-Digital Video Containers-Obtaining Video Clips Shooting And Editing Video.

Unit- IV   (6 Hours)
Making Multimedia – The Stages Of Multimedia Project- What You Need Multimedia Skills: The Team.

Unit-V   (6 Hours)
The Internet and Multimedia –Internet History – Internetworking – Multimedia on the Web.

Course Outcome:

CO1: Describe technical characteristics and performance of multimedia system.
CO2: Design creative approach in application of multimedia devices, equipment and systems.
CO3: Describe the development process and applications of the multimedia systems.
CO4: Carry out experiments and measurements on the multimedia systems.
CO5: Gain knowledge about internet and multimedia on web.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO1			H		H	M		H
CO2	H			M			M	H
CO3		M	M			H		L
CO4	M	L				M	L	
CO5			H		M		L	M

Text Book:

1. Tay Vaughan, Multimedia: Making It Work – 8th edition, TMH,2012.

       Unit 1: Chapter 1 (1.1, 1.2), Chapter 2 (2.3, 2.5, 2.6).

       Unit 2: Chapter 3 (3.1-3.3), Chapter 4 (4.1- 4.8).

       Unit 3: Chapter 5 (5.1-5.4), Chapter 6 (6.1- 6.5).

       Unit 4: Chapter 7 (7.1, 7.2) Chapter 8 (8.1)

       Unit 5: Chapter 12 (12.1-12.3).

Reference Books

1. Richard E. Mayer – Multimedia Learning, Cambridge University Press 2014.

2. Ralf Steinmetz, Klara Nahrstedt, Multimedia Systems, X Media publications, 2013.

BCA Degree Examination–Syllabus for candidates admitted from the academic year 2019-2020 onwards.

FOURTH SEMESTER
PART-IV-SBC- II: GRAPHICAL DESIGN USING CORELDRAW

Maximum CE: 75
Total Hours: 36

Course Objective:

To equip the students with the basic knowledge of CorelDraw Graphics Suite.

Unit- I   (7 Hours)
Introduction to Corel Draw- Starting Corel Draw-The CorelDraw screen-. Managing Files on Disk-Setting up a Multiple-Page File-Importing Files-Exporting Files-Printing Files- Customizing your Desktop-Drawing Lines and Curves-Drawing Dimensional Lines.

Unit- II   (7 Hours)
Manipulating Objects: Moving and Modifying Objects-Filling and Outlining Objects-Shaping Objects-Arranging Object. The write Type: Using Text: Editing, Modifying Text-Paragraph Text-Fitting Text to a path.

Unit- III   (7 Hours)
Color Modeling System-Creating Custom colors-Using and Customizing color palettes- Creating special Effects: Perspective-Envelopes-Blending Objects-File Management Functions-Printing Files in Batches.

Unit-IV   (8 Hours)
COREL OCR TRACE: Importing Images-Tracing Images-The Basics Toolbox-Managing Corel PHOTO-PAINT Files-The display and selection tools-The Drawing and Painting Tools-The Retouching Tools.

Unit-V   (7 Hours)
COREL UTILITIES: Corel color manager wizard-Corel Font Master 6-Corel Depth 6-The presentation Screen-Creating a slide show-Corel Dream 3D: The main screen-Scene Options-Rendering.

Course Outcome:

CO1: Analyze basic functionalities and file options in CorelDraw.
CO2: To gain knowledge about objects and formatting text.
CO3: Describe the color models and special effects.
CO4: Get Knowledge about manipulating images and basic tools in CorelDraw.
CO5: Gain knowledge about 3D design and rendering functions.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO1	H		L	H	M			H
CO2		L		L		M	H	
CO3	L	M			M	M		M
CO4			L		H		M	
CO5	H		M			H		H

Text Book:

1. Dawn Erdos, CorelDraw 6.0 , First Indian Edition,2010.

      Unit 1: Chapter 2 (2.1, 2.2), Chapter 3 (3.1, 3.2, 3.3, 3.5, 3.6), Chapter 4 (4.1, 4.4, 4.5).

      Unit 2: Chapter 5 (5.1, 5.3, 5.4, 5.5), Chapter 6(6.1, 6.2, 6.3, 6.4).

      Unit 3: Chapter 7 (7.1-7.3), Chapter 8 (8.1- 8.3), Chapter 9(9.1, 9.2).

      Unit 4: Chapter 10 (10.2, 10.3), Chapter 11 (11.1-11.5).

      Unit 5: Chapter 12 (12.3, 12.4, 12.8), Chapter 13(13.1, 13.2), Chapter 14(14.1, 14.2).

Reference Book:

1. Alan Balfe, Corel Draw 3.0, Prentice Hall International (UK) Ltd,2011.

BCA Degree Examination-Syllabus- for candidates admitted from the academic year 2019 – 2020 onwards

SEMESTER III
PART III – ALC I - LINUX OS

Maximum Marks: 100

Course Objective:

To impart knowledge about Linux OS.

Unit- I

Overview of Linux – Additional Features of Linux- Working with Shell: Repeating/ Editing Command Lines.

Unit-II

Basic Utilities: Is,cat, rm, Working with files: cp, grep, tail, sort, diff, file- Four more Utilities- Compressing and Archiving Files .

Unit-III

Process Management – Process creation – Process states – Running, Wait, Stopped, and Zombie- Process scheduling Information.

Unit-IV

Memory Management – Access control – Caches – Buffer cache – Page cache – Swap cache – Hardware caches – Page allocation.

Unit-V

System Administration: Installing Linux – Booting the system – Maintaining user accounts – File systems and Special Files – Backups and Restoration.

Course Outcome:

CO1: Understanding the basic set of commands and utilities in Linux systems.
CO2: To learn about the importance of memory concept.
CO3: To learn the important Linux Commands and utilities.
CO4: To understand the inner workings of LINUX-like operating systems.
CO5: To obtain a foundation for an advanced course in operating systems.

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1		M				H		
CO 2	L						M	
CO 3			M					L
CO 4				L	M			
CO 5				L			H	

Text Books:
1. Mark G. Sobell ,A Practical Guide to Linux Commands, Editors, and Shell Programming ,Prentice Hall, 2010.

       Unit 1: Chapter 1 (1.3, 1.4) Chapter 2(2.3.3).
       Unit 2: Chapter 3 (3.1, 3.2, 3.3, 3.4).
2. Richard Peterson, Linux - The Complete Reference, Tata McGraw Hill, New Delhi, 2012.
       Unit 3: Chapter 4, Chapter.
       Unit 4: Chapter 10, Chapter 11.
       Unit 5: Chapter 12.

Reference Books:
1. Pramod Chandra P. Bhatt, An Introduction to Operating Systems Concepts and practice (Gnu/Linux), 4th Edition, 2014.

BCA Degree Examination-Syllabus- for candidates admitted from the academic year 2019 – 2020 onwards

SEMESTER IV
PART III – ALC II - INTRODUCTION TO COMPUTER GRAPHICS

Maximum Marks: 100

Course Objectives:
- On the successful completion of the course the students should have
- Learnt the concepts of Graphics.
- Learnt the concepts of two and three dimensional objects.

Unit- I
Overview of Graphics System - Bresenham technique – Line Drawing and Circle Drawing Algorithms - DDA – Cohen Sutherland Line Clipping - Text Clipping.

Unit- II
2D Geometric Transformations: Basic Transformations – Matrix Representations –Composite Transformations – Other Transformations.3D Geometric Modeling and Transformations: Translation – Rotation –Scaling.

Unit-III
3D Concepts - Projections – Parallel Projection - Perspective Projection.

Unit- IV
Visible Surface Detection Methods: Depth- Buffer Method - Scan-Line Method.

Unit- V
Color models: XYZ-RGB-YIQ-CMY-HSV Models.

Course Outcome:
CO1: Understanding the concepts of line drawing Algorithms.
CO2: To learn about the importance of Transformations.
CO3: To learn about the concepts of Projections.
CO4: To attain knowledge on Surface detection Methods.
CO5: To obtain knowledge on various color models in Computer Graphics.

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	M			L				H
CO 2		L				M		
CO 3			M				M	
CO 4	L				M			L
CO 5		H				M		

Text Book:
1. Donald Hearn and M.Pauline Barker, Computer Graphics – C version, 2nd edition, PEARSON Education, 2011.

Unit 1: Chapter 2, Chapter 3.
Unit 2: Chapter 5, Chapter 11.
Unit 3: Chapter 9.
Unit 4: Chapter 13.
Unit 5: Chapter 15.

Reference Books:
1. Dawara, Sudhir ,Mastering Graphics Programming In C Paperback,2010.
2. Nobuhiko Mukai, Computer Graphics, InTech publishers,2012.

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

THIRD SEMESTER

CERTIFICATE COURSE- OFFICE AUTOMATION

Total Hours: 30

Course Objective:

　　To inculcate knowledge on computer fundamentals and office automation tools.

Unit-I   (6 Hours)

Overview Of Computers And Programming - Electronic Computer Then And Now-Computer Hardware–Computer Software – Binary Systems - Digital Computers And Digital Systems, Binary Numbers, Number Base Conversion, Octal And Hexadecimal Numbers.

Unit-II   (6 Hours)

MS Word: Creating A New Document- Finding And Replacing Formatting-Checking Spelling And Grammar-Adding Headers And Footers-Arranging Text In Columns-Inserting A Table Of Contents-Creating A Table-Modifying And Formatting A Table-Creating A Form Letter.

Unit-III   (6 Hours)

MS Excel: Creating A Simple Formula-Editing A Formula-Performing Calculation Using Functions-Creating A Chart-Editing A Chart-Creating A List-Sorting Data In List- Inserting Page Breaks-Printing Worksheets.

Unit-IV   (6 Hours)

MS Power Point: Creating A New Presentation- Choosing A Template-Adding Action Buttons-Creating Slide Transitions-Adding Animation-Timing A Presentation-Setting Up A Slide Show-Creating A Custom Slide Show-Printing A Presentation.

Unit-V   (6 Hours)

MS Access: Creating A Database-Working With A Table-Creating Table Using A Wizard-Working With a Table In Design View-Specifying Data Types And Field Properties-Planning And Defining Table Relationships-Filtering Out Records-Creating A Query Using A Wizard-Creating A Form Using Wizard.

Text Books:

1.M.Morris Mano, Computer System Architecture , 3rd Edition , Pearson Prentice

Hall, First Impression , 2007.

Unit I: Chapter 1 (1.1, 1.2, 1.3, 1.5-1.9) Chapter 2(2.1-2.4)

2. Microsoft Office Xp Simply Visual Perspection, Inc. Edition 2001.
Unit II: Chapter 4 (4.2,4.8,4.11) Chapter 6(6.5,6.6,6.7,6.10)
Unit III: Chapter 8 (8.1-8.5, 8.11,8.12,8.14)
Unit IV: Chapter 9 (9.1-9.3) Chapter 10(10.2-10.10)
Unit V: Chapter 11 (11.1, 11.2, 11.6-11.11) Chapter 12(12.1,12.3,12.9)

Reference Book:

1. Fundamentals Of Computers by E Balagurusamy Published by Tata Mcgraw Hill Publishing Co Ltd-2015.

All UG Degree Examination - Syllabus for candidates admitted from the Academic Year 2019 – 2020 onwards

THIRD SEMESTER
CERTIFICATE COURSE – BASICS OF WEB DESIGN

Total Hours: 30

Course Objective:

      Enabling students to acquire knowledge in internet and web designing using HTML and CSS.

Unit - I   (6 Hours)

Introduction: Getting Started - What is Web Publishing? – Getting your Tools in Order – Introducing HTML and CSS – Creating Web Pages – Learning the Basics of HTML – Organizing Information with Lists – Working with Links.

Unit – II   (6 Hours)

Doing more with HTML and CSS: Formatting Text with HTML & CSS – Using CSS to Style a Site – Using Images on Your Web Pages – Building Tables – Using CSS to position Elements on the page

Unit – III   (6 Hours)

Designing Forms – Structuring a Page with HTML5 – Integrating Multimedia: Video and Sound – Advanced CSS: Page Layout in CSS – Using Responsive Web Design

Unit – IV   (6 Hours)

Using JavaScript and JQuery: Introducing JavaScript – Using jQuery – Using JavaScript in Your Pages – Working with Frames and Linked Windows

Unit – V   (6 Hours)

Designing for Everyone: Designing for the Mobile Web – Designing for User Experience. Going Live on the Web : How to Publish Your Site – Taking Advantage of the Server – Search Engines and SEO.

Text Book:
1. Laura Lemay, Rafe Colburn, Jennifer Kyrnin – Sams Teach Yourself HTML, CSS & JavaScript Web Publishing in One Hour a Day, Seventh Edition, Pearson Education, 2016.

Reference Book:
1. Elizabeth Castro, Bruce Hyslop – HTML5 and CSS3, Seventh Edition, 2012

THIRD SEMESTER
CERTIFICATE COURSE – BASICS OF ANIMATION TECHNIQUE

Total Hours: 30

Course Objective:
The objective of this subject is to teach the principles of how different types of media can be processed and presented by computers.

Unit - I   (6 Hours)
Multimedia- An Overview: Introduction – Characteristics of Multimedia – Uses of Multimedia – Analog and Digital Representations – Visual Display Systems. Text: Introduction - Types of Text – Unicode Standard – Font – Insertion of Text – Text Compression – Text File Formats.

Unit– II   (6 Hours)
Image: Introduction – Image Data Representation – Image Acquisition – Image Processing – Binary Image Processing – Grayscale Image Processing – Color Image Processing - Image File Formats.

Unit - III   (6 Hours)
Graphics: Introduction – Uses of Graphics – 2D Transformations - 3D Transformations - Graphics File Formats – Graphics Software.

Unit - IV   (6 Hours)
Audio: Introduction - Types and Properties of Sounds – Digital Audio - Digital Audio Processing – Audio Transmission - Audio File Formats.
Video: Introduction – Digital Video - Digital Video Processing – Video File Formats.

Unit - V   (6 Hours)
Animation: Introduction – Uses of Animation – Principles of Animation - 3D Animation - Animation File Formats – Animation Software.

 Text Book:
   1. Ranjan Parekh, Principles of Multimedia, Tata McGraw Hill Education Private Limited - Second Edition, Reprint 2019.
      Unit 1: Chapter 1 (1.1, 1.3, 1.5, 1.6, 1.10) Chapter 2 (2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7)
      Unit 2: Chapter 3 (3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7)
      Unit 3: Chapter 4 (4.1, 4.3, 4.6, 4.25, 4.29, 4.32)
      Unit 4: Chapter 5 (5.1, 5.4, 5.7, 5.10, 5.13, 5.14) Chapter 6 (6.1, 6.7, 6.8, 6.10)
      Unit 5: Chapter 7 (7.1, 7.3, 7.5, 7.8, 7.10, 7.11)

Reference Book:
   1. Ashok Banerji, Ananda Mohan Ghosh, Multimedia Technologies, McGraw Hill Publication.

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

FOURTH SEMESTER
CERTIFICATE COURSE – LINUX OS

Total Hours: 30

Course Objective:
    To enable the student to understand the importance of Linux Operating System and its commands.

Unit- I   (6 Hours)
Linux Software Architecture: Device Driver Layer - Linux Kernel - Process Management - File Management - Main Memory Management - Disk Management - System Call Interface - Language Libraries - Linux Shell – Applications - Historical Development of the Linux Operating System - Beginnings - History of Shells - Future Developments - Basic Comparison of Linux System Distributions - Linux System Standardization.

Unit- II   (6 Hours)
Structure of a Linux Command - Logging On and Logging Off - Stand Alone Login Connection to Linux - Graphical Login and Logout Procedures - Connecting via PuTTY from a Microsoft Windows Computer - Login and Logout Procedures - Connecting via an SSH Client between Linux Machines - Login and Logout Procedures - File Maintenance Commands and Help on Linux Command Usage - File and Directory Structure - Viewing the Contents of Files - Creating, Deleting, Managing - Directories.

Unit- III   (6 Hours)
Files and File System structure - Introduction - Linux File Concept - Types of Files - Simple/Ordinary File - Directory - Link File - Special (Device) File - Named Pipe (FIFO) - Socket - File System Structure - File System Organization- Home and Present Working Directories - Pathnames - Absolute and Relative - Some Standard Directories and Files - Standard Files and File Descriptors - File System - Displaying Disk Usage of Files and Directories - End-of-File Marker.

Unit- IV   (6 Hours)
File Security - Introduction - Password Based Protection - Encryption Based Protection - Protection Based on Access Permission - Types of Users - Types of File Operations/Access Permissions - Access Permissions for Directories - Determining and Changing File Access Privileges - Determining File Access Privileges - Changing File Access Privileges - Access Privileges for Directories - Default File Access Privileges - Special Access Bits - SUID Bit - SGID Bit - Sticky Bit.

Unit- V   (6 Hours)
Advanced File Processing - Sorting Files - Searching for Commands and Files - Regular Expressions - Searching Files - Cutting and Pasting - Compressing Files - gzip Command - gunzip Command - gzexe Command - zcat and zmore Commands - gzip, bzip2, and xz Commands - Encoding and Decoding - File Encryption and Decryption.

Text Book:

1. Syed Mansoor Sarwar, Robert M. Koretsky, Linux The Textbook, Second Edition, CRC Press, 2019.

Unit I: Chapter 1 (1.7, 1.8, 1.9)
Unit II: Chapter 2 (2.3, 2.4)
Unit III: Chapter 3 (4.1, 4.2, 4.3, 4.4, 4.6, 4.7, 4.8)
Unit IV: Chapter 5 (5.1, 5.2, 5.3, 5.4, 5.5, 5.6)
Unit V: Chapter 7 (7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9)

Reference Books:

1. Oliver Pelz, Fundamentals of Linux: Explore the essentials of the Linux command line, Packt Publishing, 2018
2. Jason Cannon, Linux for Beginners: An Introduction to the Linux Operating System, CreateSpace Independent Publishing Platform, 2017

**All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 –
2020 and onwards.**

FOURTH SEMESTER
CERTIFICATE COURSE – DTP

Total Hours: 30

Course Objective:
    To inculcate knowledge on computer fundamentals and office automation tools.

Unit-I   (6 Hours)
Overview Of Desktop Publishing - Document organization-Word Processing Tools, New toys Ends–
Body Type – Setting up your text – Display Type, Styles, Graphics-File Formats, Sources of
Graphics,OLE,DDL,Formatting Graphics, Fonts and Printers.

Unit-II   (6 Hours)
MS Word: Creating A New Document- Finding And Replacing Formatting-Checking Spelling And
Grammar-Adding Headers And Footers-Arranging Text In Columns-Inserting A Table Of Contents-
Creating A Table-Modifying And Formatting A Table-Creating A Form Letter.

Unit- III   (6 Hours)
MS Excel: Creating A Simple Formula-Editing A Formula-Performing Calculation Using Functions-
Creating A Chart-Editing A Chart-Creating A List-Sorting Data In List- Inserting Page Breaks-
Printing Worksheets.

Unit-IV   (6 Hours)
MS Power Point: Creating A New Presentation- Choosing A Template-Adding Action Buttons-
Creating Slide Transitions-Adding Animation-Timing A Presentation-Setting Up A Slide Show-
Creating A Custom Slide Show-Printing A Presentation.

Unit-V   (6 Hours)
MS Access: Creating A Database-Working With A Table-Creating Table Using A Wizard-Working
With a Table In Design View-Specifying Data Types And Field Properties-Planning And Defining
Table Relationships-Filtering Out Records-Creating A Query Using A Wizard-Creating A Form
Using Wizard-Editing Data In A Form-Creating Report Using A Wizard. Creating Web Pages with
Office XP Programs: Designing Web Pages-Opening Web Pages –CreatingWeb Pages- Inserting
Hyperlinks-Removing Hyperlinks-Enhancing Web Pages-Publishing Web Pages.

Text Books:
1. Tom Lichty version 2.0 Desktop Publishing with Word for windows.Ventana Press.
        Unit I: Chapter 1 (1.1, 1.2, 1.3, 1.5,1.6, 1.8,1.9)
2. Microsoft Office Xp Simply Visual Perspection, Inc. Edition 2001.
        Unit II: Chapter 4 (4.2,4.8,4.11) Chapter 6(6.5,6.6,6.7,6.10)
        Unit III: Chapter 8 (8.1-8.5, 8.11,8.12,8.14)
        Unit IV: Chapter 9 (9.1-9.3) Chapter 10(10.2-10.10)
        Unit V: Chapter 11 (11.1, 11.2, 11.6-11.11) Chapter 12(12.1,12.3,12.9)

Reference Book:

1. Learning Desktop Publishing by Ramesh Bingia Published by khanna Publishing Co Ltd-

    2016.

All UG Degree Examination - Syllabus for candidates admitted from the Academic Year 2019 – 2020 onwards

FOURTH SEMESTER
CERTIFICATE COURSE – PC HARDWARE

Total: 30 Hours

Course Objective:

To equips students with basic knowledge in PC and its various devices.

Unit – I   (6 Hours)
Introduction to world of computers: What is a Computer and What does it do?-Computers to fit every need – Computer Networks and Internet – Computers and Society.

Unit – II   (6 Hours)
The System Unit: Overview-Data and Program Representation – Inside System Unit –How the CPU works – Making computers faster and better and in future

Unit – III   (6 Hours)
Storage –Overview – Storage System Characteristics – Magnetic Disk Systems – Optical Disc Systems- Flash Memory – Other types of storage systems

Unit – IV   (6 Hours)
Input and Output: Overview – Keyboards-Pointing Devices – Scanners, Readers and Digital Cameras –Audio Input – Display Devices – Printers – Audio Output

Unit – V   (6 Hours)
System Software: System Software vs Application Software – OS-OS for Desktop PCs and Severs – OS for Handheld PCs and other Devices – OS for Larger Computers-Utiliy Programs – Future of OS.

Text Book:
1. Morley & Parker, Fundamentals of Computers, Cengage Learning, Reprint 2014.

Reference Book:
1. Scott Mueller, Upgrading and Repairing PCs –, 20th Edition, Pearson Publishing,

   Second Impression 2014.

Department of Computer Science

B.Sc Computer Science

Regulations for B.Sc Computer Science

(Effective from the academic year 2019-2020 onwards)

Introduction:

The department of computer science started the UG Programme in 1992 and PG Programme in 1996. The UG Programme is B.Sc Computer Science.

Objective:

Students will be able to design, develop, document, and test software using current techniques.

Eligibility: UG Programme

Candidate for admission to the first year of the B.Sc. Computer Science degree course shall be required to have passed the higher secondary examination conducted by the Govt. of Tamil Nadu with any one of the following subjects: Mathematics / Computer Science / Statistics / Business mathematics or other examinations accepted as equivalent there to by the Syndicate, subject to such other conditions as may be prescribed there for.

Duration of UG Programme

The course shall extend over a period of three years comprising of six semesters, with two semesters per year. There shall not be less than ninety instructional days during each semester. Examination shall be conducted at the end of each semester for the respective subject.

Vision:

To empower students of Computer Science Department to be technologically adept, innovative, self-motivated and responsible global citizen possessing human values and enable them to contribute in the industrial development innovation, high quality technical education and research with the ever-changing world.

Mission:

To create, share, and apply knowledge in Computer Science, including in interdisciplinary areas that extend the scope of Computer Science and benefit humanity; to educate students to be successful, ethical, and effective problem-solvers and life-long learners who will contribute positively to the economic well-being of our region and nation and who are prepared to tackle complex 21st Century challenges facing the world.

Program Outcomes:

After the completion of the under graduate programme in Bachelor of Science (B.Sc Degree), the graduates will be able to

PO1: Attain the core value in their respective area to meet out the global competitive edge.

PO2: Apply and update their skills towards their employability, entrepreneurship and its sustainability.

PO3: Realize their responsibility towards the society centre through ethical, social and human values.

PO4: Recognize the opportunities towards their up gradation and professional development in all spheres.

PO5: Ensure the quality in terms of all the aspects by the way of their contribution in work atmosphere.

Program Specific Outcomes:

PSO1: Serve as the Programmers or the Software Engineers with the sound knowledge of practical and theoretical concepts for developing software.

PSO2: Work as the Hardware Designers/Engineers with the knowledge of Networking Concepts.

PSO3: To Give Technical Support for various systems.

COMPUTER SCIENCE BOARD
SCHEME OF EXAMINATIONS (CBCS and OBE PATTERN)
For Candidates admitted during the academic year 2019-2020 onwards
Programme: B.Sc Computer Science

Part	Sub Code	Subject Title	Ins.Hrs/Week	Dur. Hrs.	CIA	CE	Total	Credit
					Examination			
SEMESTER I								
I	19LATA01/ 19LAHI01/ 19LAMY01/ 19LAFR01	Language – I Tamil-I/ Hindi-I/ Malayalam-I/ French-I	5	3	30	70	100	3
II	19ENG001	English –I	5	3	30	70	100	3
III	19BSC101	Core 1- Digital Principles and C Programming	6	3	30	70	100	4
III	19BSCP01	Core Lab I – Digital Principles and C Programming lab	6	3	40	60	100	4
III	19BSCID1	**IDC 1:**Numerical Methods and Statistics	6	3	30	70	100	4
IV	19UFCA01	**Foundation Course I** : EVS #	2	2	-	50	50	2
		Total	30				550	20
SEMESTER II								
I	19LATA02/ 19LAHI02/ 19LAMY02/ 19LAFR02	Language –II Tamil-II/ Hindi-II/ Malayalam-II/ French-II	5	3	30	70	100	3
II	19ENG002	English – II	5	3	30	70	100	3
III	19BSC201	Core 2 : Object Oriented Programming with C++	6	3	30	70	100	4
III	19BSCP02	Core Lab 2 – Object Oriented Programming with C++ Lab	6	3	40	60	100	4
III	19BSCID2	**IDC 2 :** Discrete Mathematics	6	3	30	70	100	4
IV	19UFCA02	**Foundation Course II**: Value Education #	2	2	-	50	50	2
		Total	30				550	20
SEMESTER III								
III	19BSC301	Core 3: Data Structures and Algorithm	5	3	30	70	100	4
III	19BSC302	Core 4: Java Programming	5	3	30	70	100	4
III	19BSC303	Core 5 : Computer Networks	5	3	30	70	100	4
III	19BSCP03	Core Lab 3: Java Programming Lab	5	3	40	60	100	4
III	19BSCID3	**IDC 3 :**Operation Research	5	3	30	70	100	4
IV	19BSCSB1/ 19BSCSB2	**SBC I** Multimedia Lab/ Python Lab	3	3	-	75	75	3
IV	19BTA001/ 19ATA001/ 19EDC002	**EDC 1:** Basic Tamil-I/ Advanced Tamil-I / Communicative English	2	2	-	50	50	2
		Total	30				625	25

		SEMESTER IV						
III	19BSC401	Core 6 : Data Base Management System	5	3	30	70	100	4
III	19BSC402	Core 7: PHP Programming	5	3	30	70	100	4
III	19BSC403	Core 8: Operating Systems	5	3	30	70	100	4
III	19BSCP04	Core Lab 4: PHP Programming Lab	5	3	40	60	100	4
III	19BSCID4	**IDC 4** :Business Accounting	5	3	30	70	100	4
IV	19BSCSB3/ 19BSCSB4	**SBC II** : Linux Lab / Oracle Lab	3	3	-	75	75	3
IV	19BTA002/ 19ATA002/ 19BSCED1	**EDC 2:** Basic Tamil-II /Advanced Tamil-II /Business Communications.	2	2	-	50	50	2
V	19NCC001/ 19NSS001/ 19SPT001/ 19EXT001	NCC/ NSS/ Sports @dilute/ Extension Activities	-	-	50	-	50	2
		Total	**30**				**675**	**27**

		SEMESTER V						
III	19BSC501	Core 9: Software Engineering	5	3	30	70	100	4
III	19BSC502	Core 10: .Net Programming	5	3	30	70	100	4
III	19BSC503	Core 11: PC Hardware	5	3	30	70	100	4
III	19BSC504	Core 12: Computer Graphics	5	3	30	70	100	4
III	19BSCP05	Core Lab 5: .Net Programming Lab	5	3	40	60	100	4
III	19BSCE01/ 19BSCE02/ 19BSCE03	**Elective I**: Open Source Technologies / System Software / Unified Modeling Language	5	3	30	70	100	4
		Total	**30**				**600**	**24**

		SEMESTER VI						
III	19BSC601	Core 13: Web Technologies	5	3	30	70	100	4
III	19BSC602	Core 14: Network Security and Cryptography	5	3	30	70	100	4
III	19BSCP06	Core Lab 6: Web Technologies Lab	5	3	40	60	100	4
III	19BSCE04/ 19BSCE05/ 19BSCE06	**Elective II**: Data Mining/ Artificial Intelligence/ Information Security	5	3	30	70	100	4
III	19BSCE07/ 19BSCE08/ 19BSCE09	**Elective III**: Mobile Computing/ Cloud Computing/ Internet of Things	5	3	30	70	100	4
III	19BSCPR1	**Project and Viva Voce**	5	3	50	50	100	4
		Total	**30**				**600**	**24**
		Total					**3600**	**140**

For candidates admitted from the Academic year 2019-2020 onwards
No Continuous Internal Assessment (CIA) , only Comprehensive Examination (CE)
@ No Continuous Internal Assessment (CIA) and Comprehensive Examination (CE)
IDC- Inter disciplinary Course, EDC – Extra Disciplinary course , SBC – Skill Based Course

List of Skill Based Courses

Sem	Code	Subject Title	Credits
AOCI			
III	19BSCSB1	Multimedia Lab	3
III	19BSCSB2	Python Lab	3
AOCII			
IV	19BSCSB3	Linux Lab	3
IV	19BSCSB4	Oracle Lab	3

List of Elective Courses

Sem	Code	Subject Title	Credits
Elective I			
V	19BSCE01	Open Source Technologies	4
V	19BSCE02	System Software	4
V	19BSCE03	UML	4
Elective II			
VI	19BSCE04	Data Mining	4
VI	19BSCE05	Artificial Intelligence	4
VI	19BSCE06	Network Security & Cryptography	4
Elective III			
VI	19BSCE07	Mobile Computing	4
VI	19BSCE08	Cloud Computing	4
VI	19BSCE09	Wireless Networks	4

List of Extra Disciplinary Courses

Sem	Code	Subject Title	Credits
III	19EDC002	**EDC 1:** Communicative English	2
IV	19BSCED1	**EDC 2:** Business Communications	2

List of Additional Credit Courses

Sem	Code	Subject Title	Credits
III	19BSCAC1	Management Information System	2
IV	19BSCAC2	HTML	2
V	19BSCAC3	System Analysis & Design	2

Summary of the Programme

Part	No of Papers	Total Credits	Total Marks
I	2	6	200
II	2	6	200
III –Core	20	80	2000
III – IDC	4	16	400
III – Elective	3	12	300
III –Project	1	4	100
IV –Foundation Course	2	4	100
IV – EDC	2	4	100
IV – Skill Based Course	2	6	190
V – Extension Activities	-	2	50
Total	**38**	**140**	**3600**

Regulations for B.Sc Computer Science

(Effective from the Academic Year 2019-2020 onwards)

1. Submission of Record Note Books for practical examinations

Candidates appearing for practical examinations should submit Bonafide Record Note Books prescribed for practical examinations, Otherwise the candidate shall not be permitted to appear for the Practical Examinations.

2. Ratio of Comprehensive Examination, Pre- Model and Model Examinations Marks for UG and PG Courses

Part	Internal Assessment	External Assessment	Total Marks
I (Languages)	30	70	100
II (English)	30	70	100
III(Core, IDC)	30	70	100
IV (AOC)	-	75	75
IV (EDC/Foundation Course)	-	50	50
V (NCC/NSS/Sports/Ext. Activity)	50	-	50

3. Project Work Mark Distribution

Particulars	IA	CE	Total
Project Work (UG)	50	50	100
Project Work (PG)	100	100	200
Project Work(M.Sc(CS)/M.Sc(ECS)	150	100	250
Project Work (M.Com/MIB)	50	100	150

4. Practical Mark Distribution for all UG and PG Courses

Internal -40 External-60 Total Marks -100

5. Break up for Internal Marks

S. No	Internal Marks	Distribution of Marks
1	Pre Model Examination	70
2	Model Examination	70
3	Seminar	30
4	Attendance	10
Total		**180/6=30**

6. Seminar Split up

S.NO	Seminar split up	Marks
1	Content	10
2	Flow of the presentation	10
3	Stage management and Body language	10
	Total	**30**

7. Attendance Break up

S.NO	Attendance split up	Marks
1	65% to 74%	4
2	75% - 80%	6
3	81% - 90%	8
4	91% - 100%	10

8. Internal Marks for Practical (Maximum 40)

Maximum Marks : 40		
S No	**Internal Marks**	**Distribution of Marks**
1	For Completion of the Practical List	20
2	Test –I	10
3	Test –II	10
	Total	**40**

9. Internal Marks for Practical (Maximum 25)

Maximum Marks : 25		
S No	**Internal Marks**	**Distribution of Marks**
1	For Completion of the Practical List	15
2	Test –I	5
3	Test –II	5
	Total	**25**

10. External Marks for Practical (Maximum 60)

Maximum Marks : 60		
S. No	**Comprehensive Examination**	**Distribution of Marks**
1	Record	10
2	Program – I Algorithm Coding Execution	5 10 10 TOTAL (25)
3	Program – II Algorithm Coding Execution	5 10 10 TOTAL (25)
	Total	**60**

11. External Marks for Practical (Maximum 50)

Maximum Marks : 50		
S. No	**Comprehensive Examination**	**Distribution of Marks**
1	Construction	10
2	Designing	20
3	Record	20
Total		50

12. Internal and External Marks for Project Work

S.No	Internal Marks	Distribution of Marks
1	**INTERNAL** Review –I Review –II Documentation & Final Review	 10 10 30 **Total (50)**
2	**EXTERNAL** Presentation Viva	 30 20 **Total (50)**
Total		**100**

13. Internal and External Marks for Project Work (Maximum 150)

S.No	Internal Marks	Distribution of Marks
1	**INTERNAL** Three Project Reviews Report	 25 25 **Total (50)**
2	**EXTERNAL** Presentation Viva	 50 50 **Total (100)**
Total		**150**

14. Internal and External Marks for Project Work (Maximum 200)

S.No	Internal Marks	Distribution of Marks
1	**INTERNAL** Two Project Reviews Report	 50 50 **Total (100)**
2	**EXTERNAL** Presentation Viva	 50 50 **Total (100)**
	Total	**200**

15. Internal and External Marks for Project Work (Maximum 250)

S.No	Internal Marks	Distribution of Marks
1	**INTERNAL** Three Project Reviews Report	 75 75 **Total (150)**
2	**EXTERNAL** Presentation Viva	 50 50 **Total (100)**
	Total	**250**

The distribution of Marks among the various components for IA and CE for Theory, Practical and Project Work is given in detail in the respective Schemes of Examination and Regulation of the different UG and PG Courses, duly passed in their respective Board of Study.

16. Pattern of Question Paper

        For Pre model Test, Model and Comprehensive Examination under – Graduate and Post- Graduate Courses.

Maximum Marks : 70 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×4=20)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 75 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×5=25)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 50 / Time 2 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×3=15)	Each question carries four marks	Internal Choice
Section – C	(5×5=25)	Each question carries eight marks	Internal Choice
Maximum Marks : 70 / Time 3 Hrs (MBA)			
Section – A	(10×2=20)	Each question carries two mark	Short Answers
Section – B	(5×7=35)	Each question carries seven mark	Internal Choice
Section – C	(1×15=15)	Each question carries fifteen mark	Compulsory Question

Note:

1. The questions should be numbered continuously running through the Sections A, B and C.

2. Questions should be evenly distributed among the unit in the syllabus in all the sections of the Question paper

3. While framing questions with internal choice the questions must be identified as (a) or (b). (e.g 11. a or b). Further, the internal choice must be from the same unit.

4. The Controller of the Examinations shall arrange for the setting of question papers on the basis the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies

The following are the distribution of marks for Comprehensive Examinations and CIA for Theory, Practical and Project.

17. Certificate Course

In the academic year 2019-2020 we are introducing certificate course on III and IV semester as an interdisciplinary course. The course title is as follows.

List of Certificate Course

S.No	Sem	Subject Title
1		Office Automation
2	III	Basics of Web Design
3		Basics of Animation Technique
4		Linux OS
5	IV	DTP
6		PC Hardware

B.Sc (Computer Science) Degree Examination-Syllabus for candidates admitted from the academic year 2018 – 2019 and onwards

<div align="center">

FIRST SEMESTER
PART III-CORE I: DIGITAL PRINCIPLES AND C PROGRAMMING

</div>

Maximum CIA:30
Maximum CE:70
Total Hours: 72

Course Objective:
To inculcate the knowledge of computer fundamentals and C Programming.

Unit-I (15 Hours)
Binary Systems: Digital Computers & Digital Systems – Binary Numbers – Number Base Conversion – Octal and Hexadecimal Numbers – Complements – Binary Codes. Boolean Algebra: Basic Definition – Axiomatic Definition of Boolean Algebra – Boolean Functions – Canonical and Standard Forms – Other Logical Operations - Digital Logic Gates.

Unit –II (15 Hours)
Boolean Functions: The Map Method - Two and Three-Variable Maps- Four Variable Maps- Don't Care Conditions. Combinational Logic: Adders – Subtractors. Combinational Logic: Multiplexers. Sequential Logic: Flip Flops. Registers, Counters, and the Memory Unit: Registers.

Unit-III (15 Hours)
Constants, Variables, and Data Types: Character Set - C tokens - Keyword and identifiers-constants-variables-Data types-Declaration of variables and storage classes-Assigning values to variables-Defining symbolic constants. Operators: Arithmetic operators-Logical operator-Relational Operator-Assignment operator-Increment and decrement operators-conditional operator-bitwise operator-special operator.

Unit-IV (12 Hours)
Decision making and branching - Decision making and Looping-Arrays - character arrays and strings: Declaring and initializing string variables-Comparison of two strings-Strings Handling Functions. User Defined function: Definition of Functions-Return Values and their Types-Function Calls –Function Declaration-Category of functions- No Argument and No Return Values-Arguments but no return values-Arguments with return values-No Arguments but with Return values- Nesting of Functions-Recursion.

Unit –V (15 Hours)
Structure and Union: Defining a structure-Declaring and accessing structure variables-structure initialization-Array of Structures-Structures within Structures-Unions-Pointers: Declaring pointer variables-Initialization of pointer variables-Accessing a variable through its Pointers-File management: Defining and opening a file-closing a file-Command Line Arguments.

Course Outcome:
* Understand different Number systems, Codes, Relational Algebra and Logic Gates
* Simplify the Boolean functions to the minimum number of literals
* Develop conditional and iterative statements to write C programs
* Exercise user defined functions to solve real time problems

- Inscribe C programs that use Pointers to access arrays, strings and functions

Text Book:

1. M.Morris Mano Digital Logic and Computer Design, Eleventh Edition, Pearson Education, Inc., Reprint 2015.
   Chapter 1 (1.1 – 1.8), Chapter 2 (2.1 to 2.7)
   Chapter 3 (3.1 – 3.3, 3.8), Chapter 4 (4.3 – 4.4), Chapter 5 (5.6), Chapter 6 (6.2), Chapter 7 (7.2)

2. E.Balagurusamy, Programming in ANSI C, 7th Edition, Tata McGraw-Hill, 2017
   Chapter 2, Chapter 3
   Chapter 5, Chapter 6, Chapter 7, Chapter 8, Chapter 9
   Chapter 10, Chapter 11, Chapter 13

Reference Books:
1. B.Ram, Computer Fundamentals, New Age International Publishers,2016.
2. Ashok Kamthane, Programming with ANSI and Turbo C, Pearson Education India, First Edition, Reprint 2016.

B.Sc (Computer Science) Degree Examination-Syllabus for candidates admitted from the academic year 2018 – 2019 and onwards

FIRST SEMESTER

CORE LAB I: DIGITAL PRINCIPLES AND C PROGRAMMING LAB

Maximum CIA:30
Maximum CE:70
Total Hours: 72

Course Objective:

To impart knowledge on basic operations and C Programming concepts

1. Create a email id and upload a resume in any job portal.
2. Develop a C program to implement number conversions.
3. Construct a C program using type conversion.
4. Develop a C program using looping and conditional statements.
5. Construct a C program using one dimensional array.
6. Develop a C program two dimensional array
7. Develop a c program to perform String operation.
8. Construct a C program using Call by Reference
9. Develop a C program using command line arguments
10. Design a C program using recursion.
11. Develop a C program using array of structures.
12. Implement a C program using file operations.

Course Outcome:

- Understand basic Structure of the C-Programming, declaration and usage of variable
- To write C programs using operators
- Exercise conditional and iterative statements to write C programs
- To write C programs using Pointers to access arrays, strings and functions
- To write C programs using pointers and allocate memory using dynamic memory management functions

B.Sc (Computer Science) Degree Examination-Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards
SECOND SEMESTER
PART III-CORE 2: OBJECT ORIENTED PROGRAMMING WITH C++

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective:
On successful completion of this paper the students should have acquired expert knowledge of Basic Concepts, Inheritance, Abstraction, Encapsulation and Polymorphism in Object Oriented Programming Language.

Unit- I   (12 Hours)
Introduction to Object-Oriented Programming: What is Object-Oriented Programming (OOP)? – Advantages of OOPs– Disadvantages of OOPs- Characteristics of Object Oriented Programming – Structure of Object Oriented Program- History of C++. Data types, Operators and Expressions: Identifiers and Keywords - Data Types – Literal – Variables - Operators and its types-Special operators-Type Conversion.

Unit- II   (12 Hours)
Input and Output Streams: Declaration of Variables - The Main() Function - Input and Output Stream - I/O in C++ - Control Statements: Conditional Expression - Loop Statement Nested Control Structure - Breaking Control Statement - Functions and Program Structures: Defining a Function – Return Statement - Function Prototype - Types of User Defined Function - Actual and formal Argument – Local VS Global Variables Default Arguments- Recursive Function.

Unit- III   (12 Hours)
Class and Object: Declaration of a classes- Member Functions - Array of Objects - Defining the Objects of the class - Array of Class object- Union and Classes-Pointer and class Arrays: Introduction-Array Declaration - Array Initialization-Multidimensional Arrays. Special Member Functions: Constructor and Destructor - Inline Functions- Static Members Functions- Friend Functions. Overloading Function and Operator: Function Overloading- Operator Overloading- Overloading Unary - Binary Operators.

Unit- IV   (12 Hours)
Inheritance: Introduction Types of Inheritance – Single – Multilevel – Multiple – Hierarchical – Hybrid - Multi Path Inheritance – Polymorphism - Virtual Function-Pure Virtual Function-Abstract Base Classes – Pointers and String: Pointer and Strings-Pointer to Function-Array of Pointers. Structure and Union: Declaration of a Structure-Array of Structure-Array within a Structure - Union.

Unit- V   (12 Hours)
Data File Operation – Opening and Closing of File - Reading / Writing a character from a file – Binary File Operations – Random Access Operation – Templates – Exception Handling – Function Template – Class Template.

Course Outcome:
- Understand the relative merits of C++ as an object oriented programming language
- Ability to understand C++ programming structures and function
- Understanding the advanced use of arrays in C++ programming
- Understand how to apply the major object-oriented concepts to implement object oriented programs in C++, encapsulation, inheritance and polymorphism
- Understand advanced features of C++ specifically stream I/O, templates

Text Book:
1. D.Ravichandran, Programming with C++, Third Edition, McGraw Hill Education(India) Pvt Ltd, 2016,Chennai.

Unit 1: Chapter 1 (1.1 , 1.2,1.5-1.7,1.10), Chapter 2 (2.2), Chapter 3(3.1-3.5,3.7-3.15).
Unit 2: Chapter 4 (4.2,4.3,4.9), Chapter 5 (5.1,5. 4), Chapter 6 (6.2,6.8,6.16).
Unit 3: Chapter 10 (10.3 – 10.9), Chapter 7(7.3-7.4,7.7), Chapter 11(11.2-11.6), Chapter 13(13.1-13.4).
Unit 4: Chapter 12(12.1-12.10),Chapter (14.1-14.7),Chapter 8(8.1-8.7),Chapter 9(9.1-9.7,9.10)
Unit 5: Chapter 16 (16.1-16.4,16.9),Chapter 15(15.1-15.5)

Reference Books:
1. Ashok N. Kamthane, Object Oriented Programming with ANSI &Turbo C++, 1st Indian Print, Pearson Education, Reprint 2017, New Delhi.
2. Balagurusamy, Object Oriented Programming with C++, 4th Edition, TMCH, Reprint 2018, New Delhi.

B.Sc (Computer Science) Degree Examination – Syllabus for candidates admitted   from the academic year 2019 – 2020 onwards.
SECOND SEMESTER
PART III - CORE LAB 2: OBJECT ORIENTED PROGRAMMING WITH C++ LAB

Maximum CIA: 40
Maximum CE: 60
Total Hours: 60

Course Objective:

To impart knowledge on Object Oriented Programming Concepts.

1) Develop a C++ program using constructors and destructors.
2) Design a C++ program that uses both recursive function and non-recursive functions.
3) Construct a C++ program using friend functions.
4) Develop a C++ program using string functions.
5) Design a C++ program to implement an array of pointers using classes.
6) Construct a C++ program using overloaded operators.
7) Develop a C++ program that illustrates the role of inheritance.
8) Construct a C++ program which implements run-time polymorphism that is achieved using virtual functions.
9) Design a C++ program using exception handling mechanism.
10) Develop a C++ program that illustrates the role of abstract classes.
11) Prepare a C++ program that uses function templates.
12) Prepare a C++ program using file operations.

Course Outcome:
- Describe the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects.
- Understand dynamic memory management techniques using pointers, constructors, destructors, etc.,
- Describe the concept of function overloading, operator overloading, virtual functions and polymorphism.
- Classify inheritance with the understanding of early and late binding, usage of exception handling, and generic programming.
- Demonstrate the use of various OOPs concepts with the help of programs.

B.Sc (Computer Science) Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.
THIRD SEMESTER
PART III - CORE 3: DATA STRUCTURES AND ALGORITHM

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objectives:
1. To understand the different methods of data organization like linear and non-linear forms.
2. To learn different sorting and searching techniques.
3. To develop a clear understanding of the various file organizations and storage management.

Unit- I   (12 Hours)
Introduction : Overview of Algorithms- analyzing Algorithms, time and space comparisons, Notations- Big Oh, Omega and Theta- Primitive Data structures, Arrays- ADT for arrays, Ordered list, operations ,representation of arrays.

Unit- II   (12 Hours)
Linear Data Structures: Stacks and Queues - operations on queues and stacks, evaluation of expression, postfix to infix conversions, application- recursion. Linked list- operations, applications of Queues and linked lists. String processing, indexing and storage.

Unit – III   (12 Hours)
Non-linear Data Structures : Trees - basic concepts, Binary tree traversals, representation..Threaded binary trees-representation, traversal.Graphs-basic concepts, representation, search techniques, Applications of graphs and trees.

Unit – IV   (12 Hours)
Sorting and Searching: Insertion Sort, Bubble Sort, Quick Sort, Heap Sort, Search- Sequential, Binary Search.

Unit – V   (12 Hours)
File Structures and Dynamic Storage Management: File organizations -Sequential, Index sequential, direct file organization and access methods. Hashing- Hash Tables and hash functions.

Course Outcome:
CO 1:   Understand the basics of data structures.
CO 2:   Ability to analyze importance of stacks and queues.
CO 3:   Analyze basic protocols of IoT.
CO 4:   Understand the critiques of trees and graphs.
CO 5:   Acquire ideas about searching and sorting.

CO/ PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	M						M	
CO 2		H				L		
CO 3			M					H
CO 4			L			M		
CO 5					H			H

Text Books:

1. Sahni Horowitz and Anderson Freed, Fundamentals of Data Structure in C, University Press, Second Edition, and Reprint 2017.

Unit I: Chapter 1,2

Unit II: Chapter 3,4

Unit III: Chapter 5,6

Unit V: Chapter 9,10

2. Lipschutz and Pai ,Schaum's Outline Series Data Structures, Tata McGraw Hill, Reprint 2015.

Unit IV: Chapter 7 (7.1 – 7.19), Chapter 8 (8.1 to 8.9)

Reference Book:

1. Jean Paul Tremblay and Paul Anderson, An introduction to Data Structures with Applications, McGraw Hill, Second Edition, Reprint 2016.

B.Sc (Computer Science) Degree Examination – Syllabus for Candidates   admitted   from the academic year 2019 – 2020 and onwards.
THIRD   SEMESTER
PART III - CORE 4: JAVA PROGRAMMING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objectives:

1. Understand fundamentals of programming such as variables, conditional & iterative execution, methods etc.
2. Understand fundamentals of object oriented programming in Java including defining classes, invoking methods using class libraries etc.
3. Be aware of the important to pus & principles of software development.

Unit - I   (12 Hours)
Object Oriented Fundamentals And Java Revolution: Object Oriented Programming – Encapsulation – Inheritance – Polymorphism – Java Genesis – Characteristics – Java Programming Techniques – Reserved Words – Identifiers Literals – Operators – Separators – Variables – Types – Arrays – Operator Precedence.

Unit - II   (12 Hours)
Flow – Control And Classes: If – Else – Break – Switch – Return Statements – Looping – While – Do While – For – Comma Statements – Continue – Classes – Declaration – Object References – Instance Variables – New Operator – Method Declaration – Method Calling – this Operator Constructors – Methods Overloading – Inheritance – Super Class – Dynamic Method Dispatch – Final Static – Abstract Classes.

Unit - III   (12 Hours)
Packages And Interfaces: Packages – The Package Statement – Import Statement – Interface Statement – Implements Statement – Constructors – String Creation – String Concatenation – Character Extraction – Exception Handling Fundamentals – Types – Uncaught Exceptions – Nested try Statement – The Java thread Model Priorities – Synchronization – Runnable – The Synchronized on Statement -Dead Lock – Thread API Summary.

Unit - IV   (12 Hours)
Utilities & Input output: Dictionary Class – Hash Tables – String Tokenizer – Runtime – System Class – Comparison – Input and Output – File Directory – Filename Filter- File Streams

Unit - V   (12 Hours)
Applets – HTML Applet Tab – Order of Applet initialization – Sizing Graphics – Simple Graphics Method – Draw line – Draw Arc – Font Manipulation – Simple Image Loader – Image Observer – Summary.

Course Outcome:

CO 1: Identify classes, objects, members of a class and relationships among them needed for a specific problem.
CO 2: Understand the principles of inheritance, packages and interfaces
CO 3: Gain knowledge about basic Java language syntax and semantics to write Java programs and use concepts such as variables, conditional and iterative execution methods etc
CO 4: To learn how to take a problem, figure out the algorithm to solve it, the write the code.

CO 5: To learn how to produce robust programs in Java using exception handling and extensive program testing.

CO / PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1			M			L		
CO 2	L						M	
CO 3		M						L
CO 4				M		L		
CO 5		L			L		M	

Text Book:
1. Partick Naughton, "The java Hand Book", Tata McGraw Hill Publishers Company Pvt. Ltd., Reprint 2018.

    Unit 1: Chapter 2, 3, 5
    Unit 2: Chapter 6, 7
    Unit 3: Chapter 8, 9, 10, 11
    Unit 4: Chapter 12, 13
    Unit 5: Chapter 15, 16, 17

Reference Books:
1. John R.Hubbard-Schaum, Outline of Programming with Java, 3rd Edition, Tata McgrawHill, 2017.
2. Harry HariomChoudhary, Introduction to Java Programming, Comprehensive Version 2014-2015: (10th Best Selling Edition 2014 with Updated 8th Edition), HariomChoudhary, 2018.

B.Sc (Computer Science) Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.
THIRD SEMESTER
PART III - CORE 5: COMPUTER NETWORKS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To inculcate knowledge on networking concepts and technologies.

Unit- I   (12 Hours)
Computer Networks: Business Applications - Home Applications - Mobile Users - Social Issues. Network Hardware: Personal Area Networks - Local Area Networks - Metropolitan Area Networks - Wide Area Networks - Internetworks. Network Software: Protocol Hierarchies - Design Issues for the Layers - Connection-Oriented Versus Connectionless Service - Service Primitives - The Relationship of Services to Protocols. Reference Models: OSI Reference Model - TCP/IP Reference Model - Critiques.

Unit- II   (12 Hours)
Guided Transmission Media: Magnetic Media - Twisted Pairs - Coaxial Cable - Power Lines - Fiber Optics. Wireless Transmission: Radio Transmission - Microwave Transmission - Infrared Transmission - Light Transmission. Communication Satellites: Geostationary - Medium-Earth Orbit - Low-Earth Orbit - Satellites vs Fiber. Data Link Layer Design Issues: Services Provided to Network Layer - Framing - Error Control - Flow Control. Error Detection and Correction: Error-Correcting and Detecting Codes. Sliding Window Protocols: One-Bit Sliding Window Protocol - Go-Back-N - Selective Repeat.

Unit – III   (12 Hours)
Routing Algorithms: Optimality Principle - Shortest Path - Flooding - Distance Vector - Link State - Hierarchical - Broadcast - Multicast - Anycast - Routing for Mobile Hosts - Routing in Ad Hoc Networks. Congestion Control Algorithms: Approaches to Congestion Control - Traffic-Aware Routing - Admission Control - Traffic Throttling - Load Shedding. Quality of Service: Integrated Services - Differentiated Services. Internetworking: How Networks Differ and Connected - Tunneling.

Unit – IV   (12 Hours)
Transport Service: Services Provided to Upper Layers - Transport Service Primitives. Elements of Transport Protocols: Addressing - Connection Establishment - Connection Release - Error Control and Flow Control - Multiplexing - Crash Recovery. Congestion Control: Desirable Bandwidth Allocation - Regulating Sending Rate - Wireless Issues. Internet Transport Protocols: UDP - Introduction to UDP - Remote Procedure Call.

Unit – V   (12 Hours)
Domain Name System: DNS Name Space - Domain Resource Records - Name Servers. Electronic Mail: Architecture and Services - User Agent - Message Formats - Message Transfer - Final Delivery. World Wide Web: Architectural Overview - Static Web Pages - Dynamic Web Pages and Web Applications – Hyper Text Transfer Protocol - Mobile Web - Web Search. Content Delivery: Peer-to-Peer Networks

Course Outcome:
CO 1: Have a good understanding of the OSI and TCP/IP Reference Models.
CO 2: Have a basic knowledge on Transmission medium and Error Controls.
CO 3: Analyze the requirements of Routing and Congestion Control.

CO 4: Specify and identify importance of addressing and bandwidth allocation.
CO 5: Have an understanding about message transferring via web pages.

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	H						L	
CO 2		L				M		
CO 3				M			H	
CO 4			H					M
CO 5					L	H		

Text Book:

1. Andrew S. Tanenbaum, David J. Wetherall, Computer Networks Fifth Edition, Pearson Education India, Reprint 2018.
   Unit I: 1.1, 1.2, 1.3, 1.4
   Unit II: 2.2, 2.3, 2.4, 3.1, 3.2, 3.4
   Unit III: 5.2, 5.3, 5.4, 5.5
   Unit IV: 6.1, 6.2, 6.3, 6.4
   Unit V: 7.1, 7.2, 7.3, 7.5

Reference Books:
1. Networks, Crowds, and Markets: Reasoning About a Highly Connected World - David Easley and Jon Kleinberg, Cambridge University Press, Reprint - 2017.
2. Honbo Zhou, The Internet of Things in the Cloud: A Middleware Perspective, CRC Press, 2016.

B.Sc Computer Science Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.
THIRD SEMESTER
PART III - CORE LAB 3: JAVA PROGRAMMING LAB

Maximum CIA: 40
Maximum CE: 60
Total Hours: 60

Course Objective:
To implant knowledge by implementing various techniques in Java programming.

1. Write a java program to find the number of odd, even and prime numbers.

2. Write a java program to display Floyd's triangle up to the given limit.

3. Write a java program to (i)display the number in reverse order (ii) find the sum of the digits.

4. Write a java program to count the number of vowels in the given string.

5. Write a java program to arrange the given set of names in alphabetical order.

6. Write a java program to find matrix multiplication for the given numbers.

7. Write a java program to perform stack operation using Interface.

8. Write a java program to display any two subject marks and sports marks of the student and find the total marks using Interface.

9. Write a java program to handle different Exceptions.

10. Write a java program for i) assigning thread priority ii) executing thread methods yield(), stop() and sleep().

11. Write a java program for traffic light simulation using Applet.

12. Write a java program using File to get the string and display it using Byte stream classes.

Course Outcome:
CO 1: Learn the Internet Programming, using Java Applets.
CO 2: Apply event handling on AWT and Swing components.
CO 3: Create a full set of UI widgets and other components, including windows, menus, buttons, checkboxes, text fields, scrollbars and scrolling lists, using Abstract Windowing Toolkit (AWT) & Swings
CO 4: An ability to use current techniques, skills, and tools necessary for computing practice.
CO 5: To learn how to produce robust programs in Java using exception handling and extensive program testing.

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1					M	L		
CO 2	M						M	
CO 3		M					M	
CO 4				L		H		
CO 5			L					L

B.Sc (Computer Science) Degree Examination – Syllabus for Candidates admitted   from the academic year 2019 – 2020 and onwards.
THIRD SEMESTER
PART IV - SBC I: MULTIMEDIA LAB

Maximum CE: 75
Total Hours: 36

Course Objective:

To impart knowledge on Photoshop & Corel Draw programming

1. Design a 'Housewarming Invitation Card' using Photoshop.

2. Design a 'Competition Winner's Certificate' using Photoshop.

3. Design a 'Visiting Card' using Photoshop.

4. Design a 'Poster for an Intercollegiate Meet' using Photoshop.

5. Design an 'Advertisement Banner for a Company' using Photoshop.

6. Perform a wrapping of images.

7. Perform 'Photo Editing' using Corel Draw.

8. Design a 'Playground Layout' using CorelDraw.

9. Design the 'National Flag of Various Countries'. (ANY 5).

10. Design 'Your Own Car' using Corel Draw.

11. Design a 'Flex Board for an Occasion' using Corel Draw.

12. Design a 'Broucher' using Corel Draw.

Course Outcome:
CO 1: Developed understanding of technical aspect of Multimedia Systems.
CO 2: Understand various file formats for audio, video and text media
CO 3: Develop various Multimedia Systems applicable in real time.
CO 4: Design interactive multimedia software.
CO 5: Apply various networking protocols for multimedia applications.

CO /PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	M						M	
CO 2		H				M		
CO 3				M				H
CO 4			L			M		
CO 5					H		L	

B.Sc (Computer Science) Degree Examination-Syllabus for candidates admitted from 2019 – 2020 and onwards
THIRD SEMESTER
PART IV- SBC I : PYTHON LAB

Maximum CE:75
Total Hours: 36

Course Objective:

To inculcate the knowledge of computer fundamentals and python programming.

1. Write the python program to convert decimal to binary.

2. Write a python program to print all numbers in a range divisible by a given number.

3. Write a python program to perform matrix multiplication using nested loop.

4. Write a python program to find all the values in a list are greater than a specified number.

5. Write the python code to check whether the given number is palindrome number or not.

6. Write a python program to split a list based on first character of word.

7. Write a python program to generate a bar chart and pie chart for the given data.

8. Write a python program to draw simple shapes.

9. Write a python program to append, delete and display elements of a list using classes

10. Write the python code to make simple calculator using classes.

11. Write a python program to read a string from the user and append it into a file.

12. Write a python program to count the occurrences of a word in a text file.

Course Outcome:
CO 1: Describe the Numbers, Math functions, Strings, List, Tuples and Dictionaries in Python
CO 2: Express different Decision Making statements and Functions
CO 3: Interpret Object oriented programming in Python
CO 4: Understand and summarize different File handling operations
CO 5: Explain how to design GUI Applications in Python and evaluate different database operations

CO /PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	M						M	
CO 2		H				M		
CO 3				M				H
CO 4			L			M		
CO 5					H		L	

B.Sc (Computer Science) Degree Examination-Syllabus for Candidates admitted from the academic year 2019 – 2020 and onwards.
FOURTH SEMESTER
PART III - CORE 6: DATABASE MANAGEMENT SYSTEM

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:

The objective of the course is to present an introduction to database management systems, with an emphasis on how to organize, maintain efficiently and effectively searching information from database.

Unit - I   (12 Hours)
Introduction: Database-System Applications - Purpose of Database Systems - View of Data - Database Languages - Database Design - Database Engine - Database and Application Architecture - Database Users and Administrators. Introduction to the Relational Model: Structure of Relational Databases - Database Schema - Keys - Schema Diagrams - Relational Query Languages - The Relational Algebra.

Unit – II   (12 Hours)
DATABASE DESIGN: Database Design Using the E-R Model: Overview of the Design Process - The Entity-Relationship Model - Complex Attributes - Mapping Cardinalities - Primary Key - Removing Redundant Attributes in Entity - Sets - Reducing E-R Diagrams to Relational Schemas - Extended E-R Features - Entity-Relationship Design Issues - Alternative Notations for Modeling - Data - Other Aspects of Database Design.

Unit - III   (12 Hours)
Relational Database Design: Features of Good Relational Designs - Decomposition Using Functional Dependencies - Normal Forms - Functional-Dependency Theory - Algorithms for Decomposition Using Functional Dependencies - Decomposition Using Multivalued Dependencies - More Normal Forms - Atomic Domains and First Normal - Form - Database-Design Process - Modeling Temporal Data.

Unit - IV   (12 Hours)
Introduction to SQL: Overview of the SQL Query Language - SQL Data Definition 66 - Basic Structure of SQL Queries - Additional Basic Operations - Set Operations - Null Values - Aggregate Functions - Nested Subqueries - Modification of the Database. Intermediate SQL: Join Expressions - Views - Transactions - Integrity Constraints - SQL Data Types and Schemas - Index Definition in SQL – Authorization.
.
Unit - V   (12 Hours)
Advanced SQL: Accessing SQL from a Programming - Language - Functions and Procedures - Triggers - Recursive Queries - Advanced Aggregation Features.

Course Outcome:
CO 1: Describe the fundamental elements of relational database management systems
CO 2: Explain the basic concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQL.
CO 3: Design ER-models to represent simple database application scenarios
CO 4: Convert the ER-model to relational tables, populate relational database and formulate SQL queries on data.
CO 5: Improve the database design by normalization.

CO /PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	M			L				H
CO 2		L				M		
CO 3			M				M	
CO 4	L				M			L
CO 5		H				M		

Text Book:

1. Abraham Silberschatz, Henry F. Korth, S.Sudarshan, Database System Concepts –Mc-Graw Hill Education, Seventh Edition, 2020.
    Unit 1: Chapter 1 (1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8) Chapter 2 (2.1, 2.2, 2.3, 2.4, 2.5, 2.6)
    Unit 2: Chapter 6 (6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, 6.9, 6.10, 6.11)
    Unit 3: Chapter 7 (7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 7.10)
    Unit 4: Chapter 3 (3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9)
            Chapter 4 (4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7)
    Unit 5: Chapter 5 (5.1, 5.2, 5.3, 5.4, 5.5, 5.6)

Reference Books:
    1. Rajesh Narang, Database Management Systems , PHI – Publisher, Reprint 2017.
    2. Pranab Kumar Das Gupta, P. Radha Krishna, Database Management System Oracle Sql and Pl/Sql, PHI Learning pvt. ltd., Reprint 2016.
    3. Nilesh Shah, Database Systems Using Oracle- PHI- Publisher, Second Edition , Reprint 2018.

B.Sc (Computer Science) Degree Examination Syllabus for candidates admitted from the academic year 2019-2020 and onwards.

FOURTH SEMESTER
PART III - CORE 7: PHP PROGRAMMING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To inculcate the students to learn the concept of PHP.

Unit - I   (12 Hours)
Building blocks of php - variables - data types - operators and expressions - constants – flow control functions in php switching flow - loops - working with functions : calling functions - defining a function - returning values from user-defined functions - variable scope - more about arguments.

Unit- II   (12 Hours)
Working with arrays - creating arrays - some array related functions - working with objects: creating an object - object inheritance - working with strings, dates, and time formatting strings with php - investigating strings in php - manipulating strings with php - using date and time functions in php - other string, date, and time functions - working with forms - creating a simple input form - accessing form input with user-defined arrays - combining html and php code on a single page - using hidden fields to save state - redirecting the user - sending mail on form submission - working with file uploads.

Unit – III   (12 Hours)
Working with cookies and user sessions introducing cookies - setting a cookie with php - deleting a cookie with php - session function overview - starting a session - working with session - passing session ids in the query string - destroying sessions and unsetting variables - using sessions in an environment with registered users - working with files and directories including files with include( ) - validating files - creating and deleting files - opening a file for writing, reading, or appending - reading from files - writing or appending to a file . Working with directories - opening pipes to and from processes using popen( ) - running commands with exec( ) - running commands with system( ) or passthru( ).

Unit – IV   (12 Hours)
Working With Images Understanding The Image-Creation Process - Necessary Modifications To Php - Drawing A New Image - Getting Fancy With Pie Charts - Modifying Existing Images - Image Creation From User Input   - Using Images Created By Scripts – Basic Sql Commands - Mysql Data Types - Table Creation Syntax - Using The Insert Command - Select Command - Using Where In Your Queries - Selecting From Multiple Tables - Using The Update Command To Modify Records - Using The Replace Command - Using The Delete Command - Frequently Used String Functions In Mysql - Using Date And Time Functions In Mysql .

Unit – V   (12 Hours)
Interacting with mysql using php: connecting to mysql with php - working with mysql data. Creating a simple discussion forum:designing the database tables ,creating an include file for common functions ,creating the input forms and scripts . Creating an online storefront :planning and creating the database tables displaying categories of items.

Course Outcome:
CO 1: Ability to write PHP scripts to handle HTML forms.
CO 2: Ability to write regular expressions including modifiers, operators, and meta characters.
CO 3: Ability to create PHP programs that use various PHP library functions, and that manipulate files and directories.
CO 4: Analyze and solve common Web application tasks by writing PHP programs.
CO 5: Creating tables, basic commands and Connection in Sql.

CO /PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	M							H
CO 2		H				H		
CO 3				H			H	
CO 4			M			L		
CO 5					M			M

Text Book:
1. Julie C. Meloni, PHP MYSQL and APACHE, Pearson Education, India, Reprint 2018.
   Unit I: chapter 5,6,7
   Unit II: chapter 8,9,10,11
   Unit III: chapter 12,13
   Unit IV: chapter 14,16
   Unit V: chapter 18,21.

Reference Books:
1. Luke Welling, Laura Thomson, PHP and MYSQL, Pearson Education, India,reprint 2017.
2. Kevin Tatroe, Peter MacIntyre, RasmusLerdorf, Programming PHP, O'Reilly Media, Inc.,reprint 2015.

B.Sc (Computer Science) Degree Examination Syllabus for candidates admitted   from the academic year 2019– 2020 and onwards.
FOURTH SEMESTER
PART III - CORE 8: OPERATING SYSTEMS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To inculcate knowledge on the Evolution of Operating Systems and its Dedicated Services a Resource Manager, managing, Process, Memory, Information and Security Mechanisms.

Unit-I   (12 Hours)
Introduction to operating systems: what operating systems do-operating system architecture-resource management –security and protection-kernel data structures-free and open source operating systems-operating system structure: monolithic structure-layered approach-micro kernels-modules-hybrid systems. Building and booting an operating system- operating-system generation- system boot.

Unit-II   (12 Hours)
Process management: process concept-process scheduling-operations on processes-inter process communications-CPU scheduling: basic concepts- CPU–I/O burst cycle- CPU scheduler- preemptive and nonpreemptive scheduling- dispatcher- scheduling criteria- scheduling algorithms- first-come, first-served scheduling- shortest-job-first scheduling- round-robin scheduling- priority scheduling- multilevel queue scheduling- multilevel feedback queue scheduling- thread scheduling-multi-processor scheduling- real-time CPU scheduling

Unit-III   (12 Hours)
Process synchronization: the critical-section problem- hardware support for synchronization- semaphores- monitors- liveness- evaluation- deadlocks: system model- deadlock in multithreaded applications- deadlock characterization- methods for handling deadlocks- deadlock prevention- deadlock avoidance- deadlock detection- recovery from deadlock- main memory: contiguous memory allocation- paging- swapping- virtual memory: demand paging- copy-on-write- page replacement- allocation of frames- memory compression- allocating kernel memory
.
Unit-IV   (12 Hours)
File –system implementation: file-system structure- file-system operations- directory implementation- allocation methods- free-space management- performance-storage management: overview of mass-storage structure- hdd scheduling- nvm scheduling- error detection and correction- storage device management-storage attachment.

Unit-V   (12 Hours)
Security and protection: the security problem- program threats- system and network threats- cryptography as a security tool- encryption- user authentication- passwords- password vulnerabilities- securing passwords- one-time passwords- protection: goals of protection- principles of protection- protection rings- domain of protection.

Course Outcome:
CO 1: Analyze to the fundamental components of a computer operating system.
CO 2: Have a basic knowledge the policies for scheduling, process managements
CO 3: Specify   and   identify   importance   of   a   Dead   lock ,main   memory,   Process Synchronization
CO 4: Have a basic knowledge on file structure and storage management.
CO 5: Analyze the Security and Protection and password authentication.

CO /PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1		M				M		
CO 2	H					M		
CO 3			M					H
CO 4					L	M		
CO 5				H			L	

Text Book:
1. Abraham-Silberschatz, Peter Baer Galvin, Greg Gagne, Operating Systems concepts, 10thEdition, 2018.
   Unit 1: Chapter 1 and 2.
   Unit 2: Chapter 3.
   Unit 3: Chapter 7 and 8.
   Unit 4 : Chapter 14.
   Unit 5 : Chapter 16.

Reference Books:
1. H.M. Deital, Operating Systems, Addison-Wesley Publishing Company, III Edition Pearson Publication reprint 2017.
2. William Stallings, Operating System – Internals and Design Principles, VI Edition, Pearson Education reprint 2017.

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FOURTH SEMESTER
PART III - CORE LAB 4: PHP PROGRAMMING LAB

Maximum CIA: 40
Maximum CE: 60
Total Hours: 60

Course Objective:

> To import knowledge on PHP programming.

1. Program to generate the multiplication of two matrices.
2. Program to change background color based on day of the week using if else and else if statements.
3. Program to perform the user registration form using HTML tags
4. Program to create random text link advertising using predefined arrays.
5. Program for String manipulations and searching.
6. Program for displaying last updated date and time of the file.
7. Program to check the user login.
8. Program for file creation and displaying the contents of the file.
9. Program to fetch, modify, delete Rows in a Table.
10. Program to prepare the student marks list using PHP and MySQL
11. Program for billing system in supermarket using PHP and MySQL.
12. Program for storing Employee Details using a PHP script and MySQL.

Course Outcome:
CO 1: Ability to write PHP code to produce outcomes and solve problems.
CO 2: Ability to display and insert data using PHP and MySQL.
CO 3: Test, debug, and deploy web pages containing PHP and MySQL.
CO 4: Ability to write regular expressions including modifiers, operators, and metacharacters.
CO 5: Receive capability to connect PHP with MySQL

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	M					M		
CO 2				H				M
CO 3		L					H	
CO 4					M	H		
CO 5			M				M	

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FOURTH SEMESTER
PART IV - SBC II : LINUX LAB

Maximum CE: 75
Total Hours: 36

Course Objective:

To write shell script programs to solve problems as well as to implement some standard Linux utilities using system calls.

1. Write a shell script to check and list attributes of processes.

2. Write a Shell scripts to perform various operations on given strings.

3. Write a shell script that displays a list of all the files in the current directory

4. Write a Shell scripts to explore system variables such as PATH, HOME etc.

5. Write a shell script to find the factorial of given integer.

6. Write a shell script that list the all files in a directory.

7. Write a awk script to find the number of characters, words and lines in a file.

8. Write a shell script to display list of users currently logged in.

9. Write a shell script to delete all the temporary files.

10. Write a shell script to search an element from an array using binary searching.

11. Write a shell script for basic arithmetic and logical calculations.

12. Write a shell script to find the sum of given number.

Course Outcome:
CO 1: Understanding the basic set of commands and utilities in Linux systems.
CO 2: To learn to develop software for Linux systems.
CO 3: To learn the important Linux library functions and system calls.
CO 4: To understand the inner workings of LINUX-like operating systems.
CO 5: To obtain a foundation for an advanced course in operating systems.

CO /PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1		M				H		
CO 2	L						M	
CO 3			M					L
CO 4					L	M		
CO 5				L			H	

B.Sc Computer Science Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

FOURTH SEMESTER

PART IV – SBC II: ORACLE LAB

Maximum CE: 75
Total Hours: 36

Course Objective:

The major objective of this lab is to provide a strong formal foundation in database concepts, technology and practice to the participants to groom them into well-informed database application developers.

1. Write the queries for Data Manipulation and Data Definition Language.

2. Write SQL queries using logical operations and operators.

3. Write SQL query using group by function.

4. Write SQL queries for group functions.

5. Write SQL queries for sub queries, nested queries.

6. Write a PL/SQL program to compute factorial.

7. Write SQL queries to create views.

8. Write an SQL query to implement JOINS.

9. Write a query for extracting data from more than one table.

10. Write a query to understand the concepts for ROLL BACK, COMMIT & CHECK POINTS.

11. Write a PL/SQL program to return the grade of the student.

12. Write a PL/SQL program to retrieve the records of the employee.

Course Outcome:

CO 1: Read/write SQL Queries Using Embedding Operators - Write and read (understand) SQL queries using sub queries embedded using embedding operators (IN, NOT IN, EXISTS, NOT EXISTS, ALL, ANY, SOME).

CO 2: Read/write SQL Queries with GROUP BY - Write and read (understand) SQL queries using the GROUP BY clause.
Read/write Simple SQL Queries With HAVING - Write and read (understand) SQL queries using the GROUP BY and HAVING clauses.

CO 3: Eliminate HAVING Clause - Translate an SQL query using the GROUP BY and HAVING clauses into an equivalent query without the HAVING clause.

CO 4: To develop PL/SQL Programs

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1		L				M	L	
CO 2				M				M
CO 3		L				M		
CO 4	M				L		M	
CO 5			M			L		

B.Sc Computer Science Degree Examination – Syllabus – for candidates admitted from the Academic Year 2019 – 2020 and Onwards

THIRD SEMESTER
PART III: ALC I: MANAGEMENT INFORMATION SYSTEM

Maximum CE: 100

Course Objective:
    To inculcate knowledge on managing different information systems.

Unit-I
Foundation Concepts : Information System in Business – What is an Information System?-The Major Area of IS – Roles of IS in Business-Trends in IS – The Role of E- Business in Business - Types of Information Systems. Managerial Challenges of Information Technology – The Components of Information Systems.- Activities. Computer Hardware : History of Computer Hardware – Types of Computer Systems – Computer Peripherals- Input ,Output technologies- Storage Technologies.

Unit-II
 Computer software: Application Software – Introduction – Types of Software – Business Application Software- Software Suites and Integrated Packages – Web Browsers- Email- Instant Messaging – Weblogs- Word Processor – Spreadsheets- Presentations – Personal Information Managers – Groupware. Operating Systems: Functions – Microsoft Windows- Unix – Linux- Open source Software-Mac Os X. Programming Languages : Machine Languages- Assembler Languages- High level Languages- Fourth Generation Languages – Object Oriented Languages – Web Languages.

Unit - III
Database Management : Fundamental Data Concepts- Structures-Database Development- Managing Data Resources: Data Resource Management – Types of Database- Data ware housing and Data mining- Traditional File Processing. The Network Enterprise : Concept-Trends in Telecommunications-The Internet Revolution-The Role of Intranets- Role of Extranets- Types of Telecommunication Networks –Wire and Wireless Technologies-Telecommunication Processors-Telecommunication Software

Unit- IV
Business Applications : E-Business Systems- Functional Business systems Enterprise Business Systems : CRM- Phases of CRM – Benefits and Challenges of CRM – Trends- ERP- Benefits and Challenges of ERP- Trends

Unit- V
Electronic Commerce Systems : Fundamentals – E-Commerce Applications and Issues. Decision Support Systems : Introduction – Deciaion support in Business- Artificail Intelligence Technologies in Business.

Course Outcome
CO 1: Understand and apply the fundamental concepts of Information Systems.
CO 2: Develop the knowledge about the management of Information Systems.
CO 3: Interpret and recommend the use of information technology to solve business problems.
CO 4: Apply the framework and process for aligning organizations IT objectives with business
       strategies.
CO 5: The students will be able to predict the importance of applications using information systems.

CO/ PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	L						M	
CO 2		M				L		
CO 3				L				H
CO 4			H			L		
CO 5					L			H

Text Book:
1. James A O'Brien, George Marakas, Ramesh BehI, "Management Information Systems", Tata McGraw Hill, 9th Edition – Reprint 2019.

Reference Book:
1. Effy OZ, " Management Information system", India Edition – 5th edition – Reprint 2017

B.Sc Computer Science Degree Examination – Syllabus – for candidates admitted from the Academic Year 2019 – 2020 and Onwards

FOURTH SEMESTER
PART III: ALC II: HTML

Maximum CE: 100

Courses Objective: Enabling students to acquire theoretical and practical knowledge to be successful in internet and web designing using HTML.

Unit-I
Introduction: HTML, XML, and the World Wide Web. HTML: Basic HTML – The Document Body – Text – Hyperlinks – Adding More Formatting – Lists – Tables – Using Color and Images – Images.

Unit-II
More HTML: Multimedia Objects – Frames – Forms – Toward Interactivity – The HTML Document Head in Detail – XHTML – An Evolutionary Markup. Cascading Stylesheets: Introduction – Using Styles – Defining Your own Styles – Properties and Values in Styles – Stylesheets – A Worked example – Formatting Blocks of Information.

Unit-III
An Introduction to Java Script: What is Dynamic HTML? JavaScript – JavaScript – The Basics - Variables – String Manipulation – Mathematical Functions – Statements – Operators – Arrays - Functions

Unit-IV
Objects in JavaScript: Data and Objects in JavaScript – Regular Expression – Exception Handling – Bulitin objects – Events.

Unit-V
Dynamic HTML with JavaScript: Data Validation – Opening New Window – Messages and Confirmations – The Status Bar – Writing to Different Frame – Rollover Buttons – Moving Images – Multiple Pages in a Single Download – A Text-only Menu System – Floating Logos.

Course Outcome:
- CO 1: Design a basic website using HTML and CSS to demonstrate the responsive web design.
- CO 2: Implement the dynamic web page with validation using Javascript objects by applying different event handling mechanism.
- CO 3: Understand the principles of creating an effective web page, including an in-depth consideration of information architecture.
- CO 4: Learn techniques of responsive web design, including media queries.
- CO 5: Able to embed social media content into web pages.

CO/ PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	M						M	
CO 2		M				H		
CO 3				L				H
CO 4			H			H		
CO 5					M			L

Text Books:

1. Charis Bates, "Web Pragramming Building Internet Applications", Wiley India Pvt. Ltd. Second Edition, Reprint 2018
2. Jon Duckett , Beginning Web Programming with HTML, XHTML, and CSS, Wiley Publishing Inc,US, Reprint 2016,

Reference Book:

1. Elisabeth Robson, Eric Freeman Head First HTML and CSS, 2nd edition O'Reilly Media Inc.,Canada, 2012.

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

THIRD SEMESTER

CERTIFICATE COURSE- OFFICE AUTOMATION

Total Hours: 30

Course Objective:

To inculcate knowledge on computer fundamentals and office automation tools.

Unit-I   (6 Hours)

Overview Of Computers And Programming - Electronic Computer Then And Now-Computer Hardware–Computer Software – Binary Systems - Digital Computers And Digital Systems, Binary Numbers, Number Base Conversion, Octal And Hexadecimal Numbers.

Unit-II   (6 Hours)

MS Word: Creating A New Document- Finding And Replacing Formatting-Checking Spelling And Grammar-Adding Headers And Footers-Arranging Text In Columns-Inserting A Table Of Contents-Creating A Table-Modifying And Formatting A Table-Creating A Form Letter.

Unit-III   (6 Hours)

MS Excel: Creating A Simple Formula-Editing A Formula-Performing Calculation Using Functions-Creating A Chart-Editing A Chart-Creating A List-Sorting Data In List- Inserting Page Breaks-Printing Worksheets.

Unit-IV   (6 Hours)

MS Power Point: Creating A New Presentation- Choosing A Template-Adding Action Buttons-Creating Slide Transitions-Adding Animation-Timing A Presentation-Setting Up A Slide Show-Creating A Custom Slide Show-Printing A Presentation.

Unit-V   (6 Hours)

MS Access: Creating A Database-Working With A Table-Creating Table Using A Wizard-Working With a Table In Design View-Specifying Data Types And Field Properties-Planning And Defining Table Relationships-Filtering Out Records-Creating A Query Using A Wizard-Creating A Form Using Wizard.

Text Books:

1.M.Morris Mano, Computer System Architecture , 3rd Edition , Pearson Prentice

   Hall, First Impression , 2007.

<p style="text-align:center">Unit I: Chapter 1 (1.1, 1.2, 1.3, 1.5-1.9) Chapter 2(2.1-2.4)</p>

2. Microsoft Office Xp Simply Visual Perspection, Inc. Edition 2001.

   Unit II: Chapter 4 (4.2,4.8,4.11) Chapter 6(6.5,6.6,6.7,6.10)

   Unit III: Chapter 8 (8.1-8.5, 8.11,8.12,8.14)

   Unit IV: Chapter 9 (9.1-9.3) Chapter 10(10.2-10.10)

   Unit V: Chapter 11 (11.1, 11.2, 11.6-11.11) Chapter 12(12.1,12.3,12.9)

Reference Book:

1. Fundamentals Of Computers by E Balagurusamy Published by Tata Mcgraw Hill Publishing Co Ltd, Reprint -2018.

THIRD SEMESTER

CERTIFICATE COURSE – BASICS OF WEB DESIGN

Total Hours: 30

Course Objective:

Enabling students to acquire knowledge in internet and web designing using HTML and CSS.

Unit - I   (6 Hours)

Introduction: Getting Started - What is Web Publishing? – Getting your Tools in Order – Introducing HTML and CSS – Creating Web Pages – Learning the Basics of HTML – Organizing Information with Lists – Working with Links.

Unit – II   (6 Hours)

Doing more with HTML and CSS: Formatting Text with HTML & CSS – Using CSS to Style a Site – Using Images on Your Web Pages – Building Tables – Using CSS to position Elements on the page

Unit – III   (6 Hours)

Designing Forms – Structuring a Page with HTML5 – Integrating Multimedia: Video and Sound – Advanced CSS: Page Layout in CSS – Using Responsive Web Design

Unit – IV   (6 Hours)

Using JavaScript and JQuery: Introducing JavaScript – Using jQuery – Using JavaScript in Your Pages – Working with Frames and Linked Windows

Unit – V   (6 Hours)

Designing for Everyone: Designing for the Mobile Web – Designing for User Experience.   Going Live on the Web : How to Publish Your Site – Taking Advantage of the Server – Search Engines and SEO.

Text Book:

1. Laura Lemay, Rafe Colburn, Jennifer Kyrnin – Sams Teach Yourself HTML, CSS & JavaScript Web Publishing in One Hour a Day, Seventh Edition, Pearson Education, 2016.

Reference Book:

1. Elizabeth Castro, Bruce Hyslop – HTML5 and CSS3, Seventh Edition, 2012

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

THIRD SEMESTER

CERTIFICATE COURSE – BASICS OF ANIMATION TECHNIQUE

Total Hours: 30

Course Objective:
 The objective of this subject is to teach the principles of how different types of media can be processed and presented by computers.

Unit - I (6 Hours)
Multimedia- An Overview: Introduction – Characteristics of Multimedia – Uses of Multimedia – Analog and Digital Representations – Visual Display Systems. Text: Introduction - Types of Text – Unicode Standard – Font – Insertion of Text – Text Compression – Text File Formats.

Unit– II (6 Hours)
Image: Introduction – Image Data Representation – Image Acquisition – Image Processing – Binary Image Processing – Grayscale Image Processing – Color Image Processing - Image File Formats.

Unit - III (6 Hours)
Graphics: Introduction – Uses of Graphics – 2D Transformations - 3D Transformations - Graphics File Formats – Graphics Software.

Unit - IV (6 Hours)
Audio: Introduction - Types and Properties of Sounds – Digital Audio - Digital Audio Processing – Audio Transmission - Audio File Formats.
Video: Introduction – Digital Video - Digital Video Processing – Video File Formats.

Unit - V (6 Hours)
Animation: Introduction – Uses of Animation – Principles of Animation - 3D Animation - Animation File Formats – Animation Software.

 Text Book:
 1.Ranjan Parekh, Principles of Multimedia, Tata McGraw Hill Education Private Limited - Second Edition, Reprint 2019.
  Unit 1: Chapter 1 (1.1, 1.3, 1.5, 1.6, 1.10) Chapter 2 (2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7)

  Unit 2: Chapter 3 (3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7)

  Unit 3: Chapter 4 (4.1, 4.3, 4.6, 4.25, 4.29, 4.32)

  Unit 4: Chapter 5 (5.1, 5.4, 5.7, 5.10, 5.13, 5.14) Chapter 6 (6.1, 6.7, 6.8, 6.10)

  Unit 5: Chapter 7 (7.1, 7.3, 7.5, 7.8, 7.10, 7.11)

Reference Book:
 1. Ashok Banerji, Ananda Mohan Ghosh, Multimedia Technologies, McGraw Hill Publication.

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

FOURTH SEMESTER

CERTIFICATE COURSE – LINUX OS

Total Hours: 30

Course Objective:

To enable the student to understand the importance of Linux Operating System and its commands.

Unit- I   (6 Hours)

Linux Software Architecture: Device Driver Layer - Linux Kernel - Process Management - File Management - Main Memory Management - Disk Management - System Call Interface - Language Libraries - Linux Shell – Applications - Historical Development of the Linux Operating System - Beginnings - History of Shells - Future Developments - Basic Comparison of Linux System Distributions - Linux System Standardization.

Unit- II   (6 Hours)

Structure of a Linux Command - Logging On and Logging Off - Stand Alone Login Connection to Linux - Graphical Login and Logout Procedures - Connecting via PuTTY from a Microsoft Windows Computer - Login and Logout Procedures - Connecting via an SSH Client between Linux Machines - Login and Logout Procedures - File Maintenance Commands and Help on Linux Command Usage - File and Directory Structure - Viewing the Contents of Files - Creating, Deleting, Managing - Directories.

Unit- III   (6 Hours)

Files and File System structure - Introduction - Linux File Concept - Types of Files - Simple/Ordinary File - Directory - Link File - Special (Device) File - Named Pipe (FIFO) - Socket - File System Structure - File System Organization- Home and Present Working Directories - Pathnames - Absolute and Relative - Some Standard Directories and Files - Standard Files and File Descriptors - File System - Displaying Disk Usage of Files and Directories - End-of-File Marker.

Unit- IV   (6 Hours)

File Security - Introduction - Password Based Protection - Encryption Based Protection - Protection Based on Access Permission - Types of Users - Types of File Operations/Access Permissions - Access Permissions for Directories - Determining and Changing File Access Privileges - Determining File Access Privileges - Changing File Access Privileges - Access Privileges for Directories - Default File Access Privileges - Special Access Bits - SUID Bit - SGID Bit - Sticky Bit.

Unit- V   (6 Hours)

Advanced File Processing - Sorting Files - Searching for Commands and Files - Regular Expressions - Searching Files - Cutting and Pasting - Compressing Files - gzip Command - gunzip Command -

gzexe Command - zcat and zmore Commands - gzip, bzip2, and xz Commands - Encoding and Decoding - File Encryption and Decryption.

Text Book:

1. Syed Mansoor Sarwar, Robert M. Koretsky, Linux The Textbook, Second Edition, CRC Press, 2019.

    Unit I: Chapter 1 (1.7, 1.8, 1.9)

    Unit II: Chapter 2 (2.3, 2.4)

    Unit III: Chapter 3 (4.1, 4.2, 4.3, 4.4, 4.6, 4.7, 4.8)

    Unit IV: Chapter 5 (5.1, 5.2, 5.3, 5.4, 5.5, 5.6)

    Unit V: Chapter 7 (7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9)

Reference Books:

1. Oliver Pelz, Fundamentals of Linux: Explore the essentials of the Linux command line, Packt Publishing, 2018
2. Jason Cannon, Linux for Beginners: An Introduction to the Linux Operating System, CreateSpace Independent Publishing Platform, 2017

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

FOURTH SEMESTER
CERTIFICATE COURSE – DTP

Total Hours: 30

Course Objective:

    To inculcate knowledge on computer fundamentals and office automation tools.

Unit-I   (6 Hours)

Overview Of Desktop Publishing - Document organization-Word Processing Tools, New toys Ends– Body Type – Setting up your text – Display Type, Styles, Graphics-File Formats, Sources of Graphics,OLE,DDL,Formatting Graphics, Fonts and Printers.

Unit-II   (6 Hours)

MS Word: Creating A New Document- Finding And Replacing Formatting-Checking Spelling And Grammar-Adding Headers And Footers-Arranging Text In Columns-Inserting A Table Of Contents-Creating A Table-Modifying And Formatting A Table-Creating A Form Letter.

Unit- III   (6 Hours)

MS Excel: Creating A Simple Formula-Editing A Formula-Performing Calculation Using Functions-Creating A Chart-Editing A Chart-Creating A List-Sorting Data In List- Inserting Page Breaks-Printing Worksheets.

Unit-IV   (6 Hours)

MS Power Point: Creating A New Presentation- Choosing A Template-Adding Action Buttons-Creating Slide Transitions-Adding Animation-Timing A Presentation-Setting Up A Slide Show-Creating A Custom Slide Show-Printing A Presentation.

Unit-V   (6 Hours)

MS Access: Creating A Database-Working With A Table-Creating Table Using A Wizard-Working With a Table In Design View-Specifying Data Types And Field Properties-Planning And Defining Table Relationships-Filtering Out Records-Creating A Query Using A Wizard-Creating A Form Using Wizard-Editing Data In A Form-Creating Report Using A Wizard. Creating Web Pages with Office XP Programs: Designing Web Pages-Opening Web Pages –CreatingWeb Pages- Inserting Hyperlinks-Removing Hyperlinks-Enhancing Web Pages-Publishing Web Pages.

Text Books:

1. Tom Lichty version 2.0 Desktop Publishing with Word for windows.Ventana Press.
       Unit I: Chapter 1 (1.1, 1.2, 1.3, 1.5,1.6, 1.8,1.9)
2. Microsoft Office Xp Simply Visual Perspection, Inc. Edition 2001.
       Unit II: Chapter 4 (4.2,4.8,4.11) Chapter 6(6.5,6.6,6.7,6.10)
       Unit III: Chapter 8 (8.1-8.5, 8.11,8.12,8.14)
       Unit IV: Chapter 9 (9.1-9.3) Chapter 10(10.2-10.10)
       Unit V: Chapter 11 (11.1, 11.2, 11.6-11.11) Chapter 12(12.1,12.3,12.9)

Reference Book:

1. Learning Desktop Publishing by Ramesh Bingia Published by khanna Publishing Co Ltd-2016.

All UG Degree Examination - Syllabus for candidates admitted from the Academic Year 2019 – 2020 onwards

FOURTH SEMESTER

CERTIFICATE COURSE – PC HARDWARE

Total: 30 Hours

Course Objective:

To equips students with basic knowledge in PC and its various devices.

Unit – I   (6 Hours)

Introduction to world of computers: What is a Computer and What does it do?-Computers to fit every need – Computer Networks and Internet – Computers and Society.

Unit – II   (6 Hours)

The System Unit: Overview-Data and Program Representation – Inside System Unit –How the CPU works – Making computers faster and better and in future

Unit – III   (6 Hours)

Storage –Overview – Storage System Characteristics – Magnetic Disk Systems – Optical Disc Systems- Flash Memory – Other types of storage systems

Unit – IV   (6 Hours)

Input and Output: Overview – Keyboards-Pointing Devices – Scanners, Readers and Digital Cameras –Audio Input – Display Devices – Printers – Audio Output

Unit – V   (6 Hours)

System Software: System Software vs Application Software – OS-OS for Desktop PCs and Severs – OS for Handheld PCs and other Devices – OS for Larger Computers-Utiliy Programs – Future of OS.

Text Book:

1. Morley & Parker, Fundamentals of Computers, Cengage Learning, Reprint 2014.

Reference Book:

1. Scott Mueller, Upgrading and Repairing PCs –, 20th Edition, Pearson Publishing, Second Impression 2014.

VLB JANAKIAMMAL COLLEGE OF ARTS AND SCIENCE
DEPARTMENT OF IT & CT
Regulations for B.Sc IT and CT
(Effective from the academic year 2019-2020 onwards)

Introduction:

The Department of IT and CT started the UG Programme in B.Sc IT in 2007 and B.Sc CT in 2008.

Objective:

The courses, Bachelor of Science in Information Technology and Computer Technology, is designed to produce employable graduate in Information technology, which will enable to bridge the gap between industry and graduates to turn successful in Information and Computer Technology field.

Eligibility: UG Programme

A pass in Higher Secondary Examination conducted by Tamilnadu or an equivalent examination,

Duration of UG Programme

The course shall extend over a period of three years comprising of six semesters, with two semesters per year. There shall not be less than ninety instructional days during each semester. Examination shall be conducted at the end of each semester for the respective subject.

Vision

- To inculcate Information and Computer Technology knowledge that meets the challenges in IT trends
- To render excellence in teaching and learning in order to achieve success in all their endeavors

Mission:

- Teaching variety of computer Courses/ Programming Languages using current technology, giving students hands on experience
- Enhance the skill sets of students through updation of curriculum based guidelines

Programme Outcome:

After the completion of the under graduate programme in Bachelor of Science (B.Sc Degree), the graduates will be able to

PO1: Attain the core value in their respective area to meet out the global competitive edge.

PO2: Apply and update their skills towards their employability, entrepreneurship and its sustainability.

PO3: Realize their responsibility towards the society centre through ethical, social and human values.

PO4: Recognize the opportunities towards their up gradation and professional development in all spheres.

PO5: Ensure the quality in terms of all the aspects by the way of their contribution in work atmosphere.

Programme Specific Outcome:

B.Sc (IT):

PSO1. Understand the field of Information Technology, to provide holistic knowledge about Software and analyze the relationship among storing, processing, securing and managing information.

PSO2. Comprehend the professional ethics in any science subject to help in the development of interdisciplinary approach for sustainable development and Acquire the knowledge in the various fields of Information Technology including Networks,Testing, Information Security,Databases and Programming skills.

PSO3. B.Sc IT graduates are hired as Programmer, Database Administrator, IT Specialists, Technology Engineer, and Web Designer.

B.Sc Information Technology Board
Scheme of Examination (CBCS AND OBE Pattern)
For the Candidates admitted during the Academic Year 2019-2020 onwards

Part	Sub Code	Subject Title	Ins.Hrs/Week	Dur. Hrs.	CIA	CE	Total	Credit
					Examination			
	SEMESTER I							
I	19LATA01/ 19LAHI01/ 19LAFR01 19LAMY01	Language – I Tamil/Hindi/Malayalam/French	5	3	30	70	100	3
II	19ENG001	English –I	5	3	30	70	100	3
III	19BIT101	Core 1 – Programming in C	6	3	30	70	100	4
III	19BITP01	Core Lab 1 - C Lab	6	3	40	60	100	4
III	19BITID1	IDC 1 – Numerical Methods and Statistics	6	3	30	70	100	4
IV	19UFCA01	Foundation Course I : EVS #	2	2	-	50	50	2
		Total	**30**				**550**	**20**
	SEMESTER II							
I	19LATA02/ 19LAHI02/ 19LAFR02/ 19LAMY02	Language –II Tamil/Hindi/Malayalam/French	5	3	30	70	100	3
II	19ENG002	English – II	5	3	30	70	100	3
III	19BIT201	Core 2 - Object Oriented Programming with C++	6	3	30	70	100	4
III	19BITP02	Core Lab 2 - C++ Lab	6	3	40	60	100	4
III	19BITID2	IDC2- Discrete Mathematics	6	3	30	70	100	4
IV	19UFCA02	Foundation Course II: Value Education #	2	2	-	50	50	2
		Total	**30**				**550**	**20**
	SEMESTER III							
III	19BIT301	Core 3 – Java Programming	5	3	30	70	100	4
III	19BIT302	Core 4 - Data Structures	5	3	30	70	100	4
III	19BIT303	Core 5 - Computer Organization & Architecture	5	3	30	70	100	4
III	19BITP03	Core Lab 3 – Java Programming Lab	5	3	40	60	100	4
III	19BITID3	IDC 3– ERP	5	3	30	70	100	4
IV	19BITSB1/ 19BITSB2	SBC I - Web Design / Office Automation #	3	3	-	75	75	3
IV	19BTA001 \19ATA001/ 19EDC002	EDC 1: BT – 1/AT - 1 /Communicative English #	2	2	-	50	50	2
		Total	**30**				**625**	**25**

		SEMESTER IV						
III	19BIT401	Core 6 – Middleware Technologies	5	3	30	70	100	4
III	19BIT402	Core 7 – Computer Networks	5	3	30	70	100	4
III	19BIT403	Core 8 – Operating System	5	3	30	70	100	4
III	19BITP04	Core Lab 4 - Middleware Technologies Lab	5	3	40	60	100	4
III	19BITID4	IDC 4- Operations Research	5	3	30	70	100	4
IV	19BITSB3/ 19BITSB4	SBC II Lab – Web Design Lab / Office Automation Lab #	3	3	-	75	75	3
IV	19BTA002/ 19ATA002/ 19BITED1	EDC 2 : BT - 2/AT -2/ Microprocessor and its applications #	2	2	-	50	50	2
V	19NSS001/ 19NCC001 19SPT001/ 19EXT001	NCC/NSS/Sports //Extension Activities@			50		50	2
		Total	**30**				**675**	**27**
		SEMESTER V						
III	19BIT501	Core 9 - .Net Framework	5	3	30	70	100	4
III	19BIT502	Core 10 – Mobile Computing	5	3	30	70	100	4
III	19BIT503	Core 11 – Software Engineering	5	3	30	70	100	4
III	19BIT504	Core 12 – RDBMS	5	3	30	70	100	4
III	19BITP05	Core Lab 5 - Net Framework Lab	5	3	40	60	100	4
III	19BITE01/ 19BITE02/ 19BITE03	Elective I - IOT / Bio – Informatics / Data Mining and Warehousing	5	3	30	70	100	4
		Total	**30**				**600**	**24**
		SEMESTER VI						
III	19BIT601	Core 13 - PHP Programming	5	3	30	70	100	4
III	19BIT602	Core 14 – Information Security	5	3	30	70	100	4
III	19BITP06	Core Lab 6 - PHP Lab	5	3	40	60	100	4
III	19BITE04/ 19BITE05/ 19BITE06	Elective II - Big Data Analytics / Artificial Intelligence and Expert Systems / Python Programming	5	3	30	70	100	4
III	19BITE07/ 19BITE08/ 19BITE09	Elective III – Software Testing / Mobile Application Development /Multimedia	5	3	30	70	100	4
III	19BITPR1	Project and Viva Voce	5	3	50	50	100	4
		Total	**30**				**600**	**24**
		Total					**3600**	**140**

For Candidates admitted from the Academic year 2019 - 2020 onwards
No Continuous Internal Assessment (CIA) only Comprehensive Examination (CE)
@ No Continuous Internal Assessment (CIA) and Comprehensive Examination (CE)
IDC- Inter disciplinary Course, EDC – Extra Disciplinary Course, SBC – Skill Based Courses

1. List of Skill Based Course

Semester	Code	Subject Title	Credits
III	19BITSB1	SBC I - Web Design	3
III	19BITSB2	SBC I - Office Automation	3
IV	19BITSB3	SBC II Lab – Web Design Lab	3
IV	19BITSB4	SBC II Lab - Office Automation Lab #	3

2. List of Electives Papers

Elective I			
1	19BITE01	IOT	
2	19BITE02	Bio-Informatics	
3	19BITE03	Data Mining &Warehousing	
Elective II			
1	19BITE04	Big Data Analytics	
2	19BITE05	Artificial Intelligence and Expert Systems	
3	19BITE06	Python Programming	
Elective III			
1	19BITE07	Software Testing	
2	19BITE08	Mobile Application Development	
3	19BITE09	Multimedia	

3. List of Extra Disciplinary Course papers

Sem	Code	Subject Title	Credits	Maximum Marks
III	19BTA001	Basic Tamil-I	2	50
III	19ATA001	Advanced Tamil-I	2	50
III	19EDC002	Communicative English	2	50
IV	19BTA002	Basic Tamil-II	2	50
IV	19ATA002	Advanced Tamil-II	2	50
IV	19BITED1	Microprocessor and its applications	2	50

4. List of Additional Credit Papers

Sem	Code	Subject Title	Credits	Maximum Marks
III	19BITAC1	Linux OS	2	100
IV	19BITAC2	Basics of Animation	2	100
V	19BITAC3	Management Information System	2	100

Summary

Part	No of Papers	Total Credits	Total Marks
I	2	6	200
II	2	6	200
III –Core	20	80	2000
III – IDC	4	16	400
III – Elective	3	12	300
III –Project	1	4	100
IV –Foundation Course	2	4	100
IV – EDC	2	4	100
IV – Application Oriented Course	2	6	150
V Extension Activities	-	2	50
Total	**38**	**140**	**3600**

REGULATIONS FOR B.Sc (IT)
(Effective from the academic year 2019-2020 onwards)

1. Project and Viva Voce :

Each student in the UG final year shall compulsorily undergo Project Work in the 6th semester. Projects shall be done individually. Project Coordinators shall allocate the project title and the guide. Project work shall be done only in the lab provided by the college, including Project Record Preparation. Project Reviews shall be conducted thrice in which the progress of project work shall be strictly evaluated by respective Project Guides and Project Coordinators. Viva-Voce shall be conducted only in the presence of Industrialists or academicians. Out of the Total of 100 marks, 50% of mark shall be allocated for CIA and 50% for CE VIVA VOCE.

2. Submission of Record Note Books for practical examinations

Candidates appearing for practical examinations shall submit bonafide Record work for the concerned practical examinations. If not the candidate has to submit a bonafide certificate issued by the concerned subject in-charge duly signed by the Head of the department in order to permitted to take up the practical examination. The candidate so permitted will not be eligible for the Record work mark.

3. Distribution of Marks:

The following are the distribution of marks for Comprehensive Examinations and CIA for Theory, Practical and Project.

Category	Max Marks	Comprehensive Examination		Internal Marks	Overall passing minimum (Internal + CE)
		Max Marks	Passing Minimum		
Theory Paper	100	70	28	30	40
	75	75	30	-	30
	50	50	20	-	20
Practical Paper	100	60	24	40	40
Project	100	50	20	50	40

4. Distribution of Internal Mark for Theory :
(No Passing Minimum for CIA)

S. No	CIA	Distribution of Marks
1	Pre Model Examination	70
2.	Model Examination	70
3.	Seminar	30
4.	Attendance	10
Total		**180/6=30**

Breakup for Attendance:
65% - 74 %   - 4 Marks
75% - 80%   - 6 Marks
81% - 90%   - 8 Marks
91% - 100%   - 10 Marks

Breakup for Seminar

Content	10mark
Flow of Presentation	10mark
Stage management and Body Language	10mark
Total	30

5. Distribution of Internal Mark for Practical:

MAXIMUM MARKS : 40		
S No	CIA	Distribution of Marks
1	For Completion of the Practical List	20
2	Test –I	10
3	Test –II	10
Total		**40**

6. Distribution of Comprehensive Exam Mark for Practical :

MAXIMUM MARKS : 60		
S. No	Comprehensive Examination	Distribution of Marks

1	**Record**	**10**

2	**Program – I**
	  a) Algorithm
	  b) Coding
	  c) Execution
		
		5
		10
		10
		TOTAL **(25)**

3	**Program – II**
	  a) Algorithm
	  b) Coding
	  c) Execution
		
		5
		10
		10
		TOTAL **(25)**

	Total	**60**

Distribution of Comprehensive Exam Mark for SBC Practical:

	MAXIMUM MARKS : 75	
S. No	**Comprehensive Examination**	**Distribution of Marks**
1	**Record**	**15**

2	**Program – I**
	  d) Algorithm
	  e) Coding
	  f) Execution
		
		5
		10
		15
		TOTAL **(30)**

3	**Program – II**
	  d) Algorithm
	  e) Coding
	  f) Execution
		
		5
		10
		15
		TOTAL **(30)**

	Total	**75**

7. **Distribution of Mark for Project VIVA-VOCE :**

S.No	CIA	Distribution of Marks

1	**INTERNAL**
	  a) Review –I
	  b) Review –II
	  c) Documentation & Final Review
		
		10
		10
		30 **Total (50)**

2	**EXTERNAL ***
	  a) Presentation
	  b) Viva
		
		30
		20 **Total (50)**

	Total	**100**

*Marks to be awarded by both External and Internal Examiners.

8. **Conduct of Practical Examinations:**

Practical examinations shall be conducted with one internal examiner and one external examiner and the question paper for practical examination shall be set by both Internal and External examiners.

9. Pattern of Question Paper

For Pre model Test, Model and Comprehensive Examination under – Graduate and Post-Graduate Courses.

Maximum Marks : 70 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×4=20)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 75 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×5=25)	Each question carries five marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 50 / Time 2 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×3=15)	Each question carries three marks	Internal Choice
Section – C	(5×5=25)	Each question carries five marks	Internal Choice
Maximum Marks : 100 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×8=40)	Each question carries eight marks	Internal Choice
Section – C	(5×10=50)	Each question carries ten marks	Internal Choice

10. Certificate Course

In the academic year 2019-2020 we are introducing certificate course on III and IV semester as an interdisciplinary course. The course title is as follows.

List of Certificate Course

S.No	Sem	Subject Title
1	III	Office Automation
2		Basics of Web Design
3		Basics of Animation Technique
4	IV	Linux OS
5		DTP
6		PC Hardware

NOTE:

1. The questions should be numbered continuously running through the Sections A, B and C.
2. Questions should be evenly distributed among the unit in the syllabus in all the sections of the question paper.
3. While framing questions with internal choice the questions must be identified as (a) or (b). (e.g. 11. a or b). Further, the internal choice must be from the same unit.
4. The Controller of the Examinations shall arrange for the setting of question papers on the basis the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies.

B.Sc. (Information Technology) Degree Programme - Syllabus for candidates admitted from the academic year 2019 – 2020 onwards

FIRST SEMESTER
PART III : CORE 1: C PROGRAMMING

Maximum CIA : 30
Maximum CE : 70
Total Hours: 72

Course Objectives:
Learn the structure, syntax and semantics of C programming. It helps to gain the knowledge on different control structures like decision control, loop control and arrays. Students are trained in modular programming concepts and storage classes. Crystal knowledge on the limitations of basic data types , concepts of derived data types and user defined data types. It also discovers various FILEI/O operations.

Unit-I   **(**15 Hours)
Overview of C – History of C – Importance of C – Basic Structure of C Programs – Programming Style- Executing a C Program – Constants ,Variables and Data Types – Introduction- Character Set – C Tokens – Keywords and Identifiers – Constants – Variables – Data Types – Declaration of Variables – Assigning values to Variable s- Assigning values to variables- Defining Symbolic constant – Declaring variable as constant and as Volatile- Operators and Expressions – Arithmetic – relational –Logical – Assignment – Increment and Decrement operator- conditional operator – bitwise operator - special operators – arithmetic expressions – evaluation of expression – precedence of arithmetic operators .

Unit-II   (15 Hours)
Managing Input and Output Operations : Reading a character – Writing a character – Formatted input – Formatted output – Decision Making and Branching – Decision making if statement – simple if – if else – nesting of if – else – else-if – ladder – switch -?:operator- go to operator- Decision making and looping – while statement – do statement – for statement – jumps in loop – Array – One dimensional array – declaration-initialization – Two dimensional array – multidimensional arrays – dynamic arrays – Character Arrays and Strings - Declaring and initializing string variables – reading strings from terminal – writing strings to screen – arithmetic operations on character- putting strings together – comparison of two strings – string handling functions .

Unit-III   (15 Hours)
Character Arrays and Strings - Declaring and initializing string variables – reading strings from terminal – writing strings to screen – arithmetic operations on character- putting strings together – comparison of two strings – string handling functions .User Defined Functions - Need for user – defined function – Elements of user defined function – definition of functions- return values and their types – function calls – function declaration – category of functions – No arguments and no return values – arguments but no return values – arguments with return values – no arguments but returns a value- functions that returns a multiple values – nesting of functions – recursion – passing arrays to functions – passing strings to functions – scope, visibility and lifetime of variables.

Unit-IV   (15 Hours)
Structure and union – Defining a structure – declaring and accessing structure variables- structure initialization – copying and comparing structure variable – operations on individual

members – array of structures – arrays within structure – structure within structure – structures and functions – unions – size of structures – bit fields – Pointers – understanding pointers – accessing the address of a variable – declaring and initializing a pointer variables- accessing a variable through its pointer – chain of pointers – pointer expression – pointers and arrays – pointers and character strings – array of pointers – pointers as function arguments – functions returning pointers – pointers to functions – pointers to structures – troubles in pointers

Unit-V   (12 Hours)
File Management in C - defining and opening a file – closing a file – I/O operations on files – Error handling during I/O operations – random access to files – command line arguments – Dynamic Memory Allocation and Linked List – Dynamic memory allocation – allocating a block of memory malloc – Allocation multiple blocks of memory calloc – releasing the used space – free – altering the size of block – realloc – The Preprocessor – Macro Substitution – File inclusion – compiler control directives – ANSI additions .

Course Outcomes:
 •Understand the fundamentals of C programming.
•Choose the decision making statements, loops and arrays to solve the problem.
•Use functions to solve the given problem.
•Allocate dynamic memory using pointers.
•Apply the structures, unions and files Operations in a specific need.

Text Book:
   1. E.Balagurusamy, "Programming in C "7th edition, McGraw Hill Education(India) Private Ltd, fifth reprint , 2017

Reference Books
    1. Ashok N. Kamathane, " Programming in C ", 2nd Edition , Pearson Education Delhi, Reprint 2012.

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FIRST SEMESTER
PART III : CORE LAB 1: C PROGRAMMING

Maximum CIA : 40
Maximum CE : 60
Total Hours: 72

Course Objective:

To make the student learn the basic programming knowledge about C

1. Write a program for computing the volume of sphere, cone and cylinder assume that dimensions are integers use type casting where ever necessary.
2. Write a Program to read marks of a student in six subjects and print whether pass or fail (using if-else).
3. Write a Program to calculate electricity bill. Read starting and ending meter reading. The charges are as follows.

No. of Units Consumed	Rate in(Rs)
1-100	1.50 per unit
101-300	2.00 per unit for excess of 100 units
301-500	2.50 per unit for excess of 300 units
501-above	3.25 per unit for excess of 500 units

4. Develop a C program to check whether the number is perfect or not.
5. Write a C program to display multiplication tables from 1 to 10 except 3 and 5.
6. Write a C program to count no. of positive numbers, negative numbers and zeros in the array.
7. Write a C program to swap two numbers using a) Call ByValue B) Call By Reference.
8. Write a C program to find the Factorial of given number using recursion .
9. Write a C program to create structure called traveler and members of structure are train no, coach no, seat no, source ,destination , gender, age, name and departure date.
10. Write a C program to print the given strings in ascending order.
11. Write a C program to perform arithmetic operations using pointer.
12. Write a C program that will receive a file name and line of text as command line argument and write the text to the file.

Course Outcome:

- After the completion of this course the student would be able to
- Read, understand and trace the execution of the program written in C language.
- Write the C code for the given algorithm
- Develop C programs involving functions, recursion, pointers, and structures.
- Design applications using file concepts.

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SECOND SEMESTER
PART - III – CORE 2 – OBJECT ORIENTED PROGRAMMING WITH C++

Maximum CIA : 30
Maximum CE : 70
Total Hours: 72

Course Objectives: On the Successful Study of this Subject the Students should have acquired knowledge in Developing C++ Programs.

Unit-I   (15 Hours)
Introduction:What Is Object-Oriented Programming-Structured Programming-Object-Oriented Programming-Characteristics Of Oops - Advantages-Disadvantages-Object-Oriented Languages-Importance Of C++ - History Of C++ - C++ Versus C-Compiling And Debugging C++ Programs-Stages Of Program Development. Data Types, Operators and Expressions: Identifiers and Keywords-Data Types- C++ Simple Data Types- Literals-Variables-The Const Data Type-C++ Operators-Type Conversion-Input and Output Streams: Comment-Declaration Of Variables- The Main () Function-Features Of Io Stream-Manipulators- I/O Stream Flags.

Unit-II   (15 Hours)
Control Statements: Conditional Expressions-Loop Statements-Nested Control Structures-Breaking Control Statements. Functions: Introduction-Defining A Function-The Return Statement-Function Prototypes-Types Of User-Defined Functions-Actual And Formal Arguments-Local Vs Global Variables-Default Arguments-Structure Of C++ Program-Nested Functions-Recursive Functions-.Arrays: Array Notation-Array Declaration-Array Initialization-Arrays And Functions-Multidimensional Arrays- Character Arrays.

Unit-III   (15 Hours)
Storage Class Specifiers- Automatic variable – Register variable – Static variable – External variable – the const modifier – the Volatile modifier - Classes And Objects: Introduction-Declaration Of A Class-Member Functions-Defining The Object Of A Class-Accessing A Member Of Class-Array Of Class Objects-Classes Within Classes. Special Member Functions: Constructors-Destructors-Inline Member Functions-Static Class Members-Friend Functions-This Pointer.

Unit-IV   (15 Hours)
Inheritance: Introduction-Single Inheritance - Types Of Base Classes - Types Of Derivation - Types Of Inheritance - Function Overloading-Operator Overloading - Overloading Of Binary Operators-Overloading Of Unary Operators. Polymorphism-Early Binding - Virtual Functions - Late Binding - Pure Virtual Functions - Abstract Base Classes - Virtual Base Classes - String Handling functions.

Unit-V   (12 Hours)

Templates: Function Template-Class Template-Overloading Of Function Template-Exception Handling-Data File Operations -Opening and Closing Files-Reading/Writing A Character from A File-Binary File Operations-Random Access File Processing-Command Line Arguments.

Course Outcome:

- Describe the procedural and object oriented paradigm with concepts of streams, data types and operators.
- Describe decision making by branching and looping statements, functions and arrays.
- Understand dynamic memory management techniques Using pointers, constructors, destructors, etc
- Classify inheritance with the understanding of Inheritance, early and late binding, usage of virtual functions and Polymorphism.
- Demonstrate the use of various OOPs concepts with the help of exception handling, templates and file operations.

Text Books:

1. D.Ravichandran, "Programming with C++", 3rd Edition, Tenth Reprint 2017, Tata McGraw Hill.

Reference Books:

1. Ashok N Kamthane, "Object-Oriented Programming With ANSI &Turbo C++", Pearson Education, 2009, India.
2. Yashavant Kanetkar, "Let Us C++", BPB Publications, 2nd Revised Edition, 2010.
3. E.Balagurusamy, "Object-oriented programming with C++", 5th Edition, 2011, Tata McGraw Hill Publishing Company Ltd.

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SECOND SEMESTER
PART - III - CORE LAB - 2 – OBJECT ORIENTED PROGRAMMING WITH C++

Maximum CIA : 40
Maximum CE : 60
Total Hours: 72

Course Objectives: On the Successful Study of this Subject the Students should have acquired the Professional Skills in Developing C++ Programs.

1. Write a C++ Program for Developing Student Mark List and Display the Result.

2. Write a C++ Program to Illustrate the Use of a Class.

3. Write a C++ program that uses functions

   a) To swap two integers.

   b) To swap two characters.

   c) To swap two reals using function overloading

4. Write a C++ program find the factorial of the given number using constructors and recursion.

5. Write a C++ program to determine if the given string is a palindrome or not.

6. Write a C++ Program to Perform Arithmetic Operations using Operator Overloading.

7. Write a C++ Program to Display Patient Details By using Single Inheritance.

8. Write a C++ Program to Create Employee Payroll by using Multilevel Inheritance.

9. Write a C++ Program to Display Book Details with Price using Polymorphism.

10. Write a C++ Program to Find the Smallest of n Numbers using Array of Pointers.

11. Write a C++ Program to perform Exception Handling for divide by Zero Exception.

12. Write a C++ Program to Copy the Text from One File to Another File using Command Line Arguments.

Course Outcomes:
- Master using key structured programming constructs: declarations, sequence, selection, repetition, evaluating expressions.
- Be familiar with C++classes.
- Master Constructors, Operator overloading ad Polymorphism concepts.
- Be familiar with using String handling functions.
- Be familiar with using C++ functions and the concepts related to good modular design.
- Be familiar with using pointers and reference parameters.
- Master one-dimensional and two-dimensional arrays.
- Be familiar with using text file input/output.

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THIRD SEMESTER

PART III : CORE 3: JAVA PROGRAMMING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: To facilitate students to obtain a theoretical knowledge in Console and Windows Application Development through Java Programming.

Unit I: (12 Hours)

The History and Evolution of Java : The Creation of Java - How Java changed the Internet - Java's Magic: The Bytecode 9- Servlets: Java on Server Side - The Java Buzzwords - The Evolution of Java. An overview of Java: Object Oriented Programming - A First Simple Program- Lexical Issues - Data Types, Variables and Arrays

Unit II: (12 Hours)

Operators, Control statements, Introducing classes – A Closer look at methods and classes- Overloading methods – using objects as parameters – Returning objects – recursion- Introducing Access Control - Understanding Static - Introducing final, Introducing nested and inner class – using command line arguments – Inheritance

Unit III: (12 Hours)

Packages and Interfaces: Packages - Access Protection - Importing Packages - Interfaces. Exception Handling: Exception Handling Fundamentals - Exception Types - Using Try and Catch - Multiple catch clauses - Finally - Java's Bulit-in Exceptions. Multithreaded Programming – String Handling – More Utility Classes: Date - Calendar - GregorianCalendar - TimeZone - SimpleTimeZone

Unit IV: (12 Hours)

Event Handling: Two Event Handling Mechanism - The Delegation Event Model - Event Classes - The Key Event Class - sources of Events - Event Listener Interfaces – Introducing the AWT: Working with Windows, Graphics and Text. Using AWT Controls, Layout Managers, and Menus. Introducing Swing: The Origin of Swing Swing is Built on the AWT - Two Key Swing Features - The MVC Connection - The Swing Package.

Unit V: (12 Hours)

Exploring Swing, Introducing Swing Menus. Introducing JavaFX GUI Programming, JavaFX Basic Concepts, JavaFX Application Skeleton, Compiling and Running a JavaFX Program - The Application Thread - A Sample JavaFX Control: Label - Using Buttons and Events. Exploring JavaFX Controls: Toggle Buttons - Radio Button - Check Box - ListView - ComboBox - TextField.

Course Outcome:

CO1. Learns and understands the basis of Java Programming and its overview
CO2. Understands the Control and Iterative Statements and apply the Object Oriented programming in Java
CO3. Understands the use of packages, runtime error handling and String Libraries
CO4. Understands the windows application development using heavyweight AWT and lightweight Swing Components

CO5.   To recognize the role of Java technology in project development using JavaFX technology

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1		M						H
CO2	H					H		
CO3			H			H		
CO4				H				H
CO5				H				H

Text Book:
1. Herbert Schildt, Java - The Complete Reference, 11th edition, 2018, McGraw Hill Education, India.

Reference Books:
1. Y. Daniel Liang, Introduction to Java Programming, 8th edition, 2011, Pearson Education, New Jersey.

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THIRD SEMESTER
PART III : CORE 4 : DATA STRUCTURES

Maximum CIA : 30
Maximum CE :   70
Total Hours: 60

Course Objective :

To enable the students to learn and acquire knowledge on fundamentals of different types of data structures and the ways to implement them for a particular problem.

Unit I: (12 Hours)
Introduction: Basics terminologies – Data structures – Data structure operation – Algorithms. Preliminaries: Mathematical Notations and Functions - Algorithmic notation – Control structures – Complexity of algorithm - Other Asymptotic Notations for Complexity of Algorithms.

Unit II: (12 Hours)
Arrays, Records and Pointers: Linear Array - Representation of Linear Array in Memory - Traversing Linear Arrays - Inserting and Deleting - Multidimensional Arrays. Linked list: Representation of linked list in memory-Traversing a linked list-Searching a linked list - Memory allocation - Insertion into a linked list - Deletion from a linked list - Header linked list-Two way lists.

Unit III: (12 Hours)
Stacks – Queues – Recursion: Stacks – Array representation of stacks – Linked representation of stacks – Arithmetic Expression: Polished notation – Recursion – Towers of Hanoi – Queues – Linked representation of Queues – Deques - Priority queues.

Unit IV: (12 Hours)
Trees: Binary tree-Representing binary trees in memory-Traversing binary tree-Binary search tree-Searching and Inserting in Binary Search tree - Deleting in Binary Search Tree. Graphs: Introduction-Graph theory terminology-Sequential representation of graph- Warshall's Algorithm: Shortest Path - Linked Representation of Graph - Operations on graphs.

Unit V: (12 Hours)
Sorting And Searching: Introduction - Sorting - Insertion Sort - Selection Sort - Merging - Merge Sort - Radix Sort - Searching and Data Modification - Hashing.

Course Outcomes:

After undergoing this course students will be able to

   CO1. Understand how various data structures are represented in memory and are used by algorithms.

CO2. Understand the concept of time and space complexity and analyze them for different algorithms and also the ability to estimate programming time using Big O notation.

CO3. Apply the different linear and non-linear data structures to solve real time problems
.

CO4. Design and employ appropriate data structures for solving computing problems.

CO5. Implement searching and sorting algorithms in solving larger problems.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO1				M		M		M
CO2					L			
CO3			H				H	
CO4		H		H				
CO5	M							H

Text Book
1. Seymour Lipschutz "Data Structures with C" (Schaum`s Outline Series) Published by Tata McGraw-Hill Education Pvt. Ltd., 2015

References
1. John R. Hubbard, "Data Structure with Java", Schaum'sOutline,Second Edition, 2011.
2. Clifford A. Shaffer, "Data Structures & Algorithm Analysis in Java", Dover Publications Inc, Third Edition, 2011

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THIRD SEMESTER
PART III : CORE 5: COMPUTER ORGANIZATION & ARCHITECTURE

Maximum CIA : 30
Maximum CE : 70
Total Hours: 60

Course Objective: To impart knowledge about Computer Organization and Architecture.

Unit I: (10 Hours)
DATA REPRESENTATION - Data types – Number Systems – Octal and Hexadecimal Numbers – Decimal Representation – Alpha numeric representation – Complements – (r-1)'s complement – r's Complements – Fixed Point Representation – Other Binary Code - Logic Gates –Half Adder-Full Adder- Flip-flop.

Unit II: (12 Hours)
REGISTER TRANSFER AND MICRO OPERATIONS - Register Transfer Language – Register Transfer – Bus and Memory Transfer – Arithmetic micro- operations – Logic micro-operations – shift micro- operations .BASIC COMPUTER ORGANIZATION AND DESIGN - Instruction code- Computer Registers – Computer Instructions – Timing and Control – Instruction cycle - Memory Reference Instructions .

Unit III: (13 Hours)
CENTRAL PROCESSING UNIT - General Register Organization – control word – Stack Organisation– Register stack – memory stack – Reverse Polish Notation – Evaluation of arithmetic expressions – Instructions Formats – Three Address – Two Address – One Address – Zero address instructions- Addressing Modes – Data transfer and manipulation – Program Control - RISC – CISC characteristics – RISC characteristics.

Unit IV: (13 Hours)
INPUT OUTPUT ORGANIZATION - Input Output Organization – Peripheral Devices – Input Output Interface – Asynchronous Data Transfer - Priority Interrupt – Daisy Chaining Priority – Parallel Priority Interrupt – Priority Encoder - Direct Memory Access – Input Output Processor   - CPU – IOP Communication.

Unit V: (13 Hours)
MEMORY ORGANIZATION - Memory Organization – Memory Hierarchy – Main Memory – RAM and ROM chips- Memory Address Map – Memory connection to CPU- Associative Memory – Hardware Organization – Match Logic- Read – Write Operation - Cache Memory - Associative Mapping – Direct Mapping – Set Associative Mapping – Writing into Cache – Cache Initialization.

Course Outcome
    CO 1:Define different number systems, binary addition and subtraction, 2's complement
          representation and operations with this representation.
    CO 2:Understand the concept of register transfer and various types of micro operations
           and   inter processor communication.

CO 3:Understand the architecture of central processing unit RISC and CISC computers.
CO 4:Exemplify in a better way the I/O and memory organization.
CO 5:Learn   various types of memory organizations.

C0/PO&PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1			L			M		
CO 2		M						M
CO 3			M			M		
CO 4	M			L			M	
CO 5					H			

Text Book
1. M.Morris Mano, Computer System Architecture , 3rd Edition , Pearson Prentice Hall , Eighth Impression , 2011

References Book
1. William Stallings , Computer Organisation and Architecture , Designing for performance , 8th Edition, Pearson Prentice Hall, 2012

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THIRD SEMESTER
PART III : CORE LAB 3: JAVA PROGRAMMING LAB

Maximum CIA : 40
Maximum CE : 60
Total Hours: 60

Course Objective: To facilitate students to obtain a practical knowledge in Console and Windows Application Development through Java Programming.

1. Create a Console application for Bank, identify the various values for customer, read the value and print it in standard pattern
2. Create a program to read the user information like Name, Gender, Date of Birth, Aadhar card number, through command line arguments and display it.
3. Create a program, read a number and print the following pattern using separate static function and different iterative statement

*****	1	1
*****	12	22
*****	123	333
	1234	4444

4. Create an Integer Array called Number, read n values from user and display the maximum and minimum number.
5. Create a class for Employee object, identify the data of Employee and read and print the values using separate functions. Create an instance and call the functions.
6. Create a class Overloading and read five numbers from user through constructor and add first two numbers, three numbers, four numbers and five numbers using separate functions by illustrating method overloading.
7. Create the following classes Student, Test, and Result and an interface Sports through separate packages. Result is derived from Test and Sports; Test is derived class of Student. Implement Hybrid inheritance and method overriding by defining data and methods to process student.
8. Create a program to illustrate Multithreading to print even and odd number using separate Threads.
9. Create an AWT Frame read two string and perform following String functions by choosing a option from Radio Button.
    a. Check the equality of String and equal ignore case also
    b. Compare the two string
    c. Concatenate two string
    d. Substring of first string
    e. Convert the String into Uppercase and Lowercase
10. Create a Swing based network application to send the message from Sender to Receiver.
11. Create a MDI frame using Swing Components and perform the following operations
    a. Read a number, print its equivalent numeric word using switch
    b. Read two number and perform binary OR and AND operations.

12. Create a JavaFX application to perform addition of two numbers.

Course Outcome:

CO1.   Learns and understands the basis of Java Programming and its overview
CO2.   Understands the Control and Iterative Statements and apply the Object Oriented programming in Java
CO3.   Understands the use of packages, runtime error handling and String Libraries
CO4.   Understands the windows application development using heavyweight AWT and lightweight Swing Components
CO5.   To recognize the role of Java technology in project development using JavaFX technology

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1		M						H
CO2	H					H		
CO3			H			H		
CO4				H				H
CO5				H				H

B.Sc (Information Technology) Degree Examination-Syllabus-for candidates admitted from the Academic Year 2019-2020 Onwards
THIRD SEMESTER
PART IV: SBC-I WEB DESIGN

Maximum CE: 75
Total Hours: 36

Course Objectives: To make the students to get familiarized with the Web designing concepts.

Unit I: (6 Hours)
Introduction to Web Programming- Coding Standards, Block Elements, Text Elements, and Character References.

Unit II: (7 Hours)
Cascading Style sheets(CSS)- Organizing a Page's Content with Lists , Figures, and various Organizational Elements.- Table and CSS Layout.

Unit III: (8 Hours)
Links and Images – Image Manipulations, Audio, and Video: Introduction –Positioning Images- Shortcut Icon- iframe Element- CSS Image sprites- Audio-Background Images- Web Fonts-Video.

Unit IV: (7 Hours)
Introduction to Javascript:Functions ,DOM,Forms, and Event Handlers- window object- Constraint validation for form controls- Loops, Additional controls, Manipulating CSS with Javascript.

Unit V: (8 Hours)
JSON. Document Object Model: Nodes and Objects. JQuery Selection.-jQuery Traversal and Manipulation.- jQuery Events- Data Attributes and Templates.

Course Outcomes:

CO1: To discover how a web does works really, and what makes website works.

CO2: Setting up page layout, color schemes, contract, typography in the designs.

CO3: Develop skills in analyzing how to embed audio and video in the website.

CO4: Able to develop a dynamic webpage by the use of java script.

CO5: Utilize graphic design and animations to enhance web pages.

C0/PO&PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L							
CO 2		M					M	
CO 3			H					
CO 4				M				M
CO 5		H			M	M		

Text Book:
1. John Dean, Web Programming with HTML5, CSS, and JavaScript, Jones & Bartlett Learning, 2018. (Unit I, II, III, IV)
2. Dane Cameron, HTML5, JavaScript, and jQuery 24-Hour Trainer, John Wiley & Sons, 2015. (Unit V)

Reference Books
1. Charis Bates, "Web Programming Building Internet Applications", Wiley India Pvt. Ltd. Second Edition, 2014

B.Sc (Information Technology) Degree Examination-Syllabus-for candidates admitted from the Academic Year 2019-2020 Onwards
THIRD SEMESTER
PART IV: SBC-II OFFICE AUTOMATION

Maximum CE: 75
Total Hours: 36

Course Objective: Recognize when to use each of the Microsoft Office programs to create professional and academic documents.

Unit I: (7 Hours)
Explore Office 2016-Create and Manage Files- Microsoft Word 2016:-Modify the Structure and Collaborjate on documents-Merge data with documents and labels.

Unit II: (7 Hours)
Microsoft Excel 2016:- Perform calculations on data- Manage worksheet data-Reorder and summarize data – Ajnalyze alternative data sets.

Unit III: (7 Hours)
Microsoft Excel 2016 Power Programming with VBA- Introduction to Excel VBA- Interacting with other applications: Understanding Microsoft office Automation- Automating outlook for Excel.

Unit IV: (7 Hours)
Microsoft PowerPoint 2016:- Create and Manage slides- Insert and Manage simple graphics. Microsoft Outlook 2016:-Send and receive email messages – Organize your inbox- Manage scheduling.

Unit V: (8 Hours)
Microsoft Access 2016: Access Building Blocks-Understanding Access tables –Working with Access Queries-Working with Access forms and reports.

Course Outcomes:

CO1. To create and edit multi- page word documents.

CO2. To create, edit and enhance the spreadsheets. Use basic formulas and generate charts of different types.

CO3. To create email Automation Outlook from Excel

CO4. To create and edit basic PowerPoint presentations. Use template, color schemes, animation, slide transition. Insert images including digital pictures.To send, receive and open email attachments.

CO5. To create, edit and enhance databases. Create Queries, create and print Reports

C0/PO&PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M							
CO 2		L				M		
CO 3			M					M
CO 4				M				
CO 5		M					M	

Text Books:

1. Joan Lambert and Curtis Frye, Microsoft Office 2016 Step by Step, 2nd Edition, Microsoft Press,2016. (Unit I , II , IV and V)
2. Michael Alexander, Richard Kusleika,Excel 2016 Power programming with VBA, John Wiley & Sons, Inc,2016 (Unit III)

Reference Books:

1. Michael Alexander, Richard Kusleika, Access 2016 Bible The Comprehensive Tutorial Resource, John Wiley & Sons, Inc,2016

B.Sc (Information Technology) Degree Examination-Syllabus-for candidates admitted from the Academic Year 2019-2020 onwards
THIRD SEMESTER
PART III: ALC I – LINUX OS

Maximum CE: 100

Course Objective:

To learn the fundamentals of LINUX Operating Systems and learn programmatically to implement simple OS mechanisms

Unit I:
Introduction to LINUX: Operating systems- GUIs- The linux command line – Virtual Machines – Unix and Linux – Types of Users. The Bash Shell: Introduction – Entering Linux Commands – Man pages – Bash Features – Other Shells – Interpreters.

Unit II:
Navigating Linux File System: Introduction – Filename Specification – File System Commands – Locating Files – Permissions – Linux File System Structure – Secondary Storage Devices – File Compression. Managing Processes: Introduction – Forms of Process Management – Starting, Pausing, and Resuming Processes – Monitoring Processes – Managing Linux Processes – Killing Processes.

Unit III:
Linux Applications: Text Editiors – Productivity software – Latex – Encryption Software – Email programs – Network Softwar. Regular Expressions: Metacharacters and examples – GREP – SED – awk.

Unit IV:
Shell Scripting: Simple Scripting – Variables, Assignments and Parameters – Input and Output – Selection Statements – Loops – Arrays – String Manipulation – Functions – C-Shell Scripting. Installing Linux: Introduction – The Linux-operating system – Installing Centos. Installing UBUNTU – Software Installation Choices – Virtual Memory –Setting up Network connectivity and a Printer – Selinux

Unit V:
User Accounts: Introduction – Creating Accounts and Groups – Managing Users and Groups – Passwords – PAM – Establishing Common User Resources – The SUDO Command – Establishing User and Group Policies. The Linux File System: Storage Access – Files – Partitions – Linux Top-Level Directories Revisited- Other System Administration duties

Text Books:

1. Richard fox – LINUX with operating system concepts-, CRC Press, Taylor and Francis Group, 2015 Edition.

Reference Books:

1. Richard Petersen – The Complete reference Linux, CRC Press, Taylor and Francis Group, 2015 Sixth Edition

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

THIRD SEMESTER
CERTIFICATE COURSE – BASICS OF ANIMATION TECHNIQUE

Total Hours: 30

Course Objective:
    The objective of this subject is to teach the principles of how different types of media can be processed and presented by computers.

Unit - I   (6 Hours)
Multimedia- An Overview: Introduction – Characteristics of Multimedia – Uses of Multimedia – Analog and Digital Representations – Visual Display Systems. Text: Introduction - Types of Text – Unicode Standard – Font – Insertion of Text – Text Compression – Text File Formats.

Unit– II   (6 Hours)
Image: Introduction – Image Data Representation – Image Acquisition – Image Processing – Binary Image Processing – Grayscale Image Processing – Color Image Processing - Image File Formats.

Unit - III   (6 Hours)
Graphics: Introduction – Uses of Graphics – 2D Transformations - 3D Transformations - Graphics File Formats – Graphics Software.

Unit - IV   (6 Hours)
Audio: Introduction - Types and Properties of Sounds – Digital Audio - Digital Audio Processing – Audio Transmission - Audio File Formats.
Video: Introduction – Digital Video - Digital Video Processing – Video File Formats.

Unit - V   (6 Hours)
Animation: Introduction – Uses of Animation – Principles of Animation - 3D Animation - Animation File Formats – Animation Software.

Text Book:
  1. Ranjan Parekh, Principles of Multimedia, Tata McGraw Hill Education Private Limited - Second Edition, Reprint 2019.
     Unit 1: Chapter 1 (1.1, 1.3, 1.5, 1.6, 1.10) Chapter 2 (2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7)

     Unit 2: Chapter 3 (3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7)

     Unit 3: Chapter 4 (4.1, 4.3, 4.6, 4.25, 4.29, 4.32)

     Unit 4: Chapter 5 (5.1, 5.4, 5.7, 5.10, 5.13, 5.14) Chapter 6 (6.1, 6.7, 6.8, 6.10)

     Unit 5: Chapter 7 (7.1, 7.3, 7.5, 7.8, 7.10, 7.11)

Reference Book:
  1. Ashok Banerji, Ananda Mohan Ghosh, Multimedia Technologies, McGraw Hill Publication.

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

THIRD SEMESTER
CERTIFICATE COURSE- OFFICE AUTOMATION

Total Hours: 30

Course Objective:

To inculcate knowledge on computer fundamentals and office automation tools.

Unit-I   (6 Hours)

Overview Of Computers And Programming - Electronic Computer Then And Now-Computer Hardware–Computer Software – Binary Systems - Digital Computers And Digital Systems, Binary Numbers, Number Base Conversion, Octal And Hexadecimal Numbers.

Unit-II   (6 Hours)

MS Word: Creating A New Document- Finding And Replacing Formatting-Checking Spelling And Grammar-Adding Headers And Footers-Arranging Text In Columns-Inserting A Table Of Contents-Creating A Table-Modifying And Formatting A Table-Creating A Form Letter.

Unit-III   (6 Hours)

MS Excel: Creating A Simple Formula-Editing A Formula-Performing Calculation Using Functions-Creating A Chart-Editing A Chart-Creating A List-Sorting Data In List- Inserting Page Breaks-Printing Worksheets.

Unit-IV   (6 Hours)

MS Power Point: Creating A New Presentation- Choosing A Template-Adding Action Buttons-Creating Slide Transitions-Adding Animation-Timing A Presentation-Setting Up A Slide Show-Creating A Custom Slide Show-Printing A Presentation.

Unit-V   (6 Hours)

MS Access: Creating A Database-Working With A Table-Creating Table Using A Wizard-Working With a Table In Design View-Specifying Data Types And Field Properties-Planning And Defining Table Relationships-Filtering Out Records-Creating A Query Using A Wizard-Creating A Form Using Wizard.

Text Books:

1.M.Morris Mano, Computer System Architecture , 3rd Edition , Pearson Prentice
   Hall, First Impression , 2007.
        Unit I: Chapter 1 (1.1, 1.2, 1.3, 1.5-1.9) Chapter 2(2.1-2.4)

2. Microsoft Office Xp Simply Visual Perspection, Inc. Edition 2001.

Unit II: Chapter 4 (4.2,4.8,4.11) Chapter 6(6.5,6.6,6.7,6.10)
Unit III: Chapter 8 (8.1-8.5, 8.11,8.12,8.14)
Unit IV: Chapter 9 (9.1-9.3) Chapter 10(10.2-10.10)
Unit V: Chapter 11 (11.1, 11.2, 11.6-11.11) Chapter 12(12.1,12.3,12.9)

Reference Book:

1. Fundamentals Of Computers by E Balagurusamy Published by Tata Mcgraw Hill Publishing Co Ltd-2015.

All UG Degree Examination - Syllabus for candidates admitted from the Academic Year 2019 – 2020 onwards

THIRD SEMESTER
CERTIFICATE COURSE – BASICS OF WEB DESIGN

Total Hours: 30

Course Objective:

Enabling students to acquire knowledge in internet and web designing using HTML and CSS.

Unit - I   (6 Hours)

Introduction: Getting Started - What is Web Publishing? – Getting your Tools in Order – Introducing HTML and CSS – Creating Web Pages – Learning the Basics of HTML – Organizing Information with Lists – Working with Links.

Unit – II   (6 Hours)

Doing more with HTML and CSS: Formatting Text with HTML & CSS – Using CSS to Style a Site – Using Images on Your Web Pages – Building Tables – Using CSS to position Elements on the page

Unit – III   (6 Hours)

Designing Forms – Structuring a Page with HTML5 – Integrating Multimedia: Video and Sound – Advanced CSS: Page Layout in CSS – Using Responsive Web Design

Unit – IV   (6 Hours)

Using JavaScript and JQuery: Introducing JavaScript – Using jQuery – Using JavaScript in Your Pages – Working with Frames and Linked Windows

Unit – V   (6 Hours)

Designing for Everyone: Designing for the Mobile Web – Designing for User Experience.   Going Live on the Web : How to Publish Your Site – Taking Advantage of the Server – Search Engines and SEO.

Text Book:

1. Laura Lemay, Rafe Colburn, Jennifer Kyrnin – Sams Teach Yourself HTML, CSS & JavaScript Web Publishing in One Hour a Day, Seventh Edition, Pearson Education, 2016.

Reference Book:

1. Elizabeth Castro, Bruce Hyslop – HTML5 and CSS3, Seventh Edition, 2012

B.Sc (Information Technology) Degree Examination-Syllabus- for candidates admitted from the Academic Year 2018 – 2019 and onwards

FOURTH SEMESTER
PART III: CORE 6: MIDDLEWARE TECHNOLOGIES

Maximum CIA : 30
Maximum CE : 70
Total Hours: 60

Course Objective: To Utilize the Oracle JEE Architecture for Creating Comprehensive Multi-Tiered Application using Java and to convey the Web Application Framework through JSF and Angular JS.

Unit I: (12 Hours)
Java Remote Method Invocation: Remote method Invocation concept – Server side – Client side. Classic Memories: JDBC - Introduction to JDBC - Structured Query Language - The JDBC APIs - Library Application Using JDBC.

Unit II: (12 Hours)
The Big Picture: Java EE Architecture, The Many Variations of Java EE Applications. Java Servlets and Web Applications: Foundations of the Web Tier: The HTTP Protocol - Introducing Java Servlets - Example Java Servlet Application: Photo Application - Understanding the Java Servlet API - Web Applications - Java Servlets: The Good and the Bad.

Unit III: (12 Hours)
Dynamic Web Pages: JSP - JSP Runtime Architecture - A JSP Clock - JSP Syntax - JSP Directives - Using Java Beans from JSPs - The Java Environment for JSPs - JSP Standard Tags - Custom Tag Libraries: Tag Libraries vs. JavaBeans - Expression Language. The Fundamentals of Enterprise Beans: Introduction to Enterprise Beans - Hello Enterprise Beans - Flavors of Enterprise Beans - Exposing Enterprise Beans - Finding Enterprise Beans - Finding Session Beans - EJB Lifecycle - Packaging Enterprise Beans

Unit IV: (12 Hours)
Java Server Faces Life cycle: Introduction to JSF - The MVC design pattern - Facelets - The request processing lifecycle. Building JSF Forms: Create, Retrieve, Update and Delete - A basic create entity JSF form - JSF Custom Tags - Displaying a list collection objects - JSF and CDI Scopes

Unit V: (12 Hours)
JSF Validation and AJAX: Validation Methods - Faces Messages - Validation - A Partial JSF lifecycle - Handling views. Angular JS and Java RESTful Services: Single-page applications - The caseworker application - Angular JS - Caseworker overview - Project organization - Application main controller - New case record controller- New task record controller - State Change - Server-side Java.

Course Outcome:

CO1. To design distributed applications and build projects using Java technology and interact with databases and perform database transactions

CO2. Understands the basis of Multi Tier Architecture and Web Page Development using Java Technology

CO3. To design and deploy Web Applications and Enterprise Applications using JSP and JEE Technology

CO4. To understand various MVC frameworks and apply the JSF for developing Web Applications using Java Technology

CO5.   To design a Web Application with Validation using AJAX and AngularJS

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1			H			H		
CO2				H			H	
CO3		H						H
CO4				H			H	
CO5				H		H		

Text Books:
1. Jim Keogh, "The Complete Reference J2EE", Tata McGraw-Hill Edition 2002. (Unit 1, Chapter 1)
2. Dr. Danny Coward., "Java EE 7: The Big Picture", Oracle Press, October 2014. (Unit - 1 Chapter 2) (Unit - 2, Unit - 3)
3. Peter Pilgrim, "Digital Java EE 7 Web Application Development", PACKT Publishing, 2015. (Unit 4, Unit 5)

Reference Book:
1. Michael Muller, "Practical JSF in Java EE 8: Web Applications in Java for the Enterprise", APress, 2018.

Bachelor of Science (Information Technology) Degree Examination-Syllabus for Candidates admitted from the Academic Year 2019-2020 Onwards

FOURTH SEMESTER
PART III: CORE 7 – COMPUTER NETWORKS

Maximum CIA:30
Maximum CE :70
Total Hours: 60

Course Objective

To gain knowledge on the basic concepts of computer networks.

Unit I: (12 Hours)
Introduction to network: Uses of computer networks - Network Hardware: LAN – WAN – MAN – Wireless Network – Home Networks. Network Software: Protocol Hierarchies – Design Issues for the Layers – Connection-oriented and connectionless services – Service Primitives – The Relationship of services to Protocols. Reference Models: OSI Reference Model – TCP/IP reference Model – Comparison of OSI and TCP/IP

Unit II: (12 Hours)
Physical layer: Guided Transmission Media: Magnetic Media – Twisted Pair Coaxial Cable – Fiber Optics. Wireless Transmission: Radio Transmission-Microwave Transmission-Infrared and Millimeter Waves-Light Waves- The Public switched telephone network: Structure of the telephone system-Trunks and Multiplexing.

Unit III: (12 Hours)
Data Link Layer: Data Link Layer Design Issues -Error Detection and Correction-Elementary Data Link Protocols- Sliding Window Protocols- Bluetooth: Bluetooth Architecture – Bluetooth application.

Unit IV: (12 Hours)
Network Layer: Routing Algorithms: -Shortest Path Algorithm- Flooding-Distance Vector Algorithm- Link state Routing-Hierarchical Routing-Broadcast Routing, Multicast Routing-Routing in Adhoc Networks - Congestion Control Algorithms :Load Shedding- Jitter Control.

Unit V: (12 Hours)
Transport Layer: Elements of Transport Protocols- Internet Transport Protocols UDP-Internet Transport Protocols TCP-Application Layer: DNS-Electronic Mail-The World Wide Web.

Course Outcome:

   CO1: Describe the functions of each layer in OSI and TCP/IP model.
   CO2: Read the fundamentals of Physical layer, and apply them in real time
          applications.
   CO3: Study data link layer concepts, design issues, and protocols.
   CO4: Gain core knowledge of Network layer routing protocols and IP addressing.
   C05: Acquire knowledge of Transport Layer and Application layer paradigms and
          protocols.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		H					L	
CO 2	H				H			
CO 3	M					M		
CO 4				L			L	
CO 5			M					M

Text Book:
1. Andrew S.Tanenbaum, David J. Wetherall, "Computer Networks", 5th Edition, Tata McGraw-Hill Publishing Company Limited, 2013, India.

Reference Book:
1. Larry L. Peterson, Bruce S. Davie , "Computer Networks: A Systems Approach", 5th edition, Elsevier publication ,2012 , USA

2. Achyut Godbole," Data Communication and Networks",2nd Edition, TataMcGrawHill Publications , 2011,India.

B.Sc (Information Technology) Degree Examination-Syllabus for Candidates admitted from the Academic Year 2019-2020 Onwards
FOURTH SEMESTER
PART - III – CORE 8 – OPERATING SYSTEMS

Maximum CE : 70
Maximum CIA: 30
Total hours: 60

Course Objectives: To understand the concepts of fundamental and system components in various operating systems.

Unit I: (12 Hours)
Introduction and Process Concepts: Definition of OS –Early History of OS-Definition of Process-Process States –Process State Transitions –Process Control Block –Operations on Processes –Suspend and Resume -Interrupt Processing: Interrupt classes –Context Switching.

Unit II: (12 Hours)
IPC and Process Synchronization: Critical Section-Mutual Exclusion-Semaphores-Deadlock& Indefinite postponement: Introduction –Examples of Deadlock –A Related Problem: Indefinite Postponement –Resource Concepts –Four necessary conditions for deadlock –Major areas of deadlock research –Deadlock Prevention –Deadlock Avoidance and the Banker's Algorithm –Deadlock Detection –Deadlock Recovery.

Unit III: (12 Hours)
Processor Management Job and Processor Scheduling: Scheduling Levels –Preemptive Vs Non-Preemptive Scheduling –Priorities –Deadline Scheduling –FIFO –RR –Quantum size –SJF –SRT –HRN. Distributed Computing: Classification of sequential and Parallel Processing –Array Processors –Data flow computers -Multiprocessors –Fault Tolerance.

Unit IV: (12 Hours)
Storage Management and Virtual Storage Management: Storage Hierarchy –Real Storage Management Strategies –Contiguous Vs Non-Contiguous Storage allocation –Single user contiguous storage allocation –Fixed Partition Multiprogramming –Variable Partition Multiprogramming, Multiprogramming with Storage Swapping. Virtual Storage Management Strategies: Page replacement strategies –Working sets –Demand Paging –Page size.

Unit V: (12 Hours)
Information Management Disk Performance Optimization: Operation of moving head disk storage –Need for disk scheduling –Seek optimization –FCFS –SSTF –SCAN –RAM Disks –Optical Disks. File and Database Systems: Introduction -File System –File System Functions –File Organization –Allocating and freeing space –File Descriptor –Access Control Matrix.

Course Outcomes:
> CO1: To learn the fundamentals and mechanisms of OS to handle processes and threads and their communication.
> CO2: To learn the mechanisms of Mutual Exclusion and deadlock detection algorithms.
> CO3: To learn the mechanisms involved in memory management in contemporary OS.
> CO4: To gain knowledge on various scheduling levels.

CO5: To know the components of Disk Scheduling and file systems.

C0/PO&PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M					M		
CO 2				M				
CO 3		M					M	
CO 4		H			L			
CO 5			M					H

Text book

1.Dr.Priyanka Rathee,"Basic Principles of an Operating system:Learn the internals and Design Principle",BPB Publications, 2019.

Reference Book

1.H.M.Deitel,Paul J.Deitel, David R.Choffnes–"Operating System", 3rd Edition, Pearson Education Publication, Mumbai, 2006.

B.Sc(Information Technology) Degree Examination-Syllabus- for candidates admitted from the Academic Year 2019 – 2020 and onwards
FOURTH SEMESTER
PART III: CORE LAB 4 : MIDDLEWARE TECHNOLOGIES LAB

Maximum CIA : 40
Maximum CE : 60
Total Hours: 60

Course Objective: To equip the students to learning and development of client/ server and web based application using Java with Enterprise Edition.

1. Create a Window based Distributed application using RMI to perform Arithmetic and Relational operations with different servers, and create client interface to process.
2. Develop a JDBC application to perform CRUD operations for College Management System for any one object.
3. Create a web application using Servlet and HTML formatting tags to display user Bio-data by specifying user information, academic detail, area of interest and extra-curricular activities.
4. Design a Web Application to illustrate the usage every types of JSP tags with associated Java statements.
5. Design a web application using JSP to read Register number, name, 12 STD marks and generate a printable mark statement in another JSP page.
6. Create a web application for ATM machine, read the value using JSP and authenticate using Servlet.
7. Design a Web Application to generate Employee Payroll with PF, HRA, DA and Net pay based on basic pay, Read the employee information using JSP with validation and calculate and generate payroll using Servlet
8. Design a Web Application for DML operations for Voter ID registration, read the various values through JSP and store in Database through Servlet.
9. Develop a web application to perform CRUD operations for Product object of Departmental Store.
10. Develop a web application to illustrate the Middleware technology by create a Session Bean to perform AND, OR logical operations of two numbers using separate functions and call the functions through Servlet and JSP.
11. Design a web application using JSF for online examination application form, read the various values from user and display in second page.
12. Design a JSF application with JDBC to help bank employees for Customer registration, updation and view the customer with validation.

Course Outcome:

CO1. To design distributed applications and build projects using Java technology and interact with databases and perform database transactions

CO2. Understands the basis of Multi Tier Architecture and Web Page Development using Java Technology

CO3. To design and deploy Web Applications and Enterprise Applications using JSP and JEE Technology

CO4. To understand various MVC frameworks and apply the JSF for developing Web Applications using Java Technology

CO5. To design a Web Application with Validation using AJAX and AngularJS

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1			H			H		
CO2				H			H	
CO3		H						H
CO4				H			H	
CO5				H		H		

B.Sc (Information Technology) Degree Examination-Syllabus-for candidates admitted from the Academic Year 2019-2020 Onwards
FOURTH SEMESTER
PART IV: SBC II LAB: WEB DESIGN LAB

Maximum CE :75
Total Hours :36

Course Objectives: To make the students to get familiarized with the Web designing concepts.

1. Develop a HTML document to list out various countries in the world. Make them as a hypertext and describe about each country when it is clicked.

2. Write a HTML document to print your class Time Table.

3. Develop a Complete Web Page using Frames and Framesets which gives the Information about a Hospital using HTML.

4. Develop a HTML document to display a Registration Form for an inter-collegiate function.

5. Develop a html page to create a calendar using javascript by getting the year from the user which displays all month

6. Design a dynamic web page with validation using JavaScript.

7. Design a CD catalogue using XML.

8. Develop a html document which changes the background color on each click of a button or refresh of a page

9. To create an html page to demonstrate exception handling in javascript.

10. Develop a html document to display a new image & text when the mouse comes over the existing content in the page.

11. Develop a html document to perform sorting of array elements in ascending order using java script

12. Create a watermark in background for an image in html5

Course Outcomes:
CO1: To develop an ability to design and implement static web pages.

CO2: Design a basic web site using HTML5 and CSS3 to demonstrate responsive web design.

CO3: Implement dynamic web pages with validation using JavaScript objects by applying different event

handling mechanism.

CO4: Create XML documents and Analyze a webpage and identify its elements and attributes.

CO5:Utilize the concepts of JavaScript.

C0/PO&PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	H					H		
CO 2			M					
CO 3		M		H			H	
CO 4			L		L			M
CO 5	M				M			

B.Sc (Information Technology) Degree Examination-Syllabus-for candidates admitted from the Academic Year 2019-2020 Onwards
FOURTH SEMESTER
PART IV: SBC-II LAB :OFFICE AUTOMATION LAB

Maximum CE: 75
Total Hours: 36

Course Objective: Use Microsoft Office programs to create personal, academic and business documents following current professional and/or industry standards.

MS-WORD
1. Prepare a newspaper for two column format (Page which includes border, background,
   Pictures, Header and Footer)
2. Prepare a document with the aid of drawing objects.
3. Preparing a job application letter enclosing Detailed Resume. Performing Mail Merge Operation.

MS – EXCEL

4. Creating a Worksheet Using Formulas for a pay roll preparation.

5. Calculating electricity bill using formulas.

6. Drawing graphs to illustrate class performance of semester marks result analysis.

7. Create a program to excel forms.

MS- POWER POINT

8. Prepare 10 to 15 slides on any of the topic of current IT trend with all necessary formats.
9. Prepare 10 slides for an Advertisement Company to exhibit its features.

MS- OUTLOOK

10. Create a new message as personal email, shared email and also create a signature for personal email.

MS- ACCESS

11. Simple commands perform sorting on name, place and pin code of students database and address printing using label format.

12. Pay rolls processing and prepare report

Course Outcomes:

CO1. To develop a document in Microsoft Word with formatting, inserting clip arts, and also merging of many documents.

CO2. Students able to know the basic functions performed in Excel and also to insert different types of charts.

CO3. Students able to know to create a presentation in Microsoft PowerPoint that is interactive and legible content.

CO4. Students able to know to create slide presentations that include text, graphics, animation, and transitions.

CO5. Students able to know to create a database , generate forms and to print reports.

C0/PO&PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M							
CO 2		L					M	
CO 3			L					M
CO 4				M				
CO 5		M				M		

B.Sc (Information Technology) Degree Examination-Syllabus-for candidates admitted from the Academic Year 2019-2020 onwards
FOURTH SEMESTER
PART III: ALC II: BASICS OF ANIMATION

Maximum CE: 100

Course Objective:

A primary objective of this course is to teach the students how to develop multimedia programs. Another objective is to demonstrate how still images, sound, and video can be digitized on the computer.

Unit I:
Introduction :History and Evolution-Survey of Computer Graphics- Graphics Hardware and Software: Overview of Graphics Systems – GKS Programs – OpenGL programs – VRML Programs.
Unit II:
Graphics Primitives: Basic concepts – Line Drawing Algorithms – Loading the Frame Buffer – Line Function – Circle Drawing Algorithms – Bresenham's Midpoint Ellipse Algorithm- Polygon-fill Algorithms – Attributes of Graphics Primitives – Aliasing and Anti-aliasing – OpenGL programs.
Unit III:
Two-dimensional Transformations: Basic and Composite Transformations,Properties. Two-dimensional viewing and clipping: Viewing Pipeline-Clipping operations-Interior Clipping – OpenGL programs. Three-Dimensional Concepts: Display methods – Object Representations – OpenGL programs.
Unit IV:
Three-Dimensional Transformations:Basic and other transformations,OpenGL Programs. Three-Dimensional Viewing: 2D and 3D Graphics – Viewing Pipeline – viewing Coordinate – Projections – Clipping. Illumination and color models: Light Sources- Basic Illumination Models – Hlftone Patterns and Dithering Techniques – Chromaticity Diagram – RGB color model-CMY color model – HLS Color model.
Unit V:
Computer Animation and Realism : Basics and types – design of animation – Key frame systems – Computer Animation Tools and Applications. Multimedia Systems: Introductions-Multimedia system Architecture – Defining objects – data interface standards – multimedia input and output technologies – Data and File formats

Text Books :

1. D. Evangeline, S.Anitha – Computer Graphics and Multimedia, PHI 2016 Edition

Reference Books:

2. Vic Costello – Multimedia foundation- Core concepts for digital design, 2017 Edition.

Bachelor of Science (Electronics and Communication System) Degree Examination-Syllabus for Candidates admitted from the Academic Year 2019-2020 Onwards
FOURTH SEMESTER
PART IV: EDC 1 : COMPUTER COMMUNICATION

Maximum CE :50
Total Hours: 24

Course Objective
    To gain knowledge on the basic concepts of computer networks.

Unit I: (5 Hours)
Introduction to network: Uses of computer networks - Network Hardware: LAN – WAN – MAN – Wireless Network – Home Networks. Reference Models: OSI Reference Model – TCP/IP reference Model – Comparison of OSI and TCP/IP

Unit II: (4 Hours)
Physical layer: Guided Transmission Media: Magnetic Media – Twisted Pair Coaxial Cable – Fiber Optics. Wireless Transmission: Radio Transmission-Microwave Transmission

Unit III: (5 Hours)
Data Link Layer: Data Link Layer Design Issues -Error Detection and Correction-Elementary Data Link Protocols- Sliding Window Protocols

Unit IV: (5 Hours)
Network Layer: Routing Algorithms: -Shortest Path Algorithm- Flooding-Distance Vector Algorithm- Link state Routing-Hierarchical Routing

Unit V: (5 Hours)
Transport Layer: Elements of Transport Protocols- Internet Transport Protocols UDP-Internet Transport Protocols TCP-Application Layer: DNS-Electronic Mail-The World Wide Web.

Course Outcome:

    CO1: Describe the functions of each layer in OSI and TCP/IP model.
    CO2: Read the fundamentals of Physical layer, and apply them in real time
           applications.
    CO3: Study data link layer concepts, design issues, and protocols.
    CO4: Gain core knowledge of Network layer routing protocols and IP addressing.
    CO5: Acquire knowledge of Transport Layer and Application layer paradigms and
           protocols.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		L						L
CO 2	H				M			
CO 3		M	L		H	M		
CO 4	M						L	
CO 5	M		M	M			M	M

Text Book:
1. Andrew S.Tanenbaum, David J. Wetherall, "Computer Networks", 5th Edition, Tata McGraw-Hill Publishing Company Limited, 2013, India.

Reference Book:
1. Larry L. Peterson, Bruce S. Davie , "Computer Networks: A Systems Approach", 5th edition, Elsevier publication ,2012 , USA

2. Achyut Godbole," Data Communication and Networks",2nd Edition, TataMcGrawHill Publications , 2011,India.

B.Sc (Mathematics) Degree Examination-Syllabus-for candidates admitted from the Academic Year 2019-2020 onwards

FOURTH SEMESTER
PART IV: EDC 1: BASICS OF INTERNET

Maximum CE :50
Total Hours: 24

Course Objective: Enabling students to acquire theoretical knowledge to be successful in internet and web designing.

Unit I: (5 Hours)
Introduction: Introduction -What is Computer?-Computer Organization-History of the Internet and World Wide Web- -Hardware Trends.

Unit II: (5 Hours)
Dive into Web 2.0: What is Web 2.0-Search-User-Generated Content-Blogging-Social Networking-Social Media-.

Unit III: (5 Hours)
Introduction to XHTML: Introduction-First XHTML Example-Headings-Linking-Lists-Tables-Forms.

Unit IV: (5 Hours)
Cascading Style Sheets: Introduction-Inline Styles-Embedded Style Sheets-Linking External Style Sheets-Positioning Elements.

Unit V: (4 Hours)
Web Servers: Introduction-Http Transactions-Multi-tier Application Architecture-Accessing WebServers.

Course Outcomes:

CO1: To get skills about Computer, Internet and trends in hardware.
CO2: To gain knowledge about various content used in web.
CO3: Develop skills in XHTML to design a webpage.
CO4: Able to develop a webpage using more formatting using CSS.
CO5: Learn to gain knowledge about Web servers and its access.

C0/PO&PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L							
CO 2		M					M	
CO 3			H					
CO 4				M				M
CO 5		H			M	M		

Text Book:

1. Paul J. Deitel, Harvey M.Deitel,"Internet and World Wide Web",Pearson Education,Fourth Edition.

Reference Books:

1. Charis Bates, "Web Pragramming Building Internet Applications", Wiley India Pvt. Ltd. Second Edition, 2014.
2. Rajkamal "Internet and WebTechnologies" Tata McGraw-Hill Education, 2014.

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

FOURTH SEMESTER
CERTIFICATE COURSE – DTP

Total Hours: 30

Course Objective:

To inculcate knowledge on computer fundamentals and office automation tools.

Unit-I   (6 Hours)
Overview Of Desktop Publishing - Document organization-Word Processing Tools, New toys Ends–Body Type – Setting up your text – Display Type, Styles, Graphics-File Formats, Sources of Graphics,OLE,DDL,Formatting Graphics, Fonts and Printers.

Unit-II   (6 Hours)
MS Word: Creating A New Document- Finding And Replacing Formatting-Checking Spelling And Grammar-Adding Headers And Footers-Arranging Text In Columns-Inserting A Table Of Contents-Creating A Table-Modifying And Formatting A Table-Creating A Form Letter.

Unit- III   (6 Hours)
MS Excel: Creating A Simple Formula-Editing A Formula-Performing Calculation Using Functions-Creating A Chart-Editing A Chart-Creating A List-Sorting Data In List- Inserting Page Breaks-Printing Worksheets.

Unit-IV   (6 Hours)
MS Power Point: Creating A New Presentation- Choosing A Template-Adding Action Buttons-Creating Slide Transitions-Adding Animation-Timing A Presentation-Setting Up A Slide Show-Creating A Custom Slide Show-Printing A Presentation.

Unit-V   (6 Hours)
MS Access: Creating A Database-Working With A Table-Creating Table Using A Wizard-Working With a Table In Design View-Specifying Data Types And Field Properties-Planning And Defining Table Relationships-Filtering Out Records-Creating A Query Using A Wizard-Creating A Form Using Wizard-Editing Data In A Form-Creating Report Using A Wizard. Creating Web Pages with Office XP Programs: Designing Web Pages-Opening Web Pages –CreatingWeb Pages- Inserting Hyperlinks-Removing Hyperlinks-Enhancing Web Pages-Publishing Web Pages.

Text Books:
1. Tom Lichty version 2.0 Desktop Publishing with Word for windows.Ventana Press.
        Unit I: Chapter 1 (1.1, 1.2, 1.3, 1.5,1.6, 1.8,1.9)
2. Microsoft Office Xp Simply Visual Perspection, Inc. Edition 2001.
        Unit II: Chapter 4 (4.2,4.8,4.11) Chapter 6(6.5,6.6,6.7,6.10)
        Unit III: Chapter 8 (8.1-8.5, 8.11,8.12,8.14)
        Unit IV: Chapter 9 (9.1-9.3) Chapter 10(10.2-10.10)
        Unit V: Chapter 11 (11.1, 11.2, 11.6-11.11) Chapter 12(12.1,12.3,12.9)

Reference Book:

1. Learning Desktop Publishing by Ramesh Bingia Published by khanna Publishing Co Ltd-2016.

All UG Degree Examination - Syllabus for candidates admitted from the Academic Year 2019 – 2020 onwards

FOURTH SEMESTER
CERTIFICATE COURSE – PC HARDWARE

Total: 30 Hours

Course Objective:

    To equips students with basic knowledge in PC and its various devices.

Unit – I   (6 Hours)

Introduction to world of computers: What is a Computer and What does it do?-Computers to fit every need – Computer Networks and Internet – Computers and Society.

Unit – II   (6 Hours)

The System Unit: Overview-Data and Program Representation – Inside System Unit –How the CPU works – Making computers faster and better and in future

Unit – III   (6 Hours)

Storage –Overview – Storage System Characteristics – Magnetic Disk Systems – Optical Disc Systems- Flash Memory – Other types of storage systems

Unit – IV   (6 Hours)

Input and Output: Overview – Keyboards-Pointing Devices – Scanners, Readers and Digital Cameras –Audio Input – Display Devices – Printers – Audio Output

Unit – V   (6 Hours)

System Software: System Software vs Application Software – OS-OS for Desktop PCs and Severs – OS for Handheld PCs and other Devices – OS for Larger Computers-Utiliy Programs – Future of OS.

Text Book:

1. Morley & Parker, Fundamentals of Computers, Cengage Learning, Reprint 2014.

Reference Book:

1. Scott Mueller, Upgrading and Repairing PCs –, 20th Edition, Pearson Publishing, Second

    Impression 2014.

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

FOURTH SEMESTER
CERTIFICATE COURSE – LINUX OS

Total Hours: 30

Course Objective:

To enable the student to understand the importance of Linux Operating System and its commands.

Unit- I   (6 Hours)

Linux Software Architecture: Device Driver Layer - Linux Kernel - Process Management - File Management - Main Memory Management - Disk Management - System Call Interface - Language Libraries - Linux Shell – Applications - Historical Development of the Linux Operating System - Beginnings - History of Shells - Future Developments - Basic Comparison of Linux System Distributions - Linux System Standardization.

Unit- II   (6 Hours)

Structure of a Linux Command - Logging On and Logging Off - Stand Alone Login Connection to Linux - Graphical Login and Logout Procedures - Connecting via PuTTY from a Microsoft Windows Computer - Login and Logout Procedures - Connecting via an SSH Client between Linux Machines - Login and Logout Procedures - File Maintenance Commands and Help on Linux Command Usage - File and Directory Structure - Viewing the Contents of Files - Creating, Deleting, Managing - Directories.

Unit- III   (6 Hours)

Files and File System structure - Introduction - Linux File Concept - Types of Files - Simple/Ordinary File - Directory - Link File - Special (Device) File - Named Pipe (FIFO) - Socket - File System Structure - File System Organization- Home and Present Working Directories - Pathnames - Absolute and Relative - Some Standard Directories and Files - Standard Files and File Descriptors - File System - Displaying Disk Usage of Files and Directories - End-of-File Marker.

Unit- IV   (6 Hours)

File Security - Introduction - Password Based Protection - Encryption Based Protection - Protection Based on Access Permission - Types of Users - Types of File Operations/Access Permissions - Access Permissions for Directories - Determining and Changing File Access Privileges - Determining File Access Privileges - Changing File Access Privileges - Access Privileges for Directories - Default File Access Privileges - Special Access Bits - SUID Bit - SGID Bit - Sticky Bit.

Unit- V   (6 Hours)

Advanced File Processing - Sorting Files - Searching for Commands and Files - Regular Expressions - Searching Files - Cutting and Pasting - Compressing Files - gzip Command - gunzip Command - gzexe Command - zcat and zmore Commands - gzip, bzip2, and xz Commands - Encoding and Decoding - File Encryption and Decryption.

Text Book:

1. Syed Mansoor Sarwar, Robert M. Koretsky, Linux The Textbook, Second Edition, CRC Press, 2019.

Unit I: Chapter 1 (1.7, 1.8, 1.9)

Unit II: Chapter 2 (2.3, 2.4)
Unit III: Chapter 3 (4.1, 4.2, 4.3, 4.4, 4.6, 4.7, 4.8)
Unit IV: Chapter 5 (5.1, 5.2, 5.3, 5.4, 5.5, 5.6)
Unit V: Chapter 7 (7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9)

Reference Books:

1. Oliver Pelz, Fundamentals of Linux: Explore the essentials of the Linux command line, Packt Publishing, 2018
2. Jason Cannon, Linux for Beginners: An Introduction to the Linux Operating System, CreateSpace Independent Publishing Platform, 2017

VLB JANAKIAMMAL COLLEGE OF ARTS AND SCIENCE
DEPARTMENT OF IT & CT
Regulations for B.Sc IT and CT
(Effective from the academic year 2019-2020 onwards)

Introduction:

The Department of IT and CT started the UG Programme in B.Sc IT in 2007 and B.Sc CT in 2008.

Objective:

The courses, Bachelor of Science in Information Technology and Computer Technology, is designed to produce employable graduate in Information technology, which will enable to bridge the gap between industry and graduates to turn successful in Information and Computer Technology field.

Eligibility: UG Programme

A pass in Higher Secondary Examination conducted by Tamilnadu or an equivalent examination,

Duration of UG Programme

The course shall extend over a period of three years comprising of six semesters, with two semesters per year. There shall not be less than ninety instructional days during each semester. Examination shall be conducted at the end of each semester for the respective subject.

Vision

- To inculcate Information and Computer Technology knowledge that meets the challenges in IT trends
- To render excellence in teaching and learning in order to achieve success in all their endeavors

Mission:

- Teaching variety of computer Courses/ Programming Languages using current technology, giving students hands on experience
- Enhance the skill sets of students through updation of curriculum based guidelines

Programme Outcome:

After the completion of the under graduate programme in Bachelor of Science (B.Sc Degree), the graduates will be able to

PO1: Attain the core value in their respective area to meet out the global competitive edge.

PO2: Apply and update their skills towards their employability, entrepreneurship and its sustainability.

PO3: Realize their responsibility towards the society centre through ethical, social and human values.

PO4: Recognize the opportunities towards their up gradation and professional development in all spheres.

PO5: Ensure the quality in terms of all the aspects by the way of their contribution in work atmosphere.

Programme Specific Outcome:

B.Sc (CT):

PSO1. Understand the field of Information and Computer Sciences; to equip oneself in the latest technologies and Analyze the theoretical foundations of information and computation with their implementation and application in Computer Systems

PSO2. Acquire the knowledge in the various fields in Computer Technology includes Hardwares, Embedded Systems, Networks, Information Security, Databases, and Programming and Comprehend the professional ethics in any science subject to help in the devleopment of interdisciplinary approach for sustainable developments.

PSO3. B.Sc. (CT) graduates have great opportunity to enter the ever expanding software and IT fields as Programmers, Network Administrators and System Analysts.

B.Sc Computer Technology Board
Scheme of Examination (CBCS and OBE Pattern)
For the Candidates admitted during the Academic Year 2019-2020 onwards

Part	Sub Code	Subject Title	Ins.Hrs/Week	Dur. Hrs.	CIA	CE	Total	Credit
						Examination		
SEMESTER I								
I	19LATA01/ 19LAHI01/ 19LAFR01 19LAMY01	Language – I Tamil/Hindi/Malayalam/French	5	3	30	70	100	3
II	19ENG001	English –I	5	3	30	70	100	3
III	19BCT101	Core 1 – Programming in C	6	3	30	70	100	4
III	19BCTP01	Core Lab 1 - C Lab	6	3	40	60	100	4
III	19BCTID1	**IDC 1** – Numerical Methods and Statistics	6	3	30	70	100	4
IV	19UFCA01	**Foundation Course I** : EVS #	2	2	-	50	50	2
		Total	**30**				**550**	**20**
SEMESTER II								
I	19LATA02/ 19LAHI02/ 19LAFR02/ 19LAMY02	Language –II Tamil/Hindi/Malayalam/French	5	3	30	70	100	3
II	19ENG002	English – II	5	3	30	70	100	3
III	19BCT201	Core 2 - Object Oriented Programming with C++	6	3	30	70	100	4
III	19BCTP02	Core Lab 2 - C++ Lab	6	3	40	60	100	4
III	19BCTID2	**IDC 2** – Discrete Mathematics	6	3	30	70	100	4
IV	19UFCA02	**Foundation Course II**: Value Education #	2	2	-	50	50	2
		Total	**30**				**550**	**20**
SEMESTER III								
III	19BCT301	Core 3 – Java Programming	5	3	30	70	100	4
III	19BCT302	Core 4 - Data Structures	5	3	30	70	100	4
III	19BCT303	Core 5 - Computer Organization and Architecture	5	3	30	70	100	4
III	19BCTP03	Core Lab 3 – Java Programming Lab	5	3	40	60	100	4
III	19BCTID3	**IDC 3** – ERP	5	3	30	70	100	4
IV	19BCTSB1/ 19BCTSB2	**SBC I** - Web Design / Office Automation #	3	3	-	75	75	3
IV	19BTA001 \19ATA001/ 19EDC002	**EDC 1 :** BT – 1/AT - 1 / Communicative English #	2	2	-	50	50	2
		Total	**30**				**625**	**25**

		SEMESTER IV						
III	19BCT401	Core 6 – RDBMS	5	3	30	70	100	4
III	19BCT402	Core 7 – Embedded System	5	3	30	70	100	4
III	19BCT403	Core 8 – Operating System	5	3	30	70	100	4
III	19BCTP04	Core Lab 4 - RDBMS Lab	5	3	40	60	100	4
III	19BCTID4	**IDC 4** – Operations Research	5	3	30	70	100	4
IV	19BCTSB3/ 19BCTSB4	**SBC II Lab** - Web Design Lab / Office Automation Lab #	3	3	-	75	75	3
IV	19BTA002/ 19ATA002/ 19BCTED1	**EDC 2** : BT - 2/AT -2/Mathematical Aptitude#	2	2	-	50	50	2
V	19NSS001/ 19NCC001/ 19SPT001/ 19EXT001	NCC/NSS/Sports/Extension Activities@			50		50	2
		Total	**30**				**675**	**27**
		SEMESTER V						
III	19BCT501	Core 9 - .Net Framework	5	3	30	70	100	4
III	19BCT502	Core 10 – Computer Networks	5	3	30	70	100	4
III	19BCT503	Core 11 – Software Engineering	5	3	30	70	100	4
III	19BCT504	Core 12 – PC Hardware	5	3	30	70	100	4
III	19BCTP05	Core Lab 5 - Net Framework Lab	5	3	40	60	100	4
III	19BCTE01/ 19BCTE02/ 19BCTE03	**Elective I :** IOT/ Mobile Computing / Cloud Computing	5	3	30	70	100	4
		Total	**30**				**600**	**24**
		SEMESTER VI						
III	19BCT601	Core 13 - PHP Programming	5	3	30	70	100	4
III	19BCT602	Core 14 – Information Security	5	3	30	70	100	4
III	19BCTP06	Core Lab 6 - PHP Lab	5	3	40	60	100	4
III	19BCTE04/ 19BCTE05/ 19BCTE06	**Elective II :** Big Data Analytics / Data Mining and Warehousing/ Python Programming	5	3	30	70	100	4
III	19BCTE07/ 19BCTE08/ 19BCTE09	**Elective III :** Software Testing/ Computer Graphics & Multimedia/ Mobile Application Development	5	3	30	70	100	4
III	19BCTPR1	Project and Viva Voce	5	3	50	50	100	4
		Total	**30**				**600**	**24**
		Total					**3600**	**140**

For Candidates admitted from the Academic year 2019 - 2020 onwards
No Continuous Internal Assessment (CIA) only Comprehensive Examination (CE)
@ No Continuous Internal Assessment (CIA) and Comprehensive Examination (CE)
IDC- Inter disciplinary Course, EDC – Extra Disciplinary Course, SBC – Skill Based Courses

1. List of Skill Based Course

Semester	Code	Subject Title	Credits
III	19BCTSB1	SBC I - Web Design	3
III	19BCTSB2	SBC I - Office Automation	3
IV	19BCTSB3	SBC II Lab – Web Design Lab	3
IV	19BCTSB4	SBC II Lab - Office Automation Lab #	3

2. List of Electives Papers

Elective I			
1	19BCTE01	IOT	
2	19BCTE02	Mobile Computing	
3	19BCTE03	Cloud Computing	
Elective II			
1	19BCTE04	Big Data Analytics	
2	19BCTE05	Data Mining and Warehousing	
3	19BCTE06	Python Programming	
Elective III			
1	19BCTE07	Software Testing	
2	19BCTE08	Computer Graphics & Multimedia	
3	19BCTE09	Mobile Application Development	

3. List of Extra Disciplinary Course papers

Sem	Code	Subject Title	Credits	Maximum Marks
III	19BTA001	Basic Tamil-I	2	50
III	19ATA001	Advanced Tamil-I	2	50
III	19EDC002	Communicative English	2	50
IV	19BTA002	Basic Tamil-II	2	50
IV	19ATA002	Advanced Tamil-II	2	50
IV	19BCTED1	Mathematical Aptitude	2	50

4. List of Additional Credit Papers

Sem	Code	Subject Title	Credits	Maximum Marks
III	19BCTAC1	Linux OS	2	100
IV	19BCTAC2	Basics of Animation	2	100
V	19BCTAC3	Management Information System	2	100

SUMMARY

Part	No of Papers	Total Credits	Total Marks
I	2	6	200
II	2	6	200
III –Core	20	80	2000
III – IDC	4	16	400
III – Elective	3	12	300
III –Project	1	4	100
IV –Foundation Course	2	4	100
IV – EDC	2	4	100
IV – Application Oriented Course	2	6	150
V Extension Activities	-	2	50
Total	**38**	**140**	**3600**

REGULATIONS FOR B.Sc (CT)
(Effective from the academic year 2019-2020 onwards)

1. **Project and Viva Voce** :

Each student in the UG final year shall compulsorily undergo Project Work in the 6th semester. Projects shall be done individually. Project Coordinators shall allocate the project title and the guide. Project work shall be done only in the lab provided by the college, including Project Record Preparation. Project Reviews shall be conducted thrice in which the progress of project work shall be strictly evaluated by respective Project Guides and Project Coordinators. Viva-Voce shall be conducted only in the presence of Industrialists or academicians. Out of the Total of 100 marks, 50% of mark shall be allocated for CIA and 50% for CE VIVA VOCE.

2. **Submission of Record Note Books for practical examinations**

Candidates appearing for practical examinations shall submit bonafide Record Work for the concerned Practical Examinations. If not the candidate has to submit a bonafide certificate issued by the concerned subject in-charge duly signed by the Head of the department in order to permitted to take up the Practical Examination. The candidate so permitted will not be eligible for

the Record Work mark.

3. Distribution of Marks:

The following are the distribution of marks for Comprehensive Examinations and CIA for Theory, Practical and Project.

Category	Max Marks	Comprehensive Examination		Internal Marks	Overall passing minimum (Internal + CE)
		Max Marks	Passing Minimum		
Theory Paper	100	70	28	30	40
	75	75	30	-	30
	50	50	20	-	20
Practical Paper	100	60	24	40	40
Project	100	50	20	50	40

4. Distribution of Internal Mark for Theory :
(No Passing Minimum for CIA)

S. No	CIA	Distribution of Marks
1	Pre Model Examination	70
2.	Model Examination	70
3.	Seminar	30
4.	Attendance	10
Total		**180/6=30**

Breakup for Attendance:

65% - 74 %	- 4 Marks
75% - 80%	- 6 Marks
81% - 90%	- 8 Marks
91% - 100%	- 10 Marks

Breakup for Seminar

Content	10mark
Flow of Presentation	10mark
Stage management and Body Language	10mark
Total	30

5. Distribution of Internal Mark for Practical:

MAXIMUM MARKS : 40		
S No	CIA	Distribution of Marks
1	For Completion of the Practical List	20
2	Test –I	10
3	Test –II	10
Total		**40**

6. Distribution of Comprehensive Exam Mark for Practical :

MAXIMUM MARKS : 60		
S. No	Comprehensive Examination	Distribution of Marks
1	**Record**	**10**
2	**Program – I** a) Algorithm b) Coding c) Execution	 5 10 10 TOTAL **(25)**
3	**Program – II** a) Algorithm b) Coding c) Execution	 5 10 10 TOTAL **(25)**
	Total	**60**

Distribution of Comprehensive Exam Mark for SBC Practical:

MAXIMUM MARKS : 75		
S. No	Comprehensive Examination	Distribution of Marks
1	**Record**	**15**
2	**Program – I** d) Algorithm e) Coding f) Execution	 5 10 15 TOTAL **(30)**
3	**Program – II** d) Algorithm e) Coding f) Execution	 5 10 15 TOTAL **(30)**
	Total	**75**

7. Distribution of Mark for Project VIVA-VOCE :

S.No	CIA	Distribution of Marks
1	**INTERNAL** a) Review –I b) Review –II c) Documentation & Final Review	 10 10 30 **Total (50)**
2	**EXTERNAL *** a) Presentation **b)** Viva	 30 20 **Total (50)**
	Total	**100**

*Marks to be awarded by both External and Internal Examiners.

8. Conduct of Practical Examinations:

Practical examinations shall be conducted with one internal examiner and one external

examiner and the question paper for practical examination shall be set by both Internal and External examiners.

9. Pattern of Question Paper

For Pre model Test, Model and Comprehensive Examination under – Graduate and Post-Graduate Courses.

Maximum Marks : 70 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×4=20)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 75 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×5=25)	Each question carries five marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 50 / Time 2 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×3=15)	Each question carries three marks	Internal Choice
Section – C	(5×5=25)	Each question carries five marks	Internal Choice
Maximum Marks : 100 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×8=40)	Each question carries eight marks	Internal Choice
Section – C	(5×10=50)	Each question carries ten marks	Internal Choice

10. Certificate Course

In the academic year 2019-2020 we are introducing certificate course on III and IV semester as an interdisciplinary course. The course title is as follows.

List of Certificate Course

S.No	Sem	Subject Title
1		Office Automation
2	III	Basics of Web Design
3		Basics of Animation Technique
4		Linux OS
5	IV	DTP
6		PC Hardware

NOTE:

1. The questions should be numbered continuously running through the Sections A, B and C.
2. Questions should be evenly distributed among the UNIT in the syllabus in all the sections of the question paper.
3. While framing questions with internal choice the questions must be identified as (a) or (b). (e.g. 11. a or b). Further, the internal choice must be from the same UNIT.
4. The Controller of the Examinations shall arrange for the setting of question papers on the basis the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies.

B.Sc. (Computer Technology) Degree Programme - Syllabus for candidates admitted from the academic year 2019 – 2020 onwards

<div align="center">

FIRST SEMESTER
PART III : CORE 1: C PROGRAMMING

</div>

<div align="right">

Maximum CIA : 30
Maximum CE : 70
Total Hours: 72

</div>

Course Objectives:
Learn the structure, syntax and semantics of C programming. It helps to gain the knowledge on different control structures like decision control, loop control and arrays. Students are trained in modular programming concepts and storage classes. Crystal knowledge on the limitations of basic data types , concepts of derived data types and user defined data types. It also discovers various FILEI/O operations.

Unit-I   **(**15 Hours)
Overview of C – History of C – Importance of C – Basic Structure of C Programs – Programming Style- Executing a C Program – Constants ,Variables and Data Types – Introduction- Character Set – C Tokens – Keywords and Identifiers – Constants – Variables – Data Types – Declaration of Variables – Assigning values to Variable s- Assigning values to variables- Defining Symbolic constant – Declaring variable as constant and as Volatile- Operators and Expressions – Arithmetic – relational –Logical – Assignment – Increment and Decrement operator- conditional operator – bitwise operator - special operators – arithmetic expressions – evaluation of expression – precedence of arithmetic operators .

Unit-II   (15 Hours)
Managing Input and Output Operations : Reading a character – Writing a character – Formatted input – Formatted output – Decision Making and Branching – Decision making if statement – simple if – if else – nesting of if – else – else-if – ladder – switch -?:operator- go to operator- Decision making and looping – while statement – do statement – for statement – jumps in loop – Array – One dimensional array – declaration-initialization – Two dimensional array – multidimensional arrays – dynamic arrays – Character Arrays and Strings - Declaring and initializing string variables – reading strings from terminal – writing strings to screen – arithmetic operations on character- putting strings together – comparison of two strings – string handling functions .

Unit-III   (15 Hours)
Character Arrays and Strings - Declaring and initializing string variables – reading strings from terminal – writing strings to screen – arithmetic operations on character- putting strings together – comparison of two strings – string handling functions .User Defined Functions - Need for user – defined function – Elements of user defined function – definition of functions- return values and their types – function calls – function declaration – category of functions – No arguments and no return values – arguments but no return values – arguments with return values – no arguments but returns a value- functions that returns a multiple values – nesting of functions – recursion – passing arrays to functions – passing strings to functions – scope, visibility and lifetime of variables.

Unit-IV   (15 Hours)

Structure and union – Defining a structure – declaring and accessing structure variables-
structure initialization – copying and comparing structure variable – operations on individual
members – array of structures – arrays within structure – structure within structure –
structures and functions – unions – size of structures – bit fields – Pointers – understanding
pointers – accessing the address of a variable – declaring and initializing a pointer variables-
accessing a variable through its pointer – chain of pointers – pointer expression – pointers
and arrays – pointers and character strings – array of pointers – pointers as function
arguments – functions returning pointers – pointers to functions – pointers to structures –
troubles in pointers

Unit-V   (12 Hours)

File Management in C - defining and opening a file – closing a file – I/O operations on files
– Error handling during I/O operations – random access to files – command line arguments –
Dynamic Memory Allocation and Linked List – Dynamic memory allocation – allocating a
block of memory malloc – Allocation multiple blocks of memory calloc – releasing the used
space – free – altering the size of block – realloc – The Preprocessor – Macro Substitution –
File inclusion – compiler control directives – ANSI additions .

Course Outcomes:
 •Understand the fundamentals of C programming.
•Choose the decision making statements, loops and arrays to solve the problem.
•Use functions to solve the given problem.
•Allocate dynamic memory using pointers.
•Apply the structures, unions and files Operations in a specific need.

Text Book:
   1. E.Balagurusamy, "Programming in C "7th edition, McGraw Hill Education(India)
      Private Ltd, fifth reprint , 2017

Reference Books
     1. Ashok N. Kamathane, " Programming in C ", 2nd Edition , Pearson Education Delhi, Reprint
2012.

B.Sc. (Computer Technology) Degree Programme - Syllabus for candidates admitted from the academic year 2019 – 2020 onwards

FIRST SEMESTER
PART III : CORE LAB 1: C PROGRAMMING

Maximum CIA : 40
Maximum CE :   60
Total Hours: 72

Course Objective:

To make the student learn the basic programming knowledge about C

1. Write a program for computing the volume of sphere, cone and cylinder assume that dimensions are integer's use type casting where ever necessary.
2. Write a Program to read marks of a student in six subjects and print whether pass or fail (using if-else).
3. Write a Program to calculate electricity bill. Read starting and ending meter reading. The charges are as follows.

No. of Units Consumed	Rate in(Rs)
1-100	1.50 per unit
101-300	2.00 per unit for excess of 100 units
301-500	2.50 per unit for excess of 300 units
501-above	3.25 per unit for excess of 500 units

4. Develop a C program to check whether the number is perfect or not.
5. Write a C program to display multiplication tables from 1 to 10 except 3 and 5.
6. Write a C program to count no. of positive numbers, negative numbers and zeros in the array.
7. Write a C program to swap two numbers using a) Call ByValue B) Call By Reference.
8. Write a C program to find the Factorial of given number using recursion .
9. Write a C program to create structure called traveler and members of structure are train no, coach no, seat no, source ,destination , gender, age, name and departure date.
10. Write a C program to print the given strings in ascending order.
11. Write a C program to perform arithmetic operations using pointer.
12. Write a C program that will receive a file name and line of text as command line argument and write the text to the file.

Course Outcome:

- After the completion of this course the student would be able to
- Read, understand and trace the execution of the program written in C language.
- Write the C code for the given algorithm
- Develop C programs involving functions, recursion, pointers, and structures.
- Design applications using file concepts.

B.Sc. (Computer Technology) Degree Examination-Syllabus for Candidates admitted from the academic year 2019-2020 Onwards

SECOND SEMESTER
PART - III – CORE 2 – OBJECT ORIENTED PROGRAMMING WITH C++

Maximum CIA : 30
Maximum CE :   70
Total Hours: 72

Course Objectives: On the Successful Study of this Subject the Students should have acquired knowledge in Developing C++ Programs.

Unit-I   (15 Hours)
Introduction:What Is Object-Oriented Programming-Structured Programming-Object-Oriented Programming-Characteristics Of Oops - Advantages-Disadvantages-Object-Oriented Languages-Importance Of C++ - History Of C++ - C++ Versus C-Compiling And Debugging C++ Programs-Stages Of Program Development. Data Types, Operators and Expressions: Identifiers and Keywords-Data Types- C++ Simple Data Types- Literals-Variables-The Const Data Type-C++ Operators-Type Conversion-Input and Output Streams: Comment-Declaration Of Variables- The Main () Function-Features Of Io Stream-Manipulators- I/O Stream Flags.

Unit-II   (15 Hours)
Control Statements: Conditional Expressions-Loop Statements-Nested Control Structures-Breaking Control Statements. Functions: Introduction-Defining A Function-The Return Statement-Function Prototypes-Types Of User-Defined Functions-Actual And Formal Arguments-Local Vs Global Variables-Default Arguments-Structure Of C++ Program-Nested Functions-Recursive Functions-.Arrays: Array Notation-Array Declaration-Array Initialization-Arrays And Functions-Multidimensional Arrays- Character Arrays.

Unit-III   (15 Hours)
Storage Class Specifiers- Automatic variable – Register variable – Static variable – External variable – the const modifier – the Volatile modifier - Classes And Objects: Introduction-Declaration Of A Class-Member Functions-Defining The Object Of A Class-Accessing A Member Of Class-Array Of Class Objects-Classes Within Classes. Special Member Functions: Constructors-Destructors-Inline Member Functions-Static Class Members-Friend Functions-This Pointer.

Unit-IV   (15 Hours)
Inheritance: Introduction-Single Inheritance - Types Of Base Classes - Types Of Derivation - Types Of Inheritance - Function Overloading-Operator Overloading - Overloading Of Binary Operators-Overloading Of Unary Operators. Polymorphism-Early Binding - Virtual Functions - Late Binding - Pure Virtual Functions - Abstract Base Classes - Virtual Base Classes - String Handling functions.

Unit-V   (12 Hours)

Templates: Function Template-Class Template-Overloading Of Function Template-Exception Handling-Data File Operations -Opening and Closing Files-Reading/Writing A Character from A File-Binary File Operations-Random Access File Processing-Command Line Arguments.

Course Outcome:
- Describe the procedural and object oriented paradigm with concepts of streams, data types and operators.
- Describe decision making by branching and looping statements, functions and arrays.
- Understand dynamic memory management techniques Using pointers, constructors, destructors, etc
- Classify inheritance with the understanding of Inheritance, early and late binding, usage of virtual functions and Polymorphism.
- Demonstrate the use of various OOPs concepts with the help of exception handling, templates and file operations.

Text Books:
1. D.Ravichandran, "Programming with C++", 3rd Edition, Tenth Reprint 2017, Tata McGraw Hill.

Reference Books:
1. Ashok N Kamthane, "Object-Oriented Programming With ANSI &Turbo C++", Pearson Education, 2009, India.
2. Yashavant Kanetkar, "Let Us C++", BPB Publications, 2nd Revised Edition, 2010.
3. E.Balagurusamy, "Object-oriented programming with C++", 5th Edition, 2011, Tata McGraw Hill Publishing Company Ltd.

B.Sc. (Computer Technology) Degree Programme - Syllabus for candidates admitted from the academic year 2019 – 2020 onwards

SECOND SEMESTER
PART - III - CORE LAB - 2 – OBJECT ORIENTED PROGRAMMING WITH C++

Maximum CIA : 40
Maximum CE :   60
Total Hours: 72

Course Objectives: On the Successful Study of this Subject the Students should have acquired the Professional Skills in Developing C++ Programs.

1. Write a C++ Program for Developing Student Mark List and Display the Result.

2. Write a C++ Program to Illustrate the Use of a Class.

3. Write a C++ program that uses functions

    a) To swap two integers.

    b) To swap two characters.

    c) To swap two reals using function overloading

4. Write a C++ program find the factorial of the given number using constructors and recursion.

5. Write a C++ program to determine if the given string is a palindrome or not.

6. Write a C++ Program to Perform Arithmetic Operations using Operator Overloading.

7. Write a C++ Program to Display Patient Details By using Single Inheritance.

8. Write a C++ Program to Create Employee Payroll by using Multilevel Inheritance.

9. Write a C++ Program to Display Book Details with Price using Polymorphism.

10. Write a C++ Program to Find the Smallest of n Numbers using Array of Pointers.

11. Write a C++ Program to perform Exception Handling for divide by Zero Exception.

12. Write a C++ Program to Copy the Text from One File to Another File using Command Line Arguments.

Course Outcomes:
*   Master using key structured programming constructs: declarations, sequence, selection, repetition, evaluating expressions.
*   Be familiar with C++classes.
*   Master Constructors, Operator overloading ad Polymorphism concepts.
*   Be familiar with using String handling functions.
*   Be familiar with using C++ functions and the concepts related to good modular design.
*   Be familiar with using pointers and reference parameters.
*   Master one-dimensional and two-dimensional arrays.
*   Be familiar with using text file input/output.

B.Sc. (Computer Technology) Degree Programme - Syllabus for candidates admitted from the Academic Year 2019 – 2020 onwards

THIRD SEMESTER
PART III : CORE 3: JAVA PROGRAMMING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: To facilitate students to obtain a theoretical knowledge in Console and Windows Application Development through Java Programming.

Unit I: (12 Hours)
The History and Evolution of Java : The Creation of Java - How Java changed the Internet - Java's Magic: The Bytecode 9- Servlets: Java on Server Side - The Java Buzzwords - The Evolution of Java. An overview of Java: Object Oriented Programming - A First Simple Program- Lexical Issues - Data Types, Variables and Arrays

Unit II: (12 Hours)
Operators, Control statements, Introducing classes – A Closer look at methods and classes- Overloading methods – using objects as parameters – Returning objects – recursion- Introducing Access Control - Understanding Static - Introducing final, Introducing nested and inner class – using command line arguments – Inheritance

Unit III: (12 Hours)
Packages and Interfaces: Packages - Access Protection - Importing Packages - Interfaces. Exception Handling: Exception Handling Fundamentals - Exception Types - Using Try and Catch - Multiple catch clauses - Finally - Java's Bulit-in Exceptions. Multithreaded Programming – String Handling – More Utility Classes: Date - Calendar - GregorianCalendar - TimeZone - SimpleTimeZone

Unit IV: (12 Hours)
Event Handling: Two Event Handling Mechanism - The Delegation Event Model - Event Classes - The Key Event Class - sources of Events - Event Listener Interfaces – Introducing the AWT: Working with Windows, Graphics and Text. Using AWT Controls, Layout Managers, and Menus. Introducing Swing: The Origin of Swing Swing is Built on the AWT - Two Key Swing Features - The MVC Connection - The Swing Package.

Unit V: (12 Hours)
Exploring Swing, Introducing Swing Menus. Introducing JavaFX GUI Programming, JavaFX Basic Concepts, JavaFX Application Skeleton, Compiling and Running a JavaFX Program - The Application Thread - A Sample JavaFX Control: Label - Using Buttons and Events. Exploring JavaFX Controls: Toggle Buttons - Radio Button - Check Box - ListView - ComboBox - TextField.

Course Outcome:

CO1.   Learns and understands the basis of Java Programming and its overview
CO2.   Understands the Control and Iterative Statements and apply the Object Oriented programming in Java
CO3.   Understands the use of packages, runtime error handling and String Libraries
CO4.   Understands the windows application development using heavyweight AWT and lightweight Swing Components

CO5.   To recognize the role of Java technology in project development using JavaFX technology

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1		M						H
CO2	H					H		
CO3			H			H		
CO4				H				H
CO5				H				H

Text Book:
1. Herbert Schildt, Java - The Complete Reference, 11th edition, 2018, McGraw Hill Education, India.

Reference Books:
1. Y. Daniel Liang, Introduction to Java Programming, 8th edition, 2011, Pearson Education, New Jersey.

B.Sc (Computer Technology) Degree Examination-Syllabus for candidates admitted from the Academic Year 2019 – 2020 onwards

THIRD SEMESTER
PART III : CORE 4 : DATA STRUCTURES

Maximum CIA : 30
Maximum CE :   70
Total Hours: 60

Course Objective :

To enable the students to learn and acquire knowledge on fundamentals of different types of data structures and the ways to implement them for a particular problem.

Unit I: (12 Hours)

Introduction: Basics terminologies – Data structures – Data structure operation – Algorithms. Preliminaries: Mathematical Notations and Functions - Algorithmic notation – Control structures – Complexity of algorithm - Other Asymptotic Notations for Complexity of Algorithms.

Unit II: (12 Hours)
Arrays, Records and Pointers: Linear Array - Representation of Linear Array in Memory - Traversing Linear Arrays - Inserting and Deleting - Multidimensional Arrays. Linked list: Representation of linked list in memory-Traversing a linked list-Searching a linked list - Memory allocation - Insertion into a linked list - Deletion from a linked list - Header linked list-Two way lists.

Unit III: (12 Hours)
Stacks – Queues – Recursion: Stacks – Array representation of stacks – Linked representation of stacks – Arithmetic Expression: Polished notation – Recursion – Towers of Hanoi – Queues – Linked representation of Queues – Deques - Priority queues.

Unit IV: (12 Hours)
Trees: Binary tree-Representing binary trees in memory-Traversing binary tree-Binary search tree-Searching and Inserting in Binary Search tree - Deleting in Binary Search Tree. Graphs: Introduction-Graph theory terminology-Sequential representation of graph- Warshall's Algorithm: Shortest Path - Linked Representation of Graph - Operations on graphs.

Unit V: (12 Hours)
Sorting And Searching: Introduction - Sorting - Insertion Sort - Selection Sort - Merging - Merge Sort - Radix Sort - Searching and Data Modification - Hashing.

Course Outcomes:

After undergoing this course students will be able to

- Understand how various data structures are represented in memory and are used by algorithms.
- Understand the concept of time and space complexity and analyze them for different algorithms and also the ability to estimate programming time using Big O notation.
- Apply the different linear and non-linear data structures to solve real time problems .
- Design and employ appropriate data structures for solving computing problems.
- Implement searching and sorting algorithms in solving larger problems.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO1				M		M		M
CO2					L			
CO3			H				H	
CO4		H		H				
CO5	M							H

Text Book
1. Seymour Lipschutz "Data Structures with C" (Schaum`s Outline Series) Published by Tata McGraw-Hill Education Pvt. Ltd., 2015

References
1. John R. Hubbard, "Data Structure with Java", Schaum'sOutline,Second Edition, 2011.
2. Clifford A. Shaffer, "Data Structures & Algorithm Analysis in Java", Dover Publications Inc, Third Edition, 2011

B.Sc.(Computer Technology) Degree Examination - Syllabus for candidates admitted from the Academic Year 2019 – 2020 onwards

THIRD SEMESTER
PART III : CORE 5: COMPUTER ORGANIZATION AND ARCHITECTURE

Maximum CIA : 30
Maximum CE : 70
Total Hours: 60

Course Objective: To impart knowledge about Computer Organization and Architecture.

Unit I: (10 Hours)
DATA REPRESENTATION - Data types – Number Systems – Octal and Hexadecimal Numbers – Decimal Representation – Alpha numeric representation – Complements – (r-1)'s complement – r's Complements – Fixed Point Representation – Other Binary Code - Logic Gates –Half Adder-Full Adder- Flip-flop.

Unit II: (12 Hours)
REGISTER TRANSFER AND MICRO OPERATIONS - Register Transfer Language – Register Transfer – Bus and Memory Transfer – Arithmetic micro- operations – Logic micro-operations – shift micro- operations .BASIC COMPUTER ORGANIZATION AND DESIGN - Instruction code-Computer Registers – Computer Instructions – Timing and Control – Instruction cycle - Memory Reference Instructions .

Unit III: (13 Hours)
CENTRAL PROCESSING UNIT - General Register Organization – control word – Stack Organisation– Register stack – memory stack – Reverse Polish Notation – Evaluation of arithmetic expressions – Instructions Formats – Three Address – Two Address – One Address – Zero address instructions- Addressing Modes – Data transfer and manipulation – Program Control - RISC – CISC characteristics – RISC characteristics.

Unit IV: (13 Hours)
INPUT OUTPUT ORGANIZATION - Input Output Organization – Peripheral Devices – Input Output Interface – Asynchronous Data Transfer - Priority Interrupt – Daisy Chaining Priority – Parallel Priority Interrupt – Priority Encoder - Direct Memory Access – Input Output Processor   - CPU – IOP Communication.

Unit V: (13 Hours)
MEMORY ORGANIZATION - Memory Organization – Memory Hierarchy – Main Memory – RAM and ROM chips- Memory Address Map – Memory connection to CPU- Associative Memory – Hardware Organization – Match Logic- Read – Write Operation - Cache Memory - Associative Mapping – Direct Mapping – Set Associative Mapping – Writing into Cache – Cache Initialization.

Course Outcome
   CO 1:Define different number systems, binary addition and subtraction, 2's complement
        representation and operations with this representation.
   CO 2:Understand the concept of register transfer and various types of micro operations

and inter processor communication.
CO 3:Understand the architecture of central processing unit RISC and CISC computers.
CO 4:Exemplify in a better way the I/O and memory organization.
CO 5:Learn various types of memory organizations.

C0/PO&PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1			L			M		
CO 2		M						M
CO 3			M			M		
CO 4	M			L			M	
CO 5					H			

Text Book
1. M.Morris Mano, Computer System Architecture , 3rd Edition , Pearson Prentice Hall , Eighth Impression , 2011

References Book
1. William Stallings , Computer Organisation and Architecture , Designing for performance , 8th Edition, Pearson Prentice Hall, 2012

B.Sc (ComputerTechnology) Degree Examination – Syllabus for Candidates admitted from the Academic Year 2019 – 2020 onwards

THIRD SEMESTER
PART III : CORE LAB 3: JAVA PROGRAMMING LAB

Maximum CIA : 40
Maximum CE : 60
Total Hours: 60

Course Objective: To facilitate students to obtain a practical knowledge in Console and Windows Application Development through Java Programming.

1. Create a Console application for Bank, identify the various values for customer, read the value and print it in standard pattern
2. Create a program to read the user information like Name, Gender, Date of Birth, Aadhar card number, through command line arguments and display it.
3. Create a program, read a number and print the following pattern using separate static function and different iterative statement

```
*****      1           1
*****      12          22
*****      123         333
           1234        4444
```

4. Create an Integer Array called Number, read n values from user and display the maximum and minimum number.
5. Create a class for Employee object, identify the data of Employee and read and print the values using separate functions. Create an instance and call the functions.
6. Create a class Overloading and read five numbers from user through constructor and add first two numbers, three numbers, four numbers and five numbers using separate functions by illustrating method overloading.
7. Create the following classes Student, Test, and Result and an interface Sports through separate packages. Result is derived from Test and Sports; Test is derived class of Student. Implement Hybrid inheritance and method overriding by defining data and methods to process student.
8. Create a program to illustrate Multithreading to print even and odd number using separate Threads.
9. Create an AWT Frame read two string and perform following String functions by choosing a option from Radio Button.
    a. Check the equality of String and equal ignore case also
    b. Compare the two string
    c. Concatenate two string
    d. Substring of first string
    e. Convert the String into Uppercase and Lowercase
10. Create a Swing based network application to send the message from Sender to Receiver.
11. Create a MDI frame using Swing Components and perform the following operations
    a. Read a number, print its equivalent numeric word using switch
    b. Read two number and perform binary OR and AND operations.
12. Create a JavaFX application to perform addition of two numbers.

Course Outcome:

CO1.   Learns and understands the basis of Java Programming and its overview

CO2.   Understands the Control and Iterative Statements and apply the Object Oriented programming in Java

CO3.   Understands the use of packages, runtime error handling and String Libraries

CO4.   Understands the windows application development using heavyweight AWT and lightweight Swing Components

CO5.   To recognize the role of Java technology in project development using JavaFX technology

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1		M						H
CO2	H					H		
CO3			H			H		
CO4				H				H
CO5				H				H

B.Sc (Computer Technology) Degree Examination-Syllabus-for candidates admitted from the Academic Year 2019-2020 Onwards
THIRD SEMESTER
PART IV: SBC-I WEB DESIGN

Maximum CE: 75
Total Hours: 36

Course Objectives: To make the students to get familiarized with the Web designing concepts.

Unit I: (6 Hours)
Introduction to Web Programming- Coding Standards, Block Elements, Text Elements, and Character References.

Unit II: (7 Hours)
Cascading Style sheets(CSS)- Organizing a Page's Content with Lists , Figures, and various Organizational Elements.- Table and CSS Layout.

Unit III: (8 Hours)
Links and Images – Image Manipulations, Audio, and Video: Introduction –Positioning Images- Shortcut Icon- iframe Element- CSS Image sprites- Audio-Background Images- Web Fonts-Video.

Unit IV: (7 Hours)
Introduction to Javascript:Functions ,DOM,Forms, and Event Handlers- window object- Constraint validation for form controls- Loops, Additional controls, Manipulating CSS with Javascript.

Unit V: (8 Hours)
JSON. Document Object Model: Nodes and Objects. JQuery Selection.-jQuery Traversal and Manipulation.- jQuery Events- Data Attributes and Templates.

Course Outcomes:

CO1: To discover how a web does works really, and what makes website works.

CO2: Setting up page layout, color schemes, contract, typography in the designs.

CO3: Develop skills in analyzing how to embed audio and video in the website.

CO4: Able to develop a dynamic webpage by the use of java script.

CO5: Utilize graphic design and animations to enhance web pages.

C0/PO&PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L							
CO 2		M					M	
CO 3			H					
CO 4				M				M
CO 5		H			M	M		

Text Book:
1. John Dean, Web Programming with HTML5, CSS, and JavaScript, Jones & Bartlett Learning, 2018. (Unit I, II, III, IV)
2. Dane Cameron, HTML5, JavaScript, and jQuery 24-Hour Trainer, John Wiley & Sons, 2015. (Unit V)

Reference Books
1. Charis Bates, "Web Pragramming Building Internet Applications", Wiley India Pvt. Ltd. Second Edition, 2014

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THIRD SEMESTER
PART IV: SBC-II OFFICE AUTOMATION

Maximum CE: 75

Total Hours: 36

Course Objective: Recognize when to use each of the Microsoft Office programs to create professional and academic documents.

Unit I: (7 Hours)
Explore Office 2016-Create and Manage Files- Microsoft Word 2016:-Modify the Structure and Collaborjate on documents-Merge data with documents and labels.

Unit II: (7 Hours)
Microsoft Excel 2016:- Perform calculations on data- Manage worksheet data-Reorder and summarize data – Ajnalyze alternative data sets.

Unit III: (7 Hours)
Microsoft Excel 2016 Power Programming with VBA- Introduction to Excel VBA- Interacting with other applications: Understanding Microsoft office Automation- Automating outlook for Excel.

Unit IV: (7 Hours)
Microsoft PowerPoint 2016:- Create and Manage slides- Insert and Manage simple graphics. Microsoft Outlook 2016:-Send and receive email messages – Organize your inbox- Manage scheduling.

Unit V: (8 Hours)
Microsoft Access 2016: Access Building Blocks-Understanding Access tables –Working with Access Queries-Working with Access forms and reports.

Course Outcomes:

CO1.   To create and edit multi- page word documents.
CO2.   To create, edit and enhance the spreadsheets. Use basic formulas and generate charts of different types.
CO3.   To create email Automation Outlook from Excel
CO4.   To create and edit basic PowerPoint presentations. Use template, color schemes, animation, slide transition. Insert images including digital pictures.To send, receive and open email attachments.
CO5.   To create, edit and enhance databases. Create Queries. Create and print Reports

C0/PO&PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M							
CO 2		L				M		
CO 3			M					M
CO 4				M				
CO 5		M					M	

Text Books:

1. Joan Lambert and Curtis Frye, Microsoft Office 2016 Step by Step, 2nd Edition, Microsoft Press,2016. (Unit I , II , IV and V)
2. Michael Alexander, Richard Kusleika,Excel 2016 Power programming with VBA, John Wiley & Sons, Inc,2016 (Unit III)

Reference Books:

1. Michael Alexander, Richard Kusleika, Access 2016 Bible The Comprehensive Tutorial Resource, John Wiley & Sons, Inc,2016

B.Sc (Computer Technology) Degree Examination-Syllabus-for candidates admitted from the Academic Year 2019-2020 onwards
THIRD SEMESTER
PART III – ALC 1: – LINUX OS

Maximum CE: 100

Course Objective: To learn the fundamentals of LINUX Operating Systems and learn programmatically to implement simple OS mechanisms

Unit I:
Introduction to LINUX: Operating systems- GUIs- The linux command line – Virtual Machines – Unix and Linux – Types of Users. The Bash Shell: Introduction – Entering Linux Commands – Man pages – Bash Features – Other Shells – Interpreters.

Unit II:
Navigating Linux File System: Introduction – Filename Specification – File System Commands – Locating Files – Permissions – Linux File System Structure – Secondary Storage Devices – File Compression. Managing Processes: Introduction – Forms of Process Management – Starting, Pausing, and Resuming Processes – Monitoring Processes – Managing Linux Processes – Killing Processes.

Unit III:
Linux Applications: Text Editiors – Productivity software – Latex – Encryption Software – Email programs – Network Softwar. Regular Expressions: Metacharacters and examples – GREP – SED – awk.

Unit IV:
 Shell Scripting: Simple Scripting – Variables, Assignments and Parameters – Input and Output – Selection Statements – Loops – Arrays – String Manipulation – Functions – C-Shell Scripting. Installing Linux: Introduction – The Linux-operating system – Installing Centos. Installing UBUNTU – Software Installation Choices – Virtual Memory –Setting up Network connectivity and a Printer – Selinux

Unit V:
User Accounts: Introduction – Creating Accounts and Groups – Managing Users and Groups – Passwords – PAM – Establishing Common User Resources – The SUDO Command – Establishing User and Group Policies. The Linux File System: Storage Access – Files – Partitions – Linux Top-Level Directories Revisited- Other System Administration duties

Text Books:

1. Richard fox – LINUX with operating system concepts-, CRC Press, Taylor and Francis Group, 2015 Edition.

Reference Books:

1. Richard Petersen – The Complete reference Linux, CRC Press, Taylor and Francis Group, 2015 Sixth Edition

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

THIRD SEMESTER

CERTIFICATE COURSE – BASICS OF ANIMATION TECHNIQUE

Total Hours: 30

Course Objective:

The objective of this subject is to teach the principles of how different types of media can be processed and presented by computers.

Unit - I   (6 Hours)
Multimedia- An Overview: Introduction – Characteristics of Multimedia – Uses of Multimedia – Analog and Digital Representations – Visual Display Systems. Text: Introduction - Types of Text – Unicode Standard – Font – Insertion of Text – Text Compression – Text File Formats.

Unit– II   (6 Hours)
Image: Introduction – Image Data Representation – Image Acquisition – Image Processing – Binary Image Processing – Grayscale Image Processing – Color Image Processing - Image File Formats.

Unit - III   (6 Hours)
Graphics: Introduction – Uses of Graphics – 2D Transformations - 3D Transformations - Graphics File Formats – Graphics Software.

Unit - IV   (6 Hours)
Audio: Introduction - Types and Properties of Sounds – Digital Audio - Digital Audio Processing – Audio Transmission - Audio File Formats.
Video: Introduction – Digital Video - Digital Video Processing – Video File Formats.

Unit - V   (6 Hours)
Animation: Introduction – Uses of Animation – Principles of Animation - 3D Animation - Animation File Formats – Animation Software.

Text Book:
1. Ranjan Parekh, Principles of Multimedia, Tata McGraw Hill Education Private Limited - Second Edition, Reprint 2019.
   Unit 1: Chapter 1 (1.1, 1.3, 1.5, 1.6, 1.10) Chapter 2 (2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7)

   Unit 2: Chapter 3 (3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7)

   Unit 3: Chapter 4 (4.1, 4.3, 4.6, 4.25, 4.29, 4.32)

   Unit 4: Chapter 5 (5.1, 5.4, 5.7, 5.10, 5.13, 5.14) Chapter 6 (6.1, 6.7, 6.8, 6.10)

   Unit 5: Chapter 7 (7.1, 7.3, 7.5, 7.8, 7.10, 7.11)

Reference Book:
1. Ashok Banerji, Ananda Mohan Ghosh, Multimedia Technologies, McGraw Hill Publication.

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

THIRD SEMESTER
CERTIFICATE COURSE- OFFICE AUTOMATION

Total Hours: 30

Course Objective:

To inculcate knowledge on computer fundamentals and office automation tools.

Unit-I   (6 Hours)

Overview Of Computers And Programming - Electronic Computer Then And Now-Computer Hardware–Computer Software – Binary Systems - Digital Computers And Digital Systems, Binary Numbers, Number Base Conversion, Octal And Hexadecimal Numbers.

Unit-II   (6 Hours)

MS Word: Creating A New Document- Finding And Replacing Formatting-Checking Spelling And Grammar-Adding Headers And Footers-Arranging Text In Columns-Inserting A Table Of Contents-Creating A Table-Modifying And Formatting A Table-Creating A Form Letter.

Unit-III   (6 Hours)

MS Excel: Creating A Simple Formula-Editing A Formula-Performing Calculation Using Functions-Creating A Chart-Editing A Chart-Creating A List-Sorting Data In List- Inserting Page Breaks-Printing Worksheets.

Unit-IV   (6 Hours)

MS Power Point: Creating A New Presentation- Choosing A Template-Adding Action Buttons-Creating Slide Transitions-Adding Animation-Timing A Presentation-Setting Up A Slide Show-Creating A Custom Slide Show-Printing A Presentation.

Unit-V   (6 Hours)

MS Access: Creating A Database-Working With A Table-Creating Table Using A Wizard-Working With a Table In Design View-Specifying Data Types And Field Properties-Planning And Defining Table Relationships-Filtering Out Records-Creating A Query Using A Wizard-Creating A Form Using Wizard.

Text Books:

 1.M.Morris Mano, Computer System Architecture , 3rd Edition , Pearson Prentice

   Hall, First Impression , 2007.

        Unit I: Chapter 1 (1.1, 1.2, 1.3, 1.5-1.9) Chapter 2(2.1-2.4)

2. Microsoft Office Xp Simply Visual Perspection, Inc. Edition 2001.

        Unit II: Chapter 4 (4.2,4.8,4.11) Chapter 6(6.5,6.6,6.7,6.10)

        Unit III: Chapter 8 (8.1-8.5, 8.11,8.12,8.14)

        Unit IV: Chapter 9 (9.1-9.3) Chapter 10(10.2-10.10)

        Unit V: Chapter 11 (11.1, 11.2, 11.6-11.11) Chapter 12(12.1,12.3,12.9)

Reference Book:

1. Fundamentals Of Computers by E Balagurusamy Published by Tata Mcgraw Hill Publishing Co Ltd-2015.

All UG Degree Examination - Syllabus for candidates admitted from the Academic Year 2019 – 2020 onwards

Third Semester
Certificate course – Basics of Web Design

Total Hours: 30

Course Objective:

      Enabling students to acquire knowledge in internet and web designing using HTML and CSS.

Unit - I   (6 Hours)
Introduction: Getting Started - What is Web Publishing? – Getting your Tools in Order – Introducing HTML and CSS – Creating Web Pages – Learning the Basics of HTML – Organizing Information with Lists – Working with Links.

Unit – II   (6 Hours)
Doing more with HTML and CSS: Formatting Text with HTML & CSS – Using CSS to Style a Site – Using Images on Your Web Pages – Building Tables – Using CSS to position Elements on the page

Unit – III   (6 Hours)
Designing Forms – Structuring a Page with HTML5 – Integrating Multimedia: Video and Sound – Advanced CSS: Page Layout in CSS – Using Responsive Web Design

Unit – IV   (6 Hours)
Using JavaScript and JQuery: Introducing JavaScript – Using jQuery – Using JavaScript in Your Pages – Working with Frames and Linked Windows

Unit – V   (6 Hours)
Designing for Everyone: Designing for the Mobile Web – Designing for User Experience.   Going Live on the Web : How to Publish Your Site – Taking Advantage of the Server – Search Engines and SEO.

Text Book:
1. Laura Lemay, Rafe Colburn, Jennifer Kyrnin – Sams Teach Yourself HTML, CSS & JavaScript Web Publishing in One Hour a Day, Seventh Edition, Pearson Education, 2016.

Reference Book:
1. Elizabeth Castro, Bruce Hyslop – HTML5 and CSS3, Seventh Edition, 2012

B.Sc (Computer Technology) Degree Examination-Syllabus for candidates admitted from the Academic Year 2019 – 2020 onwards
FOURTH SEMESTER
PART III : CORE 6: RDBMS

Maximum CIA : 40
Maximum CE :   60
Total Hours : 60

Course Objective: To emphasize on how to organize, maintain and retrieve efficiently, effectively information.

Unit-1:   (12 Hours)
Database Concepts: A Relational approach: Database –Relationships –DBMS –Relational Data Model –Integrity Rules –Theoretical Relational Languages. Database Design: Data Modeling and Normalization: Data Modeling –Dependency –Database Design –Normal forms –Dependency Diagrams –De normalization –Examples of Normalization- Entity Relationship Diagrams-Indexing and Hashing-Transaction concept

Unit-2:   (12 Hours)
Oracle9i: Overview: Personal Databases –Client/Server Databases –Oracle9i an introduction –SQL *Plus Environment –SQL –Logging into SQL *Plus -SQL *Plus Commands –Errors & Help –Alternate Text Editors -SQL *Plus Worksheet -SQL *Plus. Oracle Tables: DDL: Naming Rules and conventions –Data Types –Constraints –Creating Oracle Table –Displaying Table Information –Altering an Existing Table –Dropping, Renaming, Truncating Table –Table Types –Spooling –Error codes.

Unit-3:   (12 Hours)
Working with Table: Data Management and Retrieval: DML –adding a new Row/Record –Customized Prompts –Updating and Deleting an Existing Rows/Records –retrieving Data from Table –Arithmetic Operations –restricting Data with WHERE clause –Sorting –Revisiting Substitution Variables –DEFINE command –CASE structure. Functions and Grouping: Built-in functions –Grouping Data. Multiple Tables: Join –Set operations.

Unit-4:   (12 Hours)
PL/SQL: A Programming Language: History –Fundamentals –Block Structure –Comments –Data Types –Other Data Types –Declaration –Assignment operation –Bind variables –Substitution Variables –Printing –Arithmetic Operators. Control Structures and Embedded SQL: Control Structures –Nested Blocks –SQL in PL/SQL –Data Manipulation –Transaction Control statements. PL/SQL Cursors and Exceptions: Cursors –Implicit & Explicit Cursors and Attributes –Cursor FOR loops –SELECT...FOR UPDATE –WHERE CURRENT OF clause –Cursor with Parameters –Cursor Variables –Exceptions –Types of Exceptions.

Unit-5:   (12 Hours)
PL/SQL Composite Data Types: Records –Tables –Varrays. Named Blocks: Procedures –Functions –Packages –Triggers –Data Dictionary Views.

Course Outcome:

After the completion of this course the student would be able to

CO1: Designing the database using E-R diagram.

CO2: Concept of database languages such as DML, DDL, TCL.

CO3: ORACLE software would be able to use SQL/PL

CO4: Understand the concepts of Exception and Cursors.

CO5: Well-known about Packages and Triggers.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M							M
CO 2		H				H		
CO 3			M				L	
CO 4				L				
CO 5					M			

Text Books :

1. Nilesh Shah-Database Systems Using Oracle, 2nd edition, PHI 2016. [Unit 1: Chapter 1, Unit 2,3,4,5]

2. Abraham Silberschatz, Henry F.korth, S. Sudarshan-Database System Concepts . 6th Edition McGraw Hill Education, 2015
   [Unit 1: Chapter 2]

Reference Books:

1. Scott Urman, Ron Hardman, Michael McLaughlin, ORACLE Database 10g PL/SQL Programming, Tata McGraw-Hill Edition reprint 2013

B.Sc. (Information Technology) Degree Examination – Syllabus for candidates admitted from the Academic Year 2019 – 2020 onwards

FOURTH SEMESTER

PART III-CORE 7 – EMBEDDED SYSTEMS

Maximum CIA : 30
Maximum CE : 70
Total Hours : 60

Course Objective: Enable the students to learn the concepts of Embedded systems and its applications.

Unit I: (12 Hours)

INTRODUCTION TO EMBEDDED SYSTEMS: Embedded System–Processor Embedded in to a System –Embedded Hardware Units and Devices in System – Embedded Software in a System – Classification of Embedded Systems – Examples of Embedded Systems.

Unit II: (12 Hours)

COMMUNICATION BUSES AND DISTRIBUTED NETWORK EMBEDDED SYSTEMS: Introduction – Serial Bus Communication Protocols: I^2C Bus- CAN Bus – USB – Internet Enabled Systems: Introduction – HTTP – TCP – UDP - IP - Ethernet - Wireless and Mobile System Protocols: 802.11 – Zigbee.

Unit III: (12 Hours)

EMBEDDED PROGRAMMING IN C, C++: Programming in Assembly Language (ALP) in High – Level Language 'C'- 'C' Program Elements: Macros and Functions – Data types, Data Structures – Modifiers – Loops and Pointers – Use of Loops, Infinite Loops and Conditions – Use of Function Calls – Embedded Programming in C++.

Unit IV: (12 Hours)

PROGRAM MODELING CONCEPTS: Program Models – Data Flow Graph – Based Program Models –- State Machine Programming Models for Event-controlled Programs – Modeling of Multiprocessor Systems.

Unit V: (12 Hours)

REAL TIME OPERATING SYSTEMS – INTER PROCESS COMMUNICATION: Multiple process in an application– Multiple threads in an application – Tasks – Task and Thread States–Tasks and Data– Concepts of Semaphores– Queues and Mailboxes- Pipe and Socket Functions. Case Study of Embedded System for Smart Card.

Course Outcome:

CO1. Learns about basis of Embedded System and its Classification

CO2. Acquires knowledge about Networks and its Protocols

CO3. Gains the knowledge in Programming a embedded system with C and C++ languages

CO4. Learns the embedded system design using data flow graphs

CO5. Learns the Threads and Semaphores in real time operating system

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	H					M		
CO 2	H						M	
CO 3				H				H
CO 4				L			M	
CO 5		M				H		

Text book:

1. Raj Kamal, "Embedded systems architecture, Programming and Design", 3rd Edition, Tata McGraw Hill - Publishing company Pvt. Ltd.-2016.

Reference books:

1. Shibu K V, "Introduction to Embedded systems", Tata McGraw Hill Education - Pvt. Ltd., 2009.
2. David E Simon, "An Embedded Software Primer", Pearson Education – 12th Indian reprint, 2005.

Bachelor of Science (Computer Technology) Degree Examination-Syllabus for Candidates admitted from the Academic Year 2019-2020 Onwards
FOURTH SEMESTER
PART - III – CORE 8 – OPERATING SYSTEMS

Maximum CE : 70
Maximum CIA: 30
Total hours: 60

Course Objectives: To understand the concepts of fundamental and system components in various operating systems.

Unit I: (12 Hours)
Introduction and Process Concepts: Definition of OS –Early History of OS-Definition of Process-Process States –Process State Transitions –Process Control Block –Operations on Processes –Suspend and Resume -Interrupt Processing: Interrupt classes –Context Switching.

Unit II: (12 Hours)
IPC and Process Synchronization: Critical Section-Mutual Exclusion-Semaphores-Deadlock& Indefinite postponement: Introduction –Examples of Deadlock –A Related Problem: Indefinite Postponement –Resource Concepts –Four necessary conditions for deadlock –Major areas of deadlock research –Deadlock Prevention –Deadlock Avoidance and the Banker's Algorithm –Deadlock Detection –Deadlock Recovery.

Unit III: (12 Hours)
Processor Management Job and Processor Scheduling: Scheduling Levels –Preemptive Vs Non-Preemptive Scheduling –Priorities –Deadline Scheduling –FIFO –RR –Quantum size – SJF –SRT –HRN. Distributed Computing: Classification of sequential and Parallel Processing –Array Processors –Data flow computers -Multiprocessors –Fault Tolerance.

Unit IV: (12 Hours)
Storage Management and Virtual Storage Management: Storage Hierarchy –Real Storage Management Strategies –Contiguous Vs Non-Contiguous Storage allocation –Single user contiguous storage allocation –Fixed Partition Multiprogramming –Variable Partition Multiprogramming, Multiprogramming with Storage Swapping. Virtual Storage Management Strategies: Page replacement strategies –Working sets –Demand Paging –Page size.

Unit V: (12 Hours)
Information Management Disk Performance Optimization: Operation of moving head disk storage –Need for disk scheduling –Seek optimization –FCFS –SSTF –SCAN –RAM Disks – Optical Disks. File and Database Systems: Introduction -File System –File System Functions –File Organization –Allocating and freeing space –File Descriptor –Access Control Matrix.

Course Outcomes:
CO1: To learn the fundamentals and mechanisms of OS to handle processes and threads and their communication.
CO2: To learn the mechanisms of Mutual Exclusion and deadlock detection algorithms.
CO3: To learn the mechanisms involved in memory management in contemporary OS.

CO4: To gain knowledge on various scheduling levels.
CO5: To know the components of Disk Scheduling and file systems.

C0/PO&PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M					M		
CO 2				M				
CO 3		M					M	
CO 4		H			L			
CO 5			M					H

Text book

1.Dr.Priyanka Rathee,"Basic Principles of an Operating system:Learn the internals and Design Principle",BPB Publications, 2019.

Reference Book

1.H.M.Deitel,Paul J.Deitel, David R.Choffnes–"Operating System", 3rd Edition, Pearson Education Publication, Mumbai, 2006.

B.Sc (Computer Technology) Degree Examination – Syllabus for Candidates admitted from the Academic Year 2019 – 2020 onwards

THIRD SEMESTER
PART III : CORE LAB 4: RDBMS LAB

Maximum CIA : 40
Maximum CE : 60
Total Hours: 60

Course Objective: The major objective of this lab is to provide a strong formal foundation in database concepts, technology and practice to the participants to groom them into well-informed database application developers.

1.Create a table client_master with the following fields clients_no, name, address, city,state,pincode,remarks,bal_due with suitable data types. Create another table supplier_table from client_master.
   a) Select all the fields and rename client_no with supplier_no and name with supplier_name.
   b) Insert data into client_master
   c) Insert data into supplier_master from client_master.
   d) Delete the selected row in the client_master.

2. Create a table sales_order with s_order_no and product_no as primary key. Set other fields to store client number, delivery address, delivery data, order status.
    a) Add a new column for storing salesman number using ALTER Command.
    b) Set the s_order_no as foreign key as column constraints.
    c) Set the s_order_no as foreign key as table constraints.
    d) Enforce the integrity rules using CHECK.

3. Create a table student_master with the following fields name, regno, dept and year with suitable data type. Use select command to do the following.
    a) Select the Student's name column.
    b) Eliminate the duplicate entry in table.
    c) Sort the table in alphabetical order.
    d) Select all the students of a particular department

4. Write a PL/SQL program to insert ten values in a table, check each value is odd or even and insert the output into the table

5. Create a procedure to calculate simple interest. Principal, rate of interest and no. of years are given as input.

6. Write a PL/SQL block that will select all rows from a employee table. The block displays empno, empname, doj, dept, and experience column. Experience column should be calculated using current date and doj column.

7. Create a table to contain phone number, user name, address of the phone user. Write a function to search for an address using phone numbers.

8. Create a table stock to contain the item code, item name, current stock, date of last purchase. Write a stored procedure to seek for an item using item code and delete it, if the date of last purchase is before 1 year from the current date. If not, update the current stock.

9. Create a table to store the salary details of the employees in a company. Declare the Cursor to contain employee number, employee name and net salary1. Use Cursor to update the employee salaries.

10. Create a table to contain the information about the voters in a particular constituency. Write a proper trigger to update or delete a row in the table.

11. Create a table to store the details of the employee Salary to insert, update and delete values using view statements

12. Write a PL/SQL to raise an Exceptions in Bank Account Management table when the deposit amount is zero.

Course Outcome:
    CO1. DML and DDL database languages are well-known using their commands.
    CO2. Key constraints are used with SQL/PL
    CO3. Understand the concepts of Cursors, Triggers and Exceptions.
    CO4. Able to know about Programming Language and Structured Query Language.
    CO5. Understand concepts in PL/SQL and View Statements

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M							M
CO 2		H				H		
CO 3			M				L	
CO 4				L				
CO 5					M			

B.Sc (Computer Technology) Degree Examination-Syllabus-for candidates admitted from the Academic Year 2019-2020 Onwards
FOURTH SEMESTER
PART IV: SBC II LAB : WEB DESIGN LAB

Maximum CE :75
Total Hours :36

Course Objectives: To make the students to get familiarized with the Web designing concepts.

1. Develop a HTML document to list out various countries in the world. Make them as a hypertext and   describe about each country when it is clicked.

2. Write a HTML document to print your class Time Table.

3. Develop a Complete Web Page using Frames and Framesets which gives the Information about a Hospital using HTML.

4. Develop a HTML document to display a Registration Form for an inter-collegiate function.

5. Develop a html page to create a calendar using javascript by getting the year from the user which displays all month

6. Design a dynamic web page with validation using JavaScript.

7. Design a CD catalogue using XML.

8. Develop a html document which changes the background color on each click of a button or refresh of a page

9. To create an html page to demonstrate exception handling in javascript.

10. Develop a   html document to display a new image & text when the mouse comes over the existing content in the page.

11. Develop a html document to perform sorting of array elements in ascending order using java script

12. Create a watermark in background for an image in html5

Course Outcomes:

CO1: To develop an ability to design and implement static web pages.

CO2: Design a basic web site using HTML5 and CSS3 to demonstrate responsive web design.

CO3: Implement dynamic web pages with validation using JavaScript objects by applying different event handling mechanism.

CO4: Create XML documents and Analyze a webpage and identify its elements and attributes.

CO5:Utilize the concepts of JavaScript.

C0/PO&PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	H					H		
CO 2			M					
CO 3		M		H			H	
CO 4			L		L			M
CO 5	M				M			

B.Sc (Information Technology) Degree Examination-Syllabus-for candidates admitted from the Academic Year 2019-2020 Onwards
FOURTH SEMESTER
PART IV: SBC-II LAB :OFFICE AUTOMATION LAB

Maximum CE: 75
Total Hours: 36

Course Objective**:** Use Microsoft Office programs to create personal, academic and business documents following current professional and/or industry standards.

MS-WORD

1. Prepare a newspaper for two column format (Page which includes border, background,
    Pictures, Header and Footer)
2. Prepare a document with the aid of drawing objects.
3. Preparing a job application letter enclosing Detailed Resume. Performing Mail Merge Operation.

MS – EXCEL

4. Creating a Worksheet Using Formulas for a pay roll preparation.

5. Calculating electricity bill using formulas.

6. Drawing graphs to illustrate class performance of semester marks result analysis.

7. Create a program to excel forms.

MS- POWER POINT

8. Prepare 10 to 15 slides on any of the topic of current IT trend with all necessary formats.
9. Prepare 10 slides for an Advertisement Company to exhibit its features.

MS- OUTLOOK

10. Create a new message as personal email, shared email and also create a signature for

personal email.

MS- ACCESS

11. Simple commands perform sorting on name, place and pin code of students database and address printing using label format.

12. Pay rolls processing and prepare report

Course Outcomes:

CO1.   To develop a document in Microsoft Word with formatting, inserting clip arts, and also merging of many documents.

CO2.   Students able to know the basic functions performed in Excel and also to insert different types of charts.

CO3.   Students able to know to create a presentation in Microsoft PowerPoint that is interactive and legible content.

CO4.   Students able to know to create slide presentations that include text, graphics, animation, and transitions.

CO5.   Students able to know to create a database , generate forms and to print reports.

C0/PO&PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M							
CO 2		L					M	
CO 3			L					M
CO 4				M				
CO 5		M				M		

B.Sc (Computer Technology) Degree Examination-Syllabus-for candidates admitted from the Academic Year 2019-2020 onwards
FOURTH SEMESTER
PART III: ALC II: BASICS OF ANIMATION
Maximum CE: 100

Course Objective: A primary objective of this course is to teach the students how to develop multimedia programs. Another objective is to demonstrate how still images, sound, and video can be digitized on the computer.

Unit I:

Introduction :History and Evolution-Survey of Computer Graphics- Graphics Hardware and Software: Overview of Graphics Systems – GKS Programs – OpenGL programs – VRML Programs.

Unit II:

Graphics Primitives: Basic concepts – Line Drawing Algorithms – Loading the Frame Buffer – Line Function – Circle Drawing Algorithms – Bresenham's Midpoint Ellipse Algorithm- Polygon-fill Algorithms – Attributes of Graphics Primitives – Aliasing and Anti-aliasing – OpenGL programs.

Unit III:

Two-dimensional Transformations: Basic and Composite Transformations,Properties. Two-dimensional viewing and clipping: Viewing Pipeline-Clipping operations-Interior Clipping – OpenGL programs. Three-Dimensional Concepts: Display methods – Object Representations – OpenGL programs.

Unit IV:

Three-Dimensional Transformations:Basic and other transformations,OpenGL Programs. Three-Dimensional Viewing: 2D and 3D Graphics – Viewing Pipeline – viewing Coordinate – Projections – Clipping. Illumination and color models: Light Sources- Basic Illumination Models – Hlftone Patterns and Dithering Techniques – Chromaticity Diagram – RGB color model-CMY color model – HLS Color model.

Unit V:

Computer Animation and Realism : Basics and types – design of animation – Key frame systems – Computer Animation Tools and Applications. Multimedia Systems: Introductions-Multimedia system Architecture – Defining objects – data interface standards – multimedia input and output technologies – Data and File formats

Text Books:

1. D. Evangeline, S.Anitha – Computer Graphics and Multimedia, PHI 2016 Edition

Reference Books:

2. Vic Costello – Multimedia foundation- Core concepts for digital design, 2017 Edition.

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

FOURTH SEMESTER
CERTIFICATE COURSE – DTP

Total Hours: 30

Course Objective:

To inculcate knowledge on computer fundamentals and office automation tools.

Unit-I   (6 Hours)

Overview Of Desktop Publishing - Document organization-Word Processing Tools, New toys Ends–Body Type – Setting up your text – Display Type, Styles, Graphics-File Formats, Sources of Graphics,OLE,DDL,Formatting Graphics, Fonts and Printers.

Unit-II   (6 Hours)

MS Word: Creating A New Document- Finding And Replacing Formatting-Checking Spelling And Grammar-Adding Headers And Footers-Arranging Text In Columns-Inserting A Table Of Contents-Creating A Table-Modifying And Formatting A Table-Creating A Form Letter.

Unit- III   (6 Hours)

MS Excel: Creating A Simple Formula-Editing A Formula-Performing Calculation Using Functions-Creating A Chart-Editing A Chart-Creating A List-Sorting Data In List- Inserting Page Breaks-Printing Worksheets.

Unit-IV   (6 Hours)

MS Power Point: Creating A New Presentation- Choosing A Template-Adding Action Buttons-Creating Slide Transitions-Adding Animation-Timing A Presentation-Setting Up A Slide Show-Creating A Custom Slide Show-Printing A Presentation.

Unit-V   (6 Hours)

MS Access: Creating A Database-Working With A Table-Creating Table Using A Wizard-Working With a Table In Design View-Specifying Data Types And Field Properties-Planning And Defining Table Relationships-Filtering Out Records-Creating A Query Using A Wizard-Creating A Form Using Wizard-Editing Data In A Form-Creating Report Using A Wizard. Creating Web Pages with Office XP Programs: Designing Web Pages-Opening Web Pages –CreatingWeb Pages- Inserting Hyperlinks-Removing Hyperlinks-Enhancing Web Pages-Publishing Web Pages.

Text Books:

1. Tom Lichty version 2.0 Desktop Publishing with Word for windows.Ventana Press.
       Unit I: Chapter 1 (1.1, 1.2, 1.3, 1.5,1.6, 1.8,1.9)
2. Microsoft Office Xp Simply Visual Perspection, Inc. Edition 2001.
       Unit II: Chapter 4 (4.2,4.8,4.11) Chapter 6(6.5,6.6,6.7,6.10)
       Unit III: Chapter 8 (8.1-8.5, 8.11,8.12,8.14)
       Unit IV: Chapter 9 (9.1-9.3) Chapter 10(10.2-10.10)
       Unit V: Chapter 11 (11.1, 11.2, 11.6-11.11) Chapter 12(12.1,12.3,12.9)

Reference Book:

1. Learning Desktop Publishing by Ramesh Bingia Published by khanna Publishing Co Ltd-2016.

All UG Degree Examination - Syllabus for candidates admitted from the Academic Year 2019 – 2020 onwards

FOURTH SEMESTER
CERTIFICATE COURSE – PC HARDWARE

Total: 30 Hours

Course Objective:

To equips students with basic knowledge in PC and its various devices.

Unit – I (6 Hours)

Introduction to world of computers: What is a Computer and What does it do?-Computers to fit every need – Computer Networks and Internet – Computers and Society.

Unit – II (6 Hours)

The System Unit: Overview-Data and Program Representation – Inside System Unit –How the CPU works – Making computers faster and better and in future

Unit – III (6 Hours)

Storage –Overview – Storage System Characteristics – Magnetic Disk Systems – Optical Disc Systems- Flash Memory – Other types of storage systems

Unit – IV (6 Hours)

Input and Output: Overview – Keyboards-Pointing Devices – Scanners, Readers and Digital Cameras –Audio Input – Display Devices – Printers – Audio Output

Unit – V (6 Hours)

System Software: System Software vs Application Software – OS-OS for Desktop PCs and Severs – OS for Handheld PCs and other Devices – OS for Larger Computers-Utiliy Programs – Future of OS.

Text Book:
1. Morley & Parker, Fundamentals of Computers, Cengage Learning, Reprint 2014.

Reference Book:
1. Scott Mueller, Upgrading and Repairing PCs –, 20th Edition, Pearson Publishing, Second Impression 2014.

All UG Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.

FOURTH SEMESTER
CERTIFICATE COURSE – LINUX OS

Total Hours: 30

Course Objective:

To enable the student to understand the importance of Linux Operating System and its commands.

Unit- I   (6 Hours)
Linux Software Architecture: Device Driver Layer - Linux Kernel - Process Management - File Management - Main Memory Management - Disk Management - System Call Interface - Language Libraries - Linux Shell – Applications - Historical Development of the Linux Operating System - Beginnings - History of Shells - Future Developments - Basic Comparison of Linux System Distributions - Linux System Standardization.

Unit- II   (6 Hours)
Structure of a Linux Command - Logging On and Logging Off - Stand Alone Login Connection to Linux - Graphical Login and Logout Procedures - Connecting via PuTTY from a Microsoft Windows Computer - Login and Logout Procedures - Connecting via an SSH Client between Linux Machines - Login and Logout Procedures - File Maintenance Commands and Help on Linux Command Usage - File and Directory Structure - Viewing the Contents of Files - Creating, Deleting, Managing - Directories.

Unit- III   (6 Hours)
Files and File System structure - Introduction - Linux File Concept - Types of Files - Simple/Ordinary File - Directory - Link File - Special (Device) File - Named Pipe (FIFO) - Socket - File System Structure - File System Organization- Home and Present Working Directories - Pathnames - Absolute and Relative - Some Standard Directories and Files - Standard Files and File Descriptors - File System - Displaying Disk Usage of Files and Directories - End-of-File Marker.

Unit- IV   (6 Hours)
File Security - Introduction - Password Based Protection - Encryption Based Protection - Protection Based on Access Permission - Types of Users - Types of File Operations/Access Permissions - Access Permissions for Directories - Determining and Changing File Access Privileges - Determining File Access Privileges - Changing File Access Privileges - Access Privileges for Directories - Default File Access Privileges - Special Access Bits - SUID Bit - SGID Bit - Sticky Bit.

Unit- V   (6 Hours)
Advanced File Processing - Sorting Files - Searching for Commands and Files - Regular Expressions - Searching Files - Cutting and Pasting - Compressing Files - gzip Command - gunzip Command - gzexe Command - zcat and zmore Commands - gzip, bzip2, and xz Commands - Encoding and Decoding - File Encryption and Decryption.

Text Book:
1. Syed Mansoor Sarwar, Robert M. Koretsky, Linux The Textbook, Second Edition, CRC Press, 2019.

Unit I: Chapter 1 (1.7, 1.8, 1.9)
Unit II: Chapter 2 (2.3, 2.4)
Unit III: Chapter 3 (4.1, 4.2, 4.3, 4.4, 4.6, 4.7, 4.8)
Unit IV: Chapter 5 (5.1, 5.2, 5.3, 5.4, 5.5, 5.6)
Unit V: Chapter 7 (7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9)

Reference Books:

1. Oliver Pelz, Fundamentals of Linux: Explore the essentials of the Linux command line, Packt Publishing, 2018
2. Jason Cannon, Linux for Beginners: An Introduction to the Linux Operating System, CreateSpace Independent Publishing Platform, 2017

Regulations for B.Sc Mathematics

(Effective from the Academic Year 2019-2020 onwards)

Introduction:

The Department of Mathematics started the UG Programme B.Sc Mathematics in 2005.

Objective:

A Student with B.Sc. (Mathematics) can perform extremely well in MCA and MBA and is preferred more in software fields. After the completion of B.Sc. Mathematics, Students can join any one of the following PG courses; M.Sc. Mathematics, M.Sc. (Statistics), M.Sc. Applied Mathematics, M.Sc. (Mathematics with Computer Applications), M.Sc (Actuarial Science) / MCA., MBA., MSW., B.Tech (Lateral Entry), B.E (Lateral Entry) and B.Ed.

Eligibility: UG Programme

A pass in Higher Secondary Examination conducted by Tamilnadu or an equivalent examination, with Mathematics as one of the subjects of study as per the Bharathiar University norms.

Duration of UG Programme

The course shall extend over a period of three years comprising of six semesters, with two semesters per year. There shall not be less than ninety instructional days during each semester. Examination shall be conducted at the end of each semester for the respective subject.

Vision:

The Vision of our department is to develop and offer programmes in the mathematical sciences to enter new fields of specializations and also to make our students highly competitive in the job market. To create an environment that supports outstanding research. To gain overall development in academic and teaching domains

Mission:

The mission of our department is to provide teaching and learning opportunities to improve analytical skills. Further to make them work in jobs that require a high degree of mathematical skills and to develop mathematical thinking.

Program Outcomes:

The graduates will be able to

PO1: Attain the core value in their respective area to meet out the global competitive edge.

PO2: Apply and update their skills towards their employability, entrepreneurship and its sustainability.

PO3: Realize their responsibility towards the society centre through ethical, social and human values.

PO4: Recognize the opportunities towards their upgradation and professional development in all spheres.

PO5: Ensure the quality in terms of all the aspects by the way of their contribution in work atmosphere.

Program Specific Outcomes:

After completion of the Programme the graduates will be able to

PSO1: Apply the knowledge of Mathematics, logical thinking to analyze complex problems and real world problems to meet the needs of the society.

PSO2: To formulate and develop modern Mathematical ideas that provides a solid foundation for future learning.

PSO3: Acquire a holistic professional carrier and opportunities to gain knowledge in Teaching Methodologies and to create an environment that supports outstanding research.

B.Sc MATHEMATICS
SCHEME OF EXAMINATIONS (CBCS and OBE PATTERN)
For Candidates admitted during the Academic Year 2019-2020 onwards

Part	Subject Code	Subject Title	Ins.Hrs/ Week	Dur. Hrs.	CIA	CE	Total	Credit
					Examination			
SEMESTER I								
I	19LATA01 / 19LAHI01/ 19LAMY01/ 19LAFR01	Language – I	5	3	3	70	100	3
II	19ENG001	English –I	5	3	3	70	100	3
III	19BMA101	Core 1:Trigonometry and Fourier Series	6	3	3	70	100	4
III	19BMA102	Core 2:Calculus	6	3	3	70	100	4
III	19BMAID1	**IDC 1**:Mathematical Statistics-I	6	3	3	70	100	4
IV	19UFCA01	**Foundation Course I : EVS #**	2	2	-	50	50	2
		Total	3				**550**	**20**
SEMESTER II								
I	19LATA02/ 19LAHI02/ 19LAMY02 / 19LAFR02	Language –II	5	3	3	70	100	3
II	19ENG002	English – II	5	3	3	70	100	3
III	19BMA201	Core 3:Analytical Geometry and Vector Calculus	6	3	3	70	100	4
III	19BMA202	Core 4:Classical Algebra	6	3	3	70	100	4
III	19BMAID2	**IDC 2**:Mathematical Statistics-II	6	3	3	70	100	4
IV	19UFCA02	**Foundation Course II**: Value Education #	2	**2**	-	50	50	2
		Total	3				**550**	**20**
SEMESTER III								
I	19LATA03/ 19LAHI03/ 19LAMY03 /	Language – III	5	3	30	70	100	3

	19LAFR03							
II	19ENG003	English – III	5	3	30	70	100	3
III	19BMA301	Core 5 :Statics	5	3	30	70	100	4
III	19BMA302	Core 6:Differential Equations and Laplace Transforms	5	3	30	70	100	4
III	19BMAID3	**IDC 3** :Fundamentals of Accounting	5	3	30	70	100	4
IV	19BMASB1 /19BMASB2	**SBC I** :Operations Research – I/Fuzzy logic and Neural Networks# Fuzzy logic and Neural Networks #	3	3	-	75	75	3
IV	19BTA001/ 19ATA001/ 19EDC002	**EDC 1**:BT1 /AT1 / Communicative English #	2	2	-	50	50	2
		Total	3				625	23

<div align="center">SEMESTER IV</div>

I	19LATA04/ 19LAHI04/ 19LAMY04/ 19LAFR04	Language –IV	5	3	3	70	100	3
II	19ENG004	English – IV	5	3	3	70	100	3
III	19BMA401	Core 7 :Dynamics	5	3	3	70	100	4
III	19BMA402	Core 8: Fourier Transforms, Z- Transforms and Theory of Equations	5	3	3	70	100	4
III	19BMAID4	**IDC 4**: Advanced Accounting	5	3	3	70	100	4
IV	19BMASB3/ 19BMASB4	**SBC II**: Operations Research-II/Mathematical Modeling #	3	3	-	75	75	3
IV	19BTA002/ 19ATA002/ 19BMAED1	**EDCII:** BT II /AT II/Basics of Internet #	2	2	-	50	50	2
V	19NCC001/ 19NSS001/ 19SPT001/ 19EXT001	NCC/NSS/Sports/Extension@			5	-	50	2
		Total	3				675	25

<div align="center">SEMESTER V</div>

III	19BMA501	Core 9 : Real Analysis-I	6	3	3	70	100	5
III	19BMA502	Core 10:Complex Analysis-I	6	3	3	70	100	5
III	19BMA503	Core 11: Modern Algebra-I	6	3	3	70	100	5

III	19BMA504	Core 12:Programming in C	4	3	3	70	100	4
III	19BMA505	Core 13:Programming in C-Practical	2	3	4	60	100	2
III	19BMAE01/ 19BMAE02/ 19BMAE03	Elective I (Astronomy-I/ Numerical Methods-I/Competitive Examination Skills –I)	6	3	3	70	100	5
		Total	**3**				600	26

SEMESTER VI								
III	19BMA601	Core 14: - Real Analysis -II	5	3	3	70	100	4
III	19BMA602	Core 15:Complex Analysis-II	5	3	3	70	100	4
III	19BMA603	Core 16 : Modern Algebra-II	5	3	3	70	100	4
III	19BMA604	Core 17 :Discrete Mathematics	5	3	3	70	100	4
III	19BMAE04/ 19BMAE05/ 19BMAE06	Elective II : (Astronomy-II/ Numerical Methods-II / Competitive Examination Skills -II)	5	3	3	70	100	5
III	19BMAE07/ 19BMAE08/ 19BMAE09	Elective III :(Basics of Java Programming/ Graph Theory/Programming in C++/	5	3	3	70	100	5
		Total	**3**				600	26
						Total	3600	140

For Candidates admitted from the Academic year 2019 - 2020 onwards
\#   No Continuous Internal Assessment (CIA) only Comprehensive Examination (CE)
@ No Continuous Internal Assessment (CIA) and Comprehensive Examination (CE)
IDC- Inter disciplinary Course, EDC – Extra Disciplinary Course, SBC – Skill Based Courses

List of Skill Based Courses

S.No	Sem.	Subject Code	Subject Name	Credits
1	III	19BMASB1	Operations Research –I	3
2	III	19BMASB2	Fuzzy Logic and Neural Networks	3
3	IV	19BMASB3	Operations Research –II	3
4	IV	19BMASB4	Mathematical Modeling	3

List of Elective Courses

S.No	Sem.	Subject Code	Subject Name	Credits
Elective I				
1	V	19BMAE01	Astronomy-I	5
2	V	19BMAE02	Numerical Methods I	5
3	V	19BMAE03	Competitive Examination Skills- I	5

			Elective II	
4	VI	19BMAE04	Astronomy-II	5
5	VI	19BMAE05	Numerical Methods II	5
6	VI	19BMAE06	Competitive Examination Skills –II	5
			Elective III	
7	VI	19BMAE07	Basic of Java Programming	5
8	VI	19BMAE08	Graph theory	5
9	VI	19BMAE09	Programming in C++	5

List of Extra Disciplinary Courses

S.No	Sem.	Subject Code	Subject Name	Credits
1	III	19BTA001	Basic Tamil-I	2
2	III	19ATA001	Advanced Tamil-I	2
3	III	19EDC002	Communicative English	2
4	IV	19BTA002	Basic Tamil-II	2
5	IV	19ATA002	Advanced Tamil-II	2
6	IV	19BMAED1	Basics of Internet	2

List of Additional Credit Papers

S.No	Sem.	Subject Code	Subject Name	Credits
1	III	19BMAAC1	Vedic Mathematics	2
2	IV	19BMAAC2	Basics of Cryptography	2
3	V	19BMAAC3	Differential Equations and its Applications	2

Summary of the Programme

Part	No.of Papers	Total Credits	Total Marks
I – Language	4	12	400
II – English	4	12	400
III – Core	17	69	1700
III – IDC	4	16	400
III – Elective	3	15	300
IV – Foundation Course	2	4	100
IV – SBC	2	6	150
IV – EDC	2	4	100
V - NSS/NCC/Sports/Ext.Activity	-	2	50
Total		**140**	**3600**

Regulations for B.Sc Mathematics

(Effective from the academic year 2019-2020 onwards)

1. Submission of Record Note Books for practical examinations

Candidates appearing for practical examinations should submit Bonafide Record Note Books prescribed for practical examinations, Otherwise the candidate shall not be permitted to appear for the Practical Examinations.

2. Ratio of Comprehensive Examination, Pre- Model and Model Examinations Marks for B.Sc (Mathematics) Degree Course.

Part	Internal Assessment	External Assessment	Total Marks
I (Languages)	30	70	100
II (English)	30	70	100
III(Core, IDC)	30	70	100
IV (SBC)	-	75	75
IV (EDC/Foundation Course)	-	50	50
V (NCC/NSS/Sports/Ext. Activity)	50	-	50

3. Distribution of Internal Mark for Theory:

S. No	CIA	Distribution of Marks
1	Pre Model Examination	70
2.	Model Examination	70
3.	Seminar	30
4.	Attendance	10
Total		**180/6=30**

4. Break up for Internal Marks

S. No	Internal Marks	Distribution of Marks
1	Pre Model Examination	70
2	Model Examination	70
3	Seminar	30
4	Attendance	10
Total		**180/6=30**

5. Seminar Split up

S.NO	Seminar split up	Marks
1	Content	10
2	Flow of the presentation	10
3	Stage management and Body language	10
Total		**30**

6. Attendance Break up

S.NO	Attendance split up	Marks
1	65% to 74%	4
2	75% - 80%	6
3	81% - 90%	8
4	91% - 100%	10

7. Distribution of Internal Mark for Practical

Maximum Marks : 40		
S No	CIA	Distribution of Marks
1	For Completion of the Practical List	20
2	Test –I	10
3	Test –II	10
Total		**40**

8. Distribution of Comprehensive Examination Mark for Practical:

MAXIMUM MARKS : 60		
S. No	Comprehensive Examination	Distribution of Marks
1	**Record**	**10**
2	**Program – I** a) Algorithm b) Coding c) Execution	5 10 10 TOTAL **(25)**
3	**Program – II** a) Algorithm b) Coding c) Execution	5 10 10 TOTAL **(25)**
Total		**60**

9. Pattern of Question Paper

For Pre model Test, Model and Comprehensive Examination for Under Graduate Courses.

		Maximum Marks : 70 / Time 3 Hrs	
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×4=20)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
		Maximum Marks : 75 / Time 3 Hrs	
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×5=25)	Each question carries five marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
		Maximum Marks : 50 / Time 2 Hrs	
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×3=15)	Each question carries three marks	Internal Choice
Section – C	(5×5=25)	Each question carries five marks	Internal Choice
		Maximum Marks : 100 / Time 3 Hrs	
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×8=40)	Each question carries eight marks	Internal Choice
Section – C	(5×10=50)	Each question carries ten marks	Internal Choice

Note:

1. The questions should be numbered continuously running through the Sections A, B and C.

2. Questions should be evenly distributed among the unit in the syllabus in all the sections of the Question paper

3. While framing questions with internal choice the questions must be identified as (a) or (b). (e.g 11. a or b). Further, the internal choice must be from the same unit.

4. The Controller of the Examinations shall arrange for the setting of question papers on the basis the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies

10. Conduct of Practical Examinations:

Practical examinations shall be conducted with one internal examiner and one external examiner and the question paper for practical examination shall be set by both Internal and External examiners.

11. Certificate Course

In the Academic Year 2019-2020 we are introducing Certificate Course on III and IV Semester as an Interdisciplinary Course. The course title is as follows.

List of Certificate Courses

S.No	Semester	Subject Title
1	III	Research Methodology in Business
2		Competitive Examination Skills
3		Basic Vedic Mathematics
4	IV	Latex Theory and Practical
5		Advanced Vedic Mathematics
6		Quantitative Arithmetic and Reasoning

B.Sc. (Mathematics) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards
FIRST SEMESTER
PART- III: Core 1- TRIGONOMETRY AND FOURIER SERIES

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective:
      To enable the students to gain Fundamental knowledge about the Trigonometric Functions and Fourier series.

Unit I   (14 Hours)
Solution of Simple Trigonometric equations –To solve the equation $Sin\theta=S$- To solve the equation $Cos\theta=C$- To solve the equation $tan\theta= t$-Inverse Trigonometric functions Demoivre's Theorem (Simple problems).

Unit II   (15 Hours)
Expansion in series- Expansion of $Cos^n \theta$, $Sin^n \theta$ in a series of cosines and sines of multiples of θ – Expansions of $Cos\, n\theta$ and $Sin\, n\theta$ in powers of sines and cosines- expansion of $Sin\, \theta$, $Cos\, \theta$ and $Tan\, \theta$ in powers of θ – Hyperbolic functions and inverse hyperbolic functions.

Unit III   (14 Hours)
Logarithm of complex quantities- Summation of series- when angles are in Arithmetic progression- C+ iS Method of summation- Method of differences.

Unit IV   (15Hours)
 Fourier series- definition - Fourier Series expansion of periodic functions with Period 2π – Use of odd & even functions in Fourier Series.

Unit V   (14Hours)
Half-range Fourier series – definition- Development in Cosine series & in Sine Series- Change of interval.

Course Outcome**:**
- Remember the Trigonometric formulas and Understand the concept of Inverse Trigonometric functions
- Understand the expansions of trigonometric functions and nature of Hyperbolic and Inverse Hyperbolic functions.
- Analyse the Logarithm of complex quantities and to evaluate summation of series.
- Apply Fourier series concepts to find its expansion of periodic functions and to analyse odd and even functions.
- Analyze Half range Fourier series and interval.

Text Books
1. S.Narayanan, T.K. Manicavachagam Pillay, Trigonometry, S.Viswanathan Private Ltd 2014, Chennai.

Unit1   - Chapter -1[Page no 1-13]
             Chapter-2[Page no 19-28]
UnitII   - Chapter- 3, 4.
Unit III   - Chapter -5- Sec 5.1,Sec 5.2
             Chapter- 6- [Page no 131-158]
2. Mathematics for B.Sc.Br-1 Volume IV by Kandasamy, K.Thilagavathi, S.Chand & Company Ltd. Edition 2013
    Unit-IV- [Page No: 96-134],
    Unit –V- [Page No:135-153]

Reference Book
1. A.Singaravelu, Engineering Mathematics(for IV semester students),New revised Edition-December 1997

B.Sc. (Mathematics) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards
FIRST SEMESTER
PART-III: Core 2- CALCULUS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective:
To enable the students to gain fundamental knowledge about the Curvature, Evolutes and envelopes, Integrations and geometrical applications.

Unit I   (14 Hours)
Curvature-Radius of curvature in Cartesian and polar forms-Evolutes and envelopes- Pedal equations- Total differentiation- Euler's theorem on homogeneous functions

Unit II   (15Hours)
Integration of $f'(x)\sqrt{f(x)}$, $f'(x)/f(x)$,(px+q) $[\sqrt{(ax^2+bx+c)}]$, ,(px+q)/ $[\sqrt{(ax^2+bx+c)}])]$,$[\sqrt{(x-a)/(b-x)}]$,$\sqrt{(x-a)(b-x)}$,$1/\sqrt{(x-a)(b-x)}$,1/(acosx+bsinx+c), 1/(acos^{2}x+bsin^{2}x+c), Integration by parts.

Unit III   (14 Hours)
Reduction Formulae- Problems- Evaluation of double and triple integrals- Applications - Areas and Volumes-Areas in polar coordinates.

Unit IV   (14Hours)
Change of Order of Integration in Double Integral- Jacobian - Change of variables in Double and Triple Integrals.

Unit V   (15Hours)
Notation of improper integrals- their convergence- Simple tests for convergence simple problems- Beta and Gamma Integrals-Their properties- Relation between them- Evaluation of multiple integrals using Beta and Gamma Functions.

Course Outcome:
- Understand the concepts of curvature and its types, to evaluate total differentiation and to verify Euler's theorem.
- Analyse the types of integration.
- Remember the Reduction formula and Evaluate the double, triple integral and its application.
- Evaluate change of order of integration and change of variables.
- Apply the concept of Beta, Gamma functions and analyze its properties to evaluate multiple integrals.

Text Book
1. S. Narayanan, T.KManikavachagam Pillay, A Text book of Calculus, VOL I and II S.Viswanathan Pvt Ltd, 2014, Chennai.

Unit I : Volume I: Chapter 10 [Sec 1.1, 2.3,2.4,2.6,2.7]
Chapter 8 [Sec1.5, 1.6]

Unit II : Volume II : Chapter 1 [Sec6.5, 6.6, 7.3 (Rule b), 7.4, 8, 9, 12]
Unit III : Volume II: Chapter 1[sec 13.1-13.10]
                    Chapter 5 [Sec2.1, 2.2, 3.1, 3.2, 4,5.3,5.4, 6.3]
Unit IV : Volume II : Chapter 6 [Sec 1.1, 1.2, 2.1-2.4]
Unit V : Volume II: Chapter 7 [1.1- 1.5]
                    Chapter 7[Sec 2.1-2.3, 3, 4, 5,6]

Reference Book
1. P.Kandasamy and K.Thilagavathy, Mathematics for B.Sc– VOL I and II, S.Chand and Co 2013, New Delhi.

B.Sc. (Mathematics) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards
FIRST SEMESTER
PART- III : IDC 1- MATHEMATICAL STATISTICS –I

Maximum CIA: 30
Maximum CE: 70
Total Hours   :72

Course Objective:
      To enable the students to gain Fundamental knowledge about the concepts of Random variables, Probability Distributions, Moment generating functions, Correlation and Regression and its types.

Unit I   (15Hours)
Random Variables-Distribution Function-Properties-Discrete Random Variable- Probability Mass Function-Discrete Distribution Function-Continuous Random Variable-Probability Density Function-Various Measures of Central Tendency, Dispersion, Skewness and Kurtosis for Continuous Probability Distribution.

Unit II   (15 Hours)
Two Dimensional or Joint Probability Mass Function-Two Dimensional Distribution Function-Marginal Distribution Function-Joint Density Function-Marginal Density Function-Mathematical Expectation – Addition and Multiplication theorem of expectation-Properties of variance- Covariance.

Unit -III   (14 Hours)
 Moment Generating Functions-some Limitations of Moment Generating Function-Properties of Moment Generating Function-Uniqueness Theorem of Moment Generating Function-Chebychev's Inequality.

Unit - IV   (14 Hours)
Binomial-Poisson Distribution and their Properties.(MGF, Characteristic Function, Additive Properties and Simple Problems) Karl Pearson's Coefficient of Correlation-Limits of Correlation Coefficient-Spearman's Rank Correlation Coefficient-Tied Ranks-Repeated Ranks. Regression Coefficients-Properties of regression coefficients- Problems.

Unit –V   (14 Hours)
Normal and Exponential Distribution and their Properties. (MGF, Characteristic function, Additive Properties and Simple problems).

Course Outcome:
- Understand the concepts of random variables ,its types , probability distributions and to Analyze Measures of Central Tendency .
- Apply joint probability mass function ,two dimensional distributions , its types Mathematical Expectations and analyze the theorems based on mathematical expectations.
- Remember moment generating functions, properties, and analyze the uniqueness theorem of Moment Generating Functions, Chebychev's Inequality and Weak Law of Large Numbers.

- Analyze the correlation and regression co-efficient , properties and its types
- Apply the concept of Discrete and continuous probability distributions

Text Book

1. S.C Gupta and V.K.Kapoor, Fundamentals of Mathematical Statistics, S.Chand and Co, 2014, New Delhi.

        Unit I   - [Sec-5.1-5.4.2]
        Unit II - [Sec-5.5.1 -5.5.4, Sec-6.1-6.3,6.4(Property-I & II) – 6.5, 6.6]
        Unit III- [Sec-7.1 -7.1.3, Sec-7.5]
        Unit IV- [Sec- 8.4 - 8.5 Sec-10.4, 10.4.1, 10.7.1-10.7.3, 11.2.1-11.2.2]
        Unit V - [Sec- 9.2, 9.8]

Reference Books

1. S.P. Gupta, Statistical Methods, S.Chand and Co, 2014, New Delhi.
2. S.C. Gupta and V.K.Kapoor, Elements of Mathematical Statistics, S.Chand and Co, 2014 New Delhi.

B.Sc. (Mathematics) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards
SECOND SEMESTER
PART- III: CORE 3 - ANALYTICAL GEOMETRY AND VECTOR CALCULUS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective:
    To enable students gain Fundamental knowledge about the Analytical Geometry of three dimensions and various techniques in Vector Calculus and their applications.

Unit I   (15Hours)
Analytical Geometry of 2D-Polar Co-ordinates Equation of a Conic -Directrix-Chord-Tangent-   Normal- Simple Problems-only in deriving equation of Conic.

Unit II   (15Hours)
Analytical Geometry 3D- Straight lines- Co-Planarity of Straight line- Shortest distance (SD) and equation of Shortest distance between two lines.

Unit III   (14 Hours)
Sphere- Standard equation of sphere- Results based on the properties of a Sphere- tangent plane to a sphere- Equations $S+\lambda p=0$ and $S+\lambda S'=0$

Unit IV   (14 Hours)
Cone- Equations of Cone- Cone whose vertex is at the Origin - Right Circular Cone-Cylinder - Equation of a Cylinder – Right Circular Cylinder.

Unit V   (14 Hours)
Vector Calculus- Concept of Vector and Scalar Fields-Differentiation of vectors-Divergence of Vector-Curl of a Vector- Gradient. Integration of vectors-Gauss Divergence (Statement only)- Stokes Theorem (Statement only)- Problems.

Course Outcome:
   • Understand the concepts of Analytical Geometry of 2D-Polar Co-ordinates.
   • To understand and analyze the concepts of Analytical Geometry 3D- Straight lines
   • To apply the concepts and results based bon the properties of sphere.
   • To understand and analyze the concepts of Cone and Cylinder
   • Apply the concept of Vector Calculus and Integration of vectors.

Text Books:
1. T.K.Manicavachagam Pillai and T.Natarajan "Analytical Geometry of 2D" ,S.Viswanathan Publications-2006,Chennai.
       Unit –I - Chapter 9- Sec.9, 9.1, 10, 11,12].
2. P.Durai Pandian and Laxmi Durai Pandian "Analytical Geometry of 3D",Emerald publishers revised Edition 2006 Chennai.
       Unit II - [Chapter 4 –Sec4.1,4.2,4.3,4.5,4.6,4.7].
       Unit III - [Chapter 5-Sec 5.1-5.4,5.7].
       Unit IV - [Chapter 6-Sec 6.1-6.4,6.6,6.7,6.13]

3.P.Durai Pandian and Laxmi Durai Pandian "Vector Analysis",Emerald publishers revised
Edition2008 Chennai.
      Unit V - [Chapter 2-Sec2.1,2.3-2.9,Chapter 4-Sec4.2,4.5,4.8(only problems)]

Reference Book:
 1. T.K.Manicavachagam Pillai and T.Natarajan "Analytical Geometry of 3D" ,
     S.Viswanathan Publications-2006,Chennai.

B.Sc. (Mathematics) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards
SECOND SEMESTER
PART- III: Core 4 - CLASSICAL ALGEBRA

Maximum CIA:30
Maximum CE: 70
Total Hours: 72

Course Objective:
        To enable students gain Fundamental Knowledge about the Convergence of series and Sequences Functions and their Applications.

Unit I   (15 Hours)
Binomial Theorem-Positive Integral Index- Statement and Proof – Binomial expansion problems ─ Application of Binomial Theorem to the Summation of Series- Approximate Values.

Unit II   (15Hours)
Exponential Theorems- Their statements and proofs – Their immediate application to summation and approximation only.

Unit III   (14Hours)
Logarithmic Series Theorem- Statement and proof-Modification of logarithmic series-Different forms of logarithmic series- Series which can be summed up by the logarithmic series – Calculation of logarithms by means of the logarithmic series-Application of the exponential and logarithmic series to limits and approximations.

Unit-IV   (14Hours)
Convergency and divergency of series- Definitions-Elementary results- Comparison tests- De Alembert's and Cauchy's tests.

Unit V   (14Hours)
Absolute Convergence- Series of positive terms-Series whose terms are alternatively positive and negative- Cauchy's condensation test- Raabe's test.

Course Outcome:
  * Understand the concept of Binomial Theorem and its application to the Summation of Series
  * Understand the concept of Exponential Theorems and its application to the Summation of Series
  * Analyse the concepts of Logarithmic Series
  * Examine the convergence and Divergence of sequences and series.
  * Examine the Absolute Convergence , Cauchy's condensation test and Raabe's test

Text Book:
  1. T.K. Manicavachagam Pillai, Algebra Volume I, S.Viswanathan Private Ltd, 2014, Chennai.
     Unit I : Chapter 3- [Sec 1,1.1,1.2, Sec 7, Sec-10,Sec-14(Page no 168-175)]
     Unit II :Chapter 4 -[Sec 2 & Sec3 (Page no 191-207)]

Unit III: Chapter 4- [Sec5,Sec6,Sec7(Page no 213-220,224-229)
Sec10&Sec11(Page no 230-233)]
Unit IV : Chapter 2- [Sec 8,Sec9,Sec10,Sec13,Sec13.1,13.2,13.3,Sec16 ,16.1,16.2,Sec17]
Unit V : Chapter 2 - [Sec 12,Sec15, Sec19,Sec21,22,24]

Reference Book:
1. P.Kandasamy and K.Thilagavathy, Mathematics for B.Sc Branch I- Vol.1, S.Chand and Co 2013, New Delhi

B.Sc. (Mathematics) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards
SECOND SEMESTER
IDC 2- MATHEMATICAL STATISTICS –II

Maximum CIA:30
Maximum CE : 70
Total Hours: 72

Course Objective:

To enable students gain Fundamental Knowledge about the Concepts of Estimation, Testing of sampling, Design of experiment and Analysis of Variance.

Unit I   (15 Hours)
Chi-square, t and F Statistics their probability density functions and their properties. Simple problems.

Unit II   (14 Hours)
Concept of Population- Sample Statistics- Parameter –Characteristics of Estimators Unbiasedness-Consistency-Efficiency-Sufficiency- Neyman Factorization Theorem-Cramer Rao Inequality – Rao-Black well theorem.

Unit III   (14 Hours)
Standard Error—Tests of Significance-Null and Alternative Hypotheses-Errors in Sampling-Type I and Type II errors –Critical Region and Level of Significance- one tail and two tailed tests-Critical Values or Significant Values-Procedure For Testing of Hypothesis – Tests of Significance For Large Values-Sampling Of Attributes –Test Of Significance For Single Proportion-Test of Significance For Difference of Proportion-Neyman And Pearson Lemma-Unbiased test and Unbiased Critical Region-Likelihood Ratio Test –Properties of Likelihood Ratio Test.

Unit IV   (15Hours)
Method of Estimation-Maximum Likelihood-Likelihood Function–Properties of Maximum Likelihood-Method of Minimum Variance –Method of Moments-Method of Least Square.

Unit V   (14 Hours)
Analysis of Variance- One way and two way Classifications- Properties and Simple Problems.

Note: The proportion of marks between theory and problems shall be 60% and 40% respectively.

Course Outcome:
- To analyze Chi-square, t and F test.
- Understand the concept of Population and characteristics of Estimators.
- Understand the concepts of   testing of Hypothesis   and Likelihood Ratio Test.
- Analyse the concepts of Method of Estimation and Method of Least Square.
- Examine the Analysis of Variance.

Text Books:
1. S.C. Gupta and V.K.Kapoor, Fundamentals of Mathematical Statistics, S.Chand and Co, 2014, New Delhi.
   Unit I- [Sec 15.1 to 15.3,16.2, 16.2.1 to 16.2.3 &16.5]
   Unit-II- [Sec 17.1 to 17.3, 17.5]
   Unit III-[Sec 14.3.2 to 14.7.2, Sec 18.5 to 18.5.1, Sec 18.6 to 18.6.1]
   Unit IV-[Sec 17.6 to 17.6.4]
2. S.P Gupta, Statistical Methods, S.Chand and Co, 2000, New Delhi. (Unit V)

Reference Book:
1. S.C. Gupta and V.K.Kapoor, Elements of Mathematical Statistics, S.Chand and Co, 2014 New Delhi.

BBA Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards
FIRST SEMESTER
PART- III: IDC 1- BUSINESS MATHEMATICS AND STATISTICS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective:

To enable the students to gain Fundamental Knowledge about the Set theory concepts and Mathematical techniques relating to business.

Unit I   (15 Hours)
Set Theory - Venn diagrams - Simple and compound interest, Discounting of Bills - True discount- bankers gain

Unit II   (15Hours)
Matrices- Introduction - Types of matrices - Addition of matrices - multiplication of matrices –Determinants - Inverse of a matrix - Rank of matrix-solving simultaneous linear equations using Cramer's rule method

Unit III   (14 Hours)
Measures of Central Tendency- Introduction - Arithmetic Mean - Median and Mode - Geometric mean - Harmonic mean.

Unit IV   (14 Hours)
Measures of dispersion: Introduction - Range- Quartile deviation - Mean Deviation - Standard deviation and Co-efficient of Variation.

Unit V   (14 Hours)
Correlation - Karl Pearson's Coefficient of Correlation - Rank Correlation- Regression - Regression equations - Relationship between Correlation & Regression.
Course Outcome:
- Remember set theory concepts and to analyze the applications of business problems
- To understand the concepts of Matrices, its types and to solve simultaneous equations.
- Analyze the measures of central tendency and to apply its concepts.
- To analyze the measures of dispersion.
- To understand the meaning of correlation , Regression and its properties.

Text Book:
1. P.A. Navanitham, Business Mathematics and Statistics, Reprint 2014, Jai Publications, Trichy.
   Unit I: Page no: 104-138 Exercise: 138-145,Page no :43-60,77-88 , Exercise: 87-102
   Unit II: Page no: 147-200 Exercise: 211-216
   Unit III: Page no : 159-269, Exercise 286-300
   Unit IV: Page no : 301-340,358-365 Exercise 380-394
   Unit V : Page no : 503-521, Exercise 535-538 Page no: 540-570, Exercise 570-574

Reference Book:
1. P.R.Vital, "Business Mathematics", Reprint 2013, Margam Publication, Chennai.

BBA Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards

SECOND SEMESTER
PART- III: IDC 2- OPERATIONS RESEARCH

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective:

To enable the students to gain Fundamental Knowledge about the application of the operation research models, Transportation and Assignment problems, Game Theory, CPM and PERT Techniques.

Unit I (14 Hours)

Introduction to Operations Research – Meaning – Scope – Models – Limitations. Linear Programming – Formulation — Graphical Method only.

Unit II (14 Hours)

Transportation (Non- degenerate case only) and Assignment problems – Simple problem only.

Unit III (14 Hours)

Game theory – Concept of Pure and Mixed Strategies- Solving 2×2 matrix with and without saddle point- Graphical method of n×2 and 2×m games.

Unit IV (15 Hours)

CPM – Principle – Constructions of Network – Types of Floats – Slack.

Unit V (15 Hours)

PERT – Time scale analysis – Critical path – Probability of completion of project- Advantages and Limitations

Note: The proportion of marks between theory and problems shall be 20% and 80% respectively.

Course Outcome:
- Understand the meaning, scope, Models of Operations Research and create mathematical formulation of LPP to solve Graphical method.
- To understand the concept of Transportation and Assignment problems and its type
- .To analyze the decision making using the concept of Game theory
- Understand the CPM , Network concepts and its Types
- To understand the concepts of PERT to find the probability of completion of projects.

Text Book:
1. P.Kantiswarup, K. Gupta, Man Mohan, Operations Research, S. Chand & Sons Education Publications, 16th edition, Reprint 2013, New Delhi.
   Unit I: Chapter 1 [Sec 1.1, 1.2, 1.3, 1.5, 1.6]
           Chapter 2 [Sec2.1, 2.2, 2.3, 2.4]
           Chapter 3 [Sec3.1, 3.2, 3.3]

Unit II: Chapter 10 [Sec 10.1, 10.2, 10.9]
  Chapter 11[Sec11.1, 11.2, 11.3, 11.4, 11.7]
Unit III: Chapter 17[sec 17.1-17.6]
Unit IV: Chapter 25 [25.1- 25.4, 25.6] (problems only).
Unit V: Chapter 25 [25.7, 25.8]

Reference Book:
1. Prof.V.Sundaresan, K.S.Ganapathy Subramanian, K.Ganesan, Resource Management Techniques, A.R.Publications Arpakkam (Po), 8th Edition 2014TamilNadu.

BBA (CA) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards

FIRST SEMESTER

PART -III: IDC 1 - BUSINESS MATHEMATICS AND STATISTICS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective:

    To enable the students to gain Fundamental Knowledge about the Set theory concepts and Mathematical techniques relating to business.

Unit I   (15 Hours)
Set Theory - Venn diagrams - Simple and compound interest, Discounting of Bills - True discount- bankers gain

Unit II   (15Hours)
Matrices- Introduction - Types of matrices - Addition of matrices - multiplication of matrices –Determinants - Inverse of a matrix - Rank of matrix-solving simultaneous linear equations using Cramer's rule method

Unit III   (14 Hours)
Measures of Central Tendency- Introduction - Arithmetic Mean - Median and Mode - Geometric mean - Harmonic mean.

Unit IV   (14 Hours)
 Measures of dispersion: Introduction - Range- Quartile deviation - Mean Deviation - Standard deviation and Co-efficient of Variation.

Unit V   (14 Hours)
Correlation - Karl Pearson's Coefficient of Correlation - Rank Correlation- Regression - Regression equations - Relationship between Correlation & Regression.

Course Outcome:
  *   Remember set theory concepts and to analyze the applications of business problems
  *   To understand the concepts of Matrices, its types and to solve simultaneous equations.
  *   Analyze the measures of central tendency and to apply its concepts.
  *   To analyze the measures of dispersion.
  *   To understand the meaning of   correlation, Regression and its properties.

Text Book:
 1. P.A. Navanitham, Business Mathematics and Statistics, Reprint 2014, Jai Publications, Trichy.
    Unit I: Page no: 104-138 Exercise: 138-145,Page no :43-60,77-88 , Exercise: 87-102
    Unit II: Page no: 147-200 Exercise: 211-216
    Unit III: Page no : 159-269, Exercise 286-300
    Unit IV: Page no : 301-340,358-365 Exercise 380-394
    Unit V : Page no : 503-521, Exercise 535-538 Page no: 540-570, Exercise 570-574

Reference Book:
  1. P.R.Vital, "Business Mathematics", Reprint 2013, Margam Publication, Chennai.

BBA (CA) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards

SECOND SEMESTER
PART- III: IDC 2 - OPERATIONS RESEARCH

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective:

To enable the students to gain Fundamental Knowledge about the application of the operation research models, Transportation and Assignment problems, Game Theory, CPM and PERT Techniques.

Unit I   (14 Hours)
Introduction to Operations Research – Meaning – Scope – Models – Limitations-Linear Programming – Formulation — Graphical Method only

Unit II   (14 Hours)
Transportation (Non- degenerate case only) and Assignment problems – Simple problems only.

Unit III   (14 Hours)
Game theory – Concept of Pure and Mixed Strategies- Solving 2×2 matrix with and without saddle point- Graphical method of $n\times2$ and $2\times m$ games.

Unit IV   (15 Hours)
CPM – Principle – Network representation- Backward pass- Forward pass- computation Constructions of Network – Types of Floats .

Unit V   (15 Hours)
PERT – Time scale analysis – Critical path – Probability of completion of project- Advantages and Limitations

Note: The proportion of marks between theory and problems shall be 20% and 80% respectively.

Course Outcome:
- Understand the meaning, scope, Models of Operations Research and create mathematical formulation of LPP to solve Graphical method.
- To understand the concept of Transportation and Assignment problems and its types
- To analyze the decision making using the concept of Game theory
- .Understand the CPM , Network concepts and its Types
- To understand the concepts of PERT to find the probability of completion of projects.

Text Book:
1. P.Kantiswarup, K. Gupta, Man Mohan, Operations Research, S. Chand & Sons Education Publications, 16th edition, Reprint 2013, New Delhi
       Unit I: Chapter 1 [Sec 1.1, 1.2, 1.3, 1.5, 1.6]
                   Chapter 2 [Sec2.1, 2.2, 2.3, 2.4]

Chapter 3 [Sec3.1, 3.2, 3.3]
Unit II: Chapter 10 [Sec 10.1, 10.2, 10.9]
Chapter 11[Sec11.1, 11.2, 11.3, 11.4, 11.7]
Unit III: Chapter 17[sec 17.1-17.6]
Unit IV: Chapter 25 [25.1- 25.4, 25.6] (problems only).
Unit V: Chapter 25 [25.7, 25.8]

Reference Book:
1. Prof.V.Sundaresan, K.S.Ganapathy Subramanian, K.Ganesan, Resource Management Techniques, A.R.Publications Arpakkam (Po), 8th Edition 2014TamilNadu.

BBA (BANKING) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards
FIRST SEMESTER
PART- III: IDC 1 - BUSINESS MATHEMATICS AND STATISTICS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective:
        To enable the students to   gain Fundamental Knowledge about the Set theory concepts and Mathematical techniques relating to business

 Unit I   (15 Hours)
Set Theory - Venn diagrams - Simple and compound interest, Discounting of Bills - True discount- bankers gain

Unit II   (15Hours)
Matrices- Introduction - Types of matrices - Addition of matrices - multiplication of matrices –Determinants - Inverse of a matrix - Rank of matrix-solving simultaneous linear equations using Cramer's rule method

Unit III   (14 Hours)
Measures of Central Tendency- Introduction - Arithmetic Mean - Median and Mode - Geometric mean - Harmonic mean

Unit IV   (14 Hours)
Measures of dispersion: Introduction - Range- Quartile deviation - Mean Deviation - Standard deviation and Co-efficient of Variation.

 Unit V   (14 Hours)
Correlation - Karl Pearson's Coefficient of Correlation - Rank Correlation- Regression - Regression equations - Relationship between Correlation & Regression.

Course Outcome:
  * Remember set theory concepts and to analyze the applications of business problems
  * To understand the concepts of Matrices, its types and to solve simultaneous equations.
  * Analyze the measures of central tendency and to apply its concepts.
  * To analyzes the measures of dispersion.
  * To understand the meaning of   correlation, Regression and its properties.

Text Book:
 1. P.A. Navanitham, Business Mathematics and Statistics, Reprint 2014, Jai Publications, Trichy.
     Unit I: Page no: 104-138 Exercise: 138-145,Page no :43-60,77-88 , Exercise: 87-102
     Unit II: Page no: 147-200 Exercise: 211-216
     Unit III: Page no : 159-269, Exercise 286-300
     Unit IV: Page no : 301-340,358-365 Exercise 380-394
     Unit V : Page no : 503-521, Exercise 535-538 Page no: 540-570, Exercise 570-574
Reference Book:
  1. P.R.Vital, "Business Mathematics", Reprint 2013, Margam Publication, Chennai.

BBA (BANKING) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards
SECOND SEMESTER
PART -III: IDC 2 - OPERATIONS RESEARCH

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective:
To enable the students to gain Fundamental Knowledge about the application of the operation research models, Transportation and Assignment problems, Game Theory, CPM and PERT Techniques.

Unit I   (14 Hours)
Introduction to Operations Research – Meaning – Scope – Models – Limitations. Linear Programming – Formulation — Graphical Method only

Unit II   (14 Hours)
Transportation (Non- degenerate case only) and Assignment problems – Simple problems only.

Unit III   (14 Hours)
Game theory – Concept of Pure and Mixed Strategies- Solving 2×2 matrix with and without saddle point- Graphical method of n×2 and 2×m games.

Unit IV   (15 Hours)
CPM – Principle – Constructions of Network for projects – Types of Floats – Slack.

Unit V   (15 Hours)
PERT – Time scale analysis – Critical path – Probability of completion of project- Advantages and Limitations

Note: The proportion of marks between theory and problems shall be 20% and 80% respectively.

Course outcome:
- Understand the meaning, scope, Models of Operations Research and create mathematical formulation of LPP to solve Graphical method.
- To understand the concept of Transportation and Assignment problems and its types.
- To analyze the decision making using the concept of Game theory
- Understand the CPM , Network concepts and its Types
- To understand the concepts of PERT to find the probability of completion of projects.

Text Book:
1.P.Kantiswarup, K. Gupta, Man Mohan, Operations Research, S. Chand & Sons Education Publications, 16th edition , Reprint 2013, New Delhi.
        Unit I: Chapter 1 [Sec 1.1, 1.2, 1.3, 1.5, 1.6]
                 Chapter 2 [Sec2.1, 2.2, 2.3, 2.4]
                 Chapter 3 [Sec3.1, 3.2, 3.3]

Unit II: Chapter 10 [Sec 10.1, 10.2, 10.9]
        Chapter 11[Sec11.1, 11.2, 11.3, 11.4, 11.7]
Unit III: Chapter 17[sec 17.1-17.6]
Unit IV: Chapter 25 [25.1- 25.4, 25.6] (problems only).
Unit V: Chapter 25 [25.7, 25.8]

Reference Book:

1. Prof.V.Sundaresan, K.S.Ganapathy Subramanian, K.Ganesan, Resource Management Techniques, A.R.Publications Arpakkam (Po), 8th Edition 2014TamilNadu.

B.Com (PA) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards

FIRST SEMESTER
PART- III : IDC 1 – MATHEMATICS FOR BUSINESS

Maximum CIA: 30
Maximum CE:70
Total Hours: 72

Course Objective:

       To enable students to gain Fundamental Knowledge about the Mathematical skills and to improve of analytical skills relating to business.

Unit I   (14 Hours)
Set Theory-Venn diagrams-Simple and compound interest- Discounting of Bills-True discount -Bankers gain

Unit II   (14 Hours)
Matrices; Introduction-Types of matrices-Addition of matrices-multiplication of matrices-Determinants-Inverse of a matrix-Rank of matrix-solving simultaneous linear equations using Cramer's rule method

Unit III   (14 Hours)
Limits - Constants and variables- limits of algebraic functions- Differentiation- Method of derivatives- Applications to Business Problems.

Unit IV   (15 Hours)
Numerical Methods- System of simultaneous linear Algebraic equations- Gauss Elimination –Gauss Jordan-Numerical Integration- Trapezoidal Rule- Simpson's Rule. (No derivation).

Unit V   (15 Hours)
Interpolation-Newton's Forward Interpolation Formula-Newton's Backward Interpolation Formula- Lagrange's formula (No derivation).

Course Outcome**:**
- Remember set theory concepts and to analyze the applications of business problems
- To understands the concepts of Matrices, its types and to solve simultaneous equations.
- Apply the concepts of limits and differentiation in Business problems.
- To solve Gauss elimination , Gauss Jordon and to analyze various methods of numerical integration
- To understand the concepts of Interpolation.

Text Books:
1. PA.Navanitham, Business Mathematics and Statistics, Jai Publications 2014, Trichy.
2. P.Kandasamy, K.Thilagavathi and K.Gunavathi, Numerical Methods – S. Chand and Company Ltd., New Delhi – Reprint 2013.
   Unit I: Page no: 43-60, 77-88 Exercise: 89-102 Page no: 104-138 Exercise: 138-145
   Unit II: Page no: 147-200, Exercise 211-216
   Unit III: Page no: 222-275, Exercise 246,276-279
   Unit IV: Chapter 4 (Sec4.1, 4.2, 4.2.1) Exercise 4.1
          Chapter 9 (Sec9.9, 9.13, 9.14) Exercise 9.2

Unit V: Chapter 6 (Sec6.2, 6.3) Exercise 6
Chapter 8 (Sec8.7) Exercises 8.2

Reference Book
1. M. K. Venkataraman, Numerical Methods in Science and Engineering, National Publishing Company V Edition 2013, Chennai

B.Com (PA) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards
SECOND SEMESTER
PART -III: IDC 2 - STATISTICS   FOR BUSINESS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective:
       To enable students gain Fundamental Knowledge about the application of the Statistical concepts.

Unit I   (14 Hours)
Introduction - Definition- Meaning and Scope of Statistics- Basic Concepts of Statistics – Collection of data- Classification and Tabulation- Presentation of data- Frequency Distribution.

Unit II   (14 Hours)
Measures of Central Tendency- Introduction- Arithmetic Mean – Median and Mode- Geometric mean – Harmonic mean.

Unit III   (14 Hours)
Measures of dispersion: Introduction-Range- Quartile deviation- Mean Deviation-Standard deviation and Co-efficient of Variation.

Unit IV   (15 Hours)
Correlation – Karl Pearson's Coefficient of Correlation – Rank Correlation Regression Regression equations – Relationship between Correlation & Regression.

Unit V   (15 Hours)
Time Series- Meaning and Definition- Uses- Components of time series- Semi average method- Moving Average Method- Least square method. Index Numbers- Unweighted and Weighted Index numbers (Laspeyre's, Paasche's and Fishers only)
Course Outcome:
- To understand the meaning, scope of statistics and its basic concepts.
- Analyze the measures of central tendency and to apply its concepts.
- To analyze the measures of dispersion.
- To understand the meaning of   correlation, Regression, types and its properties.
- To understand the concepts of   Time series, Method of least squares and Index numbers. And to analyze its methods.

Text Book:
 1. PA.Navanitham, Business Mathematics and Statistics, Jai Publications, 2014, Trichy.
      Unit I : Page no : 1-41,60-147
      Unit II : Page no : 159-269, Exercise 286-300
      Unit III : Page no : 301-340,358-365 Exercise 380-394
      Unit IV : Page no : 503-521, Exercise 535-538 Page no: 540-570, Exercise 570-574
      Unit V : Page no : 579-600, Exercise 613-616, Page no 444-488, Exercise 489-495
Reference Book:
     1. R.S.N.Pillai and Bagavathi, Statistics, S.Chand and Co, 2007, New Delhi.

BCA Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards

FIRST SEMESTER
PART -III: IDC 1 - NUMERICAL METHODS AND STATISTICS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective:
To enable students gain Fundamental Knowledge about the Application of the Statistics and Numerical methods for Computer Science.

Unit I   (15 Hours)
Numerical Methods- System of simultaneous linear Algebraic equations- Gauss Elimination –Gauss Jordan- Gauss Seidal -- Solution of Numerical Algebraic and Transcendental equations- Bisection method.

Unit II   (14 Hours)
Interpolation- Newton's Forward and Backward Interpolation Formulae – Lagrange's methods. Numerical Integration- Trapezoidal Rule- Simpson's $\frac{1}{3}$ Rule- Simpson's $\frac{3}{8}$ Rule-

Unit III   (15 Hours)
Measures of Central Tendency- Introduction- Arithmetic Mean – Median and Mode- Geometric mean – Harmonic mean.

Unit IV   (14 Hours)
Measures of dispersion: Introduction-Range- Quartile deviation- Mean Deviation-Standard deviation and Co-efficient of Variation.

Unit V   (14 Hours)
Correlation – Karl Pearson's Coefficient of Correlation – Rank Correlation –Regression- Regression equations – Relationship between Correlation & Regression.

Course Outcome:
- To understand the system of linear algebraic equations and to analyze the various method
- To understand and analyze concepts of Numerical Intepolation,   Numerical Integration and its types.
- Analyze the measures of central tendency and to apply its concepts.
- To analyze the measures of dispersion.
- To understand the meaning of   correlation, Regression and its properties.

Text Books
1. Kandasamy. P, Thilagavathi. K and Gunavathi. K, Numerical Methods – S. Chand and   Company Ltd., Reprint 2013, New Delhi.
    Unit I: Chapter 4 [Sec 4.1, 4.2& 4.9 Page no 112-121,147-159]
           Chapter 3 [Sec3.1&3.4 Page no 69-81, 92-98]

Unit II: Chapter 6 [Sec 6.1-6.3 Page no 216-221, 227-229]
   Chapter 8 [Sec 8.7&8.8 Page no 271-275,278,279]
   Chapter 9 [Sec 9.9, 9.13, 9.14 Page no 308-320] except derivation

2. R.S.N.Pillai and Bagavathi, Statistics, S.Chand and Co, 2007, New Delhi.
   Unit III: Page no (121-285)
   Unit IV: Page no (389-486)
   Unit V: Page no (735-757,773-774)

Reference Books:
   1. M. K Venkataraman, Numerical Methods in Science and Engineering National Publishing Company 5th Edition 1999, Chennai.
   2.   K.Alagar, Business Statistics, Tata McGraw Hill Publications Pvt Ltd, 2009, New Delhi.

BCA Degree Examination - Syllabus for candidates admitted from the Academic Year 2019-2020 onwards

SECOND SEMESTER
PART- III: IDC 2 - OPERATIONS RESEARCH

Maximum CIA: 30
Maximum CE: 70
TotalHours:72

Course Objective:

To enable the students to gain Fundamental Knowledge about the Linear Programming , Formulation of LPP,Graphical Method, simplex Method and Big –M Method, Transportation and Assignment problems, Game Theory,CPM and PERT Techniques.

Unit I   (14 Hours)
Linear programming –Mathematical Formulation of LPP- Graphical method- Simplex method and Big-M method.

Unit II   (14 Hours)
Transportation and Assignment Problem- Assignment and Traveling Salesman Problem.

Unit III   (14 Hours)
Game theory – Concept of Pure and Mixed Strategies- Solving 2×2 matrix with and without saddle point- Graphical method of n×2 and 2×m games-Dominance Property.

Unit IV   (15 Hours)
Introduction to Queueing theory- Queueing system-Characteristic of Queueing system Symbols and Notations-Classification of Queues problems in $(M/M/1){:}(\infty/FIFO)$;
$(M/M/1){:}(N/FIFO)$ $(M/M/C){:}(\infty/FIFO)$; $(M/M/C){:}(N/FIFO)$ (problems only).

Unit V   (15 Hours)
PERT and CPM – Network representation- Backward pass- Forward pass- computation- Pert Network- Probability factor – Updating and Crashing.

Note: The proportion of marks between theory and problems shall be 20% and 80% respectively.

Course Outcome:
  • Understand the meaning, scope, Models of Operations Research and create mathematical formulation of LPP to solve Graphical method.
  • To understand the concept of Transportation and Assignment problems and its types.
  • To analyze the decision making using the concept of Game theory
  • Understand the CPM , Network concepts and its Types
  • To understand the concepts of PERT to find the probability of completion of projects.

Text Book:
1. Kantiswarup, P. K. Gupta, Man Mohan, Operations Research, S. Chand & Sons
      Education Publications, 16th edition, Reprint 2013, New Delhi.
      Unit I : Chapter 2 [Sec 2.1, 2.2 &2.3]
              Chapter 3 [Sec3.1,3.2,3.3]
              Chapter 4 [Sec4.1,4.2,4.4]

Unit II: Chapter 10 [Sec 10.1, 10.2, 10.8, 10.9, 10.13]
         Chapter 11[Sec11.1, 11.2, 11.3, 11.7]
Unit III : Chapter 17[sec 17.1-17.7]
Unit IV: Chapter 21 [Sec 21.1-21.4, 21.7, 21.9] (problems only).
Unit V: Chapter 25 [25.1- 25.4, 25.6, 25.7]

Reference Book:
  1. Prof.V.Sundaresan, K.S.Ganapathy Subramanian, K.Ganesan, Resource Management
  Techniques, A.R.Publications Arpakkam (po), 8th Edition 2014, TamilNadu.

B.Sc (CS) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards

FIRST SEMESTER
PART- III: IDC 1 - NUMERICAL METHODS AND STATISTICS

Maximum CIA :30
Maximum CE: 70
Total Hours: 72

Course Objective:

To enable students gain Fundamental Knowledge about the Application of the Statistics and Numerical methods for Computer Science.

Unit I   (15 Hours)
Numerical Methods- System of simultaneous linear Algebraic equations- Gauss Elimination –Gauss Jordan- Gauss Seidal -- Solution of Numerical Algebraic and Transcendental equations- Bisection method.

Unit II   (14 Hours)
Interpolation- Newton's Forward and Backward Interpolation Formulae – Lagrange's methods. Numerical Integration- Trapezoidal Rule- Simpson's $\frac{1}{3}$ Rule- Simpson's $\frac{3}{8}$ Rule-

Unit III   (15 Hours)
Measures of Central Tendency- Introduction- Arithmetic Mean – Median and Mode- Geometric mean – Harmonic mean.

Unit IV   (14 Hours)
Measures of dispersion: Introduction-Range- Quartile deviation- Mean Deviation-Standard deviation and Co-efficient of Variation.

Unit V   (14 Hours)
Correlation – Karl Pearson's Coefficient of Correlation – Rank Correlation –Regression- Regression equations – Relationship between Correlation & Regression.

Course Outcome:
- To understand the system of linear algebraic equations and to analyze the various method
- To understand and analyze concepts of Numerical Interpolation,   Numerical Integration and its types.
- Analyze the measures of central tendency and to apply its concepts.
- To analyze the measures of dispersion.
- To understand the meaning of   correlation, Regression and its properties.

Text Books:
1.Kandasamy. P, Thilagavathi. K and Gunavathi. K, Numerical Methods – S. Chand and   Company Ltd., Reprint 2013, New Delhi.
   Unit I: Chapter 4 [Sec 4.1, 4.2& 4.9 Page no 112-121,147-159]
       Chapter 3 [Sec3.1&3.4 Page no 69-81, 92-98]

Unit II: Chapter 6 [Sec 6.1-6.3 Page no 216-221, 227-229]
Chapter 8 [Sec 8.7&8.8 Page no 271-275,278,279]
Chapter 9 [Sec 9.9, 9.13, 9.14 Page no 308-320] except derivation

2. R.S.N.Pillai and Bagavathi, Statistics, S.Chand and Co, 2007, New Delhi.
Unit III: Page no (121-285)
Unit IV: Page no (389-486)
Unit V: Page no (735-757,773-774)

Reference Books:
1.M. K Venkataraman, Numerical Methods in Science and Engineering National
Publishing Company 5th Edition 1999, Chennai.
2. K.Alagar, Business Statistics, Tata McGraw Hill Publications Pvt Ltd, 2009, New Delhi.

B.Sc (CS) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards

SECOND SEMESTER
PART III: IDC 2 - DISCRETE MATHEMATICS

Maximum CIA:30
Maximum CE: 70
Total Hours: 72

Course Objective:

To enable students to gain Fundamental Knowledge about the application of the set theoretical notations, relations, formal languages and graph theory.

Unit I   (14 Hours)
Set theory – Types of sets – Venn Diagrams –Set operations & law of set theory – Fundamental products- Min sets -Partitions of set- -Algebra of sets and Duality- Inclusion and Exclusion principle.

Unit II   (14 Hours)
Mathematical Logic- Introduction- Proportional calculus- Basic Logical operators- Tautologies- Contradiction-Argument-Methods of proof- Predicate calculus.

Unit III   (14 Hours)
Relations- Binary Relations- Set Operation on relations- Types of relations- Partial order relation- Equivalence relation- Composition of relations- Functions- Types of Functions- Invertible functions-Composition of functions.

Unit IV   (15 Hours)
Languages- Operations on Languages- Regular Expressions and regular languages-Grammar- Types of grammars-Finite state machine- Finite state automata.

Unit V   (15 Hours)
Graph theory- Basic Terminology-paths, cycle and Connectivity-sub graphs-Types of graphs- Representation of graphs in compute memory- Trees- Properties of trees- Binary tree- traversing Binary trees- Computer Representation of general trees.

Course Outcome:
*   To understand the concepts of set theory, fundamental product and duality principle.
*   To understand and analyze concepts of mathematical logic, proportional calculus and predicate calculus
*   Analyze types of relation and types of functions to solve
*   To understanding the concept of formal languages, Grammar, finite state automata and to apply its concepts.
*   To understand the meaning of Graph , Types of graphs , its basic theorems and to apply its concepts to solve.

Text Book:
1. Prof.V.Sundaresan, K.S.Ganapathy Subramanian, K.Ganesan, Discrete Mathematics,A.R.PUBLICATIONS, New Revised Edition June 2000, Sirkali
    Unit I : Chapter 1 [Sec 1.1-Sec1.11]
    Unit II : Chapter 2 [Sec 2.1-2.19]

Unit III: Chapter 1[sec 1.11-1.21, 1.27-1.35]
Unit IV: Chapter 7 [Sec 7.1-7.17, 7.36-7.50]
Unit V: Chapter 5 [Sec5.1- 5.8, 5.38, 5.40, 5.70, 5.77-5.92]

Reference Book:

1. Dr.M.K.Venkataraman, Dr.N.Sridharan, N.Chandrasekaran, Discrete Mathematics, The National Publishing Company, Reprint January 2011, Chennai.

B.Sc (CT) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards

FIRST SEMESTER
PART -III: IDC 1- NUMERICAL METHODS AND STATISTICS

Maximum CIA: 30
Maximum CE : 70
Total Hours: 72

Course Objective:

To enable students gain Fundamental Knowledge about the Application of the Statistics and Numerical methods for Computer Science.

Unit I   (15 Hours)
Numerical Methods- System of simultaneous linear Algebraic equations- Gauss Elimination –Gauss Jordan- Gauss Seidal -- Solution of Numerical Algebraic and Transcendental equations- Bisection method.

Unit II   (14 Hours)
Interpolation- Newton's Forward and Backward Interpolation Formulae – Lagrange's methods. Numerical Integration- Trapezoidal Rule- Simpson's $\frac{1}{3}$ Rule- Simpson's $\frac{3}{8}$ Rule-

Unit III   (15 Hours)
Measures of Central Tendency- Introduction- Arithmetic Mean – Median and Mode-Geometric mean – Harmonic mean.

Unit IV   (14 Hours)
Measures of dispersion: Introduction-Range- Quartile deviation- Mean Deviation-Standard deviation and Co-efficient of Variation.

Unit V   (14 Hours)
Correlation – Karl Pearson's Coefficient of Correlation – Rank Correlation –Regression-Regression equations – Relationship between Correlation & Regression.

Course Outcome:
- To understand the concepts of set theory, fundamental product and duality principle.
- To understand and analyze concepts of mathematical logic, proportional calculus and predicate calculus
- Analyze types of relation and types of functions to solve
- To understanding the concept of formal languages, Grammar, finite state automata and to apply its concepts.
- To understand the meaning of Graph , Types of graphs , its basic theorems and to apply its concepts to solve.

Text Books:
1. Kandasamy. P, Thilagavathi. K and Gunavathi. K, Numerical Methods – S. Chand and Company Ltd., Reprint 2013, New Delhi.
   Unit I: Chapter 4 [Sec 4.1, 4.2& 4.9 Page no 112-121,147-159]
        Chapter 3 [Sec3.1&3.4 Page no 69-81, 92-98]
    Unit II: Chapter 6 [Sec 6.1-6.3 Page no 216-221, 227-229]

Chapter 8 [Sec 8.7&8.8 Page no 271-275,278,279]
Chapter 9 [Sec 9.9, 9.13, 9.14 Page no 308-320] except derivation

2.   R.S.N.Pillai and Bagavathi, Statistics, S.Chand and Co, 2007, New Delhi.
     Unit III: Page no (121-285)
     Unit IV: Page no (389-486)
     Unit V: Page no (735-757,773-774)

Reference Books:
   1. M. K Venkataraman, Numerical Methods in Science and Engineering National
       Publishing Company 5th Edition 1999, Chennai.
   2.   K.Alagar, Business Statistics, Tata McGraw Hill Publications Pvt Ltd, 2009, New
       Delhi.

B.Sc (CT) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards

SECOND SEMESTER

PART III: IDC 2 - DISCRETE MATHEMATICS

Maximum CIA:30
Maximum CE: 70
Total Hours: 72

Course Objective:

To enable students to gain fundamental knowledge about the application of the set theoretical notations, relations, formal languages and graph theory.

Unit I   (14 Hours)

Set theory – Types of sets – Venn Diagrams –Set operations & law of set theory – Fundamental products- Partitions of sets- min sets-Algebra of sets and Duality- Inclusion and Exclusion principle.

Unit II   (14 Hours)

Mathematical Logic- Introduction- Propositional calculus- Basic Logical operations- Tautologies- Contradiction-Argument-Methods of proof- Predicate calculus.

Unit III   (14 Hours)

Relations- Binary Relations- Set Operation on relations- Types of relations- Partial order relation- Equivalence relation- Composition of relations- Functions- Types of Functions-Invertible functions-Composition of functions.

Unit IV   (15 Hours)

Languages- Operations on Languages- Regular Expressions and regular languages-Grammar-Types of grammars-Finite state machine- Finite and state automata.

Unit V   (15 Hours)

Graph theory- Basic Terminology-paths, cycle and Connectivity-sub graphs-Types of graphs-Representation of graphs in computer memory- Trees- Properties of trees- Binary tree-traversing Binary trees- Computer Representation of general trees.

Course Outcome:
*   To understand the concepts of set theory, fundamental product and duality principle.
*   To understand and analyze concepts of mathematical logic, proportional calculus and predicate calculus
*   Analyze types of relation and types of functions to solve
*   To understanding the concept of formal languages, Grammar, finite state automata and to apply its concepts.
*   To understand the meaning of Graph , Types of graphs , its basic theorems and to apply its concepts to solve.

Text Book:
1. Prof.V.Sundaresan, K.S.Ganapathy Subramanian, K.Ganesan, Discrete Mathematics, A.R.PUBLICATIONS, New Revised Edition June 2000, Sirkali
    Unit I : Chapter 1 [Sec 1.1-Sec1.11]
    Unit II : Chapter 2 [Sec 2.1-2.19]

Unit III : Chapter 1[sec 1.11-1.21,1.27-1.35]
Unit IV: Chapter 7 [Sec 7.1-7.17, 7.36-7.50]
Unit V: Chapter 5 [Sec5.1- 5.8, 5.38, 5.40, 5.70, 5.77-5.92]

Reference Book:
  1. Dr.M.K.Venkataraman, Dr.N.Sridharan, N.Chandrasekaran, Discrete Mathematics,
     The National Publishing Company, Reprint January 2011, Chennai.

B.Sc (IT) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards

FIRST SEMESTER
PART -III: IDC 1- NUMERICAL METHODS AND STATISTICS

Maximum CIA: 30
Maximum CE : 70
Total Hours: 72

Course Objective:

To enable students gain Fundamental Knowledge about the Application of the Statistics and Numerical methods for Computer Science.

Unit I   (15 Hours)
Numerical Methods- System of simultaneous linear Algebraic equations- Gauss Elimination –Gauss Jordan- Gauss Seidal -- Solution of Numerical Algebraic and Transcendental equations- Bisection method.

Unit II   (14 Hours)
Interpolation- Newton's Forward and Backward Interpolation Formulae – Lagrange's methods. Numerical Integration- Trapezoidal Rule- Simpson's $\frac{1}{3}$ Rule- Simpson's $\frac{3}{8}$ Rule-

Unit III   (15 Hours)
Measures of Central Tendency- Introduction- Arithmetic Mean – Median and Mode- Geometric mean – Harmonic mean.

Unit IV   (14 Hours)
Measures of dispersion: Introduction-Range- Quartile deviation- Mean Deviation-Standard deviation and Co-efficient of Variation.

Unit V   (14 Hours)
Correlation – Karl Pearson's Coefficient of Correlation – Rank Correlation –Regression- Regression equations – Relationship between Correlation & Regression.

Course Outcome:
- To understand the system of linear algebraic equations and to analyze the various methods
- To understand and analyze concepts of Numerical Interpolation, Numerical Integration and its types.
- Analyze the measures of central tendency and to apply its concepts.
- To analyze the measures of dispersion.
- To understand the meaning of correlation, Regression and its properties.

Text Books:
1. Kandasamy. P, Thilagavathi. K and Gunavathi. K, Numerical Methods – S. Chand and Company Ltd., Reprint 2013, New Delhi.
     Unit I: Chapter 4 [Sec 4.1, 4.2& 4.9 Page no 112-121,147-159]
          Chapter 3 [Sec3.1&3.4 Page no 69-81, 92-98]
     Unit II: Chapter 6 [Sec 6.1-6.3 Page no 216-221, 227-229]

Chapter 8 [Sec 8.7&8.8 Page no 271-275,278,279]
Chapter 9 [Sec 9.9, 9.13, 9.14 Page no 308-320] except derivation

2. R.S.N.Pillai and Bagavathi, Statistics, S.Chand and Co, 2007, New Delhi. (Unit III, IV&V)
      Unit III: Page no (121-285)
      Unit IV: Page no (389-486)
      Unit V: Page no (735-757,773-774)

Reference Books:
1.M. K Venkataraman, Numerical Methods in Science and Engineering National
  Publishing Company 5th Edition 1999, Chennai.
2. K.Alagar, Business Statistics, Tata McGraw Hill Publications Pvt Ltd, 2009, New Delhi.

B.Sc (IT) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards
SECOND SEMESTER
PART -III: IDC 2 - DISCRETE MATHEMATICS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 72

Course Objective:

To enable students to gain Fundamental Knowledge about the application of the set theoretical notations, relations, formal languages and graph theory.

Unit I   (14 Hours)
Set theory – Types of sets – Venn Diagrams –Set operations and law of set theory – Fundamental products- - Min sets- Partitions of sets -Algebra of sets and Duality- Inclusion and Exclusion principle.

Unit II   (14 Hours)
Mathematical Logic- Introduction- Propositional calculus- Basic Logical operations-Tautologies- Contradiction-Argument-Methods of proof- Predicate calculus.

Unit III   (14 Hours)
Relations- Binary Relations- Set Operation on relations- Types of relations- Partial order relation- Equivalence relation- Composition of relations- Functions- Types of Functions-Invertible functions-Composition of functions.

Unit IV   (15 Hours)
Languages- Operations on Languages- Regular Expressions and regular languages-Grammar-Types of grammars-Finite state machine- Finite and state automata.

Unit V   (15 Hours)
Graph theory- Basic Terminology-paths, cycle and Connectivity-sub graphs-Types of graphs-Representation of graphs in compute memory- Trees- Properties of trees- Binary tree-traversing Binary trees- Computer Representation of general trees.

Course Outcome:
- Remember set theory concepts and to analyze the applications of business problems
- To understand and analyze concepts of Numerical Interpolation,   Numerical Integration and its types.
- Analyze the measures of central tendency and to apply its concepts.
- To analyze the measures of dispersion.
- To understand the meaning of   correlation , Regression and its properties.

Text Book:
1. Prof.V.Sundaresan, K.S.Ganapathy Subramanian, K.Ganesan, Discrete Mathematics, A.R.PUBLICATIONS, New Revised Edition June 2000, Sirkali
   Unit I: Chapter 1 [Sec 1.1-Sec1.11]
   Unit II: Chapter 2 [Sec 2.1-2.19]
   Unit III: Chapter 1[sec 1.11-1.21, 1.27-1.35]
   Unit IV: Chapter 7 [Sec 7.1-7.17, 7.36-7.50]

Unit V: Chapter 5 [Sec5.1- 5.8, 5.38, 5.40, 5.70, 5.77-5.92]

Reference Book:

1. Dr.M.K.Venkataraman, Dr.N.Sridharan, N.Chandrasekaran, Discrete Mathematics, The National Publishing Company, Reprint January 2011, Chennai.

B.Sc (Electronics) Degree Examination - Syllabus for candidates admitted from the Academic Year 2019-2020 onwards

FIRST SEMESTER
PART -III: IDC 1- MATHEMATICS-I

Maximum CIA:30
Maximum CE:70
Total Hours:72

Course Objective:

To enable students gain Fundamental Knowledge about the matrix functions and various techniques in Vector Calculus, Fourier Series ,Laplace Transform, Complex Numbers and their applications.

Unit I   (15 Hours)
Matrix- Types of Matrix-Symmetric and Skew Symmetric Matrices Problems- Properties of a Unitary and Orthogonal matrices – Characteristics equation and Characteristic roots-Characteristics vector- Problems. (Excluding Theorems.)

Unit II   (15 Hours)
Vector calculus-concept of vector and scalar fields-The Del operators-Divergence of vector - Curl of a vector –Gradient.

Unit III   (14 Hours)
Fourier Series- Drichlets Condition-General Fourier series-Use of Odd and Even functions in Fouries series-Half range Series –Half range Fourier Sine and Cosine Series.

Unit IV   (14 Hours)
Laplace Transform- Definition- Laplace Transforms of standard functions-linearity properties- First shifting theorem – Transform of t f(t), f(t)/t, f $'$(t) and f $''$(t).

Unit V   (14 Hours)
Complex Numbers- Addition-Subtraction -Multiplication and Division by using polar and Rectangular forms-Modulus and Amplitude of a Complex numbers- De Moivre's Theorem-Expansions of Sin $n\theta$, Cos $n\theta$ in powers of Sinθ, Cosθ- Expansion of Sin$^n \theta$ and Cos$^n\theta$ interms of Sines and Cosines of multiples of θ.

Course Outcome:
- To analyze the concepts of Matrix concepts , Characteristic roots and Characteristics vectors .and also to solve simultaneous equations..
- To understand the concepts theory concepts of Vector calculus and its operations.
- Analyze the types of Fourier series and to apply its concepts.
- To understand and apply   the concepts of Laplace transforms..
- To understand the meaning of Complex numbers ,expansions of trigonometric terms and De Moivre's Theorem.

Text Books:
   1. Dr.P.R.Virtal, Allied Mathematics, Reprint 2014 ,Margham Publications

Unit I Chapter 5 [Page no: 5.1-5.8,5.11, 5.18-5.24, 5.53-5.74] Excluding Theorems.
Unit III Chapter 21 [Page no: 21.1-21.59]
Unit IV Chapter 27[Page no : 27.1-27.19]

2. A.Singaravelu, Engineering Mathematics I Year BE students , Meenakshi Agency Edition July 2000, Chennai.
Unit II Chapter 9 [Page no: 9.20-9.54]
Unit V Chapter 2[Page no : 2.1-2.17]

Reference Book:
1. M.K.Venkataraman, Engineering Mathematics First Year, National
Publishing Company, Second Edition 2000, Chennai.

B.Sc (Electronics) Degree Examination (Allied Mathematics) - Syllabus for candidates admitted from the Academic Year 2019-2020 onwards
SECOND SEMESTER
PART -III:IDC 2-MATHEMATICS-II

Maximum CIA: 30
Maximum CE : 70
Total Hours: 72

Course Objective:
  To enable students gain Fundamental Knowledge about the differential equations, numerical methods, Fourier transforms, Special functions and their applications.

Unit-I   (14Hours)
Differential equations- Second order linear differential equation with constant coefficients-Application to electric circuits RL, RC, RLC.

Unit II   (14 Hours)
Numerical methods-Solving simultaneous equation using Elimination process- Gauss Jordan method- Gauss Jacobi method-Gauss Seidel Method.

Unit III   (15 Hours)
Interpolation –Newton's forward and Backward Method-Lagrange's Interpolation Method-Numerical Integration-Trapezoidal Rule-Simpson's Rule.(No Derivation) .

Unit IV   (15 Hours)
Fourier transforms- Definition of Fourier Transform-Properties of Fourier Transform-Inverse Fourier Transform-Parsevals Identity- Fourier Sine and Cosine transform (Excluding inverse) - Properties of Fourier Sine and Cosine Transforms.

UnitV   (14 Hours)
Definition of One sided Z –Transform - Z –Transform some basic functions namely Z [1] , Z [n] , $Z\left[\frac{1}{n}\right]$, $Z\left[\frac{1}{n+1}\right]$, $Z\left[\frac{1}{n+2}\right]$, $Z\left[\frac{1}{n-1}\right]$, $Z\left[\frac{1}{n!}\right]$, $Z\left[\frac{1}{(n+1)!}\right]$, Z [a^n] – Linear properity-First Shifting theorem(Only Unilateral problems). Definition of Inverse Z –Transform - Method of Partial fraction only-Long Division Method .

Course Outcome**:**
- To analyze the concepts of Second order linear differential equation with constant coefficients and its application to electric circuits RL, RC, RLC.
- To understand the system of linear algebraic equations and to analyze the various methods.
- To understand and analyze concepts of Numerical Interpolation , Numerical Integration and its types.
- To Analyze the types of Fourier Transforms and to apply its concepts.
- To understand and apply the concepts of Beta and gamma functions..

Text Books:
1. M.K.Venkataraman, Engineering Mathematics First Year, National Publishing Company, Second Edition 2000, Chennai.

Unit I : Chapter 24 [Sec24.2,24.5,24.10,24.16-24.19]
Chapter 28 [Page no : 28.56-28.65] (Excluding Higher Order)

2. Kandasamy. P, Thilagavathi. K and Gunavathi. K, Numerical Methods – S. Chand
  and   Company Ltd., Reprint 2013, New Delhi.
      Unit II : Chapter 4 [Sec 4.1,4.2,4.8,4.9] Page no 112-121,146-160
      Unit III: Chapter 6 [Sec 6.1-6.3] Page no 216-221,227-229]
            Chapter 8 [Sec 8.7,8.8] Page no 271,275,278,279]
            Chapter 9 [Sec9,9.9,9.13,9.14] Page no 308-320 (Excluding Derivatives)

3. Dr. A.Singaravelu, Transforms and Partial differential Equations, Revised Edition : June
2013,Meenakshi Agency.
      Unit IV: Chapter 2 [Page no : 2.13- 2.51, 2.65-2.79]
       UnitV: Chapter 5 [Page no : 5.1-5.8,
                        Page no : 5.13-5.16,5.22,5.24,5.25,5.63,5.65,5.84,5.85]

Reference Book:
  1. Dr.P.R.Vittal, Allied Mathematics, Reprint 2014, Margham Publications

B.Sc (Mathematics) Degree Examination- Syllabus- for Candidates admitted from the Academic Year 2019-2020 onwards
THIRD SEMESTER
PART- III: Core 5-   STATICS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: To enable students gain Knowledge about the Concept about the forces, resultant force and friction, application problems and their applications.

Unit I   (12 Hours)

Forces acting at a point – Parallelogram law-triangle law –Polygon of forces- Lami's theorem Conditions of Equilibrium.

Unit II   (12 Hours)
(λ-μ) Theorem –Resolution of a force-Theorem on resolved parts.

Unit III   (12 Hours)
Parallel Forces-Like Parallel Forces- Un like Parallel Forces-Moments of a force about a point Varignons Theorem-Moment of a force about an axis.

Unit IV   (12 Hours)
Couples- Equilibrium of two couples-Co-planar forces acting on a rigid body – Theorem on three co-planar forces in equilibrium-Reduction of a system of co-planar forces to a single force and a couple- Necessary and Sufficient Conditions of equilibrium equation to the line of action of the resultant.

Unit V   (12 Hours)
Friction- Laws of friction- Co-efficient of friction- Angle and cone of friction- Equilibrium of a particle on a rough inclined plane under a force parallel to the plane and under any force- Problems on friction.

Course Outcome**:**
CO1:   To understand the concept of forces, resultant forces of more than one force acting on a surface
CO2:   To apply the concept of friction, gravity, centre of mass, and centroid
CO3:   To acquire knowledge about the parallogram of forces, Triangle of forces, varigons theorem of moments
CO4:   To find the resultant of coplanar couples equilibrium of couples and the equation to the line of action of the resultant
CO5:   To understand the concept of equlibrium of strings, the geometrical properties of a catenary and to derive the tension at any point

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	L				M	M		
CO2	H	H			M	M		
CO3	M				H		M	
CO4	M				H	L		
CO5			L		M			H

Text Book

M.K. Venkataraman, Statics, Agasthiar Publications, Reprint2014, Trichy.
Unit-I: Chapter-II [Section 1-9 &16]
Unit-II: Chapter-II [Section 10-13]
Unit-III: Chapter-III [Section 1-4, 7-14]
Unit-IV: Chapter-IV [Section 1-2], Chapter-V [Section 1-2],
          Chapter-VI [Section 1-9]
Unit-V: Chapter-VII [Section 1-13]

Reference Books
 1. P.Duraipandian and Laxmi Duraipandian, Mechanics, Reprint 2012, S.Chand and Company Ltd., Ram Nagar, New Delhi.
 2. A.V.Dharmapadam, Statics, Reprint 2013,S.Viswanathan Printer and Publishing Pvt Ltd, Chennai.

B.Sc. (Mathematics) Degree Examination- Syllabus- for Candidates admitted from the Academic Year 2019-2020 onwards
THIRD SEMESTER
PART- III: Core 6- DIFFERENTIAL EQUATIONS AND LAPLACE TRANSFORMS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: To enable students gain Fundamental Knowledge about the method of solving Differential Equations and Laplace Transforms.

Unit I   (12 Hours)
Finding the solution of Second Order with constant coefficients with Right Hand side is of the form Ve^{ax} where V is a function of x-Euler's Homogeneous Linear Differential Equations – Method of variation of parameters.

Unit II   (12 Hours)
Ordinary Differential Equations - Equations of first Order - Solvable for p, x, y-Clairaut's Equation. Simultaneous Differential Equations with constant coefficients of the form

$$(i) f_1(D)x + g_1(D)y = \varphi_1(t)$$
$$(ii) f_2(D)x + g_2(D)y = \varphi_2(t)$$

Where f_1, g_1, f_2, g_2 are rational functions $D = \dfrac{d}{dt}$ with constant Co-efficient φ_1 and φ_2 are explicit functions of t.

Unit III   (12 Hours)
Partial Differential Equations: Formation of equations by eliminating arbitrary constants and arbitrary functions- Solutions of P.D.E-Solutions of P.D.E. by direct integration- Methods to solve the first order P.D.E. in standard forms- Lagrange's Linear Equations.

Unit IV   (12 Hours)
Laplace Transforms- Definitions - Laplace Transforms of Standard functions – Linearity Property – First shifting theorem-Transform of $tf(t), \dfrac{f(t)}{t}, f'(t)$ and $f''(t)$

Unit V   (12 Hours)
Inverse Laplace Transforms-Applications to solutions of First Order and Second Order Differential Equations with Constant Coefficients.

Course Outcome:
CO1: To examine the general, particular and complete solution of differential equations
CO2: Understand the concept of ordinary differential equations and to evaluate ODE.
CO3: Understand the concept of partial differential equations and lagrange's method
CO4: To analyze the types of equations solvable for x,y and p
CO5: To understand and apply the concept of Laplace transforms and inverse Laplace Transforms

CO/ PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	L					L		
CO2			H		H			M
CO3	H				H			H
CO4	M					L		
CO5		M			M	M		

Text Book

1. P. Kandasamy, K. Thilagavathi, Mathematics for B.Sc Branch-I Vol- III, 2014, S.Chand and Company Ltd, New Delhi.
   Unit-I: Chapter 2 [Page No 16-32], Chapter 4 [Page No 48-56], Chapter 5 [Page No 57-65]
   Unit-II: Chapter 1 [Page No 1-15], Chapter 3 [Page No 41-47]
   Unit III: Chapter 1 [Page No 117 -162]
   Unit IV: Chapter 1 [Page No 187-201]
   Unit V: Chapter 1 [Page No 202-211, 225-240]

Reference Books

1. M.L. Kanna, Differential Equations, Reprint 2009, Jaico publishers, Chennai..

2. S. Sankarappan and S.Kalavathy, Differential Equations and Laplace Transforms ,2005 Vijay Nicole Imprints Private Ltd, Chennai.

B.Sc. (Mathematics) Degree Examination- Syllabus- for Candidates admitted from the Academic Year 2019-2020 onwards
THIRD SEMESTER
PART- IV: SBC I - OPERATIONS RESEARCH-I

Maximum CE: 75
Total Hours: 36

Course Objective: To enable students gain Fundamental Knowledge about an Operations Research and their applications.

Unit I   (12 Hours)

Introduction to Operations Research–Canonical and Standard forms of L.P.P - Formulation of L.P.P – Graphical solutions of L.P.P – Simplex Method – Charnes Penalty Method (or) Big – M Method- Problems.

Unit II   (9 Hours)
Duality in L.P.P – Concept of duality – Duality and Simplex Method- Problems.

Unit III   (6 Hours)
 The transportation Problems – Basic feasible solution by Least cost method– North West
 Corner Method- Vogel's Approximation Method- Optimum solutions by Modi method –
 Unbalanced   Transportation Problems.

Unit IV   (5 Hours)
The Assignment Problems – Assignment algorithm – Optimum Solutions – Unbalanced Assignment Problems-Travelling Salesman Problem.

Unit V   (4 Hours)
Game Theory – Two person zero sum game – The Maxmin – Minimax Principle – Problems - Solution of 2 x 2 rectangular Games – Domination Property – (2 x n) and (m x 2) Graphical Method – Problems.

Note: The proportion of marks between theory and problems shall be 20% and 80% respectively.

Course Outcome:
CO1: To create the formulation of LPP and to evaluate various methods of LPP namely
         Graphical method, Simplex method and Big-M method
CO2: To understand and apply the concept of duality
CO3: To understand and apply the methods of transportation
CO4: To solve the assignment problems and travelling salesmen problem
CO5: To analyze the concept of game theory and its methods

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H					H		H
CO2	M					M		
CO3		M			H		M	H
CO4		M	H		H	H		H
CO5		M	M		M	M		

Text Book
1. Kantiswarup, P. K. Gupta and Man Mohan, Operations Research, (16th edition) Reprint 2013, S. Chand & Sons Education Publications, New Delhi.

   UnitI: Chapter-2(Section 2.1-2.4 ,Page.No:201-205)
         Chapter-3(Section 3.1-3.5)
          Chapter-4(4.1,4.3,4.4(only Big-M Method))
   Unit-II: Chapter-5(5.1-5.4,5.7,5.9)
   Unit-III: Chapter-10(10.1,10.8,10.13,10.15)
   Unit-IV: Chapter-11(11.1-11.3(Assignment Method only),11.4(Only Maximization case in   Assignment Problem),11.7)
   Unit-V: Chapter-17(17.1-17.7)

Reference Book
1. Prof.V.Sundaresan, K.S.Ganapathy Subramanian and K.Ganesan, Resource Management Techniques, 8th Edition2014, A.R.Publications Arpakkam (Po), TamilNadu.

B.Sc. (Mathematics) Degree Examination- Syllabus- for Candidates admitted from the Academic Year 2019-2020 onwards
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THIRD SEMESTER
PART - IV:SBC I- FUZZY LOGIC AND NEURAL NETWORKS

Maximum CE: 75
Total Hours: 36

Course Objective: To enable students gain Fundamental Knowledge about Fuzzy Logic and Neural Network and their applications.

Unit I   (8 Hours)
Fuzzy set theory- Fuzzy versus Crisp- Crisp sets- Operations on Crisp Sets- Properties of Crisp Sets- Partition and Covering- Fuzzy sets- Membership Function- Basic Fuzzy Set Operations- Properties of Fuzzy Sets- Crisp Relations- Cartesian Product- Operations on Relations- Fuzzy Relations- Fuzzy Cartesian product- Operations on Relations.

Unit II   (6 Hours)
Fuzzy systems- Crisp Logic- Laws of Propositional Logic- Inference in Propositional Logic- Predicate Logic- Interpretations of Predicate Logic formula- Inference in Predicate Logic- Fuzzy Logic- Fuzzy Quantifiers-m Fuzzy Inference- Applications- Greg Viot's Fuzzy Cruise Controller- Air Conditioner Controller.

Unit III   (6 Hours)
Fuzzy Associative Members- FAM Introduction- Single Associations FAM- Graphical Method of Inference- Correlation Matrix Encoding- Fuzzy Hebb FAMs- Applications- Balancing an Inverted Pendulum- Fuzzy Truck Backer-upper System.

Unit IV   (8 Hours)
Fundamentals of Neural Networks- Basic concepts of Neural Networks- Human Brain- Model of an Artificial Neuron- Neural Network Architectures- Single Layer Feed forward Network- Multilayer Feed Forward Network- Recurrent Networks0- Early Neural Network Architectures- Rosenblatt's Perceptron- ADALINE Network- MADALINE Network.

Unit V   (8 Hours)
Back probagation Networks- Architecture of a Back propagation Network- The Perceptron Model- The Solution- Single Layer Artificial Neural Network- Back propagation Learning- Input Layer Computation- Hidden Layer Computation- Output Layer Computation.

Course Outcome:
CO1: To understanding the concepts of Fuzzy set theory and its basic operations .
CO2: To acquire knowledge about Fuzzy systems ,Fuzzy logic ,quantifiers and
       inference concepts.
CO3: To understand the concepts of Fuzzy Associate members..
CO4: To acquire knowledge about covering and compact subsets of a Metric space
CO5: To apply the back propagation networks to create the perception model.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1			M			M		
CO2	L					L		
CO3	M							
CO4		M			H		M	
CO5		H			M		M	

Text Book:
1. S.Rajasekaran, G.A. Vijayalakshmi Pai, "Neural Networks, Fuzzy Logic, and Genetic Algorithms Synthesis and Applications", Asoke K. Ghosh, PHI Learning private ltd, 2010, New Delhi.

Reference Book
1. George J. Klir, "Fuzzy sets and Fuzzy Theory", 2016,Prentice Hall of India Private Limited, First Edition, New Delhi.

B.Sc. (Mathematics) Degree Examination- Syllabus- for Candidates admitted from the Academic Year 2019-2020 onwards
FOURTH SEMESTER
PART- III: Core 7 - DYNAMICS

Maximum CIA: 30
Maximum CE:70
Total Hours: 60

Course Objective: To enable students gain knowledge about the Concept of Dynamics Functions and their Applications.

Unit I   (12 Hours)
Kinematics- Velocity-Acceleration-Relative Velocity-Angular velocity-Relative Angular Velocity-Motion in the Straight line-Equations of motion-Acceleration falling bodies-Vertical motion under gravity-Motion down a smooth inclined plane. Laws of motion-Newton's laws of motion-Newton's law of gravitation.

Unit II   (12 Hours)
Conservation of linear momentum-Work done by elastic string-work done by a couple-Power- Gauss power-Conservative forces-Energy-Potential energy kinetic energy-Principle of energy. Projectiles- Path of a projectile-Greatest height-time of flight-Range on an inclined plane through the point of projection – Maximum range .

Unit III   (12 Hours)
Central Orbits- Radial and transverse components of velocity and acceleration – A real velocity. Differential equation of central orbit in polar coordinates–Circular and elliptic
 Orbit – Kepler's laws of planetary motion – Padal equations

Unit IV   (12 Hours)
Simple Harmonic Motion-   Amplitude, periodic time, phase-Composition of two simple harmonic motions of the same period in a straight line and in two perpendicular lines.

Unit V   (12 Hours)
Impact on a fixed surface- Impulsive force-Impact on a smooth fixed plane –Direct and oblique impact of two smooth spheres Loss of Kinetic energy during direct and oblique impacts.

Course Outcome:
  CO1: To understand and apply the concepts of kinematics and kinetics
  CO2: To understand the basic terms for the description of the motion of particles vector
         functions and fundamental laws
  CO3: To solve dynamical problems in one dimension that involve one or more of the
         forces of gravity and friction
  CO4: To understand and apply the concept of the path of the projectile and
         Its characteristics
  CO5: To understand simple harmonic motion ,its related geometrical representation ,the
         principle of central orbit and Direct and oblique impact.

CO/ PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1			L			M		
CO2	L					L		
CO3	M					M		
CO4		M			H		M	
CO5		H			H		H	

Text Book

1. M.K. Venkataraman, Dynamics, 11thEd. 2012,Agasthiar Publications, Trichy.

Unit-I: Chapter 3 [Section 3.1-3.11, 3.15-3.18, 3.21-3.22, 3.24, 3.28-3.32, 4.2-4.3]
Unit-II: Chapter 4 [Section 4.11, 4.28, 4.30-4.35, 6.1-6.5, 6.7, 6.12]
Unit III: Chapter 11 [Section 11.2-11.12]
Unit IV: Chapter 10 [Section 10.1-10.3, 10.6-10.7]
Unit V: Chapter 7 [Section 7.1-7.4, 8.1-8.8]

Reference Book

1. A.V. Dharamapadam, Dynamics, 2013,S.Viswanathan Printers and Publishers Pvt Ltd, Chennai.

B.Sc. (Mathematics) Degree Examination- Syllabus- for Candidates admitted from the Academic Year 2019-2020 onwards
FOURTH SEMESTER
PART- III: Core 8 - FOURIER TRANSFORMS, Z-TRANSFORMS AND THEORY OF EQUATIONS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: To enable students gain fundamental knowledge about the improper integrals and geometrical functions and their applications.

Unit I   (12 Hours)
Fourier Transform- Properties of Fourier Transform - problems based on Fourier Transform - Inverse Fourier Transform - Problems based on Inverse Fourier Transform - Convolution Theorem for Fourier Transform.

Unit II   (12 Hours)
Parseval's Identity for Fourier Transform.Fourier sine Transform - Fourier cosine Transform- Properties of Fourier cosine and sine Transform.

Unit III   (12 Hours)
Definition of One sided Z –Transform - Z –Transform some basic functions namely Z [1] , Z [n] , $Z\left[\frac{1}{n}\right]$, $Z\left[\frac{1}{n+1}\right]$, $Z\left[\frac{1}{n+2}\right]$, $Z\left[\frac{1}{n-1}\right]$, $Z\left[\frac{1}{n!}\right]$, $Z\left[\frac{1}{(n+1)!}\right]$, Z [a^n] – Linear property-First Shifting theorem(Only Unilateral problems). Definition of Inverse Z –Transform - Method of Partial fraction only-Long Division Method .

Unit IV   (12 Hours)

Theory of Equations: Roots of Equation - Relation between the Roots and Coefficients of Polynomial Equations –. Transformation of Equation- Diminishing, Increasing & multiplying the roots by a constant-Forming equations with the given roots.

Unit V   (12 Hours)
Symmetric function of root's - Sum of the Power's of the root's of an Equation – Newton's Theorem on the sum of the powers of roots – Reciprocal Equation of even and odd degree (like and unlike signs) of its coefficients- Horner's Method.

Course Outcome:
CO1: To understand and apply the concepts of Fourier Transform ,Properties and Inverse Fourier   Transform.
CO2: To understand and apply the concepts of Fourier Sine Transform ,Fourier Cosine Transform   and its properties.
CO3: To understand and apply the concept of Z-Transforms of   basic functions and few inverse   Z Transform methods.
CO4: To   know about   Theory of equations ,Transformation of equations and formation of euations.
CO5: To understand   symmetric function of roots ,Sum of the powers of the root's of an equation,   Newton's theorem,Reciprocal equation and Honer's Method.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M	H		M		H		
CO2			M		M	M		
CO3	L					L		
CO4	M	L				M		
CO5			M	M				M

Text Books
1. Dr. A. Singaravelu, Transforms and Partial differential Equations, Revised Edition : June 2013,Meenakshi Agency.
2. T.K. Manicavachagam Pillay, T.Natarajan, Algebra-VOL I, Reprint-2015, S.Chand and co, New Delhi(Unit IV,V-Chapter-6)

Reference Books
1. P.Kandasamy, K.Thilagavathy, Allied mathematics, paper-I, First semester, Reprint 2013, S.Chand & company PVT Ltd.
2. K.Vairamanickam, Nirmala, P.Ratchagar, S.Tamilselvam, Transforms and Z-Transforms, Second Edition,May 2013, SCITECH PUBLICATIONS INDIA PVT.LTD.

B.Sc. (Mathematics) Degree Examination- Syllabus- for Candidates admitted from the Academic Year 2019-2020 onwards
FOURTH SEMESTER
PART- IV: SBC II – OPERATIONS RESEARCH-II

Maximum CE: 75
Total Hours: 36

Course Objective: To enable students gain Fundamental Knowledge about Game, Queuing theory and Network analysis and their applications.

Unit I   (8 Hours)
Decision Analysis- Decision Making Environment- Decision under uncertainty- Decision under risk- Decision-Tree Analysis.

Unit II   (6 Hours)
Inventory control – Types of inventories – Inventory costs – EOQ Problem with no shortages – Production problem with no shortages – EOQ with shortages – Production problem with shortages – EOQ with price breaks.

Unit III   (6 Hours)
 Sequencing Problem- Processing n jobs through two machines- Processing 2 jobs through k machines- Processing n jobs through k machines

Unit IV   (8 Hours)
 Network scheduling by PERT / CPM – Network and basic components – Rules of Network construction – Time calculation in Networks – CPM. PERT – PERT calculations

Unit V   (8 Hours)
Queueing Theory – Introduction – Elements of Queueing System – Operating Characteristics of Queueing System – Symbols and Notation – Classifications of queues – Problems in (M/M/1) : (∞/FIFO); (M/M/1) : (N/FIFO) - Excluding derivatives.

Note: The proportion of marks between theory and problems shall be 20% and 80%.

Course Outcome:
CO1: To formulate and solve decision analysis problems
CO2: To solve sequencing problems and plan accordingly
CO3: To acquire knowledge about replacement problems to find the optimal replacement
        period
CO4: To construct the network for a project to study the system and to take better decision
CO5: To apply Queueing theory concepts to take optimal decision

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1			H			H		
CO2			H				M	
CO3	L				H		M	
CO4		H			H			H
CO5	M				M		M	M

Text Book
1. Kantiswarup, P. K. Gupta, Man Mohan Operations Research, (16th edition) Reprint 2013, S. Chand & sons Education Publications, New Delhi.
   Unit1: Chapter 16 [Section 16.1- 16.7]
   Unit II : Chaper 19[Section 19.1- 19.6, 19.9- 19.11]
   Unit III : Chaper 12[Section 12.1- 12.6]
   Unit IV : Chaper 25[Section 25.1- 25.4, 25.6-25.8]
   Unit V : Chaper 21[Section 21.1- 21.7, Section 21.9 Model I,II and III Excluding derivatives]

Reference Book
1. Prof.V.Sundaresan K.S.Ganapathy Subramanian and K.Ganesan, Resource Management Techniques, 8th Edition2014, A.R.Publications Arpakkam (Po), TamilNadu.

B.Sc. (Mathematics) Degree Examination- Syllabus- for Candidates admitted from the Academic Year 2019-2020 onwards
FOURTH SEMESTER
PART – IV : SBC II - MATHEMATICAL MODELLING

Maximum CE: 75
Total Hours: 36

Course Objective: To enable students gain Knowledge about the Concept of Mathematical Modeling and their applications.

Unit I   (8 Hours)
Introduction-Mathematical Modelling. Mathematical Modelling through Ordinary Differential Equations of First order : Linear Growth and Decay Models – Non-Linear Growth and Decay Models – Compartment Models .

Unit II   (6 Hours)
Mathematical Modelling through Systems of Ordinary Differential Equations of First Order: Population Dynamics – Compartment Models – Medicine, Arms Race, Battles and International Trade – Dynamics.

Unit III   (6 Hours)
Mathematical Modelling through Ordinary Differential Equations of Second Order :
Planetary Motions – Circular Motion and Motion of Satellites –Miscellaneous Mathematical Models.

Unit IV   (8 Hours)
Mathematical Modelling through Difference Equations : Simple Models – Basic Theory of Linear Difference Equations with Constant Coefficients - Population Dynamics and Genetics

Unit V   (8 Hours)
Mathematical Modelling through Graphs :Situations that can be Modelled
Through Graphs – Mathematical Modelling in Terms of Directed Graphs.

Course Outcome:
CO1: To understand and apply the concepts of Mathematical Modeling relating to linear and Noon-linear Growth and Decay Models.
CO2: To understand the basic terms for the description of the Population Dynamics and Compartment Models.
CO3: To know about Planetary, Circular Motion and Motion of Statellites.
CO4: To understand and apply the concepts of Mathematical Modeling through difference equations.
CO5: To understand and apply the concepts of Mathematical Modeling through Graphs and Directed Graphs.

CO/ PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1			L			M		
CO2	L					L		
CO3	M					M		
CO4		M			H		M	
CO5		H			H		H	

Text Book

1. J.N.Kapur,Mathematical Modelling, Second Edition 2015,New Age International Publishers, New Delhi.

Reference Books

1. J.N. Kapur, Mathematical Models in biology and Medicine, 1985,EWP, New Delhi.
2. J.N. Kapur, Mathematical Modelling, 1988, Wiley Eastern Limited, New Delhi.

B.Sc. (Mathematics) Degree Examination- Syllabus- for Candidates admitted from the Academic Year 2019-2020 onwards
THIRD SEMESTER
PART - III : ALC I - VEDIC MATHEMATICS

Maximum CE: 100

Course Objective: To enable students gain Fundamental knowledge about the Vedic Mathematics.

Unit I
Squaring of numbers ending with 5- Squaring of numbers between 50 and 60 – Multiplication of Numbers with a series of 9's - Multiplication of numbers with a series of 1's - Multiplication of numbers with a series of similar digits in multiplier.

Unit II
Criss- Cross system of multiplication -squaring of number – Cube roots of perfect cubes – square roots of perfect squares.

Unit III
Base method of multiplication –above base 100 and below base 1000 - above base 1000 and below base 100 - above base 10,000 and below base 10,000 – multiplying a number above the base with a number below the base – multiplying numbers with different bases.

Unit IV
Digit sum method – Magic squares – Dates and calendars – General equations – simultaneous linear equations.

Unit V
Square roots of imperfect squares – cubing numbers – Base method of division- Zeller's rule to find the day on any date.

Course Outcome:
CO1 : To learn short cuts in Squaring , multiplication of numbers.
CO2 : To acquire knowledge about Criss -Cross Multiplication ,Square root and Cube roots.
CO3 : To understand and apply the concepts of Base method of multiplication .
CO4 : Will learn about the concept of Digit sum method,Magic squares ,Dates and calender problems, general, linear equations.
CO5: To understand and apply Zeller's rule , square root for impefect squares , cubing numbers and Base method of division.

Text Book
1. Dhaval Bathia ,Vedic mathematics made Easy, Edition 2012,Jaico publishing house Chennai.

Reference Book
1.Jagadguru Swami Sri, "Vedic Mathematics" ,Revised Edition 1992,Motilal Banar Sidass Publishers Private Limited,Delhi.

B.Sc (Mathematics) Degree Examination – Syllabus – For Candidates admitted from the Academic Year 2019 – 2020 onwards
FOURTH SEMESTER
PART - III : ALC II - BASICS OF CRYPTOGRAPHY

Maximum CE: 100

Course Objective:
To enable students gain Fundamental Knowledge about the basic concepts in Cryptography.

Unit I
Symmetric Ciphers-Basic terminologies and their definitions-OSI Security Architecture-Security Attack-Security services-Security Mechanism-A Model for Network Security.

Unit II
Cryptography-Type of Operation used in Transformation-Number of keys used-Processing Technique-Crypt Analysis-Symmetric Cipher Model-The Components of Symmetric Cipher-Types of Attacks.

Unit III
Requirements of Encryption Algorithm -Substitution Techniques Rules of Encryption-Hill Cipher-Block Cipher Definition-Difference between Stream Cipher and Block Cipher.

Unit IV
Basic Number Theory-Basic Notation-Methods to find GCD-Euclid's Algorithm-Euclidean Algorithm-Congruence-Proposition.

Unit V
Extended Euclidean Algorithm.-Continued Fraction- Euler Fermat Theorem.

Course Outcome:
CO1 : To learn about the Basic terminologies and their definitions for Network Security .
CO2 : To understand the basic concepts in Cryptography
CO3 : To learn the about Encryption concepts.
CO4 : To learn the Basics of Number Theory and its methods.
CO5 : To apply the concepts of Extended Euclidean Algorithm.-Continued Fraction- Euler Fermat Theorem.

Text Book
1.B.S.Charulatha , Cryptography and Network Security , December 2013,Charulatha Publications.

Reference Book
1.Hans Delfs Helmut Knebl, Introduction to Cryptography 2002, Springer rerlag .

B.Com Degree Examination – Syllabus – For Candidates admitted from the Academic Year 2019 – 2020 onwards
THIRD SEMESTER
PART- III : IDC 3 – BUSINESS MATHEMATICS

Maximum CIA:30
Maximum CE: 70
Total Hours: 60

Course Objective: To enable students to gain Fundamental Knowledge about the Mathematical skills   and to improve of analytical skills.

Unit I   (14 Hours)
 Set Theory - Venn diagrams-Simple and compound interest - Effective rate of interest, sinking fund - Annuities - present value, Discounting of Bills-True discount ,bankers gain

Unit II   (10 Hours)
Matrices; Introduction - Types of matrices - Addition of matrices - multiplication of matrices –Determinants - Inverse of a matrix - Rank of matrix-solving simultaneous linear equations using Cramer's rule method

Unit III   (12 Hours)
Limits - Constants and variables- limits of algebraic functions – Differentiation - Method of derivatives - Applications to Business Problems.

Unit IV   (12 Hours)
Numerical Methods - System of simultaneous linear Algebraic equations - Gauss Elimination -Gauss Jordan - Numerical Integration - Trapezoidal Rule - Simpson's Rule. (No derivation).

Unit V   (12 Hours)
Interpolation-Newton's Forward Interpolation Formula-Newton's Backward Interpolation Formula- Lagrange's formula (No derivation).

Note: The proportion of marks between theory and problems shall be 20%and 80% respectively.

Course Outcome:
CO1: Remember set theory concepts and to analyze the applications of business problems
CO2: To understands the concepts of Matrices, its types and to solve
        simultaneous equations.
CO3: Apply the concepts of limits and differentiation in Business problems.
CO4: To solve Gauss elimination, Gauss Jordon and to analyze various methods
        of Numerical Integration
CO5: To understand the concepts of Interpolation.

CO/ PO& PSO	PO1	PO2	PO3	PO4	PO5	PSO 1	PSO 2	PSO 3
CO1					M			
CO2					M			
CO3								
CO4								
CO5								

Text Books
1. PA.Navanitham, Business Mathematics and Statistics, Jai Publications 2014, Trichy.
   UnitI: Page no: 43-60, 77-88 Exercise: 89-102 Page no: 104-138 Exercise: 138-145
   Unit II: Page no: 147-200, Exercise 211-216
   Unit III: Page no: 222-275, Exercise 246,276-279

2. P.Kandasamy, K.Thilagavathi and K.Gunavathi, Numerical Methods – S. Chand and Company Ltd., New Delhi – Reprint 2013.
   Unit IV: Chapter 4 (Sec4.1, 4.2, 4.2.1) Exercise 4.1
           Chapter 9 (Sec9.9, 9.13, 9.14) Exercise 9.2
   Unit V: Chapter 6 (Sec6.2, 6.3) Exercise 6
           Chapter 8 (Sec8.7) Exercises 8.2

Reference Book
1. M. K. Venkataraman, Numerical Methods in Science and Engineering, National Publishing Company V Edition 2013, Chennai

B.Com Degree Examination – Syllabus – For Candidates admitted from the Academic Year 2019 – 2020 onwards

FOURTH SEMESTER
PART – III : IDC 4 - BUSINESS STATISTICS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: To enable students gain Fundamental Knowledge about the application of the Statistical concepts.

Unit I   (10 Hours)
Introduction – Definition - Meaning and Scope of Statistics - Basic Concepts of Statistics - Collection of data - Classification and Tabulation - Presentation of data - Frequency Distribution.

Unit II   (12 Hours)
Measures of Central Tendency – Introduction - Arithmetic Mean - Median and Mode - Geometric mean - Harmonic mean.

Unit III   (12 Hours)
Measures of dispersion: Introduction – Range - Quartile deviation - Mean Deviation - Standard deviation and Co-efficient of Variation.

Unit IV   (12 Hours)
Correlation - Karl Pearson's Coefficient of Correlation - Rank Correlation Regression - Regression equations -Relationship between Correlation & Regression.

Unit V   (14 Hours)

Time Series - Meaning and Definition – Uses - Components of time series - Semi average method - Moving Average Method- Least square method. Index Numbers - Unweighted and Weighted Index numbers - Consumer Price Index numbers.

Note: The proportion of marks between theory and problems shall be 30% and 70% respectively.

Course Outcome:
CO 1: To understand the meaning, scope of statistics and its basic concepts.
CO2: Analyze the measures of central tendency and to apply its concepts.
CO3: To analyze the measures of dispersion.
CO4: To understand the meaning of correlation, Regression, types and its properties.
CO5: To understand the concepts of Time series, Method of least squares and
        Index numbers and to analyze its methods.

CO/ PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1					M			
CO2					M			
CO3								
CO4								
CO5								

Text Book
 1. PA.Navanitham, Business Mathematics and Statistics, Jai Publications, 2014, Trichy.
    UnitI : Page no : 1-41,60-147
    Unit II : Page no : 159-269, Exercise 286-300
    Unit III : Page no : 301-340,358-365 Exercise 380-394
    Unit IV : Page no : 503-521, Exercise 535-538 Page no: 540-570, Exercise 570-574
    Unit V : Page no : 579-600, Exercise 613-616, Page no 444-488, Exercise 489-495

Reference Book
     1. R.S.N.Pillai and Bagavathi, Statistics, S.Chand and Co, 2007, New Delhi.

B.Com (CA) Degree Examination – Syllabus – For Candidates admitted from the Academic Year 2019 – 2020 onwards
THIRD SEMESTER
PART- III : IDC 3 – BUSINESS MATHEMATICS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: To enable students to gain Fundamental Knowledge about the Mathematical skills and to improve of analytical skills.

Unit I   (14 Hours)
Set Theory - Venn diagrams-Simple and compound interest - Effective rate of interest, sinking fund - Annuities - present value, Discounting of Bills-True discount ,bankers gain

Unit II   (10 Hours)
Matrices; Introduction - Types of matrices - Addition of matrices - multiplication of matrices –Determinants - Inverse of a matrix - Rank of matrix-solving simultaneous linear equations using Cramer's rule method

Unit III   (12Hours)
Limits - Constants and variables- limits of algebraic functions – Differentiation - Method of derivatives - Applications to Business Problems.

Unit IV   (12 Hours)
Numerical Methods - System of simultaneous linear Algebraic equations - Gauss Elimination -Gauss Jordan - Numerical Integration - Trapezoidal Rule - Simpson's Rule. (No derivation).

Unit V   (12 Hours)
Interpolation-Newton's Forward Interpolation Formula-Newton's Backward Interpolation Formula- Lagrange's formula (No derivation).

Note: The proportion of marks between theory and problems shall be 20%and 80% respectively.

Course Outcome:
CO1: Remember set theory concepts and to analyze the applications of business problems
CO2: To understands the concepts of Matrices, its types and to solve simultaneous equations.

CO3: Apply the concepts of limits and differentiation in Business problems.
CO4: To solve Gauss elimination, Gauss Jordon and to analyze various methods of numerical
        Integration
CO5: To understand the concepts of Interpolation.

CO/ PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1					M			
CO2					M			
CO3								
CO4								
CO5								

Text Books
1. PA.Navanitham, Business Mathematics and Statistics, Jai Publications 2014, Trichy.
   UnitI: Page no: 43-60, 77-88 Exercise: 89-102 Page no: 104-138 Exercise: 138-145
   Unit II: Page no: 147-200, Exercise 211-216
   Unit III: Page no: 222-275, Exercise 246,276-279

2. P.Kandasamy, K.Thilagavathi and K.Gunavathi, Numerical Methods – S. Chand and Company Ltd., New Delhi – Reprint 2013.
   Unit IV: Chapter 4 (Sec4.1, 4.2, 4.2.1) Exercise 4.1
            Chapter 9 (Sec9.9, 9.13, 9.14) Exercise 9.2

   Unit V: Chapter 6 (Sec6.2, 6.3) Exercise 6
           Chapter 8 (Sec8.7) Exercises 8.2

Reference Book
1. M. K. Venkataraman, Numerical Methods in Science and Engineering, National Publishing Company V Edition 2013, Chennai

B.Com (CA) Degree Examination – Syllabus – For Candidates admitted from the Academic Year 2019 – 2020 onwards

FOURTH SEMESTER
PART- III : IDC 4 – BUSINESS STATISTICS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: To enable students gain Fundamental Knowledge about the application of the Statistical concepts.

Unit I   (10 Hours)
Introduction – Definition - Meaning and Scope of Statistics - Basic Concepts of Statistics - Collection of data - Classification and Tabulation - Presentation of data - Frequency Distribution.

Unit II   (12 Hours)
Measures of Central Tendency – Introduction - Arithmetic Mean - Median and Mode - Geometric mean - Harmonic mean.

Unit III   (12 Hours)
Measures of dispersion: Introduction – Range - Quartile deviation - Mean Deviation - Standard deviation and Co-efficient of Variation.

Unit IV   (12 Hours)
Correlation - Karl Pearson's Coefficient of Correlation - Rank Correlation Regression - Regression equations -Relationship between Correlation & Regression.

Unit V   (14 Hours)

Time Series - Meaning and Definition – Uses - Components of time series - Semi average method - Moving Average Method- Least square method. Index Numbers - Unweighted and Weighted Index numbers - Consumer Price Index numbers.

Note: The proportion of marks between theory and problems shall be 30% and 70% respectively.

 Course Outcome:
 CO1: To understand   the meaning, scope of   statistics and its basic concepts.
 CO2: Analyze the measures of central tendency and to apply its concepts.
 CO3: To analyze the measures of dispersion.
 CO4: To understand the meaning of correlation, Regression, types and its properties.
 CO5: To understand the concepts of Time series, Method of least squares and Index
            Numbers and to analyze its methods.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1					M			
CO2					M			
CO3								
CO4								
CO5								

Text Book

1. PA.Navanitham, Business Mathematics and Statistics, Jai Publications, 2014, Trichy.
   UnitI : Page no : 1-41,60-147
   Unit II : Page no : 159-269, Exercise 286-300
   Unit III : Page no : 301-340,358-365 Exercise 380-394
   Unit IV : Page no : 503-521, Exercise 535-538 Page no: 540-570, Exercise 570-574
   Unit V : Page no : 579-600, Exercise 613-616, Page no 444-488, Exercise 489-495

Reference Book
   1. R.S.N.Pillai and Bagavathi, Statistics, S.Chand and Co, 2007, New Delhi.

B.Com (CS) Degree Examination – Syllabus – For Candidates admitted from the Academic Year 2019 – 2020 onwards
THIRD SEMESTER
PART- III : IDC 3 – BUSINESS MATHEMATICS

Maximum CIA : 30
Maximum CE: 70
Total Hours: 60

Course Objective: To enable students to gain Fundamental Knowledge about the Mathematical skills and to improve their analytical skills.

Unit I   (14 Hours)
Set Theory - Venn diagrams - Simple and compound interest - Effective rate of interest, sinking fund – Annuities - present value, Discounting of Bills - True discount, bankers gain

Unit II   (10 Hours)
Matrices; Introduction - Types of matrices - Addition of matrices - multiplication of matrices -Determinants - Inverse of a matrix - Rank of matrix - solving simultaneous linear equations using Cramer's rule method

Unit III   (12 Hours)
Limits - Constants and variables - limits of algebraic functions – Differentiation - Method of derivatives - Applications to Business Problems.

Unit IV   (12 Hours)
Numerical Methods - System of simultaneous linear Algebraic equations - Gauss Elimination -Gauss Jordan - Numerical Integration - Trapezoidal Rule - Simpson's Rule. (No derivation).

Unit V   (12 Hours)
Interpolation-Newton's Forward Interpolation Formula-Newton's Backward Interpolation Formula- Lagrange's formula (No derivation).

Note: The proportion of marks between theory and problems shall be 20% and 80% respectively.

Course Outcome:
CO1: Remember set theory concepts and to analyze the applications of business problems
CO2: To understands the concepts of Matrices, its types and to solve simultaneous equations.
CO3: Apply the concepts of limits and differentiation in Business problems.
CO4: To solve Gauss elimination, Gauss Jordon and to analyze various methods of numerical Integration
CO5: To understand the concepts of Interpolation.

CO/ PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1					M			
CO2					M			
CO3								
CO4								
CO5								

Text Books:
1. PA.Navanitham, Business Mathematics and Statistics, Jai Publications 2014, Trichy.
    UnitI: Page no: 43-60, 77-88 Exercise: 89-102 Page no: 104-138 Exercise: 138-145
    Unit II: Page no: 147-200, Exercise 211-216
    Unit III: Page no: 222-275, Exercise 246,276-279

2. P.Kandasamy, K.Thilagavathi and K.Gunavathi, Numerical Methods – S. Chand and Company Ltd., New Delhi – Reprint 2013.
    Unit IV: Chapter 4 (Sec4.1, 4.2, 4.2.1) Exercise 4.1
            Chapter 9 (Sec9.9, 9.13, 9.14) Exercise 9.2
    Unit V: Chapter 6 (Sec6.2, 6.3) Exercise 6
            Chapter 8 (Sec8.7) Exercises 8.2

Reference Book
1. M. K. Venkataraman, Numerical Methods in Science and Engineering, National Publishing Company V Edition 2013, Chennai

B.Com (CS) Degree Examination – Syllabus – For Candidates admitted from the Academic Year 2019 – 2020 onwards
FOURTH SEMESTER
PART- III : IDC 4 – BUSINESS STATISTICS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: To enable students gain Fundamental Knowledge about the application of the statistical concepts.

Unit I   (10 hours)
Introduction - Definition - Meaning and Scope of Statistics - Basic Concepts of Statistics - Collection of Data- Classification and Tabulation- Presentation of data- Frequency distribution

Unit II   (12 Hours)
Measures of Central Tendency – Introduction - Arithmetic Mean - Median and mode - Geometric mean - Harmonic mean.

Unit III   (12 Hours)
Measures of dispersion – Introduction – Range - Quartile deviation - Mean deviation - Standard deviation and Co-efficient of Variation.

Unit IV   (12 Hours)
Correlation - Karl Pearson's Coefficient of Correlation - Rank Correlation Regression - Regression equations -Relationship between Correlation & Regression.

Unit V   (14 Hours)
Time Series - Meaning and Definition – Uses - Components of Time series - Semi Average method - Moving Average Method - Least square method. Index Numbers - Un weighted and weighted index numbers - Consumer Price Index Numbers.

Note: The proportion of marks between theory and problems shall be 30% and 70% respectively.

Course Outcome:
COI: To understand the meaning, scope of statistics and its basic concepts.
CO2: Analyze the measures of central tendency and to apply its concepts.
CO3: To analyze the measures of dispersion.
CO4: To understand the meaning of correlation, Regression, types and its properties.
CO5: To understand the concepts of Time series, Method of least squares and
        Index numbers. And to analyze its methods.

CO/ PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1					M			
CO2					M			
CO3								
CO4								
CO5								

Text Book
 1. P.A.Navanitham, Business Mathematics and Statistics, Jai Publications, 2014, Trichy.
        UnitI : Page no : 1-41,60-147
        Unit II : Page no : 159-269, Exercise 286-300
        Unit III : Page no : 301-340,358-365 Exercise 380-394
        Unit IV : Page no : 503-521, Exercise 535-538 Page no: 540-570, Exercise 570-574
        Unit V : Page no : 579-600, Exercise 613-616, Page no 444-488, Exercise 489-495

Reference Book
     1. R.S.N.Pillai and Bagavathi, Statistics, S.Chand and Co, 2007, New Delhi.

B.Com (IT) Degree Examination – Syllabus – For Candidates admitted from the Academic Year 2019 – 2020 onwards
THIRD SEMESTER
PART- III : IDC 3 – BUSINESS MATHEMATICS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: To enable students to gain Fundamental Knowledge about the Mathematical skills and to improve their analytical skills.

Unit I   (14 Hours)
Set Theory-Venn diagrams-Simple and compound interest-Effective rate of interest, sinking fund-Annuities-present value, Discounting of Bills-True discount, bankers gain

Unit II   (10 Hours)
Matrices; Introduction-Types of matrices-Addition of matrices-multiplication of matrices-Determinants-Inverse of a matrix-Rank of matrix-solving simultaneous linear equations using Cramer's rule method

Unit III   (12 Hours)
Limits - Constants and Variables-Limits of algebraic functions- Differentiation- Method of derivatives- Applications to Business Problems.

Unit IV   (12 Hours)
Numerical Methods- System of simultaneous linear Algebraic equations- Gauss Elimination –Gauss Jordan-Numerical Integration- Trapezoidal Rule- Simpson's Rule. (No derivation).

Unit V   (12 Hours)
Interpolation-Newton's Forward Interpolation Formula-Newton's Backward Interpolation Formula- Lagrange's Formula (No derivation).

Note: The proportion of marks between theory and problems shall be 20% and 80% respectively.

Course Outcome:
CO1: Remember set theory concepts and to analyze the applications of business problems
CO2: To understands the concepts of Matrices, its types and to solve simultaneous equations.

CO3: Apply the concepts of limits and differentiation in Business problems.
CO4: To solve Gauss elimination, Gauss Jordon and to analyze various methods of numerical integration
CO5: To understand the concepts of Interpolation.

CO/ PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1					M			
CO2					M			
CO3								
CO4								
CO5								

Text Books:
1. PA.Navanitham, Business Mathematics and Statistics, Jai Publications 2014, Trichy.
   UnitI: Page no: 43-60, 77-88 Exercise: 89-102 Page no: 104-138 Exercise: 138-145
   Unit II: Page no: 147-200, Exercise 211-216
   Unit III: Page no: 222-275, Exercise 246,276-279

2. P.Kandasamy, K.Thilagavathi and K.Gunavathi, Numerical Methods – S. Chand and Company Ltd., New Delhi – Reprint 2013.
   Unit IV: Chapter 4 (Sec4.1, 4.2, 4.2.1) Exercise 4.1
        Chapter 9 (Sec9.9, 9.13, 9.14) Exercise 9.2
   Unit V: Chapter 6 (Sec6.2, 6.3) Exercise 6
        Chapter 8 (Sec8.7) Exercises 8.2

Reference Book
1. M. K. Venkataraman, Numerical Methods in Science and Engineering, National Publishing Company V Edition 2013, Chennai

B.Com (IT) Degree Examination – Syllabus – For Candidates admitted from the Academic Year 2019 – 2020 onwards
FOURTH SEMESTER
PART- III : IDC 4 – BUSINESS STATISTICS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: To enable students gain Fundamental Knowledge about the application of the Statistical concepts.

Unit I   (10 Hours)
Introduction - Definition- Meaning and Scope of Statistics- Basic Concepts of Statistics – Collection of data- Classification and Tabulation- Presentation of data- Frequency Distribution.

Unit II   (12 Hours)
Measures of Central Tendency- Introduction- Arithmetic Mean – Median and Mode- Geometric mean – Harmonic mean.

Unit III   (12 Hours)
Measures of dispersion: Introduction-Range- Quartile deviation- Mean Deviation-Standard deviation and Co-efficient of Variation.

Unit IV   (12 Hours)
Correlation – Karl Pearson's Coefficient of Correlation – Rank Correlation Regression – Regression equations – Relationship between Correlation & Regression.

Unit V   (14 Hours)

Time Series- Meaning and Definition- Uses- Components of time series- Semi average method- Moving Average Method- Least square method. Index Numbers- Unweighted and Weighted Index numbers- Consumer Price Index numbers.

Note: The proportion of marks between theory and problems shall be 30% and 70% respectively.

Course Outcome:
CO1: To understand the meaning, scope of statistics and its basic concepts.
CO2: Analyze the measures of central tendency and to apply its concepts.
CO3: To analyze the measures of dispersion.
CO4: To understand the meaning of correlation, Regression, types and its properties.
CO5: To understand the concepts of Time series, Method of least squares and
Index numbers and to analyze its methods.

PO&PSO \ CO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1					M			
CO2					M			
CO3								
CO4								
CO5								

Text Book
 1. PA.Navanitham, Business Mathematics and Statistics, Jai Publications, 2014, Trichy.
       UnitI : Page no : 1-41,60-147
       Unit II : Page no : 159-269, Exercise 286-300
       Unit III : Page no : 301-340,358-365 Exercise 380-394
       Unit IV : Page no : 503-521, Exercise 535-538 Page no: 540-570, Exercise 570-574
       Unit V : Page no : 579-600, Exercise 613-616, Page no 444-488, Exercise 489-495
Reference Book
      1. R.S.N.Pillai and Bagavathi, Statistics, S.Chand and Co, 2007, New Delhi.

B.Sc (CS) Degree Examination – Syllabus – For Candidates admitted from the Academic Year 2019 – 2020 onwards
THIRD SEMESTER
PART- III : IDC 3– OPERATIONS RESEARCH

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: To enable students gain Fundamental Knowledge about the application of the managerial concepts like decision making and optimization techniques.

Unit I   (12 Hours)
Linear programming – Mathematical Model assumption of linear programming- Graphical method- Simplex method and Big-M method.

Unit II   (10 Hours)
Transportation and Assignment Problem- Assignment and Traveling Salesman Problem.

Unit III   (14 Hours)
Game theory – Concept of Pure and Mixed Strategies- Solving 2×2 matrix with and without saddle point- Graphical method of n×2 and 2×m games-Dominance Property.

Unit IV   (12 Hours)
Introduction to Queuing theory - Queuing system-Characteristic of Queuing system Symbols and Notations-Classification of Queues problems in $(M/M/1):(\infty/FIFO)$; $(M/M/1):(N/FIFO)$ $(M/M/C):(\infty/FIFO)$; $(M/M/C):(N/FIFO)$ (problems only).

Unit V   (12 Hours)
PERT and CPM – Network representation- Backward pass- Forward pass- Computation- Pert Network- Probability factor – Updating and CrashinG

Note: The proportion of marks between theory and problems shall be 20% and 80% respectively.

Course Outcome
CO1: Understand the meaning, scope, Models of Operations Research and create mathematical formulation of LPP to solve Graphical method.
CO2: To understand the concept of Transportation and Assignment problems and its types.
CO3: To analyze the decision making using the concept of Game theory
CO4: Understand the CPM , Network concepts and its Types
CO5: To understand the concepts of PERT to find the probability of completion of projects.

CO/ PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	L							
CO2								L
CO3						M		
CO4						L	M	
CO5								

Text Book
1.Kantiswarup, P. K. Gupta, Man Mohan, Operations Research, S. Chand & Sons Education Publications, 16th edition , Reprint 2013, New Delhi.

Reference Books
1.Hamdy Taha, Operations Research, 8th Edition, 2013Pearson Education.
2.Prof.V.Sundaresan, K.S.Ganapathy Subramanian, K.Ganesan, Resource Management Techniques, 8th Edition2014, A.R. Publications Arpakkam (Po), TamilNadu.

B.Sc (CT) Degree Examination – Syllabus – For Candidates admitted from the Academic Year 2019 – 2020 onwards
FOURTH SEMESTER
PART - III IDC 4 - OPERATIONS RESEARCH

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: To enable students gain Fundamental Knowledge about the application of the managerial concepts like decision making and optimization techniques.

Unit I   (12 Hours)
Linear programming – Mathematical Model assumption of linear programming- Graphical method- Simplex method and Big-M method.

Unit II   (10 Hours)
Transportation and Assignment Problem- Assignment and Traveling Salesman Problem.

Unit III   (14 Hours)
Game theory – Concept of Pure and Mixed Strategies- Solving 2×2 matrix with and without saddle point- Graphical method of n×2 and 2×m games-Dominance Property.

Unit IV   (12 Hours)
Introduction to Queueing theory- Queueing system-Characteristic of Queueing system Symbols and Notations-Classification of Queues problems in (M/M/1):(∞/FIFO);(M/M/1) :(N/FIFO) (M/M/C):(∞/FIFO); (M/M/C):(N/FIFO) (problems only).

Unit V   (12 Hours)
PERT and CPM – Network representation- Backward pass- Forward pass- Computation- Pert Network- Probability factor – Updating and Crashing.

Note: The proportion of marks between theory and problems shall be 20% and 80% respectively.

Course Outcome:
CO1: Understand the meaning, scope, Models of Operations Research and create mathematical formulation of LPP to solve Graphical method.
CO2:   To understand the concept of Transportation and Assignment problems and its types.
CO3:   To analyze the decision making using the concept of Game theory
CO4:   Understand the CPM , Network concepts and its Types
CO5:   To understand the concepts of PERT to find the probability of completion of projects.

CO/ PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	L							
CO2								L
CO3						M		
CO4						L	M	
CO5								

Text Book
1.Kantiswarup, P. K. Gupta, Man Mohan, Operations Research, S. Chand & Sons
Education Publications, 16th edition , Reprint 2013, New Delhi.

Reference Books
1.Hamdy Taha, Operations Research, Pearson Education, 8th Edition, 2013.
2.Prof.V.Sundaresan, K.S.Ganapathy Subramanian, K.Ganesan, Resource Management
Techniques, 8th Edition2014, A.R.Publications Arpakkam (Po), TamilNadu.

B.Sc. (CT) Degree Examination – Syllabus – For Candidates admitted from the Academic Year 2019 – 2020 onwards
FOURTH SEMESTER
PART-IV : EDC I - MATHEMATICAL APTITUDE

Maximum CE:50
Total Hours: 24

Course Objective: To enable students gain fundamental knowledge about the Mathematical skills and to explain the extent of the applications of Analytical Skills.

Unit I   (5 Hours)
H.C.F&L.C.M OF Numbers-simplification – Square roots and cube roots.

Unit II   (5 Hours)
Percentage- profit and loss – Ratio and proportion .

Unit III   (5 Hours)
Time and work-Chain rule- pipes and cisterns

Unit IV   (5 Hours)
Problems on trains-Boats and streams-Average

Unit V   (4 Hours)
Problems on Ages.-Relationship problems –odd man out series

Course Outcome:
CO1: To solve Numbers, H.C.F ,L.C.M,Simplification and Decimal Fractions .
CO2: To solve problems in Percentage,Profit and Loss,Ratio and Proportionand Partership.
CO3: To solve problems in Time and Work,Chain rule, Pipes and cisterns
CO4: To solve problems in Trains ,Boats and Streams.
CO5: To solve problems in Age, Relationship problems, and ODD Man Out Series.

CO/ PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1		M						
CO2								
CO3				M				
CO4							M	
CO5								M

Text book
1.R.S.Agarwal, Quantitative aptitude for Competitive Examinations , S.Chand and Company ltd (2007), Ram Nagar, New Delhi.

Reference Book
1.R.Gupta's, All about Arithmetic with Time Saving Techniques , 28th Edition 2014, Ramesh Publishing House, New Delhi.

B.Sc (IT) Degree Examination – Syllabus – For Candidates admitted from the Academic Year 2019 – 2020 onwards

FOURTH SEMESTER
PART- III : IDC 4 – OPERATIONS RESEARCH

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: To enable students gain Fundamental Knowledge about the application of the managerial concepts like decision making and optimization techniques.

Unit I   (12 Hours)
Linear programming – Mathematical Model assumption of linear programming- Graphical method- Simplex method and Big-M method.

Unit II   (10 Hours)
Transportation and Assignment Problem- Assignment and Traveling Salesman Problem.

Unit III   (14 Hours)
Game theory – Concept of Pure and Mixed Strategies- Solving 2×2 matrix with and without saddle point- Graphical method of n×2 and 2×m games-Dominance Property.

Unit IV   (12 Hours)
Introduction to Queueing theory- Queueing system-Characteristic of Queueing system Symbols and Notations-Classification of Queues problems in $(M/M/1){:}(\infty/\text{FIFO})$;$(M/M/1){:}(N/\text{FIFO})$ $(M/M/C){:}(\infty/\text{FIFO})$; $(M/M/C){:}(N/\text{FIFO})$ (problems only).

Unit V   (12 Hours)
PERT and CPM – Network representation- Backward pass- Forward pass- Computation- Pert Network- Probability factor – Updating and Crashing.

Note: The proportion of marks between theory and problems shall be 20% and 80% respectively.
.
Course Outcome:
CO1: Understand the meaning, scope, Models of Operations Research and create mathematical formulation of LPP to solve Graphical method.
CO2:   To understand the concept of Transportation and Assignment problems and its types.
CO3:   To analyze the decision making using the concept of Game theory
CO4:   To Understand the CPM , Network concepts and its Types
CO5:   To understand the concepts of PERT to find the probability of completion of projects.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	L							
CO2								L
CO3						M		
CO4						L	M	
CO5								

Text Book
1.Kantiswarup, P. K. Gupta, Man Mohan, Operations Research, S. Chand & Sons Education Publications, 16th edition , Reprint 2013, New Delhi.

Reference Books
1.Hamdy Taha, Operations Research, Pearson Education, 8th Edition, 2013.
2.Prof.V.Sundaresan, K.S.Ganapathy Subramanian, K.Ganesan, Resource Management Techniques, 8th Edition2014, A.R.Publications Arpakkam (Po), TamilNadu.

VLB JANAKIAMMAL COLLEGE OF ARTS AND SCIENCE

DEPARTMENT OF ELECTRONICS AND COMMUNICATION SYSTEMS

Regulations for B.Sc Electronics and Communication Systems

(Effective from the academic year 2019-2020 onwards)

Introduction:

The department of Electronics and Communication Systems started the UG Programme in 1996 and PG Programme in 2003.

The UG Programme is B.Sc Electronics and Communication Systems. PG Programme is M.Sc Electronics and Communication Systems.

Objective:

To impart knowledge in the field of Electronics and Communications and to mould the students to meet the current and impending challenges and encourage their aspirations to become innovators and entrepreneurs, that benefits the society and nation.

Eligibility: UG Programme

A pass in Higher Secondary Examination conducted by Tamilnadu or an equivalent examination, with Mathematics / Vocational group/ a pass in higher secondary with any groups.

Duration of UG Programme:

The course shall extend over a period of three years comprising of six semesters, with two semesters per year. There shall not be less than ninety instructional days during each semester. Examination shall be conducted at the end of each semester for the respective subjects.

Vision:

To train the students in various technical aspects in Electronics and Communication along with necessary Computer Skills in order to make the students to get placed in reputed organizations and to become a successful entrepreneur along with human, cultural, ethical and social values.

Mission:

To offer quality technical and value education and services to the students which are accessible, society centered and flexible.

Programme Outcomes:

After the completion of the under graduate programme in Bachelor of Science (B.Sc Degree), the graduates will be able to

PO1: Attain the core value in their respective area to meet out the global competitive edge.

PO2: Apply and update their skills towards their employability, entrepreneurship and its sustainability.

PO3: Realize their responsibility towards the society centre through ethical, social and human values.

PO4: Recognize the opportunities towards their up gradation and professional development in all spheres.

PO5: Ensure the quality in terms of all the aspects by the way of their contribution in work atmosphere.

Programme Specific Outcomes:

After the completion of the under graduate programme in Bachelor of Science in Electronics and Communication Systems, the graduates will be able to

PSO1: Apply the knowledge of Science, mathematics and fundamentals to solve problems in the domain of Electronics and communication field.

PSO2: Apply knowledge of Electronics and Communication principles in multidisciplinary environment and projects.

PSO3: Apply professional and ethical principles and function with responsibility.

VLB JANAKIAMMAL COLLEGE OF ARTS AND SCICENCE
(AUTONOMOUS)
B.Sc., ELECTRONICS AND COMMUNICATION SYSTEMS
Scheme of Examination (CBCS and OBE PATTERN)
For candidates admitted from the Academic Year 2019 – 2020 onwards

Part	Subject Code	Subject Title	Instruction Hrs /	Exam Dur.Hr.	CIA Marks	CE Marks	Total Marks	Credit
						Examination		
		SEMESTER - I						
I	19LATA01/ 19LAHI01/ 19LAMY01/ 19LAFR01	Language-I Tamil/Hindi/Malayalam/French	5	3	30	70	100	3
II	19ENG001	English- I	5	3	30	70	100	3
III	19BES101	**Core 1**- Electronic Principles	6	3	30	70	100	4
III	19BESP01	**Core Practical I** – Electronic Principles Practical	6	3	40	60	100	4
III	19BESID1	**IDC 1**- Mathematics-I	6	3	30	70	100	4
IV	19UFCA01	**Foundation Course I : EVS #**	2	3	-	50	50	2
		Total	**30**				**550**	**20**
		SEMESTER - II						
I	19LATA02/ 19LAHI02/ 19LAMY02/ 19LAFR02	Language-II Tamil/Hindi/Malayalam/French	5	3	30	70	100	3
II	19ENG002	English- II	5	3	30	70	100	3
III	19BES201	**Core 2**- Electronic Circuits and Its Applications	6	3	30	70	100	4
III	19BESP02	**Core Practical 2**- Electronic Circuits Practical	6	3	40	60	100	4
III	19BESID2	**IDC 2** – Mathematics-II	6	3	30	70	100	4
IV	19UFCA02	**Foundation Course II**: Value Education #	2	3	-	50	50	2
		Total	**30**				**550**	**20**
		SEMESTER - III						
III	19BES301	**Core 3**- Digital Logic Circuits	5	3	30	70	100	4
III	19BES302	**Core 4**- Electronic Instrumentation and Medical Electronics	5	3	30	70	100	4
III	19BES303	**Core 5**- Analog Communication	5	3	30	70	100	4
III	19BESP03	**Core Practical 3**- Digital Electronics & Medical Electronics Practical	5	3	40	60	100	4
III	19BESID3	**IDC 3** – C Programming	5	3	30	70	100	4
IV	19BESSB1/ 19BESSB2	**SBC I** –PCB Fabrication and Designing / Visual Basic	3	3	-	75	75	3

IV	19BTA001/ 19ATA001/ 19BESED2	EDC1 [BT/ Communicative English #]	2	3	-	50	50	2
		Total	**30**				**625**	**25**

SEMESTER – IV								
III	19BES401	**Core 6 -** Linear Integrated Circuits	5	3	30	70	100	4
III	19BES402	**Core 7-** Microwave and Antenna Propagation	5	3	30	70	100	4
III	19BES403	**Core 8-** Digital Communication	5	3	30	70	100	4
III	19BESP04	**Core Practical 4-** Analog and Digital Communication Practical	5	3	40	60	100	4
III	19BESID4	**IDC 4 -** C Programming Practical	5	3	40	60	100	4
IV	19BESSB3/ 19BESSB4	**SBC II** –Automotive Electronics / ASP.Net	3	3	-	75	75	3
IV	19BTA001 /19ATA001/ 19BESED1	EDC2 [AT/ Computer Communication]	2	3	-	50	50	2
V	19NCC001/ 19NSS001/ 19SPT001	NCC/NSS/Sports/ Extension Activities @	-	-	50	-	50	2
		Total	**30**				**675**	**27**

SEMESTER – V								
III	19BES501	**Core 9-** 8085 Microprocessor and Its Applications	5	3	30	70	100	4
III	19BES502	**Core 10-** Power Electronics	5	3	30	70	100	4
III	19BES503	**Core 11-** Advanced Wireless Communication	5	3	30	70	100	4
III	19BESP05	**Core Practical 5-** Microprocessor and Its Interfacing Practical	5	3	40	60	100	4
III	19BESP06	**Core Practical 6 –** Linear Integrated Circuits and Power Electronics Practical	5	3	40	60	100	4
III	19BESE01/ 19BESE02/ 19BESE03	**Elective I** : Digital System Design / Programmable Logic Controller/Computer Hardware and Maintenance	5	3	30	70	100	4
			30				**600**	**24**

SEMESTER - VI								
III	19BES601	**Core 12-** 8051 Microcontroller and Its Applications	5	3	30	70	100	4
III	19BES602	**Core 13-** Embedded Systems and Its Applications	5	3	30	70	100	4
III	19BESP06	**Core Practical 7-** Microcontroller and Its Interfacing Practical	5	3	40	60	100	4
III	19BESE04/ 19BESE05/ 19BESE06	**Elective II –** Advanced Digital Image Processing /Multimedia /Java Programming	5	3	30	70	100	4
III	19BESE07/ 19BESE08/ 19BESE09	**Elective III –** Principles of Robotics /HDTV and Real Time Security Systems / Fundamentals of VLSI Technology	5	3	30	70	100	4

III	19BESPR1	Project and Viva voce							
		Total	30				600	24	
						Grand Total	3600	140	

For Candidates admitted from the Academic year 2019 - 2020 onwards

  # No Continuous Internal Assessment (CIA) , only Comprehensive Examination (CE)

@ No Continuous Internal Assessment (CIA) and Comprehensive Examination (CE)

IDC- Inter Disciplinary Course , EDC – Extra Disciplinary Course, SBC – Skill Based Courses

List of Skill Based Subject Papers

Sem	Code	Subject Title	Credits
SBC: I			
III	19BESSB1	PCB Fabrication and Designing	3
III	19BESSB2	Visual Basic	3
SBC: II			
IV	19BESSB3	Automotive Electronics	3
IV	19BESSB4	ASP.Net	3

List of Elective Papers:

Sem	Code	Subject Title	Credits
Elective: I			
V	19BESE01	Digital System Design	5
V	19BESE02	Programmable Logic Controller	5
V	19BESE03	Computer Hardware and Maintenance	5
Elective: II			
VI	19BESE04	Advanced Digital Image Processing	5
VI	19BESE05	Multimedia	5
VI	19BESE06	Java Programming	5
Elective: III			
VI	19BESE07	Principles of Robotics	5
VI	19BESE08	HDTV and Real Time Security Systems	5
VI	19BESE09	Fundamentals of VLSI Technology	5

List of Extra Disciplinary Courses:

Sem	Code	Subject Title	Credits
III	19BTA001	Basic Tamil-I	2
III	19ATA001	Advanced Tamil-I	2
III	19EDC002	Communicative English	2
IV	19BTA002	Basic Tamil-II	2
IV	19ATA002	Advanced Tamil-II	2
IV	19BESED1	Computer Communication	2

List of Additional Credit Papers:

Sem	Code	Subject Title	Credits
III	19BESAC1	Material Science	2
IV	19BESAC2	Mobile communication	2
V	19BESAC3	Television Systems	2

Summary of the Programme

Part	No. of Papers	Total Credit	Total Marks
I-Language	2	6	200
II-English	2	6	200
III –Core	20	80	2000
III – IDC	4	16	400
III – Elective	3	12	300
III – Project	1	4	100
IV –Foundation Course	2	4	100
IV – EDC	2	4	100
IV – Skill Based Course	2	6	150
V- NSS/NCC/Sports/Extension Activity	-	2	50
Total	**38**	**140**	**3600**

Regulations for B.Sc., Electronics and Communication Systems

(Effective from the Academic Year 2019-2020 onwards)

1. Submission of Record Note Books for practical examinations

Candidates appearing for practical examinations should submit Bonafide Record Note Books prescribed for practical examinations, Otherwise the candidate shall not be permitted to appear for the Practical Examinations.

2. Ratio of Comprehensive Examination, Pre- Model and Model Examinations Marks for UG and PG Courses

Part	Internal Assessment	External Assessment	Total Marks
I (Languages)	30	70	100
II (English)	30	70	100
III(Core, IDC)	30	70	100
IV (AOC)	-	75	75
IV (EDC/Foundation Course)	-	50	50
V (NCC/NSS/Sports/Ext. Activity)	50	-	50

3. Project Work Mark Distribution

Particulars	IA	CE	Total
Project Work (UG)	50	50	100
Project Work (PG)	100	100	200
Project Work(M.Sc(CS)/M.Sc(ECS)	150	100	250
Project Work (M.Com/MIB)	50	100	150

4. Practical Mark Distribution for all UG and PG Courses

Internal -40 External-60 Total Marks -100

5. Break up for Internal Marks

S. No	Internal Marks	Distribution of Marks
1	Pre Model Examination	70
2	Model Examination	70
3	Seminar	30
4	Attendance	10
Total		**180/6=30**

6. Seminar Split up

S.NO	Seminar split up	Marks
1	Content	10
2	Flow of the presentation	10
3	Stage management and Body language	10
	Total	**30**

7. Attendance Break up

S.NO	Attendance split up	Marks
1	65% to 74%	4
2	75% - 80%	6
3	81% - 90%	8
4	91% - 100%	10

8. Internal Marks for Practical (Maximum 40)

Maximum Marks : 40		
S No	**Internal Marks**	**Distribution of Marks**
1	For Completion of the Practical List	20
2	Test –I	10
3	Test –II	10
Total		**40**

9. Internal Marks for Practical (Maximum 25)

Maximum Marks : 25		
S No	**Internal Marks**	**Distribution of Marks**
1	For Completion of the Practical List	15
2	Test –I	5
3	Test –II	5
Total		**25**

10. External Marks for Practical (Maximum 60)

S. No	Comprehensive Examination	Distribution of Marks
	Maximum Marks : 60	
1	Record	10
2	Program – I Algorithm Coding Execution	 5 10 10 TOTAL (25)
3	Program – II Algorithm Coding Execution	 5 10 10 TOTAL (25)
	Total	**60**

11. External Marks for Practical (Maximum 50)

S. No	Comprehensive Examination	Distribution of Marks
	Maximum Marks : 50	
1	Construction	10
2	Designing	20
3	Record	20
Total		50

12. Internal and External Marks for Project Work

S.No	Internal Marks	Distribution of Marks
1	**INTERNAL** Review –I Review –II Documentation & Final Review	 10 10 30 **Total (50)**
2	**EXTERNAL** Presentation Viva	 30 20 **Total (50)**
	Total	**100**

13. Internal and External Marks for Project Work (Maximum 150)

S.No	Internal Marks	Distribution of Marks
1	**INTERNAL** Three Project Reviews Report	25 25 **Total (50)**
2	**EXTERNAL** Presentation Viva	50 50 **Total (100)**
	Total	**150**

14. Internal and External Marks for Project Work (Maximum 200)

S.No	Internal Marks	Distribution of Marks
1	**INTERNAL** Two Project Reviews Report	 50 50 **Total (100)**
2	**EXTERNAL** Presentation Viva	 50 50 **Total (100)**
	Total	**200**

15. Internal and External Marks for Project Work (Maximum 250)

S.No	Internal Marks	Distribution of Marks
1	**INTERNAL** Three Project Reviews Report	75 75 **Total (150)**
2	**EXTERNAL** Presentation Viva	100 50 **Total (100)**
	Total	**250**

The distribution of Marks among the various components for IA and CE for Theory, Practical and Project Work is given in detail in the respective Schemes of Examination and Regulation of the different UG and PG Courses, duly passed in their respective Board of Study.

16. Pattern of Question Paper

For Pre model Test, Model and Comprehensive Examination under – Graduate and Post-Graduate Courses.

Maximum Marks : 70 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×4=20)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 75 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×5=25)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 50 / Time 2 Hrs			

Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×3=15)	Each question carries four marks	Internal Choice
Section – C	(5×5=25)	Each question carries eight marks	Internal Choice
Maximum Marks : 70 / Time 3 Hrs (MBA)			
Section – A	(10×2=20)	Each question carries two mark	Short Answers
Section – B	(5×7=35)	Each question carries seven mark	Internal Choice
Section – C	(1×15=15)	Each question carries fifteen mark	Compulsory Question

Note:

1. The questions should be numbered continuously running through the Sections A, B and C.

2. Questions should be evenly distributed among the unit in the syllabus in all the sections of the Question paper

3. While framing questions with internal choice the questions must be identified as (a) or (b). (e.g 11. a or b). Further, the internal choice must be from the same unit.

4. The Controller of the Examinations shall arrange for the setting of question papers on the basis the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies

The following are the distribution of marks for Comprehensive Examinations and CIA for Theory, Practical and Project.

B.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards
FIRST SEMESTER
PART III: Core 1 – ELECTRONIC PRINCIPLES

Maximum CIA:30
Maximum CE:70
Total Hours: 72

Course Objective: Enable the students to acquire knowledge about basic Electronics components and to enhance them to design electronic circuits.

UNIT- I   (15 Hours)
PASSIVE DEVICES: Introduction – Resistors: Fixed &Variable Resistor Color Coding – Tolerance - Series and Parallel Connection. Capacitors: Basic Structure and Symbol – Fixed & Variable Capacitors – Dissipation Factor – Series and Parallel Connection. Inductors: Inductance of The Coil – Fixed & Variable Inductors – Inductive Reactance – Energy Stored in an Inductor – Q Factor – Mutual Inductance – Series And Parallel Connection.

UNIT- II   (14 Hours)
LAWS AND THEOREMS: Ohm's Law – Kirchoff's Law– Superposition Theorem – Thevenin's Theorem – Thevenzing a Circuit with Two Voltage Source – Thevenzing a Bridge Circuits – Nortons Theorem – Thevenin's to Norton Conversion – Conversion of Voltage and Current Source – Millman's Theorem – Maximum Power Transfer Theorem.

UNIT - III   (15 Hours)
CIRCUIT FUNDAMENTALS: Alternating Current – Peak Value – Average Value – RMS Value – Frequency – Time Period – Wave Length – Phase Angle– Three Phase AC Power - AC Circuits With R – AC Circuits With XL – AC Circuits With XC – Real Power –Apparent Power – Series Resonance Circuit – Parallel Resonance Circuit – Analysis Of Series Circuit, Parallel Circuits and Series Parallel Circuits –Voltage Divider – Current Divider – Simple Problems In DC Circuits.

UNIT- IV   (14 Hours)
ACTIVE DEVICES: Introduction - Conductor – Semiconductor – Insulator–P Type And N Type Semiconductor– PN Junction Diode –V-I Characteristics - Zener Diode -V-I Characteristics - Introduction to Transistor-Construction & Operations of NPN and PNP Transistor- Transistor Configurations.

UNIT V   (14 Hours)

SPECIAL DIODES & APPLICATIONS: Introduction -V-I Characteristics - Schottky Diode, Tunnel Diode, Varactor Diode ,LED -Clipping, Clamping Circuits – Half Wave, Full Wave And Bridge Rectifiers – Average Value – Zener Diode as a Voltage Regulator – Voltage Doubler.

Course outcomes:

- Understand the passive devices and its operations.

- Understand and apply the Laws and theorems used in the circuits.

- Understand and analyze the AC and DC Circuits Fundamentals.

- Understand the passive devices and its operations.

- Understand and apply the Special diodes and in applications.

TEXT BOOKS:
1. R.S.Sedha, "A Text Book of Applied Electronics", 2nd Edition, S.Chand And Company Ltd., 2005. [Unit I,II,III]

2. V.K.Metha, "Principles of Electronics", 8th Edition, S.Chand And Company Ltd., 2003 [Unit IV , V]

REFERENCE BOOK:
1. Bernard Grob, "Basic Electronics", 9th Edition, Tata McGraw – Hill, 2003

B.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards
FIRST SEMESTER
Core Practical I – ELECTRONIC PRINCIPLES PRACTICAL

Maximum CIA:40
Maximum CE:60
Total Hours: 72

Course Objective: Imparting technical skills in Electronics Principles.

(ANY 12 EXPERIMENTS)

1. Study of CRO, Multimeter and color codes of resistors and capacitors.

2. Measurement of Resistance and Capacitance in series and parallel.

3. Series resonance circuit.

4. Parallel resonance circuit.

5. Verification of Ohm's Law.

6. Verification of Kirchhoff's Law.

7. Verification of Thevenin's Theorem.

8. Verification of Norton's Theorem.

9. Verification of Millman's theorem.

10. Verification of Maximum power transfer Theorem.

11. Characteristics of PN junction diode.

12. Characteristics of Zener diode.

13. Clipping circuits.

14. Clamping circuits.

15. Voltage Doubler.

16. Current Divider.

B.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards
SECOND SEMESTER
PART III: Core 2 - ELECTRONIC CIRCUITS AND ITS APPLICATIONS

Maximum CIA:30
Maximum CE:70
Total Hours: 72

Course Objective: Enable the students to acquire knowledge on troubleshooting the amplifiers, oscillators, power supply and filters to become a circuit designer.

UNIT- I   (15 Hours)
SMALL SIGNAL AMPLIFIERS: Introduction– Transistor as An Amplifier - Classification Of Amplifiers – Methods Of Transistor Biasing – Single Stage CE Amplifiers –Load Line Analysis - RC Coupled Amplifiers – Gain – Frequency Response – Multistage Amplifiers – Transformer- Transformer Coupled Amplifiers.

UNIT -II   (15 Hours)
POWER AMPLIFIERS: Introduction– Classification Of Amplifiers – Class A Operation – Class B Operation – Push Pull Configuration – Class AB Operation– Class C Operation – Power Efficiency – Load Power – Power Dissipation - Complementary Pair Operation – Distortions.

UNIT- III   (14 Hours)
FEEDBACK AMPLIFIERS: Introduction–Principles Of Feedback Amplifiers – Effect Of Negative Feedback On Gain Stability - Band Width – Distortion– Analysis Of Voltage And Current Feedback Amplifier Circuits.

UNIT- IV   (14 Hours)
OSCILLATORS: Introduction – Oscillatory Circuit - Barkhausen Criterion – Classification - Hartley Oscillator – Colpitts Oscillator – Crystal O s c i l l a t o r – Phase Shift Oscillator – Wein Bridge Oscillator.

UNIT- V   (14 Hours)
WAVE SHAPING CIRCUITS & MULTIVIBRATORS: Filters: Capacitors, Inductors, LC and PI Filter – Multivibrators: Astable- Monostable- Bistable- Regulated and Unregulated Power Supply.

Course outcomes:

- Understand the small signal amplifiers and their operations.

- Understand the Power amplifier configurations and their functions.

- Understand and Apply the Feedback in amplifiers.

- Understand the concept of Oscillators.

- Understand and apply the concept of Wave shaping circuits and Multivibrators.

TEXT BOOKS:
1. B.L.Theraja, "Basic Electronics", 1st Edition, S.Chand and Company Ltd. Reprint 1997,[Unit II,III,V]
2. V.K.Metha, "Principles of Electronics", 8th Edition, S.Chand and Company Ltd., 2003.[Unit I,IV]

REFERENCE BOOK:
1. Bernard Grob, "Basic Electronics", 9th Edition, Tata McGraw – Hill, 2003.

B.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards
SECOND SEMESTER
PART III: Core Practical 2 – ELECTRONIC CIRCUITS PRACTICAL

Maximum CIA:40
Maximum CE:60
Total Hours: 72

Objective: Imparting Circuit designing skills in Electronic Circuits.
(ANY 12 EXPERIMENTS)

1. Transistor biasing – self bias.

2. Transistor biasing – Fixed bias.

3. Transistor characteristics of CE configuration.

4. Transistor characteristics of CB configuration.

5. RC coupled amplifier (Single Stage).

6. Class B push pull amplifier.

7. Complementary symmetry push pull amplifier.

8. Transformer Coupled Amplifier

9. Feedback Amplifiers.

10. Hartley Oscillator.

11. Colpitts oscillator.

12. Phase shift Oscillator.

13. Astable Multivibrator

14. Monostable Multivibrator

15. DC regulated power supply using IC's.

16. Capacitor filter.

B.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the academic year 2019– 2020 onwards
THIRD SEMESTER
PART III – Core 3 - DIGITAL LOGIC CIRCUITS

Maximum CIA:30
Maximum CE:70
Total Hours:60

Course Objective:
Enable the students to ensure the various number systems, logical expressions using Boolean functions and digital simulation for development of application oriented logic circuits.

Unit- I   (12 Hours)
NUMBER SYSTEMS AND DIGITAL LOGIC FAMILIES: Review of number systems, binary codes, error detection and correction codes (Parity and Hamming code) – Digital Logic Families -comparison of RTL, DTL, TTL, ECL and MOS families -operation, characteristics of digital logic family.

Unit- II   (12 Hours)
COMBINATIONAL CIRCUITS: Combinational logic – representation of logic functions-SOP and POS forms, K-map representations – minimization using K maps – simplification and implementation of combinational logic – multiplexers and de multiplexers – code converters, adders, subtractors, Encoders and Decoders.

Unit- III   (12 Hours)
SYNCHRONOUS SEQUENTIAL CIRCUITS: Sequential logic- SR, JK, D and T flip flops – level triggering and edge triggering – counters – asynchronous and synchronous type – Modulo counters – Shift registers – design of synchronous sequential circuits – Moore and Melay models- Counters, state diagram; state reduction; state assignment.

Unit -IV   (12 Hours)
 ASYNCHRONOUS SEQUENTIAL CIRCUITS AND PROGRAMMABILITY LOGIC DEVICES 6+6 Asynchronous sequential logic circuits-Transition tability, flow tability-race conditions, hazards &errors in digital circuits; analysis of asynchronous sequential logic circuits introduction to Programmability Logic Devices: PROM – PLA –PAL, CPLD-FPGA.

Unit- V   (12 Hours)
VHDL: RTL Design – combinational logic – Sequential circuit – Operators – Introduction to Packages – Subprograms – Test bench. (Simulation /Tutorial Examples: adders, counters, flip flops, Multiplexers & De multiplexers).

Course Outcomes**:**
CO1: To understand the various number systems and simplify the logical expressions using Boolean functions.
CO2: To understand the designing of combinational and sequential Circuits.
CO3:To analyze the simulation of digital circuits using software package.
CO4: To apply digital functions into the various synchronous and asynchronous circuits.
CO5: To analyze and apply the digital simulation for development of application oriented logic circuits.

Course Outcome	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M						M	
CO2		M		M		M		
CO3	H		M				H	
CO4	H			M			H	
CO5		M		M		H		

Text Book:
　　1. M. Morris Mano, 'Digital Design with an introduction to the VHDL', Pearson Education,
Reference Book:
　　1. Thomas L.Floyd, 'Digital Fundamentals', 11th edition, Pearson Education, 2015

B.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the Academic year 2019 – 2020 onwards
THIRD SEMESTER

PART III - Core 4 – ELECTRONIC INSTRUMENTATION AND
MEDICAL ELECTRONICS

Maximum CIA: 30
Maximum CE:70
Total Hours: 60

Course Objective: Enable the students to learn the concept Biomedical Electronics and Instruments.

Unit- I   (12 Hours)
BIOELECTRIC SIGNALS:
Physiological Systems of The Body – Man Instrument System – Bioelectric Signals – Cells And Their Structures - Transport of Ions Through Cell Membrane - Resting And Action Potential – Propagation of Action Potential – Bioelectric Potentials [ECG, EEG, EMG]

Unit- II   (12 Hours)
PHYSIOLOGICAL TRANSDUCERS AND BIOMEDICAL RECORDERS :
Introduction — pressure sensors- temperature sensors- pulse sensors- respiration sensors – Electrocardiography [ECG] — Electroencephalography [EEG] – EEG Recorder – Electromyography [EMG]

Unit- III   (12 Hours)
DIAGNOSTIC AND THERAPEUTIC EQUIPMENTS: X-Ray Imaging - Radio Fluoroscopy - Image Intensifiers - Angiography - Endoscopy – Diathermy- Pacemakers - DC Defibrillator- Model of Heart Lung Machine - Anesthesia Machine – Ventilators.

Unit- IV   (12 Hours)
ADVANCEMENTS IN MEDICAL INSTRUMENTATION: Lasers in Medicine- Computerized Axial Tomography [CAT] Scanner - Ultrasonic Scanner - Magnetic Resonance Imaging - Biotelemetry - Elements of Telemetry System - Radio Telemetry System - Physiological Signals Used in Telemetry.

Unit -V   (12 Hours)
ELECTRONIC MEASURING INSTRUMENTS: Introduction – PMMC Multimeter – Digital Voltmeter – Electronic Voltmeter – Cathode Ray Oscilloscope –DSO- Frequency Counter – Q-Meter – RF Signal Generator –Pulse Generator - Function Generator – Power Meters.

Course Outcomes:

CO1: To remember the human cell structure and various bioelectric signals.
CO2: To understand the physiological transducers and Bio medical recorders.
CO3: To analyze the diagnostic and therapeutic equipments.
CO4: To apply bio medical techniques in advancement medical instruments.
CO5: To analyze the functions of different Electronic measuring instruments.

Course Outcome	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M						M	
CO2		M	M			M		
CO3	H		M				H	
CO4	H			M		H		
CO5		M		M			H	

Text Books:
1. Arumugam. M, Biomedical Instrumentation,2nd Edition, Anuradha Agencies.
2. R.G Gupta, Electronic Instruments and Systems, 3rd Edition, Tata Mcgraw – Hill Reprint 2006.

Reference Books:
1. Leslie Cromwell, Fred.J.Webell, Erich.A.Pfeffer, Bio-medical Instrumentation and Measurements, 3 rd Edition, ,Prentice Hall of India,1990.
2. A.K.Shawhney, A Course In Electrical And Electrical Measurements And Instrumentation, 10th Edition, Dhanpat Rai and Co [P] Ltd, Delhi, 2000.

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THIRD SEMESTER

PART III- Core 5 – ANALOG COMMUNICATION

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: On completion of this course the student can understand the basics of various analog modulation techniques, transmitters, receivers and the concepts of analog communication systems.

Unit- I   (12 Hours)
INTRODUCTION TO COMMUNICATION SYSTEMS: Introduction- Elements of Communication system: Information Source-Transmitter-Channel-Receiver-Destination- Need for Modulation-Electromagnetic spectrum and Typical Applications- Terminologies in Communication systems.

Unit -II   (10 hours)
NOISE: Introduction-External Noise: Atmospheric Noise-Extraterrestrial Noise-Industrial Noise- Internal Noise: Thermal Agitation Noise- Shot Noise-Transit Time Noise-Noise Figure: Signal to Noise Ratio- Definition of Noise Figure- Calculation of noise figure-Noise Temperature.

Unit- III   (14 Hours)
MODULATION TECHINIQUES: Introduction – AM Theory – Frequency Spectrum of AM Wave – Representation of AM – Power Relations In AM Wave – Generation of AM [AM Transmitter Block Diagram] –FM Theory – System Description — Frequency Spectrum of FM–Representation of FM –Generation of FM [Direct And Indirect Methods].

Unit- IV   (12 Hours)
PULSE MODULATION: Pulse Analog Modulation Techniques-Pulse Amplitude Modulation (PAM)-Pulse Width Modulation (PWM)-Pulse Position Modulation (PPM) - Demodulated of Pulse Analog Modulated Signals-Applications.

Unit- V   (12 Hours)
RADIO RECEIVERS: Introduction – TRF Receiver - Super Heterodyne Receiver – Choice Of IF And Oscillator Frequencies – Image Frequency And Its Rejection – Adjacent Channel Selectivity - Tracking – Double Conversion - AGC and AFC – Basic Communication Receiver.

Course Outcomes:

CO1: To Understand the block diagram of communication system.

CO2: To understand the concept of noise performance of particular communication system.

CO3: To analyze the Amplitude, Frequency modulation and demodulation techniques.

CO4: To apply the formulae of Pulse modulation in analog communications.

CO5: To design the different types of transmitters and receivers used for particular applications.

Course Outcome	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1		M					M	
CO2				M		M		M
CO3	H		M				H	
CO4	H			M			H	
CO5		M		M		H		

Text Book:

1. George Kennedy, Bernard Davis and SRM Prasanna, Electronic Communication Systems, 5th Edition, Tata McGraw Hill, 2012.

Reference Book:

1. Wayne Tomasi , " Advanced Electronic Communications systems, 6th Edition, Pearson Publications ,2014

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FOURTH SEMESTER

PART III - Core Practical 3 – DIGITAL ELECTRONICS & MEDICAL ELECTRONICS PRACTICAL

Maximum CIA : 40
Maximum CE   : 60
Total Hours: 60

Course Objective: Imparting technical knowledge to design digital circuits and developing technical and servicing skills in the field of Biomedical Instrumentation.

[ANY 12 EXPERIMENTS]

1. Verification of Basic Gates and Universal Gates
2. Verification of Demorgan's Theorem
3. Half Adder and Full Adder
4. Half Subtractor and Full Subtractor
5. Two Bit Comparator
6. Encoder and Decoder
7. BCD to 7-Segment Display
8. Flip Flops
9. Shift Registers and Ring Counter
10. Study of Bio ECG Amplifier Using Differential amplifier method
11. Study of Bio EMG Amplifier Using Instrumentation amplifier method
12. Measurement of Pulse Rate Using Photo Electric Transducer
13. Design of Digital Blood Pressure Monitor & Study of Vascular Ultrasonic Transducer
14. Study of Functioning and Safety Aspects Of Surgical Diathermy.
15. Simulation of ECG, EMG & EEG Signals.

Course Outcomes:

CO1: To understand the basic digital theorems and its application.

CO2: To understand the design of digital circuits using IC's.

CO3: To design the amplifier for Bio signal measurements.

 CO4: To Analyze the recording of bio signals.

CO5: To analyze the Special function ICs and its application.

CO/PO PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M					L		
CO2				L			M	
CO3			L					M
CO4		M					L	
CO5					M			M

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THIRD SEMESTER
IDC 3 - C PROGRAMMING

Maximum CIA:30
Maximum CE :70
Total Hours: 60

Course Objective:

Enable the students to acquire knowledge and programming skills in C.

Unit- I   (12 Hours)

DATA TYPES,OPERATORS, INPUT AND OUTPUT : History of C –C tokens-Constants Variables- Data Types-Declaration of variables- Operators: Arithmetic-Relational-Logical–Assignment - Increment And Decrement Operators – Conditional – Bitwise Operators – Special Operators – Operator Precedence and Associativity- Reading a character-writing a character-formatted input–formatted output.

 Unit - II   (12 Hours)

SELECTIVE , ITERATION STATEMENTS AND FUNCTIONS :Introduction – Decision making with if statement- Simple if statement – If-Else statements- Nesting of if –Else statements – Else if ladder –Switch statement –looping: Introduction- While -do while – for – Functions: Introduction-Need For User Defined Functions – Definition Of Functions – Function Declaration – Category Of Functions – Recursion – Simple Programs.

 Unit- III   (12 Hours)

ARRAYS AND STRINGS :Introduction – One Dimensional Arrays –Declaration of One Dimensional Arrays –Initialization of One Dimensional Arrays – Two Dimensional Arrays Initializing of Two Dimensional Arrays – Strings: Introduction-Declaration And Initialization of String Variables – Reading String From Terminal –Writing Strings To Screen –-String Handling Functions .

 Unit- IV   (12 Hours)

 STRUCTURES , UNIONS AND POINTERS : Introduction – Defining a Structure –Declaring Structure Variables –Accessing Structure Members –Structure Initialization – Array of Structures – Structures and Functions -unions-Pointers: Introduction – Declaring of Pointer Variables –Initialization of pointer variables-Pointers and Arrays –Pointers and Strings – Array of Pointers – Pointers and Structures .

Unit- V   (12 Hours)

 MEMORY MANAGEMENT ,FILESAND PREPROCESSOR: Introduction – Dynamic memory allocation –Allocating block of memory –files:Introduction-Defining and Opening a File –Closing a File – Input and Output Operations on Files – Error Handling During Input and Output Operations – Command Line Arguments-The Preprocessor :Introduction –Macro Substitution –File Inclusion – Compiler Control Directives.

Course Outcomes:

CO1: Remember the concept of programming languages and understand the importance of C, its data types and input output statements.
CO2:To understand selective statements and iterative statements and implement them in programs.
CO3:Analyse various data handling mechanism through arrays.
CO4: Apply   hetrogenious data in structures,unions and analyse pointers.
CO5: Analyse the importance of memory management and files and understand the concept of preprocessor .

CO/PO PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M					L		
CO2				L			M	
CO3			L					M
CO4		M					L	
CO5					M			M

Text Book:

1. E.Balagurusamy , Programming in ANSI C , 5th Edition ,Tata McGraw - Hill 2010.
    Unit- I chaper 1[page no: 1,25-26,30-34] chapter 2[page no:52-61,72,85-98]

   Unit -II chapter 1[page no :114-174] chapter 2[page no:262,267,272-274,288]

   Unit- III chapter 1[page no :190-204] chapter 2 [page no:229-236,244]

   Unit- IV chapter 1[page no 317-322,327,335] chapter 2[page no: 351-356,364-369]

   Unit- V chapter 1[page no: 411-413,389-405] chapter 2[page no:444-450]

Reference Book:

1. Ashok N.Kamthane , Programming with ANSI and Turbo C , Pearson Edition 2007.

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THIRD SEMESTER

PART IV:SBC I - PCB FABRICATION AND DESIGNING

Maximum CE:75
Total Hours:36

Course Objective:

Enable the students to learn the basic designing techniques used in PCB fabrication.

Unit- I   (6 Hours)

TYPES OF PCB AND LAYOUT: Single sided board – double sided – Layout Planning – General considerations- PCB sizes-Layout approaches-Documentation.

Unit- II   (8 Hours)

LAYOUT PARAMETERS AND ARTWORK: Introduction – Resistance, Capacitance and Inductance – Conductor Spacing – Supply and Ground Conductors – Component Placing and mounting – Cooling requirement and package density – Layout check. Basic artwork approaches – Artwork taping guidelines – General artwork rules – Artwork check and Inspection.

Unit- III   (8 Hours)

LAMINATES AND PHOTO PRINTING:

Laminates: Manufacture of copper clad laminates – Properties of laminates – Types of Laminates.

Photo Printing: Basic printing process for double sided PCB's – Photo resists – wet film resists – Coating process for wet film resists – Exposure and further process for wet film resists – Dry film resists.

Unit- IV   (8 Hours)

ETCHING AND SOLDERING:

Etching: Introduction – Etching machine – Etchant system.

Soldering: Introduction-Principles of Solder connection – Solder alloys – Soldering fluxes. Soldering Techniques – Solder mask – Reflow soldering practice- Safety, health and medical aspects in Soldering practice.

Unit -V (6 Hours)

DESIGN RULES AND AUTOMATION: Reflection – Crosstalk – Ground and Supply line noise – Electromagnetic interference from pulse type EM fields – CAD – OrCAD Software Fundamentals.

Course Outcomes:
CO1: To understand the various Types of PCB
CO2: To understand the designing of Layout Parameters and Artwork.
CO3:To analyze the Laminates and Photo Printing
CO4: To apply functions into the various Etching and Soldering.
CO5: To apply the CAD and PCB Software.

Course Outcome	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M						M	
CO2		M		M		M		
CO3	H		M				H	
CO4	H			M			H	
CO5		M		M		H		

Text Book:

1. Walter C.Bosshart, PCB Design and Technology, 1st Edition, Tata Mcgraw Hill Publications, Delhi. 1983.

Reference Book:

1. R S Khandpur " Printed Circuits Boards – Design, Fabrication, Assembly and Testing", Tata McGraw-Hill Education,2005.

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THIRD SEMESTER

PART IV- SBC I - VISUAL BASIC

<div align="right">Maximum CE:75
Total Hours:36</div>

Course Objective: Enabling the students to acquire theoretical and practical knowledge to be successful in Visual Basic.

Unit-I   (7 Hours)

Introduction to Visual Basic–Steps in VB Applications–Integrated Development Environment [IDE]–Menu Bar–Toolbar–Project Explorer Window–Property Window– Toolbox–Properties

Unit-II   (7 Hours)

Variables–Scope of Variable-Constants–Data Types–Function Procedures–Control Structures: If–Switch–Select–for–While–Do While–Array-User Defined Data Types.

Unit-III   (7 Hours)

Creating and Using Standard Control: Form-Label-Textbox- Command Button-Checkbox-Option Button-List Box- Combo Box- Picture Box-Image Control-Scrollbars–Drive List Box – Directory List Box–Time Control- Frame-Shape and Line Controls.

Unit-IV   (8 Hours)

Control Arrays–Working with Control Array–Adding and Removing Controls in Control Array–the Flex Grid Control: Properties-Events and Methods of Grid Control–Dialog Boxes -Menus–Menu Editor – Menu Creation.

UNIT-V   (7 Hours)

Data Controls–Data Access Objects[DAO]–Accessing and Manipulation Databases–Record Set. Types of Record Set–Creating a Record Set–Modifying- Deleting-Finding Record.

Course Outcomes:
CO1: To understand the concepts of Visual Basic
CO2: To understand the variables, data types and control structures
CO3:To analyze and designing of forms
CO4: To apply functions into the various control arrays
CO5: To apply the database concepts

Course Outcome	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H						M	
CO2		M		H		M		
CO3	H		M				H	
CO4	H			M			H	
CO5		M		M		H		

Text Book:

1. Mohammed Azam, Programming With Visual Basic 6.0, IKAS Publishing House [P] Ltd Reprint 2014.

Reference Books:

1. CORNELL GRAY, VB 6 Form Ground Up, 1st Edition, Tata Mc Graw Hill, Reprint 2013.
2. Rob Thayer, VB 6 Unleashed Comprehensive Solution, Reprint 2012

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FOURTH SEMESTER
PART III - Core 6 – LINEAR INTEGRATED CIRCUITS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: Enable the students to acquire theoretical knowledge of IC fabrication, comprehend the concepts of Op-Amp, basic principles of PLL, Timer Circuits and to understand the concept of Special function ICs.

Unit- I   (14 Hours)

INTEGRATED CIRCUIT FABRICATION: Introduction – Classification –Basic Planar Process: Silicon wafer preparations, Epitaxial growth, Oxidation, Photolithography, Diffusion, Ion implantation, Isolation techniques, Metallization, Assembly Processing & Packaging- Fabrication of a Typical Circuit - Thin and Thick Film Technology.

Unit -II   (12Hours)
OPERATIONAL AMPLIFIER AND ITS APPLICATIONS: Introduction - Parameters of Operational Amplifiers – Inverting And Non Inverting Amplifier– Summing Amplifier – Differential Amplifier – Integrator – Differentiator – Instrumentation Amplifier – Voltage to Current Converter – Current to Voltage Converter – Precision Half Wave Rectifiers – Precision Full Wave Rectifiers.

Unit- III   (10 Hours)
ACTIVE FILTERS:
Low Pass Filter – High Pass Filter – Band Pass Filter – Narrow Band Pass Filter - Wide Band Pass Filter - Band Reject Filter – All Pass Filter.

Unit- IV   (12 Hours)
COMPARATORS, WAVE GENERATORS AND SPECIAL FUNCTION ICS:
Comparator – Regenerative Comparator – Square Wave Generator – Triangular Wave Generator - IC Voltage Regulator - 723 General Purpose Regulators.

Unit -V   (12 Hours)
TIMER IC AND ITS APPLICATIONS: Introduction- Description of Functional Block Diagram of 555 Timer- Applications: Monostable multivibrator Operation: Linear Ramp Generator – Pulse Width Modulator – Frequency Divider – Astable multivibrator Operation: Schmitt Trigger –Pulse Position Modulator - FSK Generator- Phase Locked Loop –Basic Principles – Phase Detector / Comparator –Voltage Controlled Oscillator.

Course Outcomes:

CO1: To understand the concept of IC Fabrication.

CO2: To comprehend the concepts of Op-Amp.

CO3: To analyse the application of Op-Amp with its application.

CO4: To analyse the principles of PLL and Timer Circuits

CO5: To familiarize the concept of Special function ICs and its application.

CO/PO PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M					L		
CO2				L			M	
CO3			L					M
CO4		M					L	
CO5					M			M

Text Books:

1.D.Roy Choudhury and Shahil B Jain, Linear Integrated Circuits, 5th Edition, New Age International Publishers, 2007.
2.Op - Amps and Linear Integrated Circuits, Ramakant A. Gayakwad, 4th edition, PHI .

Reference Book:

1. K.R.Botkar, Integrated Circuits, 10th Edition, Khanna Publishers, 2006.

B.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the Academic Year 2019 – 2020 onwards
FOURTH SEMESTER
PART III- Core 7 –MICROWAVE AND ANTENNA PROPAGATION

Maximum CIA : 30
Maximum CE   : 70
Total Hours   : 60

Course Objective: Enable the students to learn the concepts of Microwave devices and Antenna Propagations.

Unit- I   (12 Hours)
INTRODUCTION TO MICROWAVES:
Microwave Region and Band Designations- Advantages of Microwaves- Applications of Microwaves- Maxwell's Equations: Ampere's Law- Faraday's Law- Gauss's Law- Wave Equations- TEM/ TE/ TM/ HE Wave Definitions- Transmission Lines: Two wire Parallel Transmission Lines- Voltage and Current Relationships on a Transmission Line- Characteristic Impedance- Reflection Coefficient- Input Impedance.

Unit - II   (12 Hours)
MICROWAVE TUBES AND CIRCUITS:
Microwave Tubes- Klystrons: Two Cavity Klystron Amplifier- Multicavity Klystron- Two Cavity Klystron Oscillator- Reflex Klystron- Travelling Wave Tube(TWT): Constructional Features of TWT- Operation - Backward Wave Oscillator: Operation- Magnetrons : Cavity Magnetron.

Unit - III   (12 Hours)
VLF, LF, MF AND HF ANTENNAS:
Introduction – VLF and LF Transmitting Antennas- Hertz and Marconi Antennas- Ungrounded Antennas – Grounded Antennas- Medium Frequency Antennas: Construction- Field Distribution- Antenna Arrays – High Frequency Antennas: Resonant and Non-resonant Antennas- Long wire or Harmonic Antenna- V Antenna.

 Unit- IV   (12 Hours)
VHF, UHF AND SHF ANTENNAS:
Folded Dipole Antenna- Yagi- Uda Antenna – Helical Antenna- Horn Antenna – Microwave Antennas- Antennas with Parabolic Reflectors: Beam Formation- Parabolic Reflector- Primary and Secondary Pattern- Lens Antennas: Principle- Types- Uses.

Unit- V   (12 Hours)
RADIO WAVE PROPAGATION:
Introduction- Electromagnetic or Radio Waves- The Fundamental Equation for Free-space Propagation- Modes of Propagation: Ground wave or Surface Wave Propagation- Sky Wave or Ionospheric Wave Propagation- Space Wave Propagation- Structure of Atmosphere : Structure of Troposphere- Structure of Ionosphere- Virtual Height – Maximum Usable Frequency (MUF) – Skip Distance.

Course Outcomes:

CO1: Remember the concept of Microwave transmissions and understand the Microwave devices.

CO2: To understand the working concepts of Microwave circuits and its applications.

CO3: Analyze the various types of antennas for wave propagations.

CO4: Apply the Frequency bands to the selective antennas for the selection process of efficient communication.

CO5: Analyze the importance of Electromagnetic waves for propagations.

CO/PO PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M					M		
CO2				L			M	
CO3			M					M
CO4		M						H
CO5					M			M

Text Books:

1. M Kulkarni , "Microwave and Radar Engineering ", 4th Edition , Umesh Publications., 2009.
2. K.D. Prasad, " Antenna & Wave Propagation" , Satya Prakashan, 1999.

Reference Books:

1. David M. Pozar, "Microwave Engineering", 4th Edition, John Wiley & Sons, 2012.
2. John D Kraus , Ronald J Marhefka, Ahmed S Khan "Antenna and wave propagation" 4th Edition 2010.

B.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the Academic Year 2019 – 2020 onwards

FOURTH SEMESTER
PART III -Core 8 – DIGITAL COMMUNICATION

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: Enable the students to acquire the knowledge on Digital Communication techniques and its applications.

Unit- I   (12 Hours)
BASICS OF COMMUNICATION SYSTEMS
   Basic Telecommunication system- Types: Point to Point-multipoint-Broadcasting-Simplex-Half Duplex- Full Duplex- Transmission impairments- Analog versus Digital transmission- Data Representation.

Unit- II   (12 Hours)
INFORMATION THEORY & TRANSMISSION MEDIA
   Requirements of a communication system: The communication system – Entropy of an information source – Channel capacity – Shannon's Theorems: Source Coding Theorem-Channel Coding Theorem-Twisted Pair-Coaxial cable-optical Fiber-Terrestrial Radio-Radio Spectrum

Unit -III   (12 Hours)
SAMPLING AND QUANTIZATION
   Sampling process –Aliasing - PAM- Natural Sampling-Flat Sampling-PPM- PWM–PCM-Noise considerations in PCM- Quantization-Delta modulation –Linear prediction – Differential pulse code modulation – Adaptive Delta Modulation.

Unit- IV   (12 Hours)
MULTIPLEXING & MULTIPLE ACCESSES
   Multiplexing and Demultiplexing- FDM- TDM- Statistical TDM – Wave Division Multiplexing- Dense Wave Division Multiplexing – FDMA-SDMA-TDMA- CDMA.

Unit- V   (12 Hours)
OPTICAL FIBER COMMUNICATION SYSTEMS
   Evolution of optical fiber Communication – Multimode- Single Mode –Wave Division Multiplexing Systems- Optical Networks- Broad band services to the Home/Office.

Course Outcomes**:**
After successfully completing the course students will be able to
1. To understand the building blocks of digital communication system.
2. Analyze the performance of a Shannon's digital communication system in terms of error rate and efficiency.
3. Perform the time and frequency domain analysis of the signals in a digital communication system and various modulation Techniques
4. To understand and analyze the concept of multiplexing and multiple access.
5. Analyze Performance of optical fiber communications.

Course Outcome	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M		M			M		
CO2		H		H			H	
CO3	H		M			H		
CO4		H		H			H	
CO5	M	H			H			

Text Books:

1. Dr.K.V.K.K.Prasad "Principles of Digital communication systems and computer Networks"
2. Simon Haykins, "Communication Systems" John Wiley, 5th Edition, March 2009.
3. Taub. HDL Schilling, G Saha, "Principles of Communication"3/e,2007.

Reference Books:

1. John G. Proakis, Masoud Salehi, "Digital Communication", McGraw Hill 5th edition November 6, 2007.
2. Bernard Sklar, "Digital Communication, Fundamentals and Application", Pearson Education Asia, 2nd Edition, Jan. 21, 2001.

B.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the Academic year 2019 – 2020 onwards
FOURTH SEMESTER
CORE PRACTICAL 4- ANALOG AND DIGITAL COMMUNICATION PRACTICAL

Maximum CIA: 40
Maximum CE: 60
Total Hours: 60

Course Objective:

1. To know the steps involved in the analysis of Analog & Digital communication systems.

2. To know how to synthesize Analog & Digital communication module with the given specifications.

[ANY 12 EXPERIMENTS]

1. AM Modulation and Detection

2. FM Modulation and Detection

3. Study of ASK Modulation

4. Study of FSK Modulation.

5. PAM Modulation

6. Study of Fiber Optic Communication.

7. Study about Alignment of Satellite Receiver

8. PWM Modulation

9. PPM Modulation

10. PCM Modulation

11. Audio Amplifier Using TBA 810

12. Sync Separator

13. Study of AM & FM Radio Receiver

14. Study of DTH Receiver

15. IR Transmitter & Receiver

Course Outcomes :

After studying this course the students shall be able to:

1. The ability of visualization and practical implementation of Amplitude modulation techniques
2. The ability of visualization and practical implementation of Frequency modulation techniques
3. The skill to analyze and implement analogue to digital converters like PCM
4. The ability to design PWM, PPM systems and techniques with desired specifications
5. The ability to design passes Analog & Digital demodulation techniques

Course Outcome	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M			H			H	
CO2		M					H	
CO3				H				
CO4	H		M		H		H	
CO5		M		M			H	

B.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards

FOURTH SEMESTER
IDC4 –C PROGRAMMING PRACTICAL

Maximum CIA: 40
Maximum CE: 60
Total Hours : 60

Course Objective: Imparting programming skills in C

[ANY 12 EXPERIMENTS]

1. Evaluate sum, average and standard deviation for given set of numbers.

2. To Display number of palindromes in a given sentence.

3. To generate 'n' prime numbers.

4. Arranging the numbers in ascending order using BUBBLE SORT.

5. Arranging the numbers in Descending order using BUBBLE SORT.

6. Finding the factorial of the given number.

7. To check Armstrong number.

8. Addition of 2 matrices.

9. Fibonacci sequence of 'n' numbers.

10. To find the largest among 'n' numbers

11. To find the smallest among 'n' numbers.

12. To find sine series.

13. To find cos series.

14. Linear and binary search.

15. Command line arguments

Course Outcomes:

CO1: Remember the mathematical concepts of performing addition ,standard deviation
      palindromes ,prime numbers and implement them in C program

CO2:Understand the concept of bubble sort and arranging the set of numbers .

CO3:Understand factorial and Armstrong numbers .

CO4:Analysing matrix addition using two dimensional arrays and also understand fibonocii
      sequence .

CO5:Analyse the concept of finding the largest and smallest among given set of numbers and
      also to find sine series .

CO/PO PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1		M				M		
CO2				L			M	
CO3		M					M	
CO4				M			L	
CO5		M						M

B.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards

FOURTH SEMESTER

PART IV: SBC II - AUTOMOTIVE ELECTRONICS

Maximum CE:75
Total Hours: 36

Course Objective: Enable the students to learn the fundamental concept of Automotive electronics system and to enhance them to design simple Automobile products.

Unit- I   (8 Hours)
FUNDAMENTALS OF AUTOMOTIVE: Introduction – Evolution – Physical configuration – Automotive Systems – Engine – Engine Block – Cylinder Head – 4 Stroke cycle – Engine control.

Unit- II   (8 Hours)
IGNITION SYSTEM : Introduction – Spark Plug – High Voltage Circuit and Distribution – Spark Pulse Generation – Ignition timings – Suspension – Brakes- Steering systems.

Unit -III   (6 Hours)
INTRODUCTION TO MICROSYSTEMS: Mems and Microsystems – Typical MEMS and microsystem product – Evolution of microfabrication and microelectronics – The multidisciplinary nature of Microsystems design and manufacture – Application of Microsystems in Automobile industry .

Unit -IV   (8 Hours)
FUNDAMENTALS OF MICROSYSTEMS: Introduction – Micro sensors – Acoustic wave sensors – Chemical sensors – Optical sensors – Pressure sensors – Thermal sensors. Micro actuators – Micro gripper – micro motors – micro valves - micro pumps – micro accelerometer – micro fluidics

Unit- V   (6 Hours)
CONTROL SYSTEMS: Introduction – Concept of a system – Block diagram representation of a system- Motivation for Electronic engine control – Concept of an electronic engine control system – Electronic fuel control system – Modern Automotive Instrumentation.

Course Outcomes:

CO1: To understand the Fundamental concepts of Automotive.

CO2: To understand the working concepts of Ignition system.

CO3: Analyze the microsystem manufacture concepts.

CO4: Analyze the various sensors of micro system applications.

CO5: Apply the Automotive techniques in control systems.

CO/PO PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H					M		
CO2				M			M	
CO3			M					M
CO4		M						H
CO5					M			M

Text Books:

1.William B Ribbens, Understanding Automotive Electronics , Society of Automotive Engineers Inc, 6th Edition, 2003.
2.Mems and Microsystems Design and Manufacture , Tai Ran Hsu , Tata McGraw Hill , 1st Edition, 2007.

Reference Books:
1.Tom Denton, Automobile Electrical and Electronics Systems , Elsevier Publications Ltd , 3rd edition , 2004.
2.Ronald K.Jurgen , Automotive Electronics Handbook , McGraw-Hill Professional, 2nd Edition, 1999.

B.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards

FOURTH SEMESTER

PART IV: SBC II - ASP.Net

Maximum CE:75
Total Hours: 36

Course Objective: To gain the knowledge in ASP.Net for Web Applications.

Unit- I   (8 Hours)
Evolution of .Net - Benefits of .Net Framework - Overview of .Net Framework4.5 - Exploring VS IDE. ASP.Net Technologies - Exploring sample ASP.NET Web Application – Developing a Web Application: Specifying location for a Web application – File Types in ASP.Net – ASP.Net Coding Models.

Unit- II   (7 Hours)
Web Forms Standard controls (I): Control Class – Label Control – Button Control – TextBox Control – Literal Control – Place Holder Control – File Upload Control. Navigation Controls: Menu Control – Treeview Control – Sitemap Control.

Unit- III   (7 Hours)
Introducing C#: – Need of C# – C# Pre-Processor Directives – Features of C# - Creating Simple C# Console Application – Identifiers and Keywords – Data Types –Type Conversions - Variables – Constants – Expressions and Operators –Classes and Objects – Constructors and Destructors .

Unit -IV   (7 Hours)
Exception Handling: – Exception Handling – Checked and Unchecked Statements. Collections and Generics: – Understanding Collections - Collection Classes in .Net – Threading: – Thread Class.

Unit -V   (7Hours)
Inside Master Pages and Themes: Understanding Master Page – Creating Master page – Configuring Master Page – Overriding Properties and Methods of a Master Page – Creating Themes -Applying Themes to a Single Page .

Course Outcomes:

CO1: To understand the concept of ASP.net frame work.

CO2: To understand the Concepts of webforms standard controls.

CO3: Analyze the concept of C#.

CO4: Analyze the various exception handling concepts.

CO5: Apply and designing the pages and themes.

CO/PO PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M					M		
CO2		M		H			M	
CO3			M					M
CO4		M						H
CO5					M			M

Text Books:
1. ASP.NET 4.5, Covers C# and VB Codes, Black Book, Kogent Learning Solutions Inc, 2013. [Units I, II, V].
2. Net 4.0 Programming (6 in 1) Black Book Kogent Dream Tech Press. [Units III, IV].

Reference Book:
1. Adam Freeman, Matthew MacDonald, Mario Szpuszta, Pro ASP.NET 4.5 in C#, Apress, 2012.

B.Sc (Information Technology) Degree Examination- Syllabus for the candidates admitted from the academic year 2019- 2020 onwards

FOURTH SEMESTER

PART –III: EDC 2- MICROPROCESSOR AND ITS APPLICATIONS

Maximum CE: 50
Total Hours : 36

Course Objective: Enable the students to acquire the knowledge in basics of Microprocessor based system design and to develop the programming skills in 8085 microprocessor.

Unit -I   (8 Hours)

INTRODUCTION TO MICROPROCESSOR 8085: Microprocessors- 8085 Microprocessor Architecture: 8085 Pin configuration and Functions -Functional Block diagram of 8085 Microprocessor- Buses- Registers- Flags.

Unit -II   (8 Hours)

8085 INSTRUCTION SET AND ADDRESSING MODES
Instruction and Data Formats - Addressing Modes: Direct – Register – Register Indirect – Immediate – Implicit Addressing – 8085 Instruction Set: Data transfer Instructions – Arithmetic Instructions – Logical Instructions – Branch Instructions - Stack - I/O and Machine control Instructions.

Unit- III   (6 Hours)

8085 PROGRAMMING AND INTERRUPTS
Looping, Counting and Indexing – Rotate and Compare Instructions – Counters and Time delay –Stack and Subroutines - Interrupts: Hardware and Software Interrupts.

Unit- IV   (10 Hours)

8085 INTERFACING CONCEPTS AND PERIPHERAL DEVICES
Device Selection data transfer: I/O mapped I/O – Memory mapped I/O – Input Interfacing: Interfacing DIP switches – Interfacing O/P display: 7 segment LED display- Interfacing Memory – 8255 A Programmable Peripheral Interface (PPI).

Unit -V   (6 Hours)

8085 REAL WORLD APPLICATIONS
Temperature monitoring system - ADC interface – DAC Interface - Stepper motor control Interface- DC motor Interface – Relay interface.

Course Outcomes:

CO1: To understand the Fundamental concepts of 8085 Microprocessor.

CO2: To understand the various Instruction set and addressing modes of 8085.

CO3: Analyze the interrupts and assembly programming concepts of 8085.

CO4: Analyze the interfacing concepts of 8085 microprocessor.

CO5: Apply and designing of various applications by 8085.

CO/PO PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H					M		
CO2		M		M			M	
CO3			M					M
CO4		M					H	
CO5					M			M

Text Book:

 1. Ramesh.S. Gaonkar "Microprocessor Architecture Programming and Applications with the 8085 / 8080A" 6th Edition, New Age International (P) Ltd, 2013.

Reference Books:
1. Aditya P Mathur "Introduction to Microprocessors " 3rd Edition, Tata Mc Graw hill, 2002.

2. S. Malarvizhi " Microprocessor and Its Applications " 2nd Edition, Anuradha Agencies and Publications, 2006.

B.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the Academic year 2019 – 2020 onwards for advanced learners
THIRD SEMESTER

PART III- ALC I -MATERIAL SCIENCE

Maximum CE: 100

Course Objective: Enable the students to acquire the knowledge in mobile communication.

Unit- I
BONDING IN SOLIDS : Classes of engineering materials – engineering requirements of materials – structure – property relationships in materials – quantum numbers and structure of complex atoms – electronic configuration of the atom – forces between atoms – bond energies – ionic bond – covalent bond – metallic bond- comparison of bands – secondary bonds- mixed bonding – chemical bonding and the periodic table.

Unit-II
CRYSTAL STRUCTURE: Crystal symmetry – crystal systems and classes – unit cell and space lattice – crystal structures – miller indices and crystal planes – crystal directions – ionic, covalent and metallically – bonded structures electron diffraction and neutron diffraction.

Unit- III
IMPERFECTIONS IN CRYSTALS AND PHASE DIAGRAMS: Types of imperfections – point imperfection – production of point defected – line imperfection – surface imperfection – phases diagrams – eutectic systems – eutectoid system – other binary systems. Diffusion in solids.

Unit- IV
MECHANICAL PROPERTIES AND TESTING : Mechanical properties – fundamental properties fatique – creep – mechanical tests – tensile tests – compression test – hardness tests – impact tests – fatique tests – creep and stress – rupture tests – factor affecting mechanical properties – effect of grain size treatment, atmospheric exposure, low temperature and high temperature.

Unit- V
ELECTRICAL AND MECHANICAL PROPERTIES OF MATERIALS: Band model of conducting – semiconductors – magnetic properties – classification of materials- magnetic hysteresis – magnetic domain – magnetostriction – par magnetism – ferromagnetism – diamagnetism – soft and hard magnetic materials – ferrites.

Text Books:
  1. Material Science and Processes S.K. Hajradhoudhury[Reprinted 1986]
  2. Material Science Arumugam

B.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the Academic year 2019 – 2020 onwards for advanced learners
FOURTH SEMESTER

PART III- ALC II -MOBILE COMMUNICATION

Maximum CE: 100

Course Objective: Enable the students to acquire the knowledge in mobile communication.

Unit- I   INTRODUCTION
Introduction to Mobile Computing – Applications of Mobile Computing- Generations of Mobile Communication Technologies- Multiplexing – Spread spectrum -MAC Protocols – SDMA- TDMA- FDMA- CDMA.

Unit- II   MOBILE TELECOMMUNICATION SYSTEM :Introduction to Cellular Systems – GSM – Services & Architecture – Protocols – Connection Establishment – Frequency Allocation – Routing – Mobility Management – Security – GPRS- UMTS – Architecture – Handover – Security.

Unit- III   MOBILE NETWORK LAYER :Mobile IP – DHCP – AdHoc– Proactive protocol-DSDV, Reactive Routing Protocols – DSR, AODV , Hybrid routing –ZRP, Multicast Routing- ODMRP, Vehicular Ad Hoc networks (VANET) –MANET Vs VANET – Security.

Unit- IV   MOBILE TRANSPORT AND APPLICATION LAYER :Mobile TCP– WAP – Architecture – WDP – WTLS – WTP –WSP – WAE – WTA Architecture – WML.

UNIT- V   MOBILE PLATFORMS AND APPLICATIONS :Mobile Device Operating Systems – Special Constraints & Requirements – Commercial Mobile Operating Systems – Software Development Kit: iOS, Android, BlackBerry, Windows Phone – MCommerce – Structure – Pros & Cons – Mobile Payment System – Security Issues.

Text Books:
1. Jochen Schiller, ―Mobile Communications‖, PHI, Second Edition, 2003.
2. Prasant Kumar Pattnaik, Rajib Mall, ―Fundamentals of Mobile Computing‖, PHI Learning Pvt.Ltd, New Delhi – 2012
Reference Books:
1. Dharma Prakash Agarval, Qing and An Zeng, "Introduction to Wireless and Mobile systems",Thomson Asia Pvt Ltd, 2005.
2. Uwe Hansmann, Lothar Merk, Martin S. Nicklons and Thomas Stober, ―Principles of Mobile Computing‖, Springer, 2003.
3. William.C.Y.Lee,―Mobile Cellular Telecommunications-Analog and Digital Systems‖, Second Edition,Tata Mc Graw Hill Edition ,2006.
4. C.K.Toh, ―AdHoc Mobile Wireless Networks, First Edition, Pearson Education, 2002.

DEPARTMENT OF CATERING SCIENCE AND HOTEL MANAGEMENT

B.Sc Catering Science and Hotel Management

Regulations for B.Sc Catering Science and Hotel Management

(Effective from the Academic Year 2019-2020 and onwards)

Introduction:

The department of Catering Science and Hotel Management started the UG Program in 1995. The UG Program is B.Sc Catering Science and Hotel Management.

Objective:
- To be a leader in the development of professionals, keeping abreast with the latest development.
- To be proactive with the industry to address the need of highly skilled manpower.
- Provide a platform for exchanging ideas and information between Industry and students.
- Demonstrate specific competence in a variety of operational aspects, adopt innovative teaching methods and plan progressive education.
- To train for both practical and theoretical knowledge of every phase within the Industry.

Eligibility: UG Program

A pass in Higher Secondary Examination conducted by Govt of Tamil Nadu or an Equivalent Examination.

Duration of UG Program:

The course shall extend over a period of three years comprising of six semesters, with two semesters per year. There shall not be less than ninety instructional days during each semester. Examination shall be conducted at the end of each semester for the respective subject.

Vision:

Developing individuals with multifaceted personality, focusing on individual skills and professional competence. Build their scope of career to suit the dynamically growing Hospitality sector as motivated professionals and industry oriented specialists.

Mission:

To impart high standard of professional knowledge and practice with creative attitude to develop techniques and skills. To bring a better world through education with a dedicated endeavor in the hospitality industry.

B.Sc CATERING SCIENCE & HOTEL MANAGEMENT
SCHEME OF EXAMINATIONS (CBCS and OBE PATTERN)
For the Candidates admitted during the Academic Year 2019-2020 and onwards

PART	SUBJECT CODE	SUBJECT TITLE	Ins. Hrs. /Week	Ex. Dur. Hrs.	CIA	CE	Total	Credit
					Examinations			
		SEMESTER – I						
I	19HMFR01	Hotel French – I	5	3	30	70	100	3
II	19ENG001	English –I	5	3	30	70	100	3
III	19BHM101	Core 1- Food Production and Patisserie-I	3	3	30	70	100	3
III	19BHM102	Core 2- Food and Beverage Service-I	3	3	30	70	100	3
III	19BHM103	Core 3- Housekeeping Management	3	3	30	70	100	3
III	19BHMP01	Core Practical 1 Food Production and Patisserie -I	3	4	-	-	-	-
III	19BHMP02	Core Practical 2 Food and Beverage Service -I	3	3	-	-	-	-
III	19BHMID1	**IDC 1** : Hospitality Personnel Development	3	3	30	70	100	4
IV	19UFCA01	**Foundation Course I :** EVS #	2	2	-	50	50	2
		Total	30				650	21
		SEMESTER – II						
I	19HMFR02	Hotel French – II	5	3	30	70	100	3
II	19ENG002	English – II	5	3	30	70	100	3
III	19BHM201	Core 4 - Food Production and Patisserie-II	3	3	30	70	100	3
III	19BHM202	Core 5- Food and Beverage Service-II	3	3	30	70	100	3
III	19BHMP01	Core Practical 1- Food Production and Patisserie-I	3	4	40	60	100	4
III	19BHMP02	Core Practical 2 Food and Beverage Service-I	3	3	40	60	100	4
III	19BHMP03	Core Practical 3 Housekeeping Management	3	3	20	30	50	3
III	19BHMID2	**IDC - 2** - Practical's - Computer Applications in Hospitality Industry	3	3	40	60	100	4
IV	19UFCA02	**Foundation Course II:** Value Education #	2	2	-	50	50	2
		Total	30				800	29
		SEMESTER – III						
III	19BHM301	Core 6 - Food Production and Patisserie-III	5	3	30	70	100	3
III	19BHM302	Core 7- Food and Beverage Service-III	4	3	30	70	100	3
III	19BHM303	Core 8- Front Office Operations	3	3	30	70	100	3
III	19BHM304	Core 9 - Bakery and Confectionery	4	3	30	70	100	3
III	19BHMP04	Core Practical 4 Food Production and Patisserie -II	3	4	-	-	-	-
III	19BHMP05	Core Practical 5 Food and Beverage Service -II	3	3	-	-	-	-
III	19BHMID3	**IDC 3** - Hotel Accounting	3	3	30	70	100	4
IV	19BHMSB1/ 19BHMSB2	**SBC - I** Bakery and Confectionary / Cake Icing and Decoration @@	3	4	-	75	75	3
IV	19BTA001/	**EDC1**: BT I/AT I/Communicative Hindi –I	2	2	-	50	50	2

	19ATA001/ 19BHMED1							
		Total	**30**				**625**	**21**
		SEMESTER – IV						
III	19BHM401	Core 10 - Food Production and Patisserie-IV	5	3	30	70	100	4
III	19BHM402	Core11- Food And Beverage Service-IV	4	3	30	70	100	4
III	19BHMP04	Core Practical **4** Food Production and Patisserie -II	3	4	40	60	100	4
III	19BHMP05	Core Practical **5** Food and Beverage Service -II	3	3	40	60	100	4
III	19BHMP06	Core Practical **6** Front Office Operations	3	3	20	30	50	3
III	19BHME01/ 02/03	Elective - I (Food Service Facilities and Planning / Food Preservation **/** Food Safety Microbiology)	4	3	30	70	100	4
III	19BHMID4	**IDC 4** - Travel and Tourism	3	3	30	70	100	4
IV	19BHMSB3/ 19BHMSB4	**SBC-II** Garde Manger /Indian Sweets and Snacks @@	3	4	-	75	75	3
IV	19BTA002/ 19ATA002/ 19BHMED2	**EDCII:** BT II/AT II/ Communicative Hindi -II	2	2	-	50	50	2
V	19NCC001/ 19NSS001/ 19SPT001/ 19EXT001	NCC / NSS / Sports / Extension Activity @	-	-	-	50	50	2
		Total	**30**				**825**	**34**
		SEMESTER – V						
III	19BHM501	Core 12 - Food Production and Patisserie-V	5	3	30	70	100	4
III	19BHM502	Core13- Food and Beverage Service-V	4	3	30	70	100	4
III	19BHM503	Core14- Food and Beverage Management	4	3	30	70	100	3
III	19BHMP07	Core Practical **7** Food Production and Patisserie-III	6	4	40	60	100	4
III	19BHMP08	Core Practical **8** Food and Beverage Service -III	6	3	40	60	100	4
III	19BHME04/ 05/06	Elective - II Fast Food Operations/Hotel Law/ Human Resource Management in Hospitality Industry	5	3	30	70	100	4
		Total	**30**				**600**	**23**
		SEMESTER – VI						
III	19BHMPR1	Core - 15 - Industrial Exposure Training Report - Viva- Voce	-	3	40	60	100	12
		Total					**3600**	**140**

@ No Continuous Internal Assessment (CIA) only Comprehensive Examination (CE) IDC – Inter Disciplinary Course, EDC – Extra Disciplinary Course, AOC - Application Oriented Course # No Continuous Internal Assessment (CIA), only Comprehensive Examination (CE for candidates admitted from the Academic year 2020-2021 onwards.

Program Outcome (PO)

After completion of the Program the graduates will be able to

PO 1. Understand the fundamentals of Hospitality Industry, Food production operations, Food

and Beverage Service, Housekeeping and Front office operations.

PO 2. Apply professional skills required for the Hospitality Industry.

PO 3. Utilise knowledge acquired for superior performance and value to customers.

PO 4. Obtain operational and supervisory positions within the Hospitality sector such as Hotels,

Resorts, Cruise lines, Restaurants and Catering establishments.

PO 5. To run their own business entity.

Program Specific Objectives (PSO)

PSO 1. To acquire knowledge in the hospitality domain to excel in professional career and social life.

PSO 2. To adapt to evolving changes in real time professional career.

PSO 3. To demonstrate professional competence in the operational areas of the Hospitality Industry.

List of Skill Based Papers

Sem	Code	Subject Title	Credits
		SBP: I	
III	19BHMSB1	Practical - Bakery and Confectionary	3
III	19BHMSB2	Practical - Cake Icing and Decoration	3
		SBP: II	
IV	19BHMSB3	Practical - Garde Manger	3
IV	19BHMSB4	Practical - Indian Sweets and Snacks	3

List of Elective Papers

Sem	Code	Subject Title	Credits
Elective: I			
IV	19BHME01	Food Service Facilities and Planning	4
IV	19BHME02	Food Preservation	4
IV	19BHME03	Food Safety Microbiology	4
Elective: II			
VI	19BHME04	Human Resource Management in Hospitality Industry	4
VI	19BHME05	Hotel Law	4
VI	19BHME06	Fast Food Operations	4

List of Additional Credit Papers

Sem	Code	Subject Title	Credits
III	19BHMAC1	Event management	2
IV	19BHMAC2	Computer Applications in Hospitality Industry (Theory)	2
V	19BHMAC3	Hotel Engineering and Maintenance	2

Summary of the Program

Part	No of Papers	Total Credits	Total Marks
I - Hotel French	2	6	200
II - English	2	6	200
III - Core	15	52	1300
III – Core Practical	8	36	900
III – IDC	4	16	400
III – Elective	2	8	200
IV – Foundation Course	2	4	100
IV – SBC	2	6	150
IV – EDC	2	4	100
V- NSS /NCC / Sports / Ext.Activity	-	2	50
Total	**39**	**140**	**3600**

REGULATIONS FOR B.SC CATERING SCIENCE AND HOTEL MANAGEMENT

(Effective from the Academic Year 2019-2020 and onwards)

1. Submission of Record Note Books for practical examinations

Candidates appearing for practical examinations should submit bonafide record note books prescribed for practical examinations, otherwise the candidate shall not be permitted to appear for the practical examinations.

Practical examinations shall be conducted with one internal examiner and one external examiner and the question paper for practical examination shall be set by both Internal and External examiners.

2. Ratio of Comprehensive Examination, Pre- Model and Model Examinations Marks for B.Sc (Catering Science and Hotel Management) Degree Course.

Part	Internal Assessment	External Assessment	Total Marks
I (Hotel French)	30	70	100
II (English)	30	70	100
III(Core, IDC)	30	70	100
III(Core Practical)	40	60	100
III(Core Practical)	20	30	50
IV (SBC)	-	75	75
IV (EDC/Foundation Course)	-	50	50
V (NCC/NSS/Sports/Ext. Activity)	50	-	50

3. Distribution of Internal Mark for Theory:

S. No	Internal Marks	Distribution of Marks
1	Pre Model Examination	70
2	Model Examination	70
3	Seminar	30
4	Attendance	10
	Total	**180/6=30**

04. Seminar Split up (Maximum 30)

S.NO	Seminar split up	Marks
1	Content	10
2	Flow of the presentation	10
3	Stage management and Body language	10
	Total	**30**

5. Attendance Break up

S.NO	Attendance split up	Marks
1	65% to 74%	4
2	75% - 80%	6
3	81% - 90%	8
4	91% - 100%	10

6. Distribution of Internal Marks for Practical (Maximum 40)

	Maximum Marks : 40	
S No	Internal Marks	Distribution of Marks
1	For Completion of the Practical List	20
2	Test –I	10
3	Test –II	10
	Total	**40**

7. Distribution of External Mark for Practical (Maximum 60)

	Maximum Marks : 60	
S. No	Comprehensive Examination	Distribution of Marks
1	Record	10
2	Experiment (Minimum one menu)	50
	Total	**60**

8. Distribution of External Marks for Practical (Maximum 75)

	Maximum Marks : 75	
S. No	Comprehensive Examination	Distribution of Marks
1	Record	15
2	Experiment	50
	Total	**75**

9. Distribution of Internal Mark for Practical (Maximum 20)

	Maximum Marks : 60	
S. No	Internal Marks	Distribution of Marks
1	For Completion of the Practical List	15
2	Test –I	5
	Total	**20**

10. Distribution of External Marks for Practical (Maximum 30)

Maximum Marks : 75		
S. No	Comprehensive Examination	Distribution of Marks
1	Record	10
2	Experiment	20
	Total	**30**

11. Distribution of Internal for IET (Maximum 40)

S. No	Maximum Marks : 40	
	Internal Marks	Distribution of Marks
1	Review –I	10
2	Final Review	10
3	Training Log Book	20
	Total	**40**

12. Distribution of External Marks for IET (Maximum 60)

S. No	Maximum Marks : 60	
	External Marks	Distribution of Marks
1	Report	40
2	Viva Voce	20
	Total	**60**

13. Pattern of Question Paper

For Pre model Test, Model and Comprehensive Examination under – Graduate Courses.

Maximum Marks : 100 / Time 3 Hrs			
Section – A	(20×1=20)	Each question carries one mark	Twenty Multiple Choice Questions
Section – B	(8×5=40)	Each question carries five marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 75 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×5=25)	Each question carries five marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 70 / Time 2 Hrs			

Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×4=20)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 50 / Time 2 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×3=15)	Each question carries three marks	Internal Choice
Section – C	(5×5=25)	Each question carries five marks	Internal Choice

Note:

1. The questions should be numbered continuously running through the Sections A, B and C.

2. Questions should be evenly distributed among the unit in the syllabus in all the sections of the Question paper

3. While framing questions with internal choice the questions must be identified as (a) or (b). (e.g 11. a or b). Further, the internal choice must be from the same unit.

4. The Controller of the Examinations shall arrange for the setting of question papers on the basis the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies

14. The board of Catering Science and Hotel Management is offering non major certificate course for all UG programs excluding Catering Science and Hotel Management department students from the academic year 2019-2020 onwards under Outcome Based Education.

15. List of Extra Departmental Courses

Sl.No	Semester	Subject Title
1	III	Indian sweet and snack – I
2		Fast food and snacks
3		Vegetable carving
4	IV	Indian sweet and snack – II
5		Confectionery and cake
6		Cookies and cakes

B.Sc. (Catering Science and Hotel Management) Degree Examination – Syllabus – for candidates admitted during the academic year 2019-2020 onwards
FIRST SEMESTER
PART III : CORE 1 - FOOD PRODUCTION AND PATTISERIE – I

Maximum CIA -30
Maximum CE-70
Total hours: 36

Course Objective:
Enabling students to acquire Theoretical Knowledge in basic cookery, Kitchen organization, Terms used Food Preparation, Methods of mixing food and Methods of cooking food.

Unit-I   (7 Hours)
Introduction to Cookery - Culinary History- Development of the Culinary Art from the Middle Ages to Modern Cookery. Nouvelle Cuisine, Cuisine Minceur. Aims and Objective of Cooking Food. Attitudes and behavior in the kitchen. Food Safety – Three main types of food Contamination (An Introduction). Importance of Personal hygiene. Uniform and protective clothing. Different equipments used in food production (Capital and Operational-Names only). Safety procedure in handling equipment.

Unit-II   (7 Hours)
Hierarchy of kitchen Department - Classical Kitchen Brigade – Duties and responsibilities of each staff. Coordination of kitchen with other departments. Meaning of Main and satellite kitchen. Layout of main kitchen, Commissary kitchen and Receiving area. Cooking fuels - Uses and advantages of different cooking fuels.

Unit-III   (7 Hours)
Preparation of Ingredients: Washing, Peeling and Scraping, Pairing, Cutting (terms used in vegetable cutting, Julienne, Brunoise, Macedoine, Jardinière, Paysanne), Grating, Grinding, Mashing, Sieving, Milling, Steeping, Centrifuging, Emulsification, Evaporation, Homogenization. Combining and Mixing in the Preparation of Food: Beating, Blending, Cutting, Creaming, Folding, Kneading, marinating, Sealing, Stirring, Whipping, and Whisking. Mise en place - meaning. Textures – Definition, Commonly found textures. Weighing and Measuring. Measurements used in the Kitchen: Ounces or Pound to Kilogram and Gram. Recipe Conversion: Increasing or Decreasing a recipe based on an Ingredients or Quantity Required.

Unit-IV   (7 Hours)
Transference of heat to food by Radiation, Conduction and Convection. Methods of cooking food: Moist Method- Boiling, Poaching, Stewing, Braising, Steaming, Dry Heat Method - Baking, Roasting, Grilling, Broiling, Frying. Pot Roasting – Microwave - Magnetron meaning. Principles of each of the above. Care and precautions to be taken selection of food for each type of cooking. Molecular Gastronomy – Introduction.

Unit-V   (8 Hours)
Classification of cooking materials and their uses: 1) Foundation ingredients - Meaning, action of heat on a) Carbohydrates. b) Fats c) Proteins d) Minerals e) vitamins. 2) Fats and oils – Meaning and examples of fats and oils. Hydrogenation of oils, uses of fats and oils, quality for shortenings, commonly used fats and oils, their sources and uses. 3) Raising agents – Functions of raising agents, Chemical, Biological, Mechanical raising agents and

yeast. 4) Eggs – Uses of egg in cooking, characteristics of fresh eggs, deterioration of eggs, storage of eggs, egg preparation. 5) Salt – Uses. 6) Liquid –Water, stock, milk, and fruit juices, etc., uses of a liquid. 7) Flavorings and seasonings – Uses and examples. 8) Sweetening agents – Uses and examples.9) Thickening agents.

Course Outcome:
- To develop basic ethis and skills needed for kitchen course.
- To develop knowledge of kitchen hirerachy and inter departmental relationship.
- To aquire knowledge on terminologies used in methods of preparation.
- To understand the methods of cooking.
- To understand about the various cooking materials and their uses.

Text Books:
1. Krishna Arora "Theory of cookery" 6th Edition" Frank brothers and Company.
2. Parvindar S. Bali "Food Production operation" 2009 Edition – Oxford University Press.

Reference Book:
1. Philip E. Thangam" Modern Cookery" (Vol-I) 5th Edition, Orient Longman, 2009.

B.Sc. (Catering Science and Hotel Management) Degree Examination – Syllabus – for candidates admitted during the academic year 2019-2020 onwards
FIRST SEMESTER
PART III : CORE 2 – FOOD AND BEVERAGE SERVICE –I

Maximum CIA -30
Maximum CE-70
Total Hours: 36

Course Objectives:
Enabling students to acquire theoretical knowledge in Food and Beverage outlets, duties and responsibilities, menu planning and equipments used in service dept.

Unit-I   (8 Hours)
Introduction to catering – Different types of catering establishments. Scope for caterers in the Industry. Relationship of catering industry with other industries. Status of a waiter/waitress in the Catering industry. Attributes of a waiter. Personal hygiene, punctuality, personality, attitude towards guests, appearance, salesmanship and sense of urgency.

Unit-II   (7 Hours)
Staff organization – The principle staff of different types of restaurants, duties and Responsibilities of restaurant staffs. Types of restaurants: overview and key characteristics of Coffee Shop, Continental restaurants, Specialty restaurants, Pubs, Night Clubs, Discotheques, Snack and Milk Bar.

Unit-III   (7 Hours)
Operating Equipments: Classification of crockery, Cutlery, Glassware, Hollow ware and Flat ware. Special equipments – upkeep and maintenance of Equipments.

Unit-IV   (7 Hours)
Ancillary departments: Pantry, still room, silver room, wash-up and hot-plate. Restaurant service: Mise en scene, Mise en place. Points to be remembered while laying a table. Do's and Don'ts in a restaurant. Dummy waiter and its uses during service.

Unit-V   (7 Hours)
Different types of menu: Origin of menu, Table d'hôte Menu, A La Carte Menu, French classical Menu. Planning of simple menus. Food and their usual accompaniments.

Course Outcome:
- To impart knowledge on basic ethics and relationship with in and out of catering industry of Food and Beverage personnel.
- To impart knowledge about staff organization and Food and Beverage outlets.
- To aquire knowledge on operational equipments.
- To develop knowledge about ancillary department and preparation of restaurant service.
- To develop menu knowledge.

Text Books:
1. Food and Beverage Service Training Manual - Sudhir Andrews – Tata Mc Graw –Hill
2. Food and Beverage – R.Singaravelavan – Oxford University.

Reference Books:
1. The Waiter – John Fuller and A.J.Currie – Hutchinson.
2. Modem Restaurant Service. A manual for students and Practitioners – John Fuller – Hutchinson.
3. Food and Beverage Service – Dennis R.Lillicrap and John A. Cousins – ELBS.

B.Sc. (Catering Science and Hotel Management) Degree Examination – Syllabus – for candidates admitted during the academic year 2019-2020 onwards
FIRST SEMESTER
PART : III CORE 3 – HOUSE KEEPING MANAGEMENT – I

Maximum CIA -30
Maximum CE-70
Total hours: 36

Course Objective:
This course aims to establish the important role of Hotel House Keeping within the Hospitality Industry. It also gears the student to acquire skills and knowledge necessary to successfully identify the required standards.

Unit-I   (7 Hours)
Introduction to Housekeeping Department: objective, Types of establishments; Organizational structure of Housekeeping Department (small, medium large); Duties and Responsibilities of House Keeping Personnel. Attributes of Housekeeping Personnel: Contract cleaning – Types of contract cleaning, advantages and disadvantages. Housekeeping controls – purchase procedure, stores / budgets and budgetary control. Functions of Housekeeping Department: Desk control – records, registers, keys – types and control of keys; interdepartmental coordination; guest supplies.

Unit-II   (8 Hours)
Planning of Housekeeping Department: Physical survey; specifications; measurement of space; time(total allowed); number of staff required; plan of work and frequency; method of work and time calculated; work schedules and allocation of duty; inspection – standard of work expected. Cleaning and maintenance of guest rooms/areas: Cleaning equipment (Manual and Electrical) – selection, use, mechanism, care and maintenance. Cleaning agents – Selection, classification, use, care and storage; Composition, care and cleaning of various surfaces (metals, glass, leather, plastic, ceramics, Care and cleaning of wall finishes) Types of guest rooms. Types of cleaning Special cleaning programs, periodical cleaning, spring cleaning, public area. Cleaning; making up of a guest room – occupied room, vacant room, departure room; Turndown service; guest room inspection, neglected areas,(an over view): standard contents of a guest room.

Unit-III   (7 Hours)
Management of linen and uniforms. Classification of linen, sizes, selection criteria for the linen items; activities of the linen room; location, equipment and layout of a linen room (basic rules) purchase of linen/linen hire – quality and quantity; storage and inspection; issuing of linen to floors and departments – procedure and records, stock taking – procedure and records condemned linen. Number of sets, Designing a uniform – functional and aesthetic consideration, layout and planning of a uniform room. (Basic consideration). Safety, security and pest control: Safety and security: Emergencies and dealing with them; lost and found fire prevention and fire fighting. Safety awareness and accident prevention: First aid box procedures. Pest control: Different types of pests found in hotels; areas of infestation; prevention and control of pests.

Unit-IV (7 Hours)

Fabrics and fibers: Definition: classification of fibers – the characteristics and use of each item in the hotel to be explained. Stain removal: Definition, general rules of stain removal, classification of stain removal methods, classification of stains. Laundry: Duties and responsibilities of laundry staffs (laundry manager and shift – in – leader, dry cleaning supervisor, spotter, compressor, laundry clerks, valet runner, laundry attendant) . Importance and principles flow process of industrial laundering. Stages in attendant. Importance and principles flow process of industrial laundering, Stages in wash cycle. Equipment, layout and planning of laundry (basic rules) Role of laundry agents, classification of laundry agents (explain briefly) Dry cleaning guest laundry – services offered, collection and delivering , care in laundering guest articles.

Unit-V (7 Hours)

Interior Design:- Basic elements of art and principles of design. Colour, colour schemes. - Qualities of colour, classification, standard colour, harmonies, factors affecting colour scheme. Role of colour in interior design. - Types of floor and floor finishes and their treatment - Role of accessories in selection - Special consideration of rooms for physically handicapped and disabled - Redecoration and refurnishing of guest rooms. Flower Arrangement: - Principles of flower arrangement - Styles of flower arrangement –Western, Japanese, Free style arrangement-Purpose of flower arrangement - Equipments and materials required. Condition of plant material.

Course Outcome:
- To impart basic ethics and functions of housekeeping department.
- To develop knowledge planning of housekeeping department and cleaning and maintainance of guest room and public area.
- To aquire knowledge on management of linen, uniform, and pest control.
- To delop knowledge on laundry services.
- To aquire knowledge on interior designing.

Text Book:
   1. Sudhir Andrews "Hotel Housekeeping-A Training Manual" 2nd Edition 2010 Tata McGraw-Hill Publishers.

Reference Books:
   1. Hotel, Hostel and Hospital Housekeeping – John C.Branson and Margaret Lennox – Edward Arnold.
   2. Housekeeping Supervision- Jane Fellows – Macdonald and Evans Limited.

B.Sc. (Catering Science and Hotel Management) Degree Examination – Syllabus – for candidates admitted during the academic year 2019-2020 onwards
FIRST AND SECOND SEMESTER PRACTICALS
PART : III CORE PRACTICAL 1 – FOOD PRODUCTION AND PATTISERIE – I

Maximum CIA -40.
Maximum CE-60
Total hours: 72.

Course Objective:
Imparting Professional skills in mis en place, stocks, soups and preparation of Indian and Continental Dishes as per Menu.

1. Demonstration
i) Equipments - Identification, Description, Uses and handling ii) Hygiene - Kitchen etiquettes, Practices and knife handling iii) Safety and security in kitchen
2. Demonstration
 i) Identification of Raw materials. ii) Knife handling Skills. iii) Cuts - Julienne, Jardinière, Macedoine, Brunoise, Pay sane, Mignonette, Dices, Cubes, Shred, Mirepoix, Bouquet garni. iv) Assorted Sandwiches and canapés.
3. Demonstration.
Stock-White and Brown Stock Vegetable Stock, Chicken Stock, beef Stock and Fish Stock
4. Demonstration
Sauces - Basic mother sauces and two derivatives each.
    1. Béchamel 2.Espagnole 3.Veloute 4.Hollandaise 5.Mayonnaise 6.Tomato
5. Menu's (Indian cuisine) to be framed with the following (Five dishes/menu)
Rice (or) Roti (Indian Breads), Egg / Fish, Lamb / Mutton / Chicken, Legumes / Dals, Raitas / Cucumbers, Indian Sweets
6. Menu's (Continental/European cuisine) to be framed with the following (Five dishes/menu)
Salads / Soup, Egg / Fish / Pasta, Main course comprising – Lamb / Mutton / Chicken, Potato preparations (compulsory), Legumes (boiled / steamed / cooked in butter), Savory, Continental sweets (Dessert/Pastries) Hot / Cold

Course Outcome:
   • To develop basic skills on handeling equipments and raw materials.
   • To develop knowledge and skill in framing menu and preparation of basic Indian cusine dishes.
   • To develop knowledge and skill in framing menu and preparation of basic Continental cusine dishes.

Text Books:
    1. Modern cookery VOL I and II Thangam E Philip.
    2. Food Production Operation – Parvindar Bali, Oxford Publications 2009 / 2015.

Reference Book:
    1. Practical Cookery – Kinton. Ceserani.

B.Sc. (Catering Science and Hotel Management) Degree Examination – Syllabus – for candidates admitted during the academic year 2019-2020 onwards
FIRST AND SECOND SEMESTER PRACTICALS
PART : III CORE PRACTICAL 2 – FOOD AND BEVERAGE SERVICE – I

Maximum CIA -40
Maximum CE-60
Total hours: 72

Course Objectives:
Imparting Professional skills in basic Food and Beverage Service.

1. Appraising and drawing of cutlery, crockery, glassware and miscellaneous equipments.
2. Serviette folds.
3. Laying and relaying of table cloths.
4. Cleaning and polishing / wiping of cutlery, crockery and glassware.
5. Carrying a light tray.
6. Carrying a heavy tray.
7. Carrying glasses.
8. Handling cutlery and crockery.
9. Manipulating service spoon and fork.
10. Service of water.
11. Arrangement of sideboard.
12. Table d'hôte cover laying.
13. A la carte cover laying.
14. Practice of simple menu compilation.
15. Receiving the guests, presenting the menu, taking orders.
16. Service of Hors d'oeuvre.
17. Service of soup, fish, and pastas.
18. Service of main course.
19. Service of salads.
20. Service of sweet.
21. Service of Cheese.
22. Service of non – alcoholic drinks, tea, and coffee.
23. Continental breakfast cover and tray set up.
24. English breakfast cover and tray set up.
25. Taking orders through telephone for room service.
26. Changing ashtray during service.
27. Presenting the bill.

Course Outcome:
- To aquire knowledge and apply skills required for handeling operational equipments and tools by food service personel.
- To develop skill on service of various courses of menu.
- To demonstrate skill in handeling guest related service.

Text Books:
1. Book A. Dennis R. Lillicrap "Food and Beverage service" 7th Edition 2006
2. Book B. Sudhir Andrews "Food and Beverage Service Training Manual" Tata McGraw-Hill Publishers – 2009
3. Reference Book:
   1. Food and Beverage – R.Singaravelavan – Oxford University Press

B.Sc. (Catering Science and Hotel Management) Degree Examination – Syllabus – for candidates admitted during the academic year 2019-2020 onwards
FIRST SEMESTER
PART : III IDC 1 – HOSPITALITY PERSONNEL DEVELOPMENT

Maximum CIA -30.
Maximum CE-70
Total hours: 36

Course Objectives:
To develop personality and soft skill for hospitality industry.

Unit-I   (8 Hours)
Self awareness: Meaning of self-awareness' – components –improving self-awareness – benefits of   understanding self. Goal setting: Meaning of goal and goal setting – short term and long term goals – importance of goal settings – choice/selection of setting goals – step for goal setting –SMART Goals.Creativity: Meaning of creativity – difference with innovation – barriers to creativity – step to stimulate creativity – understanding and importance of human values – difference with ethics ideals in life. Become a role model.

Unit-II   (7 Hours)
Interpersonal skill – meaning of interpersonal skill – need to develop interpersonal skills – component of interpersonal skill – techniques required to improve skills – benefit of effective interpersonal skills. Resolving conflict – A smiling face – Appreciative attitude – assertive nature-communication skills – listening skills – developing empathy.Stress Management: Meaning of stress –factors causing stress – positive and negative types of stress – effects of stress on body and mind – stress removal techniques.

Unit-III   (7 Hours)
Time management – what and why of time management – necessity and benefits of time management – tools of time management – how to use time management wisely. Personality Development: Meaning – Personality attributes – characteristics –concept of personality development (Swami Vivekananda concept). Attribute of taking bold decisions – Personality types and Leadership Qualities.

Unit-IV   (7 Hours)
Group Discussion – introduction – Ability to work as a team – Active listening – Nonverbal communication –Reasoning – Ability to influence – Flexibility. Group Discussion types – steps to succeed in a group discussion – Responsibility of first speaker. Guide lines – Dos and Don'ts during a group discussion. Body Language: Introduction – Emotions displayed by Body language – Body language exhibited during different Professional Interactions. The most common Body language – Hand shake. Entry to my space – Personal zone –intimate zone – social zone – public zone.

Unit-V   (7 Hours)
Interviews – introduction – ground work before then interview – dress code – importance of body language in interviews. Communication skills – Introduction – Stimulus and Response – speaking skills – effective speaking guidelines –Pronunciation Etiquette. Curriculum Vitae: Introduction – Difference between a Resume and a CV.

Course Outcome:
- To aquire basic knowledage on self awarnes, creativity and goal setting.
- To aquire knowledage on inter personnel skills.
- To develop a knowledage on time management and personality development.
- To develop knowledage on group discussion and body language.
- To aquire knowledage about interviews and basic ethics on communication skills.

Text Books:
1. Personality Development and Soft Skill - Baurn K. Mitra - Oxford University Press. 2011.
2. Soft Skills for Hospitality – Amitabh Devendra – Oxford University Press.

B.Sc. (Catering Science and Hotel Management) Degree Examination – Syllabus – for candidates admitted during the academic year 2019-2020 onwards
SECOND SEMESTER
PART : III CORE 4 – FOOD PRODUCTION AND PATISERRIE – II

Maximum CIA -30
Maximum CE-70
Total hours: 36

Course Objectives:

Enabling students to acquire theoretical knowledge in basic cookery, methods, organization, stocks and soups and to be successful in basic food production.

Unit-I   (7 Hours)
Vegetables – Classification of vegetables, cooking of vegetables, retention of colour, flavour and nutrients while cooking. Potatoes – Styles of presenting potatoes and their description. Reheating of food – Points observed while reheating.

Unit-II   (7 Hours)
Milk- Introduction, Processing of Milk, Pasteurization – Homogenization, Types of Milk - Skimmed and Condensed. Cream- Introduction, Processing of Cream, Types of Cream. Cheese- Introduction, Processing of Cheese, Types of Cheese, Classification of Cheese, Curing of Cheese and Uses of Cheese. Butter- Introduction, Processing of Butter, Types of Butter. Herbs – Uses of herbs. Salami and sausages – Meaning examples (Names Only). Glace – Meaning and uses. Yoghurt.

Unit-III   (8 Hours)
Fish – Classification with examples, selection and cuts of fish, cooking of fish. Poultry – Selection of poultry and their cuts. Lamb and mutton - Selection and drawing the carcass of Lamb and identification of parts. Pork - Selection and drawing the carcass of pork and identification of parts. Beef - Selection and drawing the carcass of beef and identification of parts.

Unit-IV   (7 Hours)
Hors d'oeuvre – Meaning, types. Example for each type. (No recipe). Salads – Types of salads – simple and compound salads – Examples of Salad dressings. Classification of stocks, and their recipes, Court bullion (Types only no recipes). Classification of soups, meaning of each type with examples (only examples, no recipes).Classification of Sauces – Mother sauces with two derivatives each (Names Only).

Unit-V   (7 Hours)
Masalas - Blending of spices and concept of masalas, Different masalas used in Indian cookery - Wet masalas - Dry masalas. Composition of different masalas, Varieties of masalas available in regional areas. Types of paste used in Indian Kitchen. Modern Garnishes – Edible Flowers and Micro greens, Types of Indian Edible Flowers, Growing Your Own Micro green in the Kitchen, Nutritional Benefit.

Course Outcome:
- To aquire knowledge on vegetable cookery.
- To develop knowledge on dairy products.
- To understand about fish and meat cookery.
- To understand about various basic starters and sauces.
- To understand about Indian masalas and modern garnishes.

Text Books:
1. Krishna Arora "Theory of cookery" 6th Edition" Frank brothers & Company.
2. Parvindar S. Bali "Food Production operation" 2009 Edition – Oxford University Press.

Reference Book:
1. Thangam E Philip." Modern Cookery" (Vol-I) 5th Edition, Orient Longman, 2009.

B.Sc. (Catering Science and Hotel Management) Degree Examination – Syllabus – for candidates admitted during the academic year 2019-2020 onwards
SECOND SEMESTER
PART : III CORE 5 – FOOD AND BEVERAGE SERVICE-II
Maximum CIA -30
Maximum CE-70
Total hours: 36

Course Objectives:
Enabling students to acquire theoretical knowledge in breakfast, types of service, and Control systems.

Unit-I (7 Hours)
Breakfast: Types, menu for each type, terms used in the service of continental breakfast. Cover laying for continental and English breakfast. Order taking procedures: In-person, telephone and door hangers.

Unit-II (7 Hours)
Types of service: Different styles of service, factors influencing each type, table layout for different styles, advantages and disadvantages, styles of service often implemented these days.

Unit-III (7 Hours)
Classification of beverages: Types of beverages, preparation of common non-alcoholic beverages. Examples tea, coffee, milk based drinks, juice, squash and aerated water, other bar non-alcoholic drinks used in dispense and main bar.

Unit-IV (7 Hours)
Billing and Control: Introduction and checking systems. Types of checking – Duplicate and triplicate system, Checking for alcoholic and non alcoholic beverages. The Bill - methods of making bill and settling the account. Tobacco – Major tobacco producing countries of the world, quality of cigars and cigarettes. Strength and size of cigars, service method.

Unit-V (8 Hours)
Cheese – Types and characteristics of English and European cheese, cover and its accompaniments.Savory – types, example for each type, cover laying and its accompaniments. Ice-creams – categories of ice-creams – Sundae, parfait, biscuits, bombes and its cover laying. Sweets – Meaning of bavoroise, mousse, flan, soufflé,custard, jellies, fools. Cover laying, styles of presenting sweets. Dessert – Fruits and nuts – cover and accompaniments.

Course Outcome:
- To understand about breakfast services.
- To recoganize different styles of services.
- To aquire knowledge about non alchoholic beverages.
- To understand about billing and checking and tobacco.
- To aquire knowledge about cheese and sweet courses service procedure.

Text Books:

1. Food and Beverage Service – Dennis R. Lillicrap and John A. Cousins – ELBS.
2. Food and Beverage Service Training Manual - Sudhir Andrews – Tata McGraw-Hill.
3. Food and Beverage – R.Singaravelavan – Oxford University.

Reference Book:
1. Modern Restaurant Service, A manual for students and Practitioners – John Fuller – Hutchinson.

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SECOND SEMESTER PRACTICALS
PART : III CORE PRACTICAL 3 – HOUSEKEEPING MANAGEMENT PRACTICAL

Maximum CIA -20
Maximum CE-30
Total hours: 36

Course Objective:
To learn basic Housekeeping Etiquettes with Procedure, Equipments and its styles.

1. Sample Layout Of Guest Rooms • Single room • Double room • Twin room • Suite
2. Identification Of Cleaning Agents – classification, use and care.
3. Areas Of Cleaning
- Room, Bathroom, Toilet, Washbasin, Bath tub, Sink, Table, Floor, Water closet, Staircase, Corridor, Carpet.
4. Sequence Of Cleaning
- Cob web taking
- Dusting
- Sweeping
- Scrubbing
- Moping
- Carpet Cleaning
- Carpet Shampooing
5. Polishing
- Brassware
- Tiles
- Furniture
6. Situation Handling
- With guest
- With other departments
7. Stain Removal
- Linen items
- Uniform Items
- Floors
- Bathroom
- Toilet
8. Bed Making
- Evening service
9. Flower Arrangement
a) Conditioning of plant materials
b) Different styles of flower arrangements
10. Duty Rota preparation for housekeeping department.

Course Outcome:
- To apply basic skills about areas of cleaning.
- To understand sequence of cleaning.
- To develop skills in stain removal, bed making and flower arrangement.

Text Book:
1. Sudhir Andrews "Hotel Housekeeping-A Training Manual" 2nd Edition 2010 Tata McGraw-Hill Publication.

Reference Book:
1. G.Ragubalan and Smritee Ragubalan "Hotel Housekeeping Operations and Management" , 2nd Edition 2014 Oxford University Press.

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THIRD SEMESTER
CORE – 6 - FOOD PRODUCTION AND PATISSERIE - III

Maximum CIA -30
Maximum CE-70
Total Hours: 60

Course Objectives: Enabling students to acquire theoretical knowledge about Indian cookery, Quantity cooking, basic gravies and regional cookery.

Unit- I   (12 Hours)
Condiments and spices: Introduction to spices used in Indian Cookery - Role of spices in Indian cookery. Quantity food production equipment (Names only), Selection of Kitchen equipment (Suitability, Appearance, Durability and Cost factors only) .Comparison of Institutional and Industrial Catering-Types of establishments (Names only). Outdoor catering work flow– Collection of data - Internal communication – Planning – Checklist for outdoor catering
.
Unit- II   (12 Hours)
Indian breakfast preparation – Dosa, Idiyappam, Idly - Recipes. Basic Indian gravies - white, yellow, Red Gravy, Chettinadu, Green gravy and their recipes, dishes prepared from the above gravies (Names Only). Indian breads- Naan, roti, Parathas, Maki roti and their recipes. Indian rice cooking methods. Objectives of Dhum cooking – pulao, biryani examples (Names Only).

Unit - III   (12 Hours)
Regional cuisines of south India – Kerala-Ingredients, characteristics, festival dishes, Karnataka-Ingredients, characteristics, festival dishes. Andhra Pradesh-Ingredients, characteristics festival dishes, Tamil Nadu-Ingredients, characteristics, festival dishes. (All dishes names only).

Unit- IV   (12 Hours)
Regional cuisines of India – Maharashtra - Ingredients, characteristics, festival dishes. Punjab - Ingredients, characteristics. Festival dishes, Kashmir - Ingredients, characteristics, dishes. Bengal - Ingredients, characteristics, Goa-Ingredients, characteristics, festival dishes. (All dishes names only).

Unit- V   (12 Hours)
Introduction to tandoori cooking, Types of tandoori pot, seasoning of Tandoori pot. Types of Tandoori marination - Curd based, Cream based and Water based (Only Ingredients used for each) – Coloring agents used in Tandoori preparations – Thickening agents used in tandoori preparations, Tenderizing agents used in tandoori preparations. Flavorings, Spices and Aromatic agents used (Examples of any five ingredients). Names of Tandoori dishes (Tandoori Chicken, Chicken Tikka, Boti Kebab, Hariyali Chicken).

Course Outcome:

CO1   To acquire knowledge about Indian Spices, Quantity cooking, Institutional and Industrial Catering.

CO2   To understand the Learning about Indian Breakfast dishes, basic gravies, Indian and Pulaos.

CO3   To understand and learn about Learning the regional cuisines of South India, Ingredients, characteristics, Festival dishes of India

CO4   To acquire knowledge about other regional cuisines of India Ingredients, characteristics, Festival dishes of India

CO5   To acquire knowledge about on Tandoori cooking, Ingredients and Marinations.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L					M		
CO 2	M						M	
CO 3					L	M		
CO 4	M						L	
CO 5				L		M		

Text books:
    1. Quantity Food Production Operations and Indian Cuisine – Parvindar S.Bali – Oxford Publications 2012
    2. Naan and Roti's of India –Puran Phobi

Reference books:
    1. Prashad cooking with Indian masters by J.Indersingh Karla Publisher Allied Publishers.
    2. Modern Cookery Vol – I by Thagam.E.Phillip
    3. Food production operations – Parvindar S.Bali – Oxford Publications. Edition – 2012
    4. Indian Cooking by Madhur Jaffrey

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THIRD SEMESTER
CORE 7- FOOD AND BEVERAGE SERVICE - III

Maximum CIA-30
Maximum CE -70
Total Hours: 48

Course Objective: Enabling students to acquire theoretical knowledge in Alcoholic and Non Alcoholic Beverages.

Unit-I   (10 Hours)
Alcoholic beverage: Meaning, classification of alcoholic beverages. Wines: Meaning, classification of wines production (Red, white, rose sparkling wine production, Aromatized and Herbal wines: Meaning and production factors influencing the quality of the wine.

Unit-II   (10 Hours)
Wines of France: Classification of French wines,   important communes and their wines of Bordeaux, Burgundy, Alsace, Loire and Champagne. Champagne: Importance, production method, styles of champagne and bottle sized - terms. Wines of Germany: Classification of German wines wine producing regions and wines of Germany.

Unit-III   (9 Hours)
Wines of Italy: classification of Italian wines, and wine producing regions. Famous wines of Italy. Spain, Portugal - Regions and famous wines. Production and styles of Sherry, Port, Madeira, Marsala. Wine & food: Wines served with different sources of the meal, suggestions for food & wines pairing. Examples of wines served with: Shell fish, soup, pasta, Fish, Red, and Pink & White meat, Cheese, Sweet and dessert.

Unit-IV   (10 Hours)
Beer: Manufacturing process, types of beer, sizes of draught beer containers, beer mixed drinks. Alcoholic strength calculation methods (Sikes, Gay Lussac and US). Spirit production methods - Pot still and Patent still.

Unit-V   (9 Hours)
Whisky – Types, production of malt & grain whisky. Brandy – production methods, Regions in France - Cognac & Armagnac. Other fruit brandies - Calvados, Applejack, Poire Williams, Kirsch, Slivovitz, Framboise, Marc. Rum - Production and Types. Gin – Production and Styles. Vodka - Productions & types. Tequila - Production and other spirits (Names only).

CO1   To acquire theoretical knowledge of classification of alcoholic beverages and wine production.

CO2   Acquire good knowledge in Classification of French wines and their important, classification of Wines of Germany

CO3 To Acquire knowledge of wines of Italy and their classification. Understand the importance of wine and food pairing with examples.

CO4 Beer manufacturing and calculation of alcoholic percentage.

CO5 Production of Whisky, Brandy, Rum and Vodka and their unique products.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M							M
CO 2				L		M		
CO 3	M					L		
CO 4		L						M
CO 5	M					H		

Text books:
1. Food & Beverage Service – Dennis. Lillicrap & John.A.Cousins – ELBS
2. Food & Beverage Service –R.Singaravelan. Oxford press.

Reference books:
1. Modern restaurant Service – A manual for students and Practitioners – John Fuller – Hutchinson
2. Food & Beverage Service – Dennis. Lillicrap & John.A.Cousins – ELBS
3. Food & Beverage Service Training Manual – Sudhir Andrews – Tata McGraw-Hill
4. The Students Guide to Food and Drink – John Cousins & Andrew Durkan – Hodder &Stoughton
5. Table & Bar – Jeffery Clarke
6. The Beverage Book - John Cousins & Andrew Durkan – Hodder & Stoughton
7. The International Guide to Drinks – United Kingdom Bar tenders Guild.

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THIRD SEMESTER
PART III - CORE 8 - FRONT OFFICE OPERATIONS

Maximum CIA -30
Maximum CE -70
Total hours: 36

Course Objective: This course aims to establish the important role of Front office and its personnel within the Hospitality Industry.

Unit-I   (8 Hours)
Introduction to the hotel industry. Classification of hotels as per location, size, clientele, length of stay. Types of hotels. Room Rates – room rate, rack rate, corporate rate, commercial rate, airline rate, group rate, crib rate, and package plan rate, back to back rate, series rate, government rate, weekend rate, half- day charges. Meal plans – EP, CP, AP, and MAP. Types of hotel guests – pleasure travelers, DFIT, FFIT, CVGR, GIT, SIT, incentive tours, back to back series tours, business travelers. The front office department – Functions and sections and layout of front office department. Organization chart of a front office department (large, medium and small). Attributes and skills of front office staff. Duties of front office personnel – Reservationists, Receptionist, Information Assistant, front office cashier, Bell captain, Bell boy, concierge, Telephone Operator, Guest relations executive, front office manager, lobby manager, Business center coordinators, Night auditor. coordination between front office department with other departments.

Unit-II   (7 Hours)
Equipments used in front office - information rack, alphabetical rack, mail and key rack, computers, billing machines, folio well, Log book. Guest cycle- Reservation - functions of a reservation system, types of reservation – Guaranteed, non – guaranteed, advanced and confirmed. Modes of Reservation enquiry, sources of reservation. The reservation process - importance of reservation, Reservation maintenance – Guaranteed reservation, non- guaranteed reservation, credit card guaranteed, advance deposit, other guaranteed reservations, over- booking, no- shows, group reservations- special details. Registration - Basic check – in procedure– pre – registration, registration records.

Unit-III   (7 Hours)
Check –out procedures- Methods of account settlements- allowances, paid – outs.   Creating a good lasting impression. Updating front office records (room status/ room rack, arrival/ departure register, guest history cards, departure intimation notice). Calculation of house count, room count, percentage of single occupancy, percentage of double occupancy.

Unit-IV   (7 Hours)
Guest relation and social skills: The role of Guest relations officer; types of guest problems; Skills necessary for dealing with problems; solving problems; handling complaints; course of action to take when handling problems; follow up action; telephone handling skills. Information/ bell desk / concierge Functions of the information department; handling guest mail and

messages; registered and insured mail. Lobby hierarchy; duties of the bell desk; luggage handling; running errands; vending stamps; scanty baggage.

Unit-V   (7 Hours)

Functions of front office accounting systems: Guest accounting cycle; the check out procedure; Credit control: Meaning; hotel credit control policy; credit control measures required when receiving reservations; credit control measures at check-ins; credit control measures after guest departure; preventing walk-outs. Cash settlement – local currency, foreign currency, traveler's cheque, personal cheque, bank credit cards; credit settlement; settlement of corporate account; travel agents vouchers. Forecasting: Importance of forecast, how to forecast, useful forecasting data; format of reservation forecast; calculation of reservation forecast (room revenue).

Course Outcome:

CO1   To develop knowledge on types of hotels, rooms, and guest. Understand the attributes of the front office staff.

CO2   To acquire knowledge of reservations and front office equipments used , protocols and procedures in reservations.

CO3   To acquire knowledge on various checkout procedures, types of account settlement and occupancy.

CO4   To develop understanding on Guest relation and social skills and Lobby hierarchy and duties.

CO5   To acquire knowledge on various Front office accounting Systems, guest account cycle and forecasting and its formats.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M					M		
CO 2	L					L		
CO 3	M					M		
CO 4			M			H		
CO 5		M						L

Text book:
1. S.K Bhatnagar "Front Office Management" Frank Bros. & Co. Ltd
2. Hotel Front Office Operations and Management- Jatashankar R.Tewari – Oxford University Press. Edition 2012
Reference books**:**
1**.** Hotel Front Office Operations and Management- Jatashankar R.Tewari – Oxford University Press. Edition 2012
2. SK Kaushal, SN Gautam"Accommodation Operation Management" Frank Bros. & Co
3. "Principles of Hotel Front Office Management, Pam Shiver and Sue Baker.

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THIRD SEMESTER
PART III: CORE 9 - BAKERY AND CONFECTIONERY

Maximum CIA -30
Maximum CE-70
Total Hours: 48

Course Objective: Enabling students to acquire theoretical knowledge in dough, paste, and icing.

Unit-I   (10 Hours)
Raw materials used in bakery – Types of Flour, fat, flavoring agents, sweetening agents and their role. Characteristics of Gluten. Equipments used in bakery, Weight volume equivalent.

Unit-II   (10 Hours)
Bread: Bread making flow chart. Various Bread dough making method. Common faults found in bread - Recipe for plain bread, white and brown, bread. Artisanal Bread –sour dough culture, recipe for sour dough. Methods of mixing Cake - common faults in cakes. Recipe for Genoise sponge, Tea cake and Chocolate Muffins.

Unit-III   (10 Hours)
Types of Icings-Butter cream, Fondant, Royal, Gum Paste (Pastilage), Water (Glace), Fondant icing, American Frosting and difference between Dairy cream and Soy cream (Fresh cream) icing. Petit Fours – meaning, types and materials used for petit fours. Hot and Cold desserts (Names Only). Recipes for caramel custard, queen of pudding, basic soufflé, mousse, bavorois.

Unit-IV   (10 Hours)
Basic pastes, meaning, short crust paste- Sweet short crust paste, Savory short crust paste, Suet short crust paste, Flaky Short crust. Puff paste, choux pastry, recipe for the above. Common Faults in all the above products. Pies meaning, production of pies, rolling of pie dough. Common problems in fruit pies. procedure for making tart shell. Phyllo dishes examples (Names only)

Unit-V   (8 Hours)
Types of meringue and their recipes. Types of cookies – methods of mixing cookies - Common faults and their causes in cookies. Recipe for any two - Chocolate chip, Peanut cookies, Nankhatai. Cooking for special needs – types, gluten free, lactose free, sugar free cooking. Sugar alternatives.

Course Outcome:

CO1   To acquire knowledge about bakery raw materials, weighing and measurements and equipments used.

CO2   To develop knowledge on basic Bread and artisanal bread, various cake mixing procedures and their faults.

CO3   To acquire knowledge about different icings, petit fours and hot and cold desserts.

CO4   To acquire knowledge about different basic pastes and their products reasons and faults.

CO5   To acquire knowledge about types of meringue, cookies and cooking for special needs.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L					M		
CO 2		M						M
CO 3		M						M
CO 4	L					M		
CO 5	M					L		

Text books:
1. Theory of Bakery and confectionary, By Yogambal Ashok kumar, Publisher –Prentice –Hall of India Pvt Ltd, 2010 – reprinted..
2. Krishna Arora ”Theory of cookery” 6th edition” Frank brothers and Company
Reference books:
1. Wayne Gisslen "Professional Baking" John Wiley and sons).
2. Wilfred J.France. F.Inst.BB ”The new International Confectioner” Pub: Virtue and company.

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THIRD AND FOURTH SEMESTER
PART III - CORE PRACTICAL 4: FOOD PRODUCTION AND PATTISERIE-II

Maximum CIA-40
Maximum CE-60
Total hours: 72

Course Objective: This course aims at developing technical skills required to prepare Indian regional and International cuisines.

- Demonstration – Naan, kulcha, roti, chicken tikka, fish tikka, sheek kebab, Tandoori chicken, Hariyali chicken/ fish tikka, tangri kebab.

-Preparation of five course Indian menu consisting of soup, Indian bread, vegetarian, Eggs, Fish, Chicken, Meat, Indian sweets and desserts

- Preparation of five course International cuisine dishes consisting of hot or cold soup, pasta, eggs, fish, chicken, meat, Indian and sweets and Desserts and pastries.

Course Outcome:

CO1   To develop skill and techniques about tandoori cooking.

CO2   To develop skill and techniques in preparation of various tandoori dishes.

CO3   To acquire technical skills on preparation of regional Indian cuisine dishes.

CO4   To acquire technical skills on preparation of International cuisine dishes.

CO5   To develop skill and ability to design and prepare a five course menu.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		M						L
CO 2		M						L
CO 3	M					M		
CO 4	L					L		
CO 5	L					M		

Text books:
1) Thangam E Phillip"Modern Cookery Volume I" 4th Edition 2006, Reprint2015.
2) Quantity Food Production Operations and Indian Cuisine – Parvindar S.Bali – Oxford Publications

Reference book:
1. Naan and Roti's Of India –Puran Phobi
2. Quantity Food Production Operations and Indian Cuisine – Parvindar S.Bali – Oxford
Publications 2011
3. Practical Cookery by Kinton, Ronald; Ceserani, Victor; Foskett, David.

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THIRD AND FOURTH SEMESTER
PART – III CORE PRACTICAL 5 - FOOD AND BEVERAGE SERVICE -II

Maximum CIA-40
Maximum CE -60
Total Hours: 72

Course Objective: Imparting Professional skills in Food & Beverage Service
1. Recollecting I year portions.
2. Enumeration of glassware.
3. Beverage order taking procedure.
4. Service of red wine.
5. Service of white wine.
6. Service of rose wine.
7. Service of Sherry, Port, Madeira and Marsala.
8. Service of sparkling wine.
9. Service of bottled beer, canned beer and draught beer.
10. Service of brandy.
11. Service of whisky.
12. Service of gin.
13. Service of vodka.
14. Service of rum.
15. Service of tequila.
16. Service of aromatized wine.
17. Service of liqueur.
18. Service of liqueur coffee and spirit coffee.
19. Service of aperitifs.
20. Compiling a wine list.
21. Compiling and service of a menu with wine suggestions.

Course Outcome:

CO1 To develop skill and techniques in Service of Alcoholic Beverages.

CO2 To develop skill and techniques in Service of liqueur coffee and spirit coffee.

CO3 To develop skill and techniques in Service of Aperitif

CO4 To develop skill and techniques in Compiling wine list.

CO5 To develop skill and techniques in Service of Wine.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		M				M		
CO 2	H							L
CO 3	H						M	
CO 4		M						L
CO 5			M				M	

Text book:
Food and beverage service –R.Singaravelan – Oxford University Press - 2014

Reference books:
1. Dennis R. Lillicrap "Food and Beverage service" 7th Edition 2006
2. Sudhir Andrews "Food and Beverage Service Training Manual" Tata McGraw-Hill Publishers – 2009

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THIRD SEMESTER
PART III – IDC3 - HOTEL ACCOUNTING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 36

Course Objective: Enabling student to acquire basic accounting knowledge in Hotel Accounting

Unit-1   (6 Hours)
Accounting – definition – objectives and importance – advantages –classification –accounting Vs Book-keeping –accounting concepts and conventions – Journal –Ledger – Journal Vs Ledger

Unit-II   (7 Hours)
Trial Balance –meaning – objectives –preparation of trial balance – Bank reconciliation statement – need – importance – simple problems.

Unit-III   (7 Hours)
Subsidiary books –purchase book – sales book – purchase return book – sales return book – petty cash book – average due date

Unit-IV   (8 Hours)
Final accounts –trading account – profit and loss account – balance sheet –simple adjustments.

Unit-V   (8 Hours)
Department –classification of department in hotels based on revenue – Negotiable forms used in hotel Industry – preparation of income and expenditure account.

Note: Distribution of Marks Theory 40%, Problems 60%

Course Outcome:
CO1   To develop understanding on accounting concepts.

CO2   To develop knowledge on trail balance.

CO3   To acquire knowledge on various books used in hotel accounts department.

CO4   To understand about final accounts.

CO5   To understand about the various departments in hotels based on their revenue generation and preparation of income and expenditure account.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	H					M		
CO 2		M					M	
CO 3		L						M
CO 4		M						M
CO 5		L						M

Text book:

1. T.S Reddy &A.Murthy, Financial Accounting, 2015, Margham Publications, Chennai

Reference books:

1. S.P.Jain & K.L.Narang, Principles of Accountancy, Reprint 2014, Kalyani Publishers, New Delhi.
2. Gupta .R.L, Gupta.V.K, Financial Accounting, Reprint 2013, Sultan Chand & Sons, New Delhi
3. OZi D'cunha Gleson OZi D'Cunha, Hotel Accounting and Financial Control, Dickey enterprises 2002, Mumbai

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THIRD SEMESTER
PART IV SBC- I BAKERY AND CONFECTIONARY PRACTICAL

Maximum CE -75
Total Hours: 36

Course Objective: Imparting Professional skills in Bakery and Confectionery.
Menu consisting of
- Breads-Buns
-Cakes-Sponge
-Icings
-Various Pastes
-Tarts
-Pies
-Puddings
 -pastries
- Cookies.

Course Outcome:

CO1   To acquire professional skills in Bakery and Confectionery.

CO2   To develop professional skills in making Breads, Buns.

CO3   To acquire skill in making Various Pastes, Tarts, and Cookies.

CO4   To develop skill in making , Cakes, Sponges, Icings

CO5   To the skill in making Pies, Puddings, pastries

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		M				M		
CO 2	M							M
CO 3		L				L		
CO 4		L						M
CO 5	M							M

Text book:
Theory of Bakery & confectionary, By Yogambal Ashok kumar, Publisher –Prentice –Hall of India Pvt Ltd, 2010 – reprinted.

Reference book:
Wayne Gisslen "Professional   Baking" John Wiley & sons, Inc

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THIRD SEMESTER
PART IV SBC- I CAKE ICING AND DECORATION

Maximum CE -75
Total Hours: 36

Course Objective: Imparting Professional skills in cake icing and decoration

- – Preparation of various Icings.
- – Stencils.
- – Preparations of paper piping bags.
- – Wedding cake dummies and assembling of cakes.
- – Making of Gum paste flowers.
- – Royale Icing designs.
- – Chocolate Garnishes.
- – Working with fresh creams.
- – Finishing of shape cakes.
- – Working with butter cream.

Course Outcome:

CO1   To demonstrate Skill about Basic Icing making

CO2   To be able to demonstrate Skill in application of different Icings in finished food Products

CO3   To exhibit Skills in making decoration with Different Icing

CO4   To develop skill on various chocolate garnishes.

CO5   To develop skill to work with butter cream.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M					M		
CO 2		L					M	
CO 3				M			M	
CO 4	L							L
CO 5					M	L		

Text book:
Wayne Gisslen "Professional   Baking" John Wiley & sons, Inc
Reference book:
 Theory of Bakery & confectionary, By Yogambal Ashok kumar, Publisher – Prentice – Hall of India Pvt Ltd, 2010 – reprinted.

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FOURTH SEMESTER
PART III - CORE – 10 - FOOD PRODUCTION AND PATTISERIE -IV

Maximum CIA -30
Maximum CE -70
Total Hours: 60

Course Objective: Enabling students to acquire theoretical knowledge of International cuisines and aspects of plate presentations.

Unit-1   (12 Hours)
Chinese cuisine -characteristics, ingredients used, equipments used. Methods of cooking, Recipes for Fried rice and Wonton soup. Sri Lankan cuisine: characteristics, ingredients used, equipments used, Methods of cooking, Dishes with recipes for Ceylon Paratha and Yellow rice. Thai cuisine: characteristics, ingredients used, equipments used, Methods of cooking, Recipes for Satay and Tom yam Soup.

Unit-II   (12 Hours)
Japanese cuisine: characteristics, ingredients used, equipments used, Methods of cooking, Recipes for Vegetarian Sushi and Prawn tempura. Italian cuisine: characteristics, ingredients used, equipments used, Methods of cooking, Recipe for Spaghetti bolognaise and Lasagna.

Unit- III   (12 Hours)
Spanish cuisine: characteristics, ingredients used, equipments used, Methods of cooking, Recipes for Paella and Spanish Tortilla. French cuisine: characteristics, ingredients used, equipments used, Methods of cooking, Recipes for Puree saint Germaine and Ratatouille. Mediterranean cuisine characteristics, ingredients used, equipments used, Methods of cooking, Recipes for Tabuleh and Greek salad.

Unit –IV   (12 Hours)
Scandinavian cuisines: Characteristics, ingredients used, equipments used, Methods of cooking, smorgasbord. United Kingdom cuisine: characteristics, ingredients used, equipments used, Methods of cooking, recipes for Yorkshire pudding, Bread and butter Pudding.

Unit –V   (12 Hours)
Mexican cuisine: characteristics, ingredients used, equipments used, Methods of cooking, Recipes of Salsa and Chicken Quesadillas. Concept of plate presentations - Emerging trends in food presentation. Fusion Cuisine- Characteristics and name of the dishes.(Butter Chicken Pies, pizza dosa, penne Chettinad, Chicken Sausage Samosa)

Course Outcome:
CO1   To acquire knowledge on Chinese cuisine, Sri Lankan cuisine

CO2   To acquire knowledge on Japanese cuisine, Italian cuisine

CO3　To acquire knowledge on Spanish cuisine, French cuisine, Mediterranean cuisine.

CO4　To acquire knowledge on Scandinavian cuisines, United Kingdom.

CO5　To develop knowledge about Mexican cuisine , Plate presentation and Fusion Cuisine.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M					L		
CO 2		L					L	
CO 3				L			M	
CO 4	H						L	
CO 5	M					M		

Text books:
1. Modern Cookery – Vol –I, and Vol –II, By Thangam E Phillips, Orient Longman.
2. International cuisine and food production management – Parvinder S.Bali – Oxford University Press. 2012.

Reference books:
1. The Asian cook book by Charmie Solomon
2. La rouse -Gastronomiqne
3. Theory of catering by Ronald Kinton, Victor Ceserani, and David Fosket.
4. International Cuisine and Food Production Management – Parvindar S.Bali – Oxford University Press.

B.Sc. (Catering Science and Hotel Management) Degree Examination – Syllabus - for candidates admitted from the academic year 2018-2019 and onwards
FOURTH SEMESTER
PART III: CORE-11 FOOD AND BEVERAGE SERVICE - IV

Maximum CIA-30
Maximum CE-70
Total Hours: 48

Course objective: Enabling students to acquire theoretical knowledge in Vermouth, Liqueurs, bar infrastructure, Mixology and bar stocking and control.

Unit- I   (10 Hours)
Vermouth: Types, production & styles. Aperitifs & Digestives (Names). Liqueurs: Meaning, color, flavor & country of origin of Absinthe, Advocate, Abricotine, Anisette, Aurum, Benedictine, Chartreuse, Cointreau, Crème de menthe, crème de mocha, Curacao, Drambuie, Glavya, Goldwaisser, Grand Marnier, Kahlua, Sambuca, Tia Maria, Vander Hum.

Unit-II   (10 Hours)
Types of bar, Parts of bar. Dispense bar: Meaning, glassware and equipment used in the dispense bar. Garnishes and Kitchen Supplies used in dispense bar.

Unit-III   (10 Hours)
Introduction to Mixology. Bar layout & its design. Equipments, Glassware, Ingredients, Bar measurements & Mixology terms. Cocktails- Meaning, Methods of making cocktails, & points to be noted while making cocktails. Service of cocktails, cocktail garnishing, mi-en-place for making cocktails.

Unit-IV   (10 Hours)
Cocktail- Recipes of Whisky, rum, Gin, Brandy, Vodka, Tequila, Champagne based cocktails. Mocktail -   recipes of famous mock tails and Spirit coffee - Irish, Scandinavian, Monk's, Royal, Dutch, Mexican, German, Italian, Caribbean, Calypso, etc. – Recipes.

Unit-V   (8 Hours)
Beverage list - Meaning and important. Method and order of listing and pricing beverages. Stocking of alcoholic beverages and bar control. Cellar inventory.

Course outcome:
 CO1 To acquire theoretical knowledge on Vermouth and Liqueurs.

 CO2 To acquire good knowledge on bar setup and its components.

 CO3 To gain knowledge on Mixology, preparation and its service.

 CO4 To acquire knowledge about Cocktails and Mocktails recipes.

 CO5 To Develop knowledge to prepare the beverage list.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		M				M		
CO 2	L					L		
CO 3	L					M		
CO 4		M						M
CO 5		H				M		

Text book:
Food and Beverage Service –R.Singaravelavan – Oxford University Press 2011.

Reference books:
1. Modern restaurant Service – A manual for students and Practitioners – John Fuller – Hutchinson
2. Food & Beverage Service – Dennis. Lillicrap & John.A.Cousins – ELBS
3. Food & Beverage Service Training Manual – Sudhir Andrews – Tata McGraw-Hill
4. The Students Guide to Food and Drink – John Cousins & Andrew Durkan – Hodder & Stoughton.

B.Sc. (Catering Science & Hotel Management) Degree Examination- Syllabus- For Candidates admitted from 2019-2020 and onwards
FOURTH SEMESTER
PART III - CORE PRACTICAL VI: FRONT OFFICE OPERATIONS

Maximum CIA-40
Maximum CE -60
Total Hours: 36

Course Objective: To enable the students to learn the skills necessary in Front office operations.

1. Basic Check in & Check out procedures.
2. Situation handling and guest complaints.
3. Preparation of Reservation form
4. Preparation of G.R.C.
5. Preparation of C – form
6. Preparation of guest history card
7. Taking Reservation, cancellation & amendments
8. Preparation of Night auditor's report
9. Handling Telephone skills – Hospitality on the line
10. Handling Guest mails
11. Handling Guest messages
12. Handling credit card procedures
13. Reservation procedure, identification of rooms through the use of Conventional and Destiny Charts.
14. Role play of the following staffs Doorman, Bellboy, Receptionist, Information assistant, Cashier.
15. Modes of Bill Settlement.
16. Places of interest in and around Tamilnadu. General awareness about the places of interest in India.
17. General awareness of capitals, currencies and airlines of countries.
18. Front office procedures- scanty baggage, wakeup call procedures, left luggage procedures

Course Outcome:

CO1 To develop basic ethics and skills needed for kitchen course.

CO2 To develop knowledge of kitchen hierarchy and inter departmental relationship.

CO3 To acquire knowledge on terminologies used in methods of preparation.

CO4 To understand the methods of cooking.

CO5 To understand about the various cooking materials and their uses.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1					L		M	
CO 2		M						L
CO 3		H				H		
CO 4		H						M
CO 5		H						M

Text book:
Front Office training Manual - Sudhir Andrews

Reference book:
Front Office Management by Bhatnagar.S.K, Frank Brothers.

B.Sc. (Catering Science & Hotel Management) Degree Examination- Syllabus- For Candidates admitted from 2019-2020 and onwards
FOURTH SEMESTER
PART III - ELECTIVE – 1 FOOD SERVICE FACILITIES AND PLANNING

Maximum CIA-30
Maximum CE-70
Total Hours: 48

Course Objective: Enabling students to acquire theoretical knowledge setting up food service establishment.

Unit-I   (Hours 9)
Food Service Facility Planning: Introduction, Design & Layout Planning: Characteristics, Scope, Objectives, Facilitating production, Materials handling, Space utilization, Maintenance and cleaning, Cost control, Investment in equipment, Labor utilization, Supervision, Flexibility.

Unit-II   (Hours 9)
The planning process: Preliminary planning information, prospectus, commissioning planners, developing the concept, equipment requirements, space requirements, developing preliminary plans, preparation of final plans, preparing specifications, bidding & awarding contracts, constructions. Preparing the prospectus: Importance, customer and user characteristics, development of the menu, service, atmosphere, operational characteristics. The feasibility Study: Importance, market survey, site analysis, cost estimates, operating capital, projected income.

Unit-III   (Hours 10)
Functional Planning: Functions, concepts of flow, functional requirements, receiving, storage, preparation, cooking, baking, serving, dishwashing, pot & pan washing, waste disposal, other requirements. Planning the atmosphere: Atmosphere & mood, color, lighting, acoustics, noise and music, climate control, furnishings, exterior design, advertising & Public relations.

Unit-IV   (Hours 10)
Work place design: Developing work places, work place environment, concepts of motion economy, materials handling, designing safe work places. Equipment requirements: Methods, equipments check list, broilers, griddles, ovens, ranges, steam-jacketed kettles, steamers, ware washing equipments, waste disposals, equipment selection.

Unit-V   (Hours 10)
Space requirements: Introduction, space estimates, total facility size, dining areas, production areas, space calculations, receiving area, storage areas, serving areas, dining areas. Layout facilities: Space arrangement, flow, other criteria for layout, layout configurations, relationship charts for layout, layout guides, layout of storage areas, layout of main cooking areas, layout of preparation areas, layout of serving areas, layout of dishwashing areas.

Course Outcome:
 CO1 To develop knowledge about design and layout planning of a food a facility.

 CO2 To develop knowledge Preliminary planning information and Preparing the

   prospectus to learn about the initial set up

 CO3 To develop knowledge about functional Planning and atmosphere to learn

   about the details in organizing the facility.

 CO4 To acquire knowledge about work place design and Equipment

   requirements.

 CO5 To acquire knowledge about space requirements for various establishments

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M					L		
CO 2				L		L		
CO 3				L		L		
CO 4	M						L	
CO 5				M		H		

Text book:
1. Food service facilities planning; BY Edward A.Kazarian, Second Edition, Published by Van Nostrand Reinhold Company, New York.
Reference books:
1. Food service facilities – Mithra- 1983
2. Hotel Planning and design –Ruth Walter
3. Hotel Facility Planning-Tarun Bansal - Oxfrod Publication-2010

B.Sc. (Catering Science & Hotel Management) Degree Examination- Syllabus- For Candidates admitted from 2019-2020 and onwards
FOURTH SEMESTER
PART III – ELECTIVE - I - FAST FOOD OPERATIONS

Maximum CIA-30
Maximum CE-70
Total Hours: 48

Course Objective: Enabling students to acquire theoretical knowledge on Fast food establishment.

Unit-I   (12 Hours)
Introduction Fast food Operation & management: The Fast Food Business: A Brief History, Types of Operation, Consumer Pattern. Managing Fast food Operation: What is Management, A practical approach Marketing & the control.

Unit-II   (12 Hours)
Social Concern & management: A Few Definitions, Responsibilities in today Fast food Market, off-Hour sale Service to different age group, Changing patterns, Health concern. Food groups Fast Food Nation, Junk food, Super Size Me, Western pattern diet, Chew on this, List of fast food restaurants, Slow Food.

Unit-III   (12 Hours)
Operation: Types of-Equipments, A Guest oriented approach , Method of service, Billing methods, Planning of Menu. Product Control, Cash Control, Role of international popular cuisine in Fast food. Filling stations, Street vendors and concessions Cuisine, Variants.

Unit-IV   (12 Hours)
Selling Techniques: A Service orientation, Establishing Service standards, basic Selling Procedure, Handling service problems, Techniques & strategies

Unit-V   (12 Hours)
Case studies on the following reputed fast foods: History, Products & operating Procedures of McDonald's, Domino's Pizza, Pizza Corner, Pizza Hut.

Course Outcome:

CO1   To develop basic knowledge on Fast food operations History

CO2   To understand the different Concept of Fast food Joints

CO3   To acquire knowledge about equipments, Control measures and types of food.

CO4   To develop knowledge on Selling techniques.

CO5   To explore case studies.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		M				L		
CO 2	M					H		
CO 3		L						M
CO 4		M					L	
CO 5		M				M		

Text book:
Fast food operation and their management- Stephen bell

Reference book:
The Book Counts – By Corrine T.Netzer – 9th Edition

B.Sc. (Catering Science & Hotel Management) Degree Examination- Syllabus- For Candidates admitted from 2019-2020 and onwards
FOURTH SEMESTER
PART III - ELECTIVE I – FOOD SAFETY AND MICROBIOLOGY

Maximum CIA-30
Maximum CE -70
Total Hours: 48

Course Objective: Enabling students to acquire theoretical knowledge on Fast food establishment.

Unit –I   (9 Hours)
Safety : Importance of safety – Accidents from structural inadequacies – Accidents from improper placemen of equipment in spaces – Accidents due to nature and behavior of people at work – Accidents from improper selection, installation, maintenance and storage of equipment – Safety procedure – Training – Safety engineering – Enforcement of safety – Safety education.

Unit –II   (9 Hours)
Introduction to microbiology: Relation of microbiology to hygiene – classification of micro – organisms. Factors affecting the growth of micro – organism. Bacteria: Morphology –size, shape structure, reproduction, beneficial and harmful effect of bacteria. Yeast: Morphology – size, shape, structure, reproduction, beneficial and harmful effect of yeast. Mold: classification – Rhizopus, Mucor, Aspergillus, Penicllium, reproduction.

Unit –III   (10 Hours)
Food hygiene & General hygiene: Introduction – types of food contamination – food contamination in meat, poultry, game, raw vegetables & fruits, cereals, dairy products, fish – shellfishes–destroying micro – organisms in food.

Unit – IV   (10 Hours)
Food – borne infection & diseases: food poisoning by micro – organism. Food intoxication: Botulism – Organism, toxin, foods involved, diseases caused. Prevention of outbreaks. Staphylococcus intoxication – exterotoxin, foods involved prevention of outbreaks. Mycotoxins – Aflatoxin its significance in food. Food infection: Salmonellosis – source of salmonella, foods involved prevention of outbreaks. Clostridium perfringens gastroenteritis – foods involved prevention of outbreaks. Enteropaathogenic Escherichia coli, Shigellosis – effect.

Unit – V   (10 Hours)
Food hygiene regulation: Equipment – requirement for food premises – food safety Act – Offence. Food sanitation, control & inspection: Inspection of drinking water, plant water, sewage water, equipment, cleaning, sanitizing. HACCP: Health analysis – critical control points, health of employees.

Course Outcome:
CO1   To develop understanding about safety perspective

CO2   To understand about various microbes causing contamination

CO3   To understand the importance of food safety in hotel.

CO4   To acquire knowledge on food hygiene relevant to various products.

CO5   To develop understanding about food borne infection, causes of toxicity and fssai regulations

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	M					L		
CO 2		L						H
CO 3		L					M	
CO 4	M				L	L		
CO 5				M				L

Text book:
1. Managing Food Hygiene – Nicholas Johns – Macmillan Publication 1991.
Reference books:
1. Food Microbiology – W.C. Frazier / D.C.Westhoff – McGraw Hill 1978.
2. Catering Management an Integrated Approach – Mohini Sethi, Surjeet Malhan – New Age International.

B.Sc. (Catering Science and Hotel Management) Degree Examination – Syllabus - for candidates admitted from the academic year 2018-2019 and onwards
FOURTH SEMESTER
PART III: IDC 4 -TRAVEL AND TOURISM

Maximum CIA - 30
Maximum CE -70
Total Hours: 36

Course Objectives: To obtain theoretical knowledge on Travel and Tourism sector.

Unit-I   (7 Hours)
Principles of Tourism: Definitions: Tourism, Tourist, Foreign Tourist, Domestic Tourist. Motivations for Tourism. Types of Tourism. Barriers to travel- Forms of Tourism, factor influencing tourism development.

Unit-II   (8 Hours)
Travel Agencies: History and development of travel agencies, Role and functions of Indian and international travel agencies. Thomas cook, American Express, Cox and King. Modern travel agencies. Emerging trends in tourism.

Unit-III   (7 Hours)
Role and function of World tourism organization, Impact of tourism: Cultural, Social, Economical and Ecological aspects. Government role in tourism Government Organizations: Ministry of Tourism and Culture - India Tourism Development Corporation (ITDC), Tamilnadu Tourism Development Corporation (TTDC). Private Organizations: International Air Transport Association (IATA) . Travel Agents Association of India (TAAI).

Unit-IV   (7 Hours)
Emergence of tour operator, package tour, elements in tour Boucher, passenger reservation forms, booking conditions, travelers advise. Passports, function, types, issuing authority, procedure for obtaining passport etc, VISA's: functions, type, issuing authority, procedure for obtaining visa.

Unit-V   (7 Hours)
Role of Communication in Travel, Modern Mass media techniques. Scope of technology in airlines, cruise and railways. Foreign Exchange: Countries and currencies, procedure for obtaining foreign exchange, foreign exchange counters. Global tourism – 2020

Course Outcome:

CO1   To gain knowledge about the types and motivation of travel by learning about the Principles of Tourism

CO2   To learn the functions of travel agents and their role.

CO3   To develop knowledge of the rules and regulations of travel pertaining to government organizations.

CO4   To understand the role of tour operators and travel requirements to travel around the world.

CO5   To develop knowledge on various technology, tourism sectors and handling foreign Currency and acquire information on latest trends.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L					L		
CO 2				L			L	
CO 3	M					M		
CO 4				L		M		
CO 5	M						L	

Text books:
1. Bhatia A.K. - Tourism Development: Principles and Practices, Sterling Publishers, New Delhi, India.
2. Rajeev R Mishra - Managing Hotel Front Office operation, CBD publishers and distributers pvt. Ltd. 2016.

Reference books:
1. Sampada Kumar Swain, Jitendra Mohan Mishra Tourism Principles and practices-2012/ 3rd editon-2015
2. Bhatia .A.K. - International Tourism, Sterling Publishers, New Delhi, India.
3. Kaul. R.N. - Dynamics of Tourism, Sterling Publishers Private Limited, New Delhi, India.
4. Burkhart A. and Medlik S. - Tourism Past, Present and Future, ELBS Publishers, London.
5. Travel Agents and Tourism – Merrisen James
6. Introduction to Tourism – Seth P.N. Sterling

B.Sc. (Catering Science & Hotel Management) Degree Examination- Syllabus- For Candidates admitted from 2019-2020 and onwards
FOURTH SEMESTER
PART IV – SBC II - GARDE MANGER PRACTICAL

Maximum CE -75
Total Hour: 36

Course Objective: To enable the students to learn the art of carving, preparation and presentation of edible garnishes, plate presentation and presentation of cold dishes.

The menu may consist of following.
- Identification of Equipments and Raw materials used in Garde Manger
- Carving from Vegetable - Carving from Fruits.
- Carving from Thermocol and Butter Sculpture.
- Jelly Logo Presentation.
- Preparation of cold egg dishes.
- Preparation of cold chicken dishes.
- Preparation of cold Fish dishes.
- Preparation of cold red meats.
- Plate Presentation- Mirror Presentation-Ice Carving

Course Outcome:

CO1   To develop the ability to identify Equipments and Raw materials used in Garde Manger

CO2   To develop the skill in carving from vegetable, fruits, Thermocol, butter sculpture and Ice block.

CO3   To learn the skill to prepare cold egg, chicken and red meats dishes and prepare plate and mirror presentation

CO4   To be able to design cold food as per customer needs in hotel.

CO5   To develop skill in handling Hot and Cold food with focus on temperature modifications.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		L						M
CO 2		M						M
CO 3		H						L
CO 4		M						L
CO 5				L				L

Text books:

 1. The Larder Chef – M.J.Letto – Butterworth Heinemann.

 2. International cuisine and food production management – Parvindar S.Bali – Oxford University Press -2012.

Reference book:

1. Table Decoration with Fruits and Vegetables. By Angkana Neumayer, Schiffer

2. Theory of cookery- Krishna Arora – Frank Bros-2014Publishing limited, Publication 2010.

B.Sc. (Catering Science & Hotel Management) Degree Examination- Syllabus- For Candidates admitted from 2019-2020 and onwards
FOURTH SEMESTER
PART IV – SBC II - INDIAN SWEETS AND SNACKS PRACTICAL

Maximum CE -75
Total Hours: 36

Course Objective: To enable the students to make various traditional sweets and snacks.

-Demonstration and practical of the following.
-Raw materials, Equipments and tools used in sweet and snack making.
SWEETS
  – Flour based sweets.
  – Vegetable based sweets.
  – Milk based sweets.
  – Nuts based sweets.
  – Fruit based sweets.
SNACKS
  – Flour based snacks.
  – Lentils based snacks.
  – Rice based Snacks.
  – Cereal based snacks.
  – Pulses based snacks.

Course Outcome:

CO1   To develop the ability in making of Indian Milk Sweet.

CO2   To develop skills in making of Indian sweets with Various Raw Materials

CO3   To be able making of Indian Snack made with different raw materials

CO4   To make famous south Indian sweets.

CO5   To make famous south Indian snacks.

CO/PO & PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1		L						M
CO 2		M						M
CO 3		H						L
CO 4		M						L
CO 5				L				L

Text book:
    Modern Cookery – Vol –I, By Thangam E Phillips, Orient Longman - Edition 2012.
of India Pvt Ltd, 2010 – reprinted.

Regulations for B.Sc Costume Design and Fashion
(Effective from the academic year 2019-2020 onwards)

Introduction:

The department of Costume Design and Fashion started the UG Programme in the Academic Year 2016 and the Programme is B.Sc Costume Design and Fashion.

Objective:

Through a series of practical project-led modules, students will gain a sound understanding of the costume design and production processes and have the opportunity to apply their creativity to a range of situations. Students will learn how to analyse and interpret scripts, generate concepts and present their ideas to industry standard.

Eligibility: UG Programme

A pass in any stream in Higher Secondary Examination conducted by State / Central Board of Higher Secondary Education or equivalent examination.

Duration of UG Programme

The course shall extend over a period of three years comprising of six semesters, with two semesters per year. There shall not be less than ninety instructional days during each semester. The programme contains both theory and practical courses. Examination shall be conducted at the end of each semester for the respective subject. Since it is professional programme the students has to attend two internship training at the end of second and fourth semester.

Vision:

- To enable the students to keep pace with the rapid advancements in the Textile Industry by providing an opportunity to obtain an insight into the actual working of the Textile Industry and emerge as a successful entrepreneur.
- To achieve quality professionals by continual improvement.
- To engage students in an exploration of fashion as an art form and a medium of communication and expression.

Mission:

- To inculcate a knowledge in fashion and costume designing with the contemporary practice for the modern world.
- To cultivate creativity, to builds imagination, and directs knowledge that together brings out future fashion leaders.
- To prepare the students with a blend of technical and professional knowledge and skills in the field of Textiles and Fashion.

Program Outcome

The graduates will be able to
PO 1: Attain the core value in their respective area to meet out the global competitive edge.
PO 2: Apply and update their skills towards their employability, entrepreneurship and its sustainability.
PO 3: Realize their responsibilities towards the society centre through ethical, social and human values.
PO 4: Recognize the opportunities towards their up gradation and professional development in all spheres.
PO 5: Ensure the quality in terms of all the aspects by the way of their contribution in work atmosphere.

Program Specific Outcomes

After completion of the Programme the graduates will be able to

PSO 1: Procreate exhaustive, conception merchandise avail oneself of their break through knowledge of new technology and traditional craft. Capability to promote their artistic personal design perception.

PSO 2: Identify problems, assume challenges and conceptualize solutions in extant fashion schemes.

PSO 3: Conspire across restraint as a team leader, efficient member and ingenious designer, aesthetics and creativity.

COSTUME DESIGN AND FASHION BOARD
SCHEME OF EXAMINATION (CBCS AND OBE PATTERN)
For the Candidates admitted during the academic year 2019-2020
Programme B.Sc Costume Design and Fashion

Part	Sub Code	Subject Title	Ins. Hrs/Week	Dur.Hrs.	CIA	CE	Total	Credit
		SEMESTER I						
I	19LATA01/ 19LAHI01/ 19LAMY01/ 19LAFR01	Language- I Tamil I/Hind I/Malayalam I/French I	5	3	30	70	100	3
II	19ENG001	English -I	5	3	30	70	100	3
III	19CDF101	Core Paper – I Basics of Apparel Designing	5	3	30	70	100	4
III	19CDFP01	Core Practical – I Basics of Apparel Designing	5	3	25	50	75	3
III	19CDF102	Core Paper – II Fundamentals of Pattern Making	4	3	30	70	100	4
III	19CDFID1	IDC – I Illustration Technique Practical	4	3	25	50	75	3
IV	19UFCA01	Foundation Course I EVS#	2	2	-	50	50	2
		Total	30				600	22
		SEMESTER II						
I	19LATA02/ 19LAHI02/ 19LAMY02 /19LAFR02	Language- II Tamil II/Hind II/Malayalam II/French II	5	3	30	70	100	3
II	19ENG002	English -II	5	3	30	70	100	3
III	19CDF201	Core Paper -III – Sewing Operation System	4	3	30	70	100	4
III	19CDFP02	Core Practical – II- Kids Garment Production	5	4	25	50	75	3
III	19CDF202	Core Paper – IV Fabric Care	3	3	30	70	100	4
III	19CDFID2	IDC – II - Customer Oriented Sketching	6	3	25	50	75	3
IV	19UFCA02	Foundation Course II Value Education#	2	2	-	50	50	2
IV	19CDFPR1	15 days Internship in any Apparel Unit	-	-	-	-	-	-
		Total	30				600	22
		SEMESTER III						
III	19CDF301	Core Paper -V – Indian Historic Costumes and Textiles	4	3	30	70	100	4
III	19CDF302	Core Paper –VI- Fashion Art	5	3	30	70	100	4
III	19CDFP03	Core Practical – III Fashion Art	4	3	25	50	75	3
III	19CDF303	Core Paper- VII- Fiber to Fabric	4	5	30	70	100	4
III	19CDFP04	Core Practical – IV – Fiber to Fabric	5	3	25	50	75	3
III	19CDFID3	IDC – III Fashion and Clothing Psychology	3	3	30	70	100	4
IV	19CDFSB1/ 19CDFSB2	**SBC- I** Basic Draping Practical/ Interior Designing Practical #	3	3	-	75	75	3
IV	19BTA001/ 19ATA001/ 19CDFED1	EDC1:Basic Tamil I /Advanced Tamil I / Fashion Photography #	2	2	-	50	50	2
		Total	30				675	27
		SEMESTER IV						

III	19CDF401	Core Paper –VIII- Fabric Structure and Design	5	3	30	70	100	4
III	19CDFP06	Core Practical – VI Fabric Structure and Design.	3	3	25	50	75	3
III	19CDF402	Core Paper- IX - Textile Processing	4	3	30	70	100	4
III	19CDFP07	Core Practical – VII – Textile Processing	4	3	25	50	75	3
III	19CDFP05	Core Practical –V- Women's Garment Production	5	4	25	50	75	3
III	19CDFID4	IDC – IV- Garment Quality and Cost Control	4	3	25	50	75	3
IV	19CDFSB3/ 19CDFSB4	**SBC - II** Surface Embellishments Practical /Beauty Care #	3	3	-	75	75	3
IV	19BTA002/ 19ATA002/ 19EDC002	EDC 2- Basic Tamil II /Advanced Tamil II / Communicative English #	2	2	-	50	50	2
V	19NCC001/ 19NSS001/ 19SPT001/ 19EXT001	NCC/NSS/Sports/Extension Activity @	-	-	50	-	50	2
IV	19CDFPR2	15 days Internship in any Apparel Processing Unit	-	-	-	-	-	-
		Total	**30**				**675**	**27**
		SEMESTER V						
III	19CDF501	Core Paper –X- Visual Merchandising	6	3	30	70	100	4
III	19CDF502	Core Paper– XI- Computers in the Garment Industry	6	3	30	70	100	4
III	19CDFP08	Core Practical –VIII- Men's Garment Production	8	4	25	50	75	3
III	19CDFP09	Core Practical- IX- Computer Aided Design- I	6	3	25	50	75	3
III	19CDFE01/ 19CDFE02/ 19CDFE03	**Elective I** Functional Clothing / Fashion Promotion / Home Furnishings.	4	3	30	70	100	4
		Total	**30**				**450**	**18**
		SEMESTER VI						
III	19CDF601	Core Paper– XII - Knitting	5	3	30	70	100	4
III	19CDFP11	Core Practical - XI- Knitting	5	3	25	50	75	3
III	19CDFP10	Core Practical –X-Computer Aided Design -II	6	3	25	50	75	3
III	19CDFE04/ 19CDFE05/ 19CDFE06	**Elective II** Apparel Marketing / Apparel Production Management/ Fashion Merchandising and Marketing.	4	3	30	70	100	4
III	19CDFE07/ 19CDFE08/ 19CDFE09	**Elective III** Organization of Garment Unit / Export Analysis and Documentation /Apparel Quality Management.	4	3	30	70	100	4
III	19CDFPR3	PROJECT- Fashion Port folio Presentation	6	3	75	75	150	6
		Total	**30**				**600**	**24**
		Grand Total					**3600**	**140**

No Continuous Internal Assessment (CIA), only Comprehensive Examination (CE)
@ Only Continuous Internal Assessment (CIA), No Comprehensive Examination (CE)
IDC – Inter Disciplinary Course, EDC – Extra Disciplinary Course, SBC – Skill Based Course.

List of Skill Based Courses

Sem	Sub Code	Subject Title
III	19CDFSB1/ 19CDFSB2	Basic Draping Practical/ Interior Designing Practical
IV	19CDFSB3/ 19CDFSB4	Surface Embellishments Practical/ Beauty care

List of Elective Courses

Sem	Elective	Subject Code	Subject Title
V	Elective I	19CDFE01	Functional Clothing
		19CDFE02	Fashion Promotion
		19CDFE03	Home Furnishings
VI	Elective II	19CDFE04	Apparel Marketing
		19CDFE05	Apparel Production Management
		19CDFE06	Fashion Merchandising and Marketing
VI	Elective III	19CDFE07	Organization of Garment Unit
		19CDFE08	Export Analysis and Documentation
		19CDFE09	Apparel Quality Management.

List of Extra Disciplinary Courses

Sem	EDC	Sub Code	Subject Title
III	EDC1	19BTA001/ 19ATA001/ 19CDFED1	Basic Tamil I / Advanced Tamil I / Fashion Photography
IV	EDC 2	19BTA002/ 19ATA002/ 19EDC002	Basic Tamil II / Advanced Tamil II / Communicative English

List of Additional Credit Courses

Sem	Sub Code	Subject Title	CE	Total	Credits
III	19CDFAC1	Retail Management	100	100	2
IV	19CDFAC2	Industrial Technology	100	100	2
V	19CDFAC3	Quality Research	100	100	2

Summary

Part	No of papers	Total Credits	Total Marks
I	2	6	200
II	2	6	200
III – Core	23	80	2000
III - IDC	4	14	350
III - Elective	3	12	300
III- Project	1	6	150
IV – Foundation Course	2	4	100
IV – EDC	2	4	100
IV – Skill Based Course	2	6	150
V Extension Activities	-	2	50
Total	**41**	**140**	**3600**

REGULATIONS FOR BOARD OF B.Sc (CDF)
(Effective from the academic year 2019-2020 onward)

1. Project and viva voce

Each student in the UG final year shall compulsorily undergo project work in the 6th semester. Projects shall be done individually. Project Coordinators shall allocate the project title and to guide for each. Project work shall be done in the Industry specified in the syllabus and project record presentation has evaluated by the External examiner in the college. Viva-voce shall be conducted only in the presence of Industrialists or Academicians. Out of the total of 150 marks,50% of mark shall be allocated for CIA and 50% for CE VIVA VOCE.

2. Submission of Record Note Books for practical examination

Candidates appearing for practical examination shall submit bonafide Record Note Books prescribe for practical examinations. If not the candidates has to submit a bonafide certificate issued by the concerned subject in charge duly signed by the head of the department. In such case, the record marks will not be provided.

3. Distribution of marks
The following are the distribution of marks for Comprehensive Examinations and CIA for Theory and Practical and Project.

Category	Max Marks	Comprehensive Examination		Internal marks	Overall passing minimum (Internal+ CE)
		Max Marks	Passing Minimum		
Theory Paper	100	70	28	30	40
	75	75	30	-	30
	50	50	20	-	20
Practical Paper	75	50	20	25	30
Project	150	75	30	75	60

4. Distribution of Internal Mark for Theory
(No Passing Minimum for CIA)

S.No	CIA	Distribution of Marks
1	Pre Model Examination	70
2	Model Examination	70
3	Seminar	30
4	Attendance	10
	Total	**180/6 (months)=30**

Seminar

S.No	Seminar Split Up	Marks
1	Content	10
2	Flow of the presentation	10
3	Stage management and Body language	10
	Total	**30**

Breakup for Attendance

65%-74%	-4 Marks
75%-80%	-6 Marks
81%-90%	-8 Marks
91%-100%	-10 Marks

5. Distribution of Internal Mark for Practical

Maximum Marks 25		
S.No	CIA	Distribution of Marks
1	For the Completion of the Practical List	15
2	Test - I	5
3	Test-II	5
Total		**25**

6. Distribution of Comprehensive Exam Mark for Practical

Maximum Marks 50		
S.No	Comprehensive Examination	Distribution of Marks
1	Record	10
2	Designing	20
	Construction	20
Total		**50**

7. Distribution of Mark for Project VIVA – VOCE

S.No	CIA	Distribution of Marks
1	Internal	
	Review –I	20
	Review –II	20
	Documentation & Final Review	35
		Total (75)
2	External *	
	Presentation	45
	Viva	30
		Total (75)
Total		**150**

*Marks to be awarded by both External and Internal Examiners.

The distribution of marks among the various components for CIA and CE for theory, practical and project work is given in detail in the respective schemes of examination and regulation of the UG programme, duly passed in their respective board.

8. Pattern of Question Paper

For Pre model, Model and Comprehensive Examination under – Graduate Courses.

Maximum Marks : 100 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×8=40)	Each question carries eight marks	Internal Choice
Section – C	(5×10=50)	Each question carries ten marks	Internal Choice
Maximum Marks : 70 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×4=20)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 75 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×5=25)	Each question carries five marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 50 / Time 2 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×3=15)	Each question carries three marks	Internal Choice
Section – C	(5×5=25)	Each question carries five marks	Internal Choice

Note:

1. The questions should be numbered sequentially and continuously running through the Sections A, B and C. The maximum external marks for theory are 70/75.

2. Questions should be evenly distributed among the unit in the syllabus in all the sections of the Question paper.

3. While framing questions with internal choice the questions must be identified as (a) or (b). (e.g 11. a or b). Further, the internal choice must be from the same unit.

4. The Controller of the Examinations shall arrange for the setting of question papers on the basis of the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies.

9. Conduct of Practical Examination

Practical Examination shall be conduct with one Internal Examiner and one External examiner. The question paper for practical examination shall be set by both Internal and External examiner.

10. Industrial Training

The student has to go for Industrial Training to specified in the syllabus for a minimum period of 15 days at the end of the II and IV Semester and has to submit the Report during the III and V Semester and the Report is adjudicate with External examiners. The results are given as Complete or Incomplete.

11. Certificate Course

In the academic year 2019-2020 we are introducing certificate course on III and IV semester as an interdisciplinary course. The course title is as follows.

S.No	Sem	Subject Title
1		Embroidery
2	III	Fabric Painting
3		Jewelry Making
4		Pot Painting
5	IV	Soft Toy
6		Dream Catcher

B.Sc. Costume Design and Fashion Degree Examination- Syllabus for Candidates admitted from the academic year 2019-2020 Onwards

FIRST SEMESTER
PART III-CORE -I BASICS OF APPAREL DESIGNING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objectives: Identify the basic in apparel design, construction skills and also to prepare for the exciting global apparel industry.

Unit-I   (12 Hours)
Parts and functions of a single needle machine, essential tools – cutting tools, measuring tools, marking tools, general tools, pressing tools, seams and seam finishes – types, working of seams and seam finishes Hems – types, stitches used. Introduction to the field of textiles-classification of fibers- natural, animal and chemical – primary and secondary characteristics of textile fibers.

Unit-II   (12 Hours)
Fullness- definition, types. Darts, tucks, pleats, flares and gadgets, gathers and shirrs, frills or ruffles, flounces, facings – bias facing, shaped facing and decorative facing. Binding – single bias binding, double bias binding.

Unit – III   (12 Hours)
Plackets – definition, characteristics of a good placket, types – inconspicuous placket and conspicuous plackets. Method of constructing the same. Fasteners – conspicuous (Button and button-holes, button loops, button with holes, shank buttons, eyelets and cords). Inconspicuous (press, buttons, hooks and eyes, zips).

Unit – IV   (12 Hours)
Sleeves – definition, types, set-in-sleeves – plain sleeve, puff sleeve, bishop sleeve, bell, circular. Modified armhole – squared armhole. Cap sleeve and Magyar sleeve. Sleeve and bodice combined – raglan, kimono and dolman. Yokes – types, simple yoke, yoke with fullness within the yoke, yoke supporting.

Unit-V   (12 Hours)
Collars – definitions, types, peter pan, scalloped, puritan, sailor, square, rippled, full shirt collar, open collar, Chinese, turtle neck, shawl collar pockets – types – patch pocket, bound pocket, pocket in a seam, front hip pocket.

Course Outcome
• Recognizing the use of tools and equipment for tailoring trade and sewing terminology.
• Manipulate different types of fullness for garment.
• Examine the different types of plackets with the aid of fasteners.
• Generate various styles of sleeves and thus vary in their construction.
• Discriminate the collars an important part of a garment.

Text Books
1. Practical Clothing Construction – Part I and II, Mary Mathews, Cosmic Press, Chennai (1986).
2. New Complete Guide to Sewing, Step-by-Step Techniques for Making Clothes and Home Accessories, Reader's Digest, Updated ed. edition (November 11, 2010).

Reference Books
1. The Complete Book of Sewing New Edition, DK ADULT, Revised edition (August 4, 2003).
2. Textbook of Fabric Science, Fundamentals to Finishing Prentice Hall India Learning Private Limited, Second edition (2016).

B.Sc. Costume Design and Fashion Degree Examination- Syllabus for Candidates admitted from the academic year 2019-2020 Onwards

FIRST SEMESTER
PART III- CORE PRACTICAL-I BASICS OF APPAREL DESIGNING

Maximum CIA: 25
Maximum CE: 50
Total Hours: 60

Course Objectives: Practice the hand – on experience and to inculcate the basic stitching to the students

1. Preparation of samples for seam (any 5)-plain, Top Stitched, Flat fell, piped seam.   (6 Hour)

2. Preparation of samples for seam finishes (any 3) - overcast, Hem, Edge stitched, bound.
(6 Hour)

3. Preparation of samples for fullness-darts, tucks (any 3)-pin, cross, group tucking with scalloped effect.   (6 Hour)

4. Pleats (any 3)-knife, box, kick, gathering by machine, elastic. Ruffles-single, double.
(6 Hour)

5. Preparation of samples for facing and binding-bias facing, shaped facing, binding.   (6 Hour)

6. Preparation of samples for plackets and fasteners-continuous, bound, faced and zipper plackets, button and buttonhole, press button, hook and eye.   (6 Hour)

7. Preparation of samples for sleeves-plain sleeve, puff sleeve (any one type),raglan or cap sleeve.
(6 Hour)

8. Preparation of samples with yoke –simple yoke, yokes supporting fullness, partial yoke
(6 Hour)

9. Preparation of samples for collar – peter pan collar- one piece/ two piece, shirt collar and Chinese collar.   (6 Hour)

10. Preparation of samples for pocket-patch pocket.   (6 Hour)

Course Outcome
- Locate various seams according to the nature of fabric and design
- Demonstrate better skills at controlling sewing machine.
- Discriminate the manual dexterity at hand stitches
- Justify the sewing terminology and its application to garment construction.

Text Book
1. Practical Clothing Construction – Part I and II, Mary Mathews, Cosmic Press, Chennai (1986).
2. Illustrated Guide to Sewing, Garment Construction Paperback by Peg Couch, Fox Chapel Publishing – 1 Apr 2011.

Reference Books
1. The Complete Book of Sewing – DK Publishing, Inc, Betsy Hosegood Dorling Kindersley, 2003.
2. The New Complete Guide to Sewing – A Readers Digest, step- by – step guide, Editors of Reader's Digest, 11-Nov-2010.

B.Sc. Costume Design and Fashion Degree Examination- Syllabus for Candidates admitted from the academic year 2019-2020 Onwards

FIRST SEMESTER
PART III - CORE PAPER-II FUNDAMENTALS OF PATTERN MAKING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 48

Course Objectives: Understanding the existing patterns to enable a garment to fit correctly for the body or an item to meet desired size and fit specifications.

Unit-I   (9 Hours)

Body measurement –importance, preparing for measuring, ladies measurements, boys and men's measurements. Standardizing body measurements –importance, techniques used. Relative length and girth measures in ladies /gentlemen Preparation of fabric for cutting –importance of grain in cutting and construction, steps in preparing the fabric for cutting.

Unit-II   (9 Hours)

Pattern making –method of pattern making – (Drafting and draping), merits and demerits. Types of paper patterns (Patterns for personal measurements and commercial patterns) Principles of pattern drafting. Pattern details, steps in drafting basic bodice front and back and sleeve.

Unit-III   (10 Hours)

Styles created by shifting of blouse darts , adding fullness to the bodice, converting darts to seam and partial yokes and incorporating darts in to seams forming yokes. Fitting - Standards of a good fit, steps in preparing a blouse for fitting, checking the fit of a blouse, solving fitting problems in a blouse.

Unit- IV   (10 Hours)

Pattern alteration –importance of altering patterns, general principles for pattern alteration, common pattern alteration in a blouse. Pattern grading –definition, types, manual and computerized grades, basic front, basic back basic sleeve, basic collar.

Unit-V   (10 Hours)

Pattern layout- definition, purpose, rules in layout, types of layouts for length wise stripped designs, fabric with bold design, asymmetric designs, one way designs. Fabric adjustment- dove tailing and piecing, fabric cutting, transferring pattern marking, stay stitching, ease stitching.

Course Outcome
- Generalize overseas buyer's specification and measurement size chart.
- Practicing on industrial pattern making with highly developed technical skill.
- Interpret on designs with a practical understanding of garment construction
- Grading helps in adapting the size of a pattern to a person's changing body size.
- Evaluate the methods to match material pattern significantly improve processing of garments from intricate pattern fabrics.

Text Book
  1. Zarapker system of cutting –Zarapker. K. R., Navneet Publications Ltd., 2008.
  2. Pattern making for fashion design, Helen, Joseph Armstrong, Pearson education, India.2013.

Reference Books
  1. Professional Pattern Grading for Women's, Men's and Children's Apparel, Jack Handford Bloomsbury Academic, 03-Jan-2003.
  2. Metric Pattern Cutting for Women's Wear, Winifred Aldrich- 2015
  3. Practical clothing construction -part I and part-II Mary Mathews, cosmic press, Chennai (1986).

B.Sc. Costume Design and Fashion Degree Examination- Syllabus for Candidates admitted from the academic year 2019-2020 Onwards

FIRST SEMESTER
PART III - IDC I - IILLUSTRATION TECHNIQUE – PRACTICAL

Maximum CIA: 25
Maximum CE: 50
Total Hours: 48

Course Objectives: Interpretation on fundamental of drawing and its concepts, and encourages the students to discover and develop a unique relationship with all kinds of drawing mediums.

1. Introduction to strokes and shading. Lines and line drawings – object drawing and perspective view drawings, enlarging and reducing motif

(9 Hour)

2. Illustrating pattern details- pockets, sleeves, yokes, skirts, trousers, tops illustrating different type of ornaments and accessories.

(10 Hour)

3. Illustrating details of ruffles, cowls, shirring, smocking, quilting, draping, gathers, pleats, frills and flounces.

(10 Hour)

4. Drawing a stick figure for both normal and fashion figure. Forming a fleshy figure over a stick figure using 10 and 12 heads.

(9 Hour)

5. Dividing the figure into various parts using lines like plumb line, center front line, Princess line, waistline, side seam, armholes, jewel neckline, panty line, bust line practicing the art of creating textures.

(10 Hour)

Course Outcome
- Recognizing to draw a basic figure, adding detail and design.
- Emphasis is given on making quick sketches to identify the human body and clothing
- Prepare human sketches maintaining accurate representation, proportion, tone and depth.
- Practice 9-head proportion, body elements from head to toe and its movement.
- Evaluate freehand modes of drawing, and techniques in relationship to the human body.

Text Books
  1. Basics Fashion Design, Research and Design, Second Edition, Simon Seivewright- 2012.
  2. Fashion Illustration Inspiration and Technique, AnnaKiper F&W Media International, Ltd- 2011.

Reference Books
  1. Fashion Drawing Illustration Techniques for Fashion Designers, Michele Wesen Bryant Laurence King Publishing, 2011.
  2. The Fundamentals of Illustration Second Edition, Lawrence Zeegen AVA Publishing- 2012.

B.Sc. Costume Design and Fashion Degree Examination- Syllabus for Candidates admitted from the academic year 2019-2020 Onwards

SECOND SEMESTER
PART III – CORE PAPER- III SEWING OPERATION SYSTEM

Maximum CIA: 30
Maximum CE: 70
Total Hours: 48

Course Objectives: Indicate the characteristic information about sewing machine and make interactions for real-time control of the industrial sewing process.

Unit-I   (9 Hour)
Sewing Machineries- Classification of sewing machines, parts functions of single Needle machine, over lock machine, bar tacking machine, button Hole making machine, button fixing machine, blind stitching Machine, fabric examining machine. Special attachments, care and maintenance, Common problems and remedies

Unit-II   (9 Hour)
Stitching mechanism- Needles, bobbin and bobbin case, bobbin winding, loops and loop Spreader, upper and lower threading, auxiliary hooks, throat plates, take-ups, tension discs- upper and lower thread tension, stitching auxiliaries, pressure foot and its types, Feed mechanisms - drop feed, differential fed, needle feed, compound feed, unison feed, puller feed.

Unit-III   (10 Hour)
Cutting technology – definition, function, scope. Cutting equipment and tools, vertical reciprocity cutting machine, rotary cutting machine band knife cutting machine, dies cutters.
Spreading - Types of spread, requirement of fabric spreading, methods of spreading, advancement in spreading.

Unit– IV   (10 Hour)
Marking - positioning marking, types of markers, marker planning, requirements of marker planning, method of marker planning – manual marker and computerized maker and its types , efficiency of a marker plan.
Pressing Equipments – purpose, pressing equipments and methods – iron, steam press, steam air finisher, steam tunnel, special types – pleating, permanent press.

Unit – V   (10 Hour)
Sewing federal standards for stitch and stitch classification, federal standards for seam and seam classification, fabric sewability and assessment method. Sewing threads- types, essential qualities of a sewing thread, manufacturing process of cotton and synthetic threads, twisting process.

Course Outcome
- Recognize the techniques of sewing and various types of sewing machine.
- Relate stitching mechanism and many upgraded, technically modified stitching.
- Analyze the cutting technology and types of spreading equipments and tools used.
- Develop knowledge on marker efficiency, marker plan and pressing equipments.
- Appraise the skill on fabric sewability and manufacturing process of sewing threads.

Text Book
1. The Complete Book of Sewing – DK Publishing, Inc, Betsy Hose-good Dorling Kindersley, 2003.

Reference Book
1. The New Complete Guide to Sewing – A Readers Digest, step- by – step guide, Editors of Reader's Digest, 11-Nov-2010.

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SECOND SEMESTER
PART III - CORE PRACTICAL –II KIDS GARMENT PRODUCTION

Maximum CIA: 25
Maximum CE: 50
Total Hours: 60

Course Objectives: Prepare the usage of appropriate textile materials for the development of kids wear, design details and special features for kids as well as to acquire construction and finishing techniques.

Designing, drafting and constructing the following garments for the features Prescribed
List the measurements required and materials suitable, calculate the cost of the garment
Calculate the material required-Layout method or direct measurement Method

1. Bib- Variation in outline shape   (8 Hour)

2. Panty-plain or elastic lined panty   (8 Hour)

3. Jabla- without sleeve, front open (or) Magyar sleeve, back opens   (8 Hour)

4. Knicker- elastic waist, side pockets   (6 Hour)

5. A-Line petticoat- double pointed dart, neck line and arm hole finished with Facing (or) petticoat with gathered waist
                                                                       (6 Hour)
6. Summer frock- with suspenders at shoulder line, without sleeve/collars (or) Angel top with raglan sleeve, fullness at neck line
                                                                       (6 Hour)
7. Yoke frock- yoke at chest line, with open, puff sleeve, gathered skirt (or) frock-with collar, without sleeve, gathered/ circular skirt at waist line (or) Princess Line frock
                                                                       (6 Hour)

8. Baba suit- knicker with chest piece attached (or) Romper   (6 Hour)

9. Shirt- open collar, with pocket   (6 Hour)

Course Outcome
  • Define various details in constructing different styles of bibs and panty.
  • Recognize different styles in preparing jabla and baba suit with soft cotton fabric.
  • Manipulate the details of constructing A-Line petticoat and Summer frock.
  • Experiment various styles in constructing yoke frock.
  • Compare different styles in construction of Knicker and shirt.

Text Book
1. Zarapker system of cutting –zarapker. K.R, Navneet Publications, Ltd 2008.
2. The Complete Book of Sewing New Edition, DK ADULT, Revised edition (August 4, 2003).

Reference Books
1. Professional Pattern Grading for Women's, Men's and Children's Apparel, Jack Handford, Bloomsbury Academic, 03-Jan-2003
2. Metric Pattern Cutting For Children's Wear And Babywear, Winifred Aldrich,A John Wiley & sons Ltd- 2012.
3. Illustrated Guide to Sewing, Garment Construction Paperback by Peg Couch, Fox Chapel Publishing, 1 Apr 2011.

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SECOND SEMESTER
PART III - CORE PAPER –IV FABRIC CARE

Maximum CIA: 30
Maximum CE: 70
Total Hours: 36

Course Objectives: Identify washing of fabrics, detergents, laundry equipments used, finishes and proper use of care label symbols in detail including washing, bleaching, drying, dry cleaning and ironing

Unit-I   (7 Hour)
Water- hard and soft water, methods of softening water. Laundry soaps – Manufacture of soap (Hot process, cold process), composition of soap types of soap, soap less detergents, chemical action, detergent manufacture, advantages of detergents, laundry re-agents.

Unit-II   (7 Hour)
Finishes – Stiffening Agents – Starch (cold water and hot water), other stiffening agents, preparation of starch. Laundry blues, their application.

Unit-III   (7 Hour)
Laundry equipment – for storage, for steeping and Washing – Wash board, suction washer, wash boiler, washing machine. Drying equipments – outdoor and indoor types. Irons and ironing board – types of iron (box, flat, automatic, steam iron). Ironing board – different types.

Unit-IV   (7 Hour)
Principles of washing – suction washing, wash by kneading and squeezing, washing by machine - Process details and machine details. Laundering of different fabrics – cotton and linen, woolens, colored fabrics, silks, rayon and nylon.

Unit-V   (8 Hour)
Special types of Laundry – water proof coats, silk ties, leather goods, furs, plastics, lace. Dry cleaning – using absorbents, using grease solvents. Storing – points to be noted.
Stain removal – food stains, lead pencil, lipstick, mildew, nose drops, paint, perfume, perspiration / mildew, tar, turmeric and kum- kum. Care labels – washing, bleaching, Drying, ironing and different placements of label in garments.

Course Outcome
• Identify the nature of water and fundamentals of soap manufacturing and the raw materials
• Analyze on laundering methods and various stiffing agents.
• Categorize the washing procedures of scrubbing, dipping and rubbing in the water.
• Recognize different fabric cares and in different ways, through labels.
• Interpret on laundering of different clothes and stain removal techniques in the fabric.

Text Book
1. Dress Your Family in Corduroy and Denim, David Sedaris, Abacis little brown book group- 2010.

Reference Books
1. Textbook of Fabric Science Fundamentals to Finishing, Sekhri, Seema, PHI learning Private Ltd- 2016.
2. Functional Finishes for Textiles Improving Comfort, Performance and Protection, Roshan Paul, Wood head publishing- 2014.

B.Sc. Costume Design and Fashion Degree Examination- Syllabus for Candidates admitted from the academic year 2019-2020 Onwards

SECOND SEMESTER
PART III IDC -II CUSTOMER ORIENTED SKETCHING

Maximum CIA: 25
Maximum CE: 50
Total Hours: 72

Course Objectives: Practicing the art of drawing, two-dimensional design, color, beginning with basic studies and continuing throughout the program toward the development of advanced capabilities.

1. Drawing types of ears, heads, hands, legs, eyes, hair styles – men and women.   (14 Hour)

2. Creating illustrations with various garment styles for Men, Women and Children – for casual wear, party wear and sportswear.
   Drawing garments for different seasons – summer, winter, autumn and spring – for Men, Women and Children.   (14 Hour)

3. Drawing the stylized figures of Men, Women and Children and different postures.
                                                                            (14 Hour)
4. Men and Women illustration on the background of party and office, children illustration on the background of party and picnic.   (15 Hour)

5. Analyzing a normal figure into fashion figure –using pictures from Magazines.   (15 Hour)

Course Outcome
• Analyze and experience in drawing the figures.
• Infer croquis quick sketches with fine drawings of clothes.
• Interpret on various fashion figure poses on paper, by understanding.
• Categorize own personal style using a variety of drawing techniques.
• Students discriminate their knowledge in sketching specs, floats, flats and fabric renderings.

Text Books
   1. Basics Fashion Design, Research and Design Second Edition, Simon Seivewright-2012.
   2. Fashion Illustration Inspiration and Technique, AnnaKiper F&W Media International, Ltd- 2011.

Reference Books
   1. Fashion Drawing Illustration Techniques for Fashion Designers, Michele Wesen Bryant, Laurence King Publishing, 2011.
   2. The Fundamentals of Illustration Second Edition, Lawrence Zeegen AVA Publishing- 2012.

B.Sc. (Costume Design and Fashion) Degree Examination- Syllabus for Candidates admitted from the academic Year 2019-2020 onwards
THIRD SEMESTER
PART III – CORE PAPER -V – INDIAN HISTORIC COSTUMES AND TEXTILES

Maximum CIA: 30
Maximum CE: 70
Total Hours: 48

Course Objective:
        To enable the students to gain knowledge about the Indian Historic Costumes and Textiles for ethnic designing

Unit I   (12 Hour)
Beginning of costume, development of dress out of painting, cutting, tattooing. A view on dyed and printed textiles of India-Bandhini, patola, ikkat, kalamkari- Woven textiles of India- Dacca Muslin, Banaras/Chanderi brocades, baluchar, himrus and amrus, Kashmir shawls, silk sarees of kancheepuram.

Unit II   (9 Hour)
Costumes of North India – Maharashtra, Rajasthan, Haryana, Himachal Pradesh, Uttarpradesh, Jammu and Kashmir, Gujarat, Madhyapradesh. Assam, Orissa, Bihar, Mizoram, Tripura, Nagaland, W.Bengal, Sikkim. Punjab

Unit III   (8 Hour)
Costumes and Jewelry of South India- Tamil Nadu, Kerala, Andra Pradesh, Karnataka, Goa. The pallava and chola period, symbolic jewellery of south India, Temple Jewellery of South India

Unit IV   (8 Hour)
North Indian Jewellery –Jewelleries used in the period of Indus valley civilization, Mauryan period, Gupta period, Mughal period, Tribal Jewellery. A brief study of gems and precious stones.

Unit V   (11 Hour)
Traditional Embroideries of India –Origin, embroidery stitches used–embroidery of Kashmir, Philkari of Punjab and Gujarat –Kutch and Kathiawar, embroidery of Rajasthan, Kasuti of Karnataka, chickenkari work of luck now, kantha of Bengal– in all the above- types and colours of fabric/thread used.

Course Outcome:
C01: Gained the knowledge on origin of costume and history of Indian costumes and textiles.
C02: Acquired knowledge on north Indian costumes.
C03: Understands costumes and jewelry of south India.
C04: Gained knowledge on north Indian jewellery
C05: Understands the traditional embroideries of India.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	H							
CO 2			M					
CO 3			H					
CO4			M					
CO 5						L		

Text Books
1. Indian Jewellery–M.L Nigam, Lustre press Pvt Ltd, India.2001.
2. The Costumes and Textiles of Royal India–by Ritu kumar 2006 Hardcover, 344 pages Published July 14th 2006 by ACC Distribution.

Reference Books
1. Costume, Textiles and Jewellery of India: Traditions in Rajasthan Vandana Bhandari From Book Vistas (New Delhi, DELHI, India) Abe Books Seller. 2010.
2. Embroidery from India and Pakistan (Fabric Folios) Paperback by Sheila Paine, Publisher: University of Washington Press 2001.
3. Asian Textile Journal- National Journal.

B.Sc. (Costume Design and Fashion) Degree Examination- Syllabus for Candidates admitted from the Academic Year 2019-2020 onwards
THIRD SEMESTER
PART III-CORE –VI- FASHION ART

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To enable the students to gain knowledge about elements and principles of designs to do fashion sketching.

Unit I   (10 HOUR)
Fashion Designing, Elements of design- Line, Shape or Forms, Column, Size and Texture. Design-Definition and Types- Structural and Decorative design. Requirements of a good structural and Decorative design. Application of structural and Decorative design in a dress.

Unit II   (10 HOUR)
Principles of design- Balance- Formal and informal, Rhythm- through Repetition, Radiation and Gradation, Alternation, Emphasis, Harmony and Proportion, Application of principles of design in a dress.

Unit III   (15 HOUR)
Fashion terminology- Fashion, Style, Fad, Classic, Garment, Apparel, Motif- Narrative, Textile Arts, Visual Arts, Silhouette, Craze, Accessory, Chic, Custom made, Fitted garment, Fashion trend, Fashion show, Forecasting, High fashion, Haute couture, Couture, Couturiers, Avant-garde, Knock off, Pre-a-porter.

Unit IV   (13 HOUR)
Color- Definition, Color theories- Prang color chart and Mussel color system, Dimensions of Color-Hue, Value, and Intensity. Standard color harmonies- Application in dress design, Monochromatic analogous, Complimentary, Split complimentary, Testing triad, Achromatic, Neutral.

Unit V   (12 HOUR)
Designing dresses for unusual figures – becoming and unbecoming for the following figure types. Stout figure, Thin figure, Slender figure, Narrow shoulders, Broad shoulders, Round shoulders, Large bust, Flat chest, Large hip, Large abdomen, Round face, Large face, Small face, Prominent chin and Jaw, Prominent forehead.

Course outcome:

C01: Understands the elements of design and application of structural and decorative design
C02: Understands the principles of design and application of principles on the garment
C03: Gained knowledge on fashion terminology and theories of fashion adoption.
C04: Learnt on colour theories and standard colour harmonies.
C05: Understand the concept on designing dressing for unusual figures and fashion accessories.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1		M						
CO 2							L	
CO 3							M	
CO4				H				
CO 5				M				

Text Books
1. Fashion Sketch Book –Bina Abling, Fair Child Publications, New York Wardrobe.2012.
2. Strategies for Women –Judith Rasband, Delmar publishers London.2001

Reference Books
1. Inside the Fashion Business- Heannette a Jarnow et-al, macimilan Publishing Company, New York.2002.
2. Art and Fashion in Clothing Selection –Mc Jimsey and Harriet, Iowa State University Press, Jowa.2012
3. Femina, Women's era, Vogue-National Magazine.

B.Sc. (Costume Design and Fashion) Degree Examination- Syllabus for Candidates admitted from the Academic Year 2019-2020 onwards
THIRD SEMESTER
PART III-CORE PRACTICAL-III FASHION ART

Maximum CIA: 25
Maximum CE: 50
Total Hours: 48

Course Objective:

        To enable the students to gain practical knowledge about application of elements of designs and principles of design to fulfill the fashion sketching work.

1. Prepare the following Charts   (4 HOUR)
    a. Prang color chart
    b. Value Chart
    c. Intensity Chart
2. Illustrate garment designs for the Elements of Design   (5 HOUR)
    a. Line
    b. Color
    c. Texture
    d. Shape or form
    e. Size
3. Illustrate garment designs for the Principles of Design   (9 HOUR)
    a. Balance in dress
    b. Harmony in dress
    c. Emphasis in dress
    d. Proportion in dress
    e. Rhythm in dress
4. Illustrate the color harmony in dress design   (10 HOUR)
    a. Monochromatic color harmony
    b. Analogous color harmony
    c. Complimentary color harmony
    d. Double complementary color harmony
    e. Split complementary color harmony
    f. Triad color harmony
5. Application of color and principles of design in dress   (10 HOUR)
    a. Harmony through color
    b. Emphasis through color
    c. Proportion through color
    d. Rhythm through color
    e. Balance through color

6. Designing for Unusual Figures   (10 HOUR)
    a. Stout & Thing figure
    b. Narrow & Broad Shoulder
    c. Flat hip & Round Face
    d. Small face & Large Abdomen
    e. prominent Forehead.

Course Outcome:

C01: Gained knowledge on prang colour chart
C02: Learnt to illustrate elements of design in a garment
C03: Learnt to illustrate principles of design in a garment
C04: Understands the usage of colours in a garment
C05: Understands to apply colours in principles of design, designing made-up.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1						M		
CO 2				H				
CO 3							L	
CO4								M
CO 5								

Text Books
1. Fashion Sketch Book – Bina Abling, Fair Child Publications, New York Wardrobe.2012.
2. Strategies for Women – Judith Rasband, Delmar publishers London.2001.

Reference Books
1. Inside the Fashion Business- Heannette a Jarnow et-al, Macimilan Publishing Company, New York. 2002.
2. Femina, Women's era, Vogue-National Magazine.
3. Home Textile views – National Magazine.

B.Sc. (Costume Design and Fashion) Degree Examination- Syllabus for Candidates admitted from the Academic Year 2019-2020 onwards
THIRD SEMESTER
PART III- CORE - VII- FIBER TO FABRIC

Maximum CIA: 30
Maximum CE: 70
Total Hours: 48

Course Objective:

To enable the students to gain basic knowledge about the various fibers and its fabric formations

Unit I   (9 HOUR)
Introduction to the Field of Textiles-Classification of fibers - Natural and Man-Made. Natural fibers – cotton, linen, jute, pineapple, Banana, Flex, Hemp, silk, wool, ramie, Bamboo

Unit II   (10 HOUR)
Process flow, Properties and End use of Manmade fibers-Viscose rayon, Acetate rayon, Nylon, Polyester, Acrylic, Elastomeric. Spandex, Tensile, Model and Micro Nano Fibre"

Unit III   (10 HOUR)
Yarn classification-Definition, classification- Spinning-Definition, Spinning-Blending, Opening, Cleaning, Doubling, Carding, Drawing, Roving, Spinning. Spinning Methods, Classification-chemical and mechanical Manufacturing process-open end, Ring, Wet & Dry, Air jet & Water Jet.

Unit IV   (10 HOUR)
Classification- Basic weaves-Plain, Twill, Satin. Fancy weaves-pile, Double cloth, Leno, Swivel, Dobby and Jacquard.

Unit V   (9 HOUR)
Types and Application of Non woven's- Felting, Fusing, Bonding, Lamination, Netting, Braiding and Calico, Tatting and Crocheting.

Course Outcome:

C01: Gained ample of information on spinning and process flow in spinning mills.
C02: Understands the fiber and its classifications
C03: Gained knowledge on yarn formation.
C04: Understands various types of weave patterns.
C05: Acquired knowledge on non-woven's.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	H							
CO 2		H						
CO 3							M	
CO4				M				
CO 5			L					

Text Books
1. Textiles- Fibre to fabric, corbmann B.P, International student's edition, Mc Graw Hill Book Company, Singapore 1985.
2. Introduction to Textile Fibres H. V. Sreenivasa Murthy 2015 by WPI Publishing

Reference Books
1. Fabric Science 10th Edition by Allen C. Cohen, Ingrid Johnson, Joseph J. Pizzuto. 2011
2. Handbook of Technical Textiles edited by A R Horrocks and S C Anand, Wood head publication limited.2000.
3. Indian Journal of Fibre and Textile Research.

B.Sc. (Costume Design and Fashion) Degree Examination- Syllabus for Candidates admitted from the academic Year 2019-2020 onwards
THIRD SEMESTER
PART III-CORE PRACTICAL – IV – FIBER TO FABRIC

Maximum CIA: 25
Maximum CE: 50
Total Hours: 60

Course Objective:

To enable the students to gain practical knowledge about identification of different fibers, yarns and fabrics through tests.

Identification of Textile fibers
  Fibers-Cotton, Silk, Wool, Nylon, Polyester, Linen, Rayon, Jute.   (6 HOUR)
1. Microscopic method.
2. Flame test.
3. Chemical test.
Testing of yarns/fabrics.
  1. Counting of the yarn using warp reel.   (6 HOUR)
2. Counting of the yarn using Beasley's balance.   (6 HOUR)
3. Twist of the yarn using twist tester.   (6 HOUR)
4. Determining the weight of the fabric.   (6 HOUR)
5. Determining the fabric count by   (6 HOUR)
   a. Raveling method.
   b. Pick Glass method.
6. Rubbing/ Crocking (Wet & Dry) Method.   (6 HOUR)
7. Color fastness to water.   (6 HOUR)
8. Test of Shrinkage.   (6 HOUR)
9. Test of Absorbency.   (3 HOUR)
10. Tensile Strength   (3 HOUR)

Course Outcome:

C01: Understands to identify natural and manmade fibres through microscopic method, natural and manmade fibers through flame test, natural and man made fibres through chemical test, yarn counting through warp reel, yarn counting through Beasley's balance.
C02: Understands to identify twist of yarn using twist tester, weight of the fabric through quadrant balance, fabric count by ravelling and pick glass method, course length and loop length of knitted fabric,
C03: Understands to identify test of shrinkage
C04: Acquired knowledge on test of absorbency.
C05: Acquired knowledge on the tensile strength of the fabric.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1							M	
CO 2					M			
CO 3	H							
CO4		H						
CO 5			H					

Text Books
1. Textiles- Fibre to fabric, corbmann B.P, International student's edition, Mc Graw Hill Book Company, Singapore. 1985.
2. Introduction to Textile Fibres H. V. Sreenivasa Murthy 2015 by WPI Publishing

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1. Fabric Science 10th Edition by Allen C. Cohen, Ingrid Johnson, Joseph J. Pizzuto. 2011
2. Handbook of Technical Textiles edited by A R Horrocks and S C Anand, Wood head publication limited. 2000.
3. Indian Journal of Fibre and Textile Research.

B.Sc. (Costume Design and Fashion) Degree Examination- Syllabus for Candidates admitted from the academic Year 2019-2020onwards
THIRD SEMESTER
PART III - IDC – III - FASHION AND CLOTHING PSYCHOLOGY

Maximum CIA: 30
Maximum CE: 70
Total Hours: 36

Course Objective :
       To enable the students to gain knowledge about fashion, clothing and its psychology towards fashion cycle.

Unit I   (6 HOUR)
Factors influencing Fashion changes-Psychological needs of fashion, Social psychology of fashion, Technological, Economical, Political, Legal and Seasonal influence. Role of costume as a status symbol, Personality and dress, Cloth as sex appeal, Cultural value.

Unit II   (10 HOUR)
Fashion evolution-Fashion cycles, Length of cycles, Consumer groups in fashion cycles-Fashion leaders, Fashion innovators, Fashion motivation, Fashion victim, Fashion followers. Adoption of Fashion Theories- Fashion-Trickle down, Trickle up and Trickle across theory. Fashion forecasting-Market research, Evaluating the collection, Fashion services and Resources(Fashion services, Colour services, Video services, News letter services, Web sites, Directories and References.

Unit III   (10 HOUR)
Visual merchandising of fashion, Types of displays – Window displays, Interior displays, Elements of display – The merchandise, Mannequins and Forms, Props, Signage, L:ighting.
Merchandising presentation- Tools and Techniques-Back drop, Forms, Fixtures.
Fashion show-Definition, Planning, Budgeting, Location, Timings, Selection of models, Collection, Set design, Music preparing, Rehearsal.

Unit IV   (6 HOUR)
Understanding fashion designer-Types-Classicist, Idealist, Influenced, Realist, Thinking poet. Indian Fashion designers-Haute couture- Manish Malhotra Gitanjili kashyap, Hemant Trivedi, J.J. Valaya, James Ferreira, Ritu Kumar, Rohit bal, Ritu Beri, Tarun Tahiliani minimalists-Himanshu and Sonali sattar, Sangeetha chopra,Wendell Rodricks.

Unit V   (4 HOUR)
World fashion centers-France, Italy, America, and Fareast. Contributions of well known designers from France, Italy, America, Britain and Fareast countries, Fashion week

Course Outcome:

C01: Acquired knowledge on factors influencing fashion changes.
C02: Gained the knowledge on fashion cycles,fashion terminologies, forecasting and fashion services and resources.

C03: Gained the knowledge on visual merchandising, merchandising presentation and fashion shows.
C04: Understands on Indian fashion designers.
C05: Acquired knowledge on world fashion centres and more information on fashion week.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1							M	
CO 2							L	
CO 3						H		
CO4					H			
CO 5			M					

Text Books
1. Retail Fashion promotion and advertising-Drake et-al, Macmillan Publications Company, New York.2000.
2. Mind What You Wear: The Psychology of Fashion by Professor Karen J. Pine Kindle Edition 2013

Reference Books
1. Fashion-from concept to consumer-Gini Stephens Frings, 9th edition, Pearson. 2008
2. Inside the fashion business-kitty G.Dickerson 2002.

B.Sc. (Costume Design and Fashion) Degree Examination- Syllabus for Candidates admitted from the academic Year 2019-2020 onwards
THIRD SEMESTER
PART IV -SBC I -BASIC DRAPING PRACTICAL

Maximum CE: 75
Total Hours: 36

Course Objective :

To enable the students to gain practical knowledge about basic draping methods for different parts of the garments.

List of Experiments

1. Introduction to draping and dress forms.   (5 HOUR)
2. Draping basic front and back.   (5 HOUR)
3. Draping yokes, shirt yoke and midriff yoke.   (6 HOUR)
4. Draping collar -Peter pan, Mandarin and shirt collar.   (7 HOUR)
5. Sleeves Types- Plain, Raglon, Kimono.   (6 HOUR)
6. Draping Basic Skirts, Types- Box, Pleated, Circular.   (7 HOUR)

Course Outcome:

CO1:Understands on draping and dressing forms
CO2:Gained knowledge on draping basic front and back.
C03:Understands on draping basic skirts.
C04:Acquired knowledge on draping different types of yokes
C05:Acquired knowledge on draping different types of collar.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	M							
CO 2	H							
CO 3		M						
CO4							M	
CO 5							H	

Text Books
    1. Draping Basic Sally DiMarco Fairchild Books – Bloomsbury. 2009.
    2. Draping for Apparel Design, 3rd Revised edition editor – Helen Joseph Armstrong 2013.
    3. Crawford The Arts of Fashion Draping- Connir Amaden 2018.

Reference Books
    1. The art of fashion Draping-3rd edition Connie Amadon-Crawford, Fairchild Publichers, Newyork. 2010.

B.Sc. (Costume Design and Fashion) Degree Examination- Syllabus for Candidates admitted from the academic Year 2019-2020 onwards
THIRD SEMESTER
PART IV -SBC I- INTERIOR DESIGNING- PRACTICAL

Maximum CE: 75
Total Hours: 36

Course Objective :
To enable the students to gain practical knowledge on Interior designing.

1. Introduction to Home Interior Design and Decoration.   (9 Hour)
a. Fundamental elements of design in 2-D and 3-D.
b. Principles and elements of design.
2. Application of Color Wheel in Interior Design.   (9 Hour)
a. Primary.
b. secondary.
c. tertiary colors.
d. modification of color hues.
3. Application of Design Drawing and Graphics in Office.   (9 Hour)
a. object drawings.
b. Architectural symbols.
c. Interiors and furniture sketching.
4. Application of Furnishings and Arrangements in Living room.   (9 Hour)
a. Lighting.
b. furnishings.
c. window treatment.
d. flower arrangement.

Course Outcome:

C01: Understands on home interior and decoration through principles of design and by 2D and 3D
C02: Gained knowledge on application of colour wheel in interior design.
C03: Gained knowledge on application of design drawing and graphics in office.
C04: Acquired knowledge on application of furnishings and arrangements in living room.
C05: Acquired knowledge on arrangements in living room.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1		M						
CO 2								
CO 3		M				M		
CO4				M			M	
CO 5		H						L

Text Books
    1. Professional Practice for Interior Designers Christine M. Piotrowski.2013.
    2. Interior Design Illustrated Francis D. K. Ching, Corky Binggeli. 2012.
Reference Books
    1. Color in Interior Design CL John Pile, publisher McGraw- Hill Education, 1997
    2. Home Textile views- National magazine.

B.Sc. (Costume Design and Fashion) Degree Examination- Syllabus for Candidates admitted from the academic Year 2019-2020 onwards
THIRD SEMESTER
PART IV -EDC 1-BASIC OF PHOTOGRAPHY

Maximum CE: 50
Total Hours: 24

Course Objective:

To inculcate knowledge and develop the skills involved in photography.

Unit I   (5 HOUR)
Introduction to Photography, Characteristics of light, Camera – Structure and Function of Camera, Exposure –Focusing, Aperture, Shutter speed, Depth of field. Basic shots, Angle, and View. Different styles of Photography – Portrait, Landscape and Documentary.

Unit II   (5 HOUR)
Types of camera, Lens and its function, Types of lenses and their use, Characteristics of lens, Lens speed, Covering power and Other features.

Unit III   (5 HOUR)
Sources of Light –Nature, Artificial and Available. Lighting techniques – Three point lighting. Kinds of light Indoor and Outdoor – Electronic flash and artificial lights, Light meters, Different kinds of filter for B& W and Color photography.

Unit IV   (4 HOUR)
Films, Film speed and Types of film, Papers - Kinds of paper, Developing and Printing. Accessories used in photography.

Unit V   (5 HOUR)
Digital photography, Optical system, Power system, Memory storage, Resolution; Understanding exposure and Controls, Flash and Lighting, Transferring image to PC, File formats, Managing digital pictures.

Course Outcome:

C01:Gained the knowledge on fundamentals of photography

C02:Acquired knowledge on types of camera and its functions

C03:Understands on sources of light ,kids of filter and colour photography.

C04:Acquired knowledge on films and accessories used in photography.

C05:Gained knowledge on digital photography.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1		H						
CO 2	H							
CO 3			M					
CO4	H							
CO 5					H			

Text Books
1. The Basic Book of Photography (Fourth Edition) (Paperback)-by Tom Grimm.

Reference Books
1. Julian Calder, John Garrett The 35 mm Photographer's Handbook, Marshall Editions Limited, London. 1999.
2. Alain Solomon Advertising Photography, American Photographic Publishing and Imprint of Watson Guptill Publication, New York. 1987.

Dave Johnson How to do everything with your Digital Camera, Tata McGrawHill, and New Delhi. 2001.

B.Sc. (Costume Design and Fashion) Degree Examination- Syllabus for Candidates admitted from the academic Year 2019-2020 onwards
FOURTH SEMESTER
PART III - CORE –VIII- FABRIC STRUCTURE AND DESIGN

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To enable the students to gain knowledge about fabric and its formation technique

Unit I   (12 HOUR)
Elements of woven design, Methods of Fabric representation, Draft and lifting plan, Construction of Elementary weaves-plain, Wrap rib, Weft rib, Twill, Modification of twills, Satin and sateen Weaves-their Derivatives.

Unit II   (12 HOUR)
Ordinary and Brighten honey comb, Its modification, Huck a back and its modifications, Crepe, mock and Leno weaves.

Unit III   (12 HOUR)
Extra warp and Extra weft figuring-Single and Two colours, Planting, Backed fabric, Warp and Weft backed fabrics.

Unit IV   (12 HOUR)
Pile fabric-Basic structure, Twill back and sateen back, Weft plush, Terry pile-3 pile, 4 pile, 5 pile and 6 pile, Length density and Fastness of pile.

Unit V   (12 HOUR)
 Double cloth-classification, Self stitched-face to back, Back to face, Stitched double cloth-warp and Centre stitched double cloth.

Course Outcome:

C01: Gained ample of information about weaving and weaving unit.
C02: Understands the various types of weaving patterns.
C03: Acquired knowledge on intricated designed weave patterns
C04: Gained information on pile fabrics.
C05: Gained knowledge on double cloth weaving and stitching.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1		H						
CO 2	M							
CO 3								
CO4				H				
CO 5		M						

Text Books
   1. Textile Design Principles and advances application k Townsend 2011

2. Watson's advanced textile design, Grosichkli Z Newness, Butter worths, London 1989.

Reference Books
1. Fabric structure and design N.Gokarneshan New Age international (p) limited
   Publishers. 2004.
2. Apparel views – National magazine.

B.Sc. (Costume Design and Fashion) Degree Examination- Syllabus for Candidates admitted from the academic Year 2019-2020 onwards
FOURTH SEMESTER
PART III – CORE PRACTICAL – VI - FABRIC STRUCTURE AND DESIGN

Maximum CIA: 25
Maximum CE: 50
Total Hours: 36

Course Objective:

To enable the students to gain practical knowledge about identification of different weaves through understanding of weaves designs, drafts and its peg plans.

Identification of the following weaves Design and Draft a peg plan for the same.
1. Plain weave and its derivatives (warp rib, weft rib).   (3 HOUR)
2. Twill weave-Right hand twill and left hand twill.   (4 HOUR)
3. Satin Weave.   (4 HOUR)
4. Sateen weave.   (4 HOUR)
5. Honey comb weave.   (4 HOUR)
6. Huck a back weaves.   (4 HOUR)
7. Extra warp and weft figuring.   (5 HOUR)
8. Double cloth.   (4 HOUR)
9. Terry pile structures.   (4 HOUR)

Course Outcome:

CO1:Gained the knowledge on analysing plain weave and its derivatives
CO2:Gained the knowledge on analysing twill weave and its derivatives
CO3:Gained the knowledge on analysing satin weave ,sateen weave,terry pile structure
CO4:Gained the knowledge on analysing honey comb weave ,huck a back weave ,
CO5:Gained the knowledge on analysing extra warp and weft figuring ,double cloth.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1		H						
CO 2								H
CO 3				M				
CO4								H
CO 5								H

Text Books
  1. Textile Design Principles and advances application k Townsend 2011
  2. Watson's advanced textile design, Grosichkli Z Newness, Butter worths, London 1989.

Reference Books
  1. Fabric structure and design N.Gokarneshan New Age international (p) limited
     Publishers. 2004.
  2. Apparel views – National magazine.
  3. Woven Textile Design- Book by Jan Shenton, 2014.

B.Sc. (Costume Design and Fashion) Degree Examination- Syllabus for Candidates admitted from the academic Year 2019-2020 onwards
FOURTH SEMESTER
PART III - CORE - IX- TEXTILE PROCESSING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 48

Course Objective:

To enable the students to gain knowledge about textile processing procedure.

Unit I   (4 HOUR)
Preparatory process for Textile Fabrics- flowchart-brief description. Fabric Preparation-Singeing types, Desizing, Scouring, Bleaching of cotton, Mercerizing, Carbonizing of wool, weighting of silk.

Unit II   (8 HOUR)
Dyeing-dyes-classification and properties - Direct, Vat, Reactive, Acid, Basic, Azoic dyes Natural and Herbal dyes-types and Colours commonly used significance of herbal dyes. Stages of dyeing-Fibre, Yarn, Fabric and Garment- Advantages and Limitations.

Unit III   (13 HOUR)
Methods of dyeing - Batch dyeing-winch, Jigger, Padding, package dyeing, Combination dyeing, Machines used and Process involved Fastness properties of fabrics-Laundering, Rubbing, Sunlight.

Unit IV   (15 HOUR)
Printing-Introduction to printing, difference between printing and dyeing, preparation of fabric for printing. Classification- Direct printing, Block printing-Stencil printing- screen printing-Flat Screen and Rotary screen printing, Printing paste, Screen printing process. Discharge printing-Chemicals used, Process involved. Resist printing-Batik printing-Tie and Dye, Other printing methods-Ink jet printing, heat transfer printing, photo printing, Digital Printing

Unit V   (8 HOUR)
Mechanical finishes-Luster-glazed, moiré, schreiner, embossed, drape-crisp and transparent, sizing, weighting, and texture-sheared, brushed, embossed, pleated, flocked, embroider, napped, fulled. Finishes-Classification- Mechanical, Chemical, Enzyme. Importance of Finishes. Functional finishes- Stabilization, anti bacterial, antimicrobial, water repellent, flame retardant, uv protection, wrinkle free finishes. Effluent treatment- Discharge control, recycling of dyed water

Course Outcome:

C01: Gained knowledge in processing of fabric
C02: Acquired knowledge on dyes and its classifications
C03: Understands the types of dyeing methods and machines.
C04: Gained various types of aesthetic finishes to the fabric.
C05: Gained knowledge on printing and its methods.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	H							
CO 2					M			
CO 3						H		
CO4						M		
CO 5		H						

Text Books
1. Textiles-Nineth edition, Sara J Radolph and Anna L Lanford, Prentice hall, New Jersey.2002.
2. Textile processing-JL Smith, Abhishek Publications, Chandigarh. 2003.
3. Textile Processing and Properties: Preparation, Dyeing Finishing and Performance(Textile Science and Technology) by T.L Vigo 2002 1st impression.

Reference Books
1. Textile Chemistry- by Arora publisher Abhishek Publications 2011
2. Textile Processing and Properties, T.L.Vigo Elsevier Science; 2nd impression March 2002.

B.Sc. (Costume Design and Fashion) Degree Examination- Syllabus for Candidates admitted from the academic Year 2019-2020 onwards
FOURTH SEMESTER
PART III - CORE PRACTICAL – VII – TEXTILE PROCESSING

Maximum CIA: 25
Maximum CE: 50
Total Hours: 48

Course Objective:
　　　To enable the students to gain practical knowledge about sample preparation and dyeing methods.

Preparation of samples for processing
- Desizing   (3 HOUR)
- Scouring   (3 HOUR)
- Bleaching   (4 HOUR)
- Mercerizing   (4 HOUR)

Dye the given fabric using suitable dye
- Direct Dye   (2 HOUR)
- Sulphur dyes   (3 HOUR)
- Vat Dyes   (3 HOUR)
- Disperse Dyes   (4 HOUR)
- Reactive Dyes   (2 HOUR)
- Acid Dyes   (2 HOUR)
- Basic Dyes   (2 HOUR)
- Tie and dye   (4 HOUR)
- Natural dyes (any three)   (2 HOUR)
- Block Printing   (2 HOUR)
- Stencil Printing   (2 HOUR)
- Screen printing   (2 HOUR)
- Batik printing   (4 HOUR)

Course Outcome:
C01: Acquired knowledge on preparing samples for textile processing
C02: Acquired knowledge on preparing samples for different types of dyeing and various method of printing
C03: Acquired knowledge on preparing samples printing method.
C04: Acquired knowledge on praparing samples Bleaching.
C05: Acquired knowledge on praparing samples Mercerizing.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	H							
CO 2		H						
CO 3							M	
CO4						H		
CO 5					M			

Text Books
1. Textiles-Nineth edition, Sara J Radolph and Anna L Lanford, Prentice hall, New Jersey.2002.
2. Textile processing-JL Smith, Abhishek Publications, Chandigarh. 2003.

Reference Books
1. Textile Chemistry- by Arora publisher Abhishek Publications 2011
2. Textile Processing and Properties, T.L.Vigo Elsevier Science; 2nd impression March 2002
3. Asian Dyers-National Magazine.

B.Sc. (Costume Design and Fashion) Degree Examination- Syllabus for Candidates admitted from the academic Year 2019-2020 onwards
FOURTH SEMESTER
PART III – CORE PRACTICAL –V- WOMEN'S GARMENT PRODUCTION

Maximum CIA: 25
Maximum CE: 50
Total Hours: 60

Course Objective:
           To enable the students to gain practical knowledge about production of women's garments and also to overcome the practical difficulties.

Designing, drafting and constructing the following garments for the features prescribed
List the measurements required and materials suitable.
Calculate the cost of the garment.
Calculate the material required – Layout method or Direct measurements method.

1. Saree Petticoat-Six panel with decorated bottom.   (5 HOUR)
2. Skirts- Flared/Umbrella with style variations.   (7 HOUR)
3. Blouse- Basic Design/ Princess line/ Single katori/
   Double Katori/ Fashion neck designs   (16 HOUR)
4. Middi Top-Kimono/Ragon, Tulip Sleeve.   (5 HOUR)
5. Lehenga skirt/Lehenga gowns/Variations   (10 HOUR)
6. Salwar / Churithar / Parallels / Bell Bottom.   (5 HOUR)
7. Kammez-with/without slit, With or without flare, With/without opening, With or without panels, with /without yoke, With/without Sleeve and variations, Neck Variation.   (12 HOUR)

Course Outcome:

C01:Gained the practical knowledge on constructing saree petticoat
C02:Gained the practical knowledge on constructing skirts
C03:Gained the practical knowledge on constructing saree blouse
C04:Gained the practical knowledge on constructing middi top
C05:Gained the practical knowledge on constructing lehenga, salwar & kameez.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1		H						
CO 2								H
CO 3				M				
CO4								H
CO 5								H

Text Books
    1. Easy cutting-Juvekar commercial Tailors Corporation pvt 166 Dr.Ambedkar
       Road dadar.1999.
    2. Metric pattern cutting for Women's Wear Hardcover-Import, by Winifred Aldrich 2008.

Reference Books
    1. Zarapker system of cutting-K.R.Zarapker, Navneet publication ltd.2008.
    2. Dress making-smt Thangam Subramanian Bombay Tailoring and Embroidery College,
       32 North park street, Ambattur, Chennai.2009.

B.Sc. (Costume Design and Fashion) Degree Examination- Syllabus for Candidates admitted from the academic Year 2019-2020 onwards
FOURTH SEMESTER
PART III - IDC II - GARMENT QUALITY AND COST CONTROL

Maximum CIA: 25
Maximum CE: 50
Total Hours: 48

Course Objective:
To enable the students to gain knowledge about garment quality and how to control cost based on its quality of production.

Unit I   (9HOUR)
Definition and scope of quality control-establishing merchandising standards-establishing raw material quality control specifications-quality of raw material.

Unit II   (10 HOUR)
Establishing Processing quality specification-training quality control personnel-the quality standard control-quality control inspection, procedures for processing-quality control of finished garments-quality control and government contacts-quality control for packaging, warehousing and shipping-statistical quality control. Sampling plans-industry-wide quality standards.

Unit III   (9 HOUR)
Function of production control – production analysis- quality specifications-qualitative specifications-scope of apparel manufacturing activity-coordinating departmental activities-Distribution of documents and records.

Unit IV   (10HOUR)
Types of control forms-basic production systems-principles for choosing a production system-evaluating production systems-flow process grids for production control-Scheduling calculation, graph methods, Scheduling bundles of varying amounts, mathematical formulas for scheduling-producing many styles simultaneously-producing many styles consecutively in one line.

Unit V   (10HOUR)
Functions of cost control, types of costs and expenses-apparel manufacturing cost categories-sales cost control, purchasing cost control, production cost control, administration cost control-cost ration policies-the manufacturing budget-cash flow controls-standard cost sheet, break even-charts.

Course Outcome:

C01: Gained the knowledge on quality control and standards in the textile industry.
C02: Acquired the knowledge on various specifications, training the quality control personnel, government contacts, packaging and warehousing in the garment industry.
C03: Gained the knowledge on various functions of production control.
C04: Understands the types of control forms.
C05: Learnt on types of cost control and break- even charts.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	H							
CO 2		H						
CO 3						M		
CO4								M
CO 5								H

Text Books
1. Garment Manufacturing Technology 1st Edition Rajkishore Nayak Rajiv Padhye Woodhead Publishing. 2015.
2. Solinger, Jacob, Apparel manufacturing analysis, New York, textiles books. 1961.
3. Garment Manufacturing, Process, practices and technology, Prasanta Sarkar. 2015.

Reference Books
1. Garments Merchandising, Prof. M. A. Kashem-2009.
2. Solinger, Jacob, Apparel manufacturing hand book, analysis principles and Practice,Columbia media corp.1988.

B.Sc. (Costume Design and Fashion) Degree Examination- Syllabus for Candidates admitted from the academic Year 2019-2020 onwards
FOURTH SEMESTER
PART IV - SBC – II SURFACE EMBELLISHMENTS PRACTICAL

Maximum CE: 75
Total Hours: 36

Course Objective:

To enable the students to gain practical knowledge about application of different embellishments in the fabric surface.

Prepare samples for the following.

1. Basic Hand embroidery Stitches-Running stitch, Stem stitch, Back stitch, Chain stitch, Satin stitch, Couching stitch, Herringbone stitch, Button hole stitch, fly stitch, Bullion knot, French knot, Fish bone stitch.   (5 HOUR)
2. Machine Embroidery stitches - Long and short Stitch, Satin stitch, Cord stitch,
Cut work.   (4 HOUR)
3. Traditional Embroidery Stitches.
Phulkari(Punjab), Kutch,(Gujarat) Chikankari, (Luck now),Kasuti (Karnataka),
  Kantha (west Bengal)   (5 HOUR)
4. Appliqué (Machine/Hand)-3 types   (3HOUR)
5. Smocking – Any 3 types   (4 HOUR)
6. Tassels and Fringes   (1HOUR)
7. Belts-any 1 types (Different material)   (1 HOUR)
8. Bows-any 1 types (Different Design)   (1 HOUR)
9. Basic Aari work- chain stitch filling, Bead work – 1 sample, Sequins work-1 sample, Zardosi work-1 sample   (9 HOUR)
10. Mirror work-1 sample   (2 HOUR)
11. Fixing the stones-1 sample   (1 HOUR)

Course Outcome:

C01: Acquired the skill on doing basic embroidery stitches.
C02: Acquired the skill on doing basic machine embroidery stitches, tassels and fringes.
C03: Gained the knowledge on practicing traditional embroidery stitches, belts and its types.
C04: Acquired the skill on practicing appliqué work, bows and its types, bows and its types.
C05:Acquired the skill on practicing smocking work,aari work, mirror work, fixing stone on the fabric.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	H							
CO 2					M			
CO 3	M							
CO4		H						
CO 5				L				

Text Books
1. Indian Jewelry –M.L Nigam, Lustre press Pvt Ltd, India.2001.
2. The Costumes and Textiles of Royal India–by Ritu kumar 2006 Hardcover, 344 pages Published July 14th 2006 by ACC Distribution

Reference Books
1. Costume, Textiles and Jewellery of India: Traditions in Rajasthan Vandana Bhandari From BookVistas (New Delhi, DELHI, India) AbeBooks Seller .2010
2. Embroidery from India and Pakistan (Fabric Folios) Paperback by Sheila Paine, Publisher: University of Washington Press 2001
3. Asian Textile Journal- National Journal.

B.Sc. (Costume Design and Fashion) Degree Examination- Syllabus for Candidates admitted from the Academic Year 2016-2017 onwards
FOURTH SEMESTER
PART IV - SBC II - BEAUTY CARE

Maximum CE: 75
Total Hours: 36

Course Objective:
        To enable the students to gain knowledge about basic steps in process of Beauty care

1. Bleaching.   (4 HOUR)
2. Herbal facial.   (5 HOUR)
3. Threading.   (4 HOUR)
4. Waxing.   (4 HOUR)
5. Hair cut-3 styles.   (5 HOUR)
6. Make up –face makeup, Bridal makeup, party makes up.   (5 HOUR)
7. Nail treatment-Pedicure, Manicure.   (4 HOUR)
8. Massages- Head, Body.   (5 HOUR)

Course Outcome:

C01: Learnt the skill on bleaching
C02: Learnt the skill on herbal facial
C03: Learnt the skill on threading
C04: Learnt the skill on waxing, the skill on hair cut, pedicure and manicure
C05: Learnt the skill on bridal and party makeup, head and body massages.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1		M						
CO 2				M				
CO 3							M	
CO4								M
CO 5								H

Text Books
    1. Body and Beauty care, Dr.Neena Khanna., Pustakmahal Publishers.2002.

Reference Books
    1. Hair and Beauty Government Publications, Postal Trade Section, Langley Freeman
       Design Group. 2000.

All UG Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards

THIRD SEMESTER
CERTIFICATE COURSE – EMBROIDERY

Total hours: 30

Course Objective:
Imparting skills in Embroidery

- Prepare 15 Basic Hand Embroidery
- Prepare 15 State embroidery

All UG Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards

THIRD SEMESTER
CERTIFICATE COURSE – FABRIC PAINTING

Total hours: 30

Course Objective:
Imparting skills in Fabric painting

- Prepare 15 Fabric painting

All UG Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards

THIRD SEMESTER
CERTIFICATE COURSE – JEWELERY MAKING

Total hours: 30

Course Objective:
Imparting skills in Embroidery

- Prepare 15 basic tools
- Prepare 5 Metal Clay Jewelry Making
- Prepare 5 wired for jewelry making
- Prepare 5 Making beaded jewelry

All UG Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards

FOURTH SEMESTER
CERTIFICATE COURSE – POT PAINTING

Total hours: 30

Course Objective:
Imparting skills in Pot Painting

- Prepare 15 Pot Painting

All UG Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards

FOURTH SEMESTER
CERTIFICATE COURSE – SOFT TOY

Total hours: 30

Course Objective:
Imparting skills in Soft Toy

- Prepare 15 Soft Toy

All UG Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards

FOURTH SEMESTER
CERTIFICATE COURSE – DREAM CATCHER

Total hours: 30

Course Objective:
Imparting skills in Dream Catcher

- Prepare 12 Dream Catcher

Introduction:

The department of Visual Communication started the UG Programme in the Academic Year 2016 and the Programme is B.Sc Visual Communication.

Objective

The Vital objective of this programme is to enhance the student creativity towards Visual Communication and enable them to get good jobs in media industries.

Eligibility: UG Programme

A pass in Higher Secondary Examination conducted by State / Central Board of Higher Secondary Education or equivalent examination.

Duration of UG Programme:

The course shall extend over a period of three years comprising of six semesters, with two semesters per year. There shall not be less than ninety instructional days during each semester. Examination shall be conducted at the end of each semester for the respective subject.

Vision:

With the help of state of the art Studio and Media Lab, we are empowering the students to get advance knowledge in Visual Communication.

Mission:

To create better citizens by providing holistic, qualitative, values based education and make them real life problem solvable members of global society.

Programme Outcomes:

After the completion of the under graduate programme in Bachelor of Science (B.Sc Degree), the graduates will be able to

PO1: Attain the core value in their respective area to meet out the global competitive edge.

PO2: Apply and update their skills towards their employability, entrepreneurship and its sustainability.

PO3: Realize their responsibility towards the society centre through ethical, social and human values.

PO4: Recognize the opportunities towards their upgradation and professional development in all spheres.

PO5: Ensure the quality in terms of all the aspects by the way of their contribution in work atmosphere.

Programme Specific Outcomes:

Students in their program of study will exhibit the ability to apply the principles of Visual Communication, including:

PSO1: Utilizing the skills of writing, editing, photography, graphics, design and interactive media.

PSO2: Creatively using appropriate visual tools to professionally communicate important and interesting information in a timely manner to the audience.

PSO3: A better understanding on communication elements and Process. Enable the students to handle still, video camera create graphic and web designs.

VISUAL COMMUNICATION BOARD

SCHEME OF EXAMINATIONS (CBCS AND OBE PATTERN)

For the Candidates admitted during the academic year 2019-2020

Programme: B.Sc Visual Communication

Part	Subject Code	Subject Title	Ins.Hrs/Week	Dur. Hrs.	CIA	CE	Total	Credit
SEMESTER I								
I	19LATA01/19LAHI01/ 19LAMY01/19LAFR01	Language - I Tamil I / Hindi I / Malayalam I / French I	5	3	30	70	100	3
II	19ENG001	English – I	5	3	30	70	100	3
III	19BVC101	Core I - Introduction to Visual Communication	6	3	30	70	100	4
III	19BVCP01	Core Lab I – Fine Art Production	6	3	40	60	100	4
III	19BVCID1	**IDC I:** Writing for the media	6	3	30	70	100	4
IV	19UFCA01	**Foundation Course I**: EVS #	2	2	-	50	50	2
		Total	**30**				**550**	**20**
SEMESTER II								
I	19LATA02/19LAHI02/ 19LAMY02/19LAFR02	Language - II Tamil II / Hindi II / Malayalam II / French II	5	3	30	70	100	3
II	19ENG002	English – II	5	3	30	70	100	3
III	19BVC201	Core II: Media History	6	3	30	70	100	4
III	19BVCP02	Core Lab II – Graphic Arts – Info. design	6	3	40	60	100	4
III	19BVCID2	**IDC II:** Advertising	6	3	30	70	100	4
IV	19UFCA02	**Foundation Course II**: Value Education #	2	2	-	50	50	2
		Total	**30**				**550**	**20**
SEMESTER III								
I	19LATA03/19LAHI03/ 19LAMY03/19LAFR03	Language - III Tamil III / Hindi III / Malayalam III / French III	5	3	30	70	100	4
II	19ENG003	English – III	5	3	30	70	100	4

III	19BVC301	Core III: Communication Theories	5	3	30	70	100	4
III	19BVCP03	Core Lab III: Digital Photography	5	3	40	60	100	4
III	19BVCID3	**IDC III**: Creative Writing	5	3	30	70	100	4
IV	19BVCSB1 / 19BVCSB2	**SBC I**: Web Designing I/ Photojournalism#	3	3	-	75	75	3
IV	19BTA001 / 19ATA001 / 19BVCED1	**EDC I**: BT I / AT I / E-Commerce #	2	2	-	50	50	2
		Total	**30**				**625**	**25**
		SEMESTER IV						
I	19LATA04/19LAHI04/ 19LAMY04/19LAFR04	Language - IV Tamil IV / Hindi IV / Malayalam IV / French IV	5	3	30	70	100	4
II	19ENG004	English – IV	5	3	30	70	100	4
III	19BVC401	Core IV: Television Production Techniques	5	3	30	70	100	4
III	19BVCP04	Core Lab IV: Scriptwriting	5	3	40	60	100	4
III	19BVCID4	**IDC IV**: Media, Society and Culture	5	3	30	70	100	4
IV	19BVCSB3 / 19BVCSB4	**SBC II**: Web DesigningII/ Mobile and SocialMedia Advertising	3	3	-	75	75	3
IV	19BTA002 / 19ATA002 / 19BVCED2	**EDC II**: BT II /AT II /Basics of Sound and Acoustics #	2	2	-	50	50	2
V	19NCC001 / 19NSS001 / 19SPT001 / 19EXT001	NCC / NSS / Sports / Extension Activity @	-	-	50	-	50	2
VI	19BVCPR1	Internship # (Compulsory)	-	-	-	-	-	-
		Total	**30**				**675**	**27**
		SEMESTER V						
III	19BVC501	Core V: Media, Laws and Ethics	5	3	30	70	100	4
III	19BVC502	Core VI: Film Studies	5	3	30	70	100	4
III	19BVCP05	Core Lab V: 2D Animation and 3D Modeling	5	3	40	60	100	4
III	19BVCP06	Core Lab VI: Audio Production	5	3	40	60	100	4
III	19BVCP07	Core Lab VII: Video Editing	5	3	40	60	100	4
III	19BVCE01/ 19BVCE02/ 19BVCE03	**Elective I**: Social Psychology / Integrated Marketing Communication / World Cinema	5	3	30	70	100	4
		Total	**30**				**600**	**24**

		SEMESTER VI							
III	19BVC601	Core VII: Public Relations	5	3	30	70	100	4
III	19BVCP08	Core Lab VIII: Package and Designing Principles	5	3	40	60	100	4
III	19BVCP09	Core Lab IX: Compositing and Visual Effects	5	3	40	60	100	4
III	19BVCE04/ 19BVCE05/ 19BVCE06	**Elective II**: Cultural Studies / Event Management / Film Appreciation and Criticism	5	3	30	70	100	4
III	19BVCE07/ 19BVCE08/ 19BVCE09	**Elective III**: Political Communication / Media Management / Film Distribution and Marketing	5	3	30	70	100	4
III	19BVCPR2	**Project (**Short Film and Documentary Production**) and Viva Voce**	5	3	50	50	100	4
		Total	30				600	24
						Total	3600	140

No Continuous Internal Assessment (CIA), only Comprehensive Examination (CE)

@ only Continuous Internal Assessment (CIA), No Comprehensive Examination (CE)

IDC – Inter Disciplinary Course, EDC – Extra Disciplinary Course, SBC – Skill Based Course

List of Skilled Based Courses		
Semester	**Subject Code**	**Subject Title**
III	19BVCSB1	Web Designing I
III	19BVCSB2	Photojournalism
IV	19BVCSB3	Web Designing II
IV	19BVCSB4	Mobile and Social Media Advertising

List of Elective Courses			
Semester	**Elective**	**Subject Code**	**Subject Title**
V	Elective I	19BVCE01	Social Psychology
V		19BVCE02	Integrated Marketing Communication
V		19BVCE03	World Cinema
VI	Elective II	19BVCE04	Cultural Studies
VI		19BVCE05	Event Management
VI		19BVCE06	Film Appreciation and Criticism

VI	Elective III	19BVCE07	Political Communication
VI		19BVCE08	Media Management
VI		19BVCE09	Film Distribution and Marketing

List of Extra Disciplinary Courses			
Semester	**EDC**	**Subject Code**	**Subject Title**
III	EDC I	19BTA001 / 19ATA001 / 19BVCED1	Basic Tamil I / Advanced Tamil I / E-Commerce
IV	EDC II	19BTA002 / 19ATA002 / 19BVCED2	Basic Tamil II / Advanced Tamil II / Basics of Sound and Acoustics #

List of Additional Credit Courses					
Semester	**Subject Code**	**Subject Title**	**CE**	**Total**	**Credits**
III	19BVCAC1	New Media Studies	100	100	2
IV	19BVCAC2	NPTEL, MOOC, Swayam (Online Courses) (Non scholastic)	100	100	2
V	19BVCAC3	NPTEL, MOOC, Swayam (Online Courses) (Non scholastic)	100	100	2

Summary			
Part	**No of Papers**	**Total Credits**	**Total Marks**
I	4	12	400
II	4	12	400
III – Core	16	64	1600
III – IDC	4	16	400
III – Elective	3	12	300
III – Project	1	4	100
IV – Foundation Course	2	4	100
IV – EDC	2	4	100
IV – Skill Based Course	2	6	150
V – Extension Activities	-	2	50
Total	**38**	**140**	**3600**

Regulations for B.Sc Visual Communication

(Effective from the Academic Year 2019-2020 onwards)

1. Submission of Record Note Books for practical examinations. Candidates appearing for practical examinations should submit Bonafide Record Note Books prescribed for practical examinations, Otherwise the candidate shall not be permitted to appear for the Practical Examinations.

2. Ratio of Comprehensive Examination, Pre- Model and Model Examinations Marks for UG Courses

Part	Internal Assessment	External Assessment	Total Marks
I (Languages)	30	70	100
II (English)	30	70	100
III (Core, IDC)	30	70	100
IV (SBC)	-	75	100
IV (EDC/Foundation Course)	-	50	50
V (NCC/NSS/Sports/Ext. Activity)	50	-	50

3. Project Work Mark Distribution

Particulars	IA	CE	Total
Project Work (UG)	50	50	100

4. Practical Mark Distribution for all UG Courses

Internal -40 External-60 Total Marks -100

5. Break up for Internal Marks

S. No	Internal Marks	Distribution of Marks
1	Pre Model Examination	70
2	Model Examination	70
3	Seminar	30
4	Attendance	10
Total		**180/6=30**

6. Seminar Split up

S.NO	Seminar split up	Marks
1	Content	10
2	Flow of the presentation	10
3	Stage management and Body language	10
	Total	**30**

7. Attendance Break up

S.NO	Attendance split up	Marks
1	65% to 74%	4
2	75% - 80%	6
3	81% - 90%	8
4	91% - 100%	10

8. Internal Marks for Practical (Maximum 40)

Maximum Marks : 40		
S No	Internal Marks	Distribution of Marks
1	For Completion of the Practical List	20
2	Test –I	10
3	Test –II	10
	Total	**40**

9. External Marks for Practical (Maximum 60)

Maximum Marks : 60		
S. No	Comprehensive Examination	Distribution of Marks
1	Record	20
2	Exam	40
	Total	**60**

10. Internal and External Marks for Project Work

S.No	Internal Marks	Distribution of Marks
1	**Internal** Pre-Production Script Writing Production	10 15 25 **Total (50)**

2	**External** Presentation (Film Theory of Audio & Video) Viva-voce	30 20 **Total (50)**
Total		**100**

The distribution of Marks among the various components for IA and CE for Theory, Practical and Project Work is given in detail in the respective Schemes of Examination and Regulation of the different UG and PG Courses, duly passed in their respective Board of Study.

11. Pattern of Question Paper

For Pre model Test, Model and Comprehensive Examination under – Graduate and Post- Graduate Courses.

Maximum Marks : 70 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×4=20)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 75 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×5=25)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 50 / Time 2 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×3=15)	Each question carries four marks	Internal Choice
Section – C	(5×5=25)	Each question carries eight marks	Internal Choice
Maximum Marks : 100 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×8=40)	Each question carries eight mark	Internal Choice
Section – C	(5×10=50)	Each question carries ten mark	Internal Choice

Note:

1. The questions should be numbered continuously running through the Sections A, B and C.

2. Questions should be evenly distributed among the unit in the syllabus in all the sections of the Question paper

3. While framing questions with internal choice the questions must be identified as (a) or (b). (e.g 11. a or b). Further, the internal choice must be from the same unit.

4. The Controller of the Examinations shall arrange for the setting of question papers on the basis the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies

12. Certificate Course

In the academic year 2019-2020 we are introducing certificate course on III and IV semesters as an interdisciplinary course. The course title is as follows.

List of Certificate Courses		
Semester	**Subject Title**	**Hours**
III	Digital Photography	30
IV	Video Editing	30

B.Sc (Visual Communication) Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards.
FIRST SEMESTER
PART III: CORE I - INTRODUCTION TO VISUAL COMMUNICATION

Maximum CIA: 30
Maximum CE: 70
Total hours: 72

Course Objective:

To inculcate the knowledge of communication skills, process, levels and fundamental aspects in the minds of student fraternity.

Unit - I (14 Hours)

Communication: need and importance - Communication models with case studies. Communication as expression, skill and process - Message, meaning, connotation, denotation, culture/codes, with case studies.

Unit - II (14 Hours)

Levels of communication: technical, semantic and pragmatic - The semiotic landscape: language and visual communication, narrative representation.

Unit - III (15 Hours)

Fundamentals of design: definition, approaches, centrality and elements - Shape, space, color, texture and form. Principles of design: symmetry, rhythm, contrast, balance, mass/scale - Design and designers: need, role, process and methods - Text, image, design and sound.

Unit - IV (15 Hours)

Principles of visual and other sensory perceptions - Color psychology and theory: Definition, optical/visual illusions - Various stages of design process, problem identification, search for solution refinement, analysis, decision making and implementation - Basics of graphic design: definition, elements and approaches - Design concepts and developing ideas - verbal, visual and thematic thinking and techniques, tools, execution and presentation.

Unit - V (14 Hours)

Digital histories and new media technologies - Visual communication on the Web - Influence of smart phone on visual communication and design principles.

Course Outcomes:

- The Students understands the need and importance of Communication.
- The Students understands the different Levels of communication.
- The Students understands the Fundamentals of design.
- The Students understands the Color psychology and color theory.
- The Students understands the Digital histories and new media technologies.

Reference Books:

1. Keval J.Kumar (1994) Mass Communication in India Jaico Publishing House fourth Edition.
2. Lester, E (2000) Visual Communications: Images with Messages. Thomson Learning.
3. Schildgen, T (1998). Pocket Guide to color with digital applications. Thomson Learning.
4. Picture this: Media Representation of Visual Arts and artists. University of Luton Press.
5. Palmer, Frederic: Visual Elements of Art and Design,1989, Longman.
6. Porter, Tom and Goodman, Sue: Manual of Graphic Technique 2: For Architects.
7. Graphic Designers, and Artists,1982, Astragal Books. London.
8. Palmer. F: Visual Awareness (Batsford, 1972).
9. Arora, Deva Yashwant Singh. Multimedia 98: Shaping the Future.
10. Graham, L (1999) The principles of Interactive Design. Thomson Learning.

B.Sc (Visual Communication) Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards.
FIRST SEMESTER
PART III: CORE LAB I - FINE ART PRODUCTION

Maximum CIA: 40
Maximum CE: 60
Total hours: 72

Course Objective:

To instill the students with the basic knowledge of creative drawing through pencil sketching, water colours, acrylic, oil painting and modern art.

1.	Basics of drawing (Colours, light and shade)	(9 Hours)
2.	Perspective	(9 Hours)
3.	Types of shading	(9 Hours)
4.	Pencil sketching	(9 Hours)
5.	Water color – Landscape	(9 Hours)
6.	Acrylic – Live model portrait	(9 Hours)
7.	Oil Painting - Still life	(9 Hours)
8.	Mixed media – Relief/modern art	(9 Hours)

Course Outcomes:

- The students understand the Basic Drawing using Color, Lights and Shades.
- The students understand pencil sketching.
- The students understand how to use water color.
- The students understand how to draw live model portrait.
- The students understand the Basic of oil painting.
- The students understand the modern art.

B.Sc (Visual Communication) Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards.
FIRST SEMESTER
PART III: IDC 1 - WRITING FOR THE MEDIA

Maximum CIA: 30
Maximum CE: 70
Total hours: 72

Course Objective:

To inculcate the knowledge of writing skills with special reference to Print, Electronic and New Media.

Unit - I (14 Hours)

Types of writing. Inverted Pyramid format of news writing. Understanding news writing and newspaper design. Hard news and feature stories. Types of news stories: spot news, features, editorials, columns, opinion pieces, Op-Ed, obituaries and news interviews.

Unit - II (14 Hours)

Elements of news story: Timeless, proximity, personality, conflict, human interest, rarity and impact. Structure of a news story. Font styles. Headlines - types. Leads – types.

Unit - III (15 Hours)

Writing crime story, accident story, court story, news interview, sports story, business story, civic story, science-technology story and human-interest story. Editing symbols.

Unit - IV (15 Hours)

Writing for radio: planning and scripting for radio programmes, news reading and presentation. Writing for television: news gathering, story formatting, news scripts and visual sync for a news story.

Unit - V (14 Hours)

Writing for the Web: understanding the internet and urgency, writing and editing, search engine optimization, keyword considerations and linking.

Course Outcomes:

- The students understand what different types of writing in media are.
- The students understand what different Elements of news story are.
- The students understand how to write different kind of news stories.
- The students understand how to write for radio industry.
- The students understand how to write for web industry (News Media).

Reference Books:
1. Usha Raman, Writing for the Media, Oxford University Press, 2010.
2. Sunny Thomas, Writing for the Media, Career Information & Guidance.
3. Fred Fedler, John.R.Bender, reporting for the media, Oxford University press, New York, 2000.

B.Sc (Visual Communication) Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards.
SECOND SEMESTER
PART III: CORE 2 - MEDIA HISTORY

Maximum CIA: 30
Maximum CE: 70
Total hours: 72

Course Objective:

To inculcate the knowledge of historical development and the related aspects to the students with special reference to Print, Film and Electronic Media.

Unit - I   (14 Hours)
Historical development of the press as a media institution in India - Advent of printing - press in India and newspaper - Role of the press in the Indian freedom movement.

Unit - II   (15 Hours)
Study of leading newspapers journalists in India since 1947 - The vernacular press in India and the development of news agencies - History and development of the press as a medium of mass communication in Tamil Nadu.

Unit - III   (15 Hours)
Invention and development of radio as a medium of mass communication - Development of radio in the pre-independent and post–independent India - Invention and development of television as medium of mass communication in India - Advent and growth of satellite and cable television networks in India.

Unit - IV   (14 Hours)
Film as medium of mass communication - Historical development of film in India and its influence in Tamil Nadu.

Unit - V   (14 Hours)
Development of the new media technologies in India - Smartphones and the World Wide Web: proliferation, access, uses and impact, digital divide.

Course Outcomes:

- The students understand the Historical development of the press as a media.
- The students understand the Study of leading newspapers journalists in India since 1947.
- The Students understands the Invention and development of radio as a medium of mass communication.
- The Students understands the Film as medium of mass communication.
- The Students understands the Development of the new media technologies in India.

Reference Books:
1. Keval J.Kumar (1994) Mass Communication in India Jaico Publishing House fourth Edition.
2. Nadiq Krishna moothy Indian Journalism, Prasaranga, University of Mysore, 1966.
3. Chatterjee, P.C, Broadcasting in India, Sage, New Delhi, 1990.

B.Sc (Visual Communication) Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards.
SECOND SEMESTER
PART III: CORE LAB 2 - GRAPHIC ARTS – INFORMATION DESIGN

Maximum CIA: 40
Maximum CE: 60
Total hours: 72

Course Objective:

To instill the students with the basic knowledge of graphic designing with regard to print media.

1. Practical knowledge on Image editing – color correction and morphing (Photoshop)

(7 Hours)

2. Designing Letter art (Photoshop and Illustrator)   (7 Hours)

3. Design creation by means of (Photoshop and Illustrator)   (7 Hours)

4. Practical knowledge on Logo design   (7 Hours)

5. Practical knowledge on Ad design   (8 Hours)

6. Practical knowledge on Brochure design   (8 Hours)

7. Practical knowledge on designing Visiting card and letterhead.   (7 Hours)

8. Practical knowledge on Book cover design   (7 Hours)

9. Practical knowledge on Photoshop layer effects   (7 Hours)

10. Practical knowledge on Image composite creation   (7 Hours)

Course Outcomes:

- The students understand the Practical knowledge on Image editing.
- The students understand to Design Letters (Fonts).
- The students understand how to use designing software.
- The students understand how to design Logo for a company.
- The students understand how to design print advertisement.
- The students understand how to design a Brochure for a company.
- The students understand how to design Visiting card and letterhead for a company.
- The students understand how to design Book cover design.
- The students understand how to give designing effects using Photoshop layer.
- The students understand how to give Image composite creation.

**B.Sc (Visual Communication) Degree Examination- Syllabus for candidates admitted
from the academic year 2019 - 2020 onwards.
SECOND SEMESTER
PART III: IDC 2 - ADVERTISING**

Maximum CIA: 30
Maximum CE: 70
Total hours: 72

Course Objective:

To inculcate the knowledge with regard to the nature, scope, growth and latest trends in Advertising Industry.

Unit - I (14 Hours)

Definition, origin and growth of advertising in India - Nature and scope of advertising - Roles of advertising - Social, communication, marketing and economic functions of advertising.

Unit - II (14 Hours)

Advertising based on target audience, geographic area, media and purpose - Corporate and promotional advertising - Web advertising.

Unit - III (14 Hours)

Latest trends in advertising (India and abroad) - Ad agencies and their types - Structure of small, medium and big agencies - Functions, services, legal aspects and ethical issues.

Unit - IV (15 Hours)

Client briefing, account planning, creative strategy and briefing, communication plan, brand management and positioning, brand personality, brand image and brand equity - Case studies.

Unit - V (15 Hours)

Conceptualization and ideation - Translation of ideas to campaigns, visualization, designing and layout, copy writing, slogans and catch lines - Logos and trademarks.

Course Outcomes:

- The students understand the growth of advertising in India.
- The students understand the kinds of advertising in new media.
- The Students understand the Latest trends in advertising.
- The Students understand the work profile in advertising company or agency.
- The Students understand how to Conceptualization and create new ideas.

Reference Books:

1. Sontakki, C.N (1999): Advertising. Kalyani Publishers.
2. Sandage, frylruger and Rotzoll (1996): Advertising theory and Practice. AAITBS Publishers.
3. Mohan: Advertising Management: Concepts & Cases. Late McGraw – Hiss
4. Jewler, E (1998): Creative strategy in Advertising. Thomson learning.

B.Sc (Visual Communication) Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards.
THIRD SEMESTER
PART III: CORE III - COMMUNICATION THEORIES

Maximum CIA: 30
Maximum CE: 70
Total hours: 60

Course Objective
　　　　To provide the students with the knowledge on various theories in communication and also to throw light on the various factors affecting the communication process as well as the current system of communication networks.

Unit - I   (12 Hours)
　　　　Communication: Definitions, scope, forms and purpose; Types of Communication – Inter personal, Intra personal, Mass, Organizational, Verbal, And Non-verbal. Process of Communication: Source, message, channel, receiver (SMCR), feedback, encoder, decoder, noise in communication

Unit - II   (12 Hours)
　　　　Elements of Basic models in communication – Noise factors – Theoretical concepts and constructs in Communication models: Lasswell's model, Two-step flow theory, Schramm's circular model, Whites Gatekeeper theory, Shannon & Weaver's mathematical model, Dance's helical model, Westley and Maclean model.

Unit - III   (14 Hours)
　　　　Communication and human development – Role and functions of mass media in society –Media system and theories: Authoritarian, Libertarian, Social responsibility and communist theories.

Unit - IV   (12 Hours)
　　　　Uses and Gratifications Theory – Media dependency theory; Knowledge gap hypothesis. Effects of Mass Communication –Bullet Theory. Media effects: Social Learning theory: Internet and children- new media and digital divide.

Unit - V   (10 Hours)
　　　　Innovation Diffusion: Process of diffusion, variables, innovation adoption process. Information society – concepts and theories of information society –information super highway – knowledge society and knowledge gap theory – Technological determinism and Global village.

Course Outcome:

CO:1 Students would be able to Understand the need and importance of Communication with the help of communication theories and model
CO:2 They are able to remember& understand the different Elements of Basic models in communication
CO:3 Make the students to understand the Role and functions of mass media in society
CO:4 They should understand the importance of effect theories in communication
CO:5 Students will get knowledge about the new media and technological oriented communication theories

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1								M
CO2								
CO3			H	H	H	M	H	
CO4								
CO5	H							

Reference Books:
1. Denis McQuail, Mc.Quails Mass Communication Theory, Vistaar Publications, 2005
2. Arvind kumar , The mass media , Anmol publications, 1999.
3. Mattelart et al, Theories of Mass Communication, Sage, London, 1998.
4. Asa Berger,Essentials of Mass Communication, Sage, New Delhi, 2000.
5. Rosengren et al, Media Gratifications Research, Sage, London, 1985.
6. Webster, Frank, Theories of the Information Society, Routledge, London, 1995.

B.Sc (Visual Communication) Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards.

THIRD SEMESTER
PART III: CORE LAB III - DIGITAL PHOTOGRAPHY

Maximum CIA: 40
Maximum CE: 60
Total hours: 60

Course Objective:

To inculcate the knowledge of camera handling techniques, skills, lighting techniques and creative aspects in the minds of student fraternity.

Basics of Camera (Aperture, Shutter Speed, Focal length, Depth of field etc.) - Types of Camera - Types of Lenses. (4 Hours)

Types of lighting- Key light, Fill light and Backlight - Natural Lighting and Artificial Lighting - Exposure Meters, Differential Focus, Filters, Flashes. (4 Hours)

Perspectives: Central, Linear etc., Framing, Texture, Pattern, Composition and Design (4 Hours)

List of Practical's:
1. Lighting- Types-key –fill- back - Rim- op-low- silhouette (3 HOURS)
2. Special Effects – Freeze frame – Slow shutter- Motion Blur (3 HOURS)
3. After Dark (3 HOURS)
4. Aperture (2 HOURS)
5. Black and White (2 HOURS)
6. Depth of Field (2 HOURS)
7. Nature (2 HOURS)
8. Reflection (2 HOURS)
9. Shutter speed (2 HOURS)
10. Through the seasons (3 HOURS)
11. Portraits (2 HOURS)
12. Product – Indoor, Outdoor (3 HOURS)
13. Advertising Photography (3 HOURS)
14. Architecture- Interior, Exterior (3 HOURS)
15. Environmental Photography (3 HOURS)
16. Industrial Photography 2 HOURS)
17. Photo-journalism 1 (3 HOURS)
18. Photographs on Foods and Beverage (2 HOURS)
19. Photo Essay – Photo feature (3 HOURS)

Note: The above list of practical have to be taken and submit the compiled work as a record for evaluation

Course Outcome:
CO1: Students can understand the importance of lighting and its types, technique of Aperture in photography
CO2: They are practically trained to capture Special effects such as freeze
CO3:Understand the techniques of black and white photography.

CO4: Understand the role of depth of field and capture the necessary picture with its types
CO5: Students are trained to capture landscape, silhouette techniques and nature photography

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1						M		H
CO2							M	
CO3						M		M
CO4						M		M
CO5						M		M

B.Sc (Visual Communication) Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards.

THIRD SEMESTER
PART III: IDCIII- CREATIVE WRITING

Maximum CIA:30
Maximum CE:70
Total hours:60

Course Objective:

To instill the   Creativity of writing the content for various media organization and to develop their knowledge in creative writing.

Unit-I

History of writing - Elements of language - Concept of literature society - Language as a tool of communication - Writing as coding of content.

Unit-II

Readability - Techniques of readability - Technical Writing - Gunning's fog index - Point score - Flesch's Reading Ease Score (RES) and Human Interest Score (HIS) - Practical exercises.

Unit-III

Informative Writing - Writing News - Headlines - writing Lead - Writing Sports News - Writing Features - Expository writing - Descriptive writing- Media Content Writing.

Unit-IV

Fiction Script writing- Non fiction Script writing- Short fiction forms and formats-Short Nonfiction forms and formats-Interview - Types of interview - Interview techniques.

Unit-V

Scripting for science/development program - Scripting for educational program - Scripting for women's program - scripting for commercials- Dramatic structure - Rising action - Falling action - Narrative structure - Characterization and theme - Adaptation - – Non - fiction script writing - Rhetorical and Expository structure.

Course Outcome:

CO:1 Understand the history of writing and language as a tool of communication.
CO:2 Students are able to apply the readability and its techniques along with the practical exercises.
CO3: They are trained to write about news along with the practical exercises with various types of technical writing.
CO4: Understands about the news selection process and Editorial writing.
CO5: students would be able to write news story creatively and review the already published article

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1						M		
CO2						M	M	
CO3		H	H	H	H	H		
CO4			M					
CO5		M		H		H		

Reference Books:

1. Mencher, Melvin, 'Basic news writing', Universal Bookstall, New Delhi, 1993
2. The Complete Book of Scriptwriting, J Michael Straczynski, Writer's Digest Books,2002.
3. Secrets of Film Writing by Tom Lazarus Jun 2,2001
4. Introduction to Media production, Gorham Kindem, Robert B. Musburger, Taylor & Francis,2012.
5. Writing the Short Film, Third Revised Edition by Patricia

Cooper and KenDancyger, Taylor & Francis,2012.

6. Documentary Storytelling for Video and Filmmakers by Sheila Curran Bernard, CRC Press,2015.

B.Sc (Visual Communication) Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards.

THIRD SEMESTER
PART IV: SBC I: WEB DESIGNING I

Maximum CE: 75
Total Hours: 36

Course Objective:
     To inculcate the knowledge of fundamental aspects of Internet, html and web designing and its elements in the minds of student fraternity.

Unit – I   (7 Hours)
     Web basics and overview: Networking – Internet – Domain name system – Web – Content types – Putting information on the web – Web hosting – Domain registration.

Unit – II   (8 Hours)
     Design Basics: Fundamentals of web designing – Design and perception – Brief history of design on the web – Elements of design – Unity and variety – Emphasis, Focal point and Hierarchy – Contrast – Visual balance.

Unit – III   (7 Hours)
     Information architecture, Page layout: Layout overview – Website architecture - Information architecture – Typography basics – Choosing types – Spacing type – Reading type on the web – Web page layout grids.

Unit – IV   (7 Hours)
     HTML basics: History of HTML – HTML Command tags – Defining web page – Main body of the text – Putting headers – Adding paragraph – Formatting text in HTML (font type, size, bold, italics – alignment – setting colours – text colours) – Inserting graphics – Wrapping text between images - Page layouts – Setting background colour – Tables.

Unit – V   (7 hours)
     Graphics, Audio and Video: Graphics for web – cropping and scanning – Types of artwork – Audio on the web – Video on the web – Video streaming.

Course Outcome:

CO1:Students can understand the basics of web design.
CO2:They are able to learn& understand about designing the website with the tools.
CO3: They are given exposure about information architecture.
CO4: Students would be able to understand about HTML language and apply coding using it.
CO5: They can learn and know more about the graphics, audio, video on the web.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1								H
CO2		H		H				
CO3	H	M						
CO4								
CO5								H

Reference Books:
1. Paul.S. way and Sanda Katila, An Introduction to Web design and Programming, Thomson leaning, 2008.
2. Ramesh Bangia, Internet and Web design, Firewall media, Newdelhi, 2008.
3. Internet Bible, IDG Books, New Delhi, 1998.
4. Leno et al., Internet for everyone, Lone Techworld, Chennai, 1998.
5. Tim Worsley, Orling Kindersely, Building a Website, New Delhi, 2000.
6. Daniel Gray,Web Design Fundamentals, Dreamtech Press, New Delhi, 2000.
7. Preston Gralla, How the internet works, QUE, 2006.

B.Sc (Visual Communication) Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards

THIRD SEMESTER
PART IV: SBC I- PHOTO JOURNALISM

Maximum CE: 75
Total hours: 36

Course Objective:
To inculcate the in depth knowledge of Journalistic skills by Photographs which tells the story to the viewers.

Unit- I
Concept of photojournalism, power of visuals, attributes of a good photograph (Aesthetic and technical), History of photojournalism, Elements of Visual news story telling.

Unit- II
Organization of a newspaper, Structure of newsroom, Role of photo journalists in a newsroom, communicating with the desk, briefing and debriefing.

Unit -III
Photo as News: Text vs. photo; attributes of a news photo, events, action, mood, profile and other categories, use of photos in a newspaper; Types of news stories.

Unit -IV
Developing eye for news photos; Photo editing: selection, deciding placement, cropping, use of cutouts, photo size, resolution and correction.

Unit- V
Principles and Ethics and of photojournalism, Media laws and Intellectual Property Rights; Caption and outlines: writing photo captions, names and designations, function and significance of outlines.

Course Outcomes:

CO1: Students can learn the basic concepts of Photo Journalism.
CO2: They are aware about the functioning of Photojournalists in a Media Organization exclusively for Print Media.
CO3: Students are able to create different types of news stories with the relevant photo histories.
CO4: They can technically handle by learning all the editing aspects in a Photograph.
CO 5: Students would be able to know the ethics of Photojournalism.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1					H			
CO2		M	M					
CO3						H		
CO4	M							
CO5							H	

Reference Books**:**
1. Chandra R.K. Handbook of Modern Newspaper Editing & Production. Mangalam Publication.
2. Parthsarthy Rangaswami. BasicJournalism.
3. McMillan India Ltd. Kamath, M.V. The Journalist's Hand book.
4. Kamath, M.V. The Professional Journalist.
5. The Professionals' Approach,Kobre Kenneth, sixth edition, Focal Press,2004
6. Photojournalism: An Introduction, Fred Parrish, Wadsworth Thomson ,2002

B.Sc (Visual Communication) Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards

THIRD SEMESTER
PART IV: EDCI - E-COMMERCE

Maximum CE: 50
Total Hours: 24

Course Objective:
To inculcate the wider knowledge for the students to electronic modes of commercial operations.

Unit - I   (4 Hours)
        Basic Terms and Introduction - Network, Internet, Transaction - Types of Network - Working of Internet - Web Server – Browser – Server – Client - Web Page.

Unit - II   (4 Hours)
        World Wide Web – Portal - Search engine – Cybernetics - Protocol and Protocol Suite - TCP/IP – URL – ISP – Gateway – Modem – Firewall – M-commerce – VAN.

Unit - III   (4 Hours)
        Electronic Devices used for E-Commerce - I-Commerce - I-Commerce Value Chain - Non-Internet based E-Commerce & their Advantages and Disadvantages.

Unit - IV   (6 Hours)
        Types of E-Commerce B2B, B2C, & C2B, C2C, G2B (Government to Business), G2C (Government to Citizens) - AI2S (Academic Institutions to Students) - Case studies - Various e-Commerce websites - Electronic Payment System - Internet Banking - Online Share Dealing - Network and Internet Security Need - Data encryption – Cryptography - Digital Signatures – Password - Encrypted smartcard - Bio-matrices - Firewall.

Unit - V   (6 Hours)
        Information Technology Act – 2000 - background of InformationTechnology Act 2000 - Preliminary, Definitions - Digital Signatures - Electronic Governance – Attribution - Acknowledgment and Dispatch of electronic records - Secure records and secure digital signatures - Functions of controller - UNCITRAL (United Nations Commission on International Trade Law) - Salient features provisions.

Course Outcome:
CO1:Students can understand the basics of internet.
CO2: Understand about the importance of search engine, TCT/IP, m-commerce.
CO3: Understand about electronic devices used for e-commerce.
CO4: They are exposed to different types of e-commerce, data encryption
CO5: They would be able to know and understand about the information technology act, digital signatures, e governance and its features.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1								
CO2								L
CO3							L	
CO4	H							
CO5								

Reference Books:

1. David Whiteley, E-Commerce, Strategy, Technologies and Applications, Tata McGraw, 2001.
2. Mahapatra P.B.S. E-commerce and its applications, Chand Publication, 2001.

All UG Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards

THIRD SEMESTER
CERTIFICATE COURSE - DIGITAL PHOTOGRAPHY

Total hours: 30

Course Objectives**:**

To understand the basics of Photography & to apply the techniques in Photo Industry by solving practical problems in the real life situations.

Unit -I

Photography- Definition & concept; Nature, scope & functions of photography; Parts & functions of camera aperture, shutter, lens & film; Camera accessories

Unit:-II

Lens- Definition & Concept; Characteristics of lens; Types of lens;Exposure- basics; Depth of field- aperture priority & shutter priority; Filter- definition & concept; Characteristics and types of filters.

Unit- III

Types of Digital Storage Compact Flash (CF), Secure Digital Card (SD), Mini SD Card, MicroSD & etc. Digital Printing Process; Photo editing & manipulation.

Unit- IV

Lighting- Definition & concept; Nature & Characteristics of Light; Understanding Light Indoor & Outdoor; Types of Light- Natural & Artificial; Standard Lighting- Key, Fill & Back Light;.

Unit-V

Aesthetics of Photography; Framing- Characteristics of Framing; Composition Characteristics of Compositions, Types of Composition- Rule of Third, Frame within Frame & etc.; Types of Photography- Photo Journalism, Ad Photography, Natural Photography, Wild life Photography, Fashion Photography & Industrial Photography.

Course outcomes:
CO1: Students can get awareness on basic photography and its characteristics.
CO2: They are able to know the lens and filter properties.
CO3: They would be able to know the digital storage and printing process.
CO4: Students can understand the types of lighting.
CO5: They can understand the types of photography and composition techniques.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M		H	M				
CO2			H	M				
CO3					L			
CO4			M					
CO5	H		H					

B.Sc (Visual Communication) Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards

FOURTH SEMESTER
PART III: CORE IV - TELEVISION PRODUCTION TECHNIQES

Maximum CIA: 30
Maximum CE: 70
Total hours: 60

Course Objective:
    To introduce students to the field of television production and to understand the basics and techniques involved in television production.

Unit – I   (12 Hours)
    Television and video standards – Frames – Lines – Timing – Scanning – PAL – NTSC – SEECAM – Aspect ratio – Resolution – HD.

Unit - II   (12 Hours)
    Video production: Introduction – Production approach – Production crew: Producer – Director – Assistant director – Floor manager – Technical director – Lighting director – Camera operator – Set designer.

Unit - III   (12 Hours)
    Production techniques: Single and multi camera production – Illusion of reality – Cameras role – Camera as an observer – Persuasive camera – Production methods – Audio: Acoustics – Mono – Stereo – Microphones – Directional features – Microphone stands and mounts.

Unit - IV   (12 Hours)
    Writing for video: script writing - Scripts purpose – Script formats – Full script – Drama script – Assimilation – Relative space – Style – Camera: Controlling the zoom – Basics of shoot – Composing pictures – shooting people – shooting instructional productions.

Unit - V   (12 Hours)
    Lighting for video: Lighting techniques - 3 point lighting – lighting instruments – Chroma key productions – Televsion graphics – Editing: Shhoting order – running order – transitions – NLE – Continuity techniques.

CourseOutcome:

CO1: Students can understand the various television and video file formats.
CO2:They would be able to understand more about the video productions and its work nature.
CO3: Students can learn television production techniques in Single and multi camera production.
CO4: They understand with various writing approches for video shoots.
CO5: They understand about various lighting techniques for video shoots.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1				H				H
CO2		H		H				M
CO3		H		H	M	M	M	M
CO4				M		M		M
CO5						M		H

Reference Books:
1. Vasukibelavadi , Video Production, Oxford University Press, 2008.
2. Gerald Millerson, Video Production Handbook, Focal press, 2008
3. Gerald Millerson, Television Production, Focal press, London, 1999.
4. Ken Pender, Digital Video for the Desktop, Focal Press, 2002.
5. John Watkinson, An Introduction to Digital Video, Focal Press, London, 1994.
6. Tom Letourneau, Lighting Techniques For Video Production , Mc will publications, Tanzania, 1996.
7. Thomas A. Ohanian, Digital Non-Linear Editing, Focal Press. London, 1998.

B.Sc (Visual Communication) Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards

PARTIII: CORE LAB IV: SCRIPTWRITING

Maximum CIA: 40
MaximumCE: 60
Total hours: 60

Course Objective:

To understand the basics of script writing for Audio &Video production in practical & apply the techniques in Media industry

➢ Concept development
➢ Usage of words
➢ Clarity in language
➢ Spontaneity
➢ Voice modulation

 (BY APPLYING THE ABOVE MENTIONED BASIC   PRINCIPLES, MAKE A SCRIPT FOR THE FOLLOWING RADIO PROGRAMS)

RADIO SCRIPTING:

1.Radio Jingles (minimum 20 seconds)
2. Radio Interview (Celebrity) (minimum 10 mins)
3. Radio News (News bulletins) (minimum 3 mins)
4. Radio Drama (minimum 5 mins)
5. Radio Documentary / Feature(minimum 5 mins)

(BY APPLYING THE FOLLOWING BASIC PRINCIPLES, MAKE A SCRIPT FOR THE TELEVISION PROGRAMS)

➢ On Screen Qualities
➢ Communication Skills
➢ Body Language
➢ Presentation
➢ Spontaneity

TELEVISION SCRIPTING:

 1.Television Interview (with Celebrity) (minimum 10 mins)
 2.Movie Review (Movie countdown) (minimum 10 mins)
 3. Event RJ-ing & VJ-ing (Awards & Music launch) (minimum 10 mins)
 4.Structuring TV News reports with News stories-(inclusive of headlines)- (minimum 10 mins)

Course Outcomes:

CO1: The students understand the basic principles of Scriptwriting concepts for the Radio medium.

CO2: The Students can visualize the concept for Radio Documentary/feature.

CO3: The Students understand the concept for writing Radio Jingles, Radio news bulletins, &Radio dramas.

CO4: As well the students can understand the basic principles of Television writing.

CO5: The Students understand the concept of Audio Visual writing for the following programs like Movie review, Award& music launch, Interviews & News Production

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1					H			
CO2		M	M					
CO3						H		
CO4	M							
CO5							H	

B.Sc (Visual Communication) Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards

FOURTH SEMESTER
PART III: IDC 4 - MEDIA, SOCIETY AND CULTURE

Maximum CIA: 30
Maximum CE: 70
Total hours: 60

Course Objective:

To inculcate the knowledge of various functions of mass media, to analyze the media audience and also to provide the students with the contemporary importance of Media in modern society.

Unit - I   (12 Hours)
Mass Communication: Characteristics; Mass media – Growth, New media context, access, control and use; Contemporary relevance of Gandhi an model of Communication.

Unit - II   (12 Hours)
Contemporary importance of Media in democratic modern society - influence on audiences thinking and social behavior; Mediated role and social conferment, status conferral, socialization; Media dependency - Pluralistic media and Indian society.

Unit - III   (12 Hours)
Market oriented media and social dilemma; Communication – mediated culture, social conflicts, religion, etc.

Unit - IV   (12 Hours)
Political economy of policy perspectives - Social Norm, Status conferral, Privatization, Monopolization, Canalization, Inoculation.

Unit - V   (12 Hours)
Mass society and Mass culture- Dysfunctions: stereotyping, cultural alienation, impact on children; Regulatory mechanism: government, professional bodies and citizen groups.

Course Outcomes:
CO1: Students can understand the mass communication- characteristics& its growth in recent era.
CO2: They are aware about contemporary importance of media in democratic modern society.
CO3: Students can understand about market oriented media and social dilemma.
CO4: They can understand about political economy of policy perspectives.
CO5: Students would be able to learn more about mass society and Mass culture

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M		H	M				
CO2			H	M				
CO3					L			
CO4			M					
CO5	H		H					

Reference Books:

1. K.S.Seetharam, Communication and culture – A World View, MC Graw hill Publishers. New Delhi, 1991.
2. Jeff Shires, Media Culture and Society,Blackwell Pub, 2008.
3. Srivastava K M, Media Issues, Sterling Publication, 1991.
4. France Webstar, Theory of Information Society, Roultledge, 1997.
5. Micheal R. Real, Mass Mediated Culture, Prentice Hall, 1977.
6. John Fisk, Introduction to Communication studies, Routledge, 1998.
7. Richard Butney, Social Accounting in Communication, Sage Publications, 1993.
8. Hamid Mowlana, Global Information and World Communication, Sage, 1997.
9. Sideny Krans and Richards Perlof, Mass Media and Political Thought (Ed) , Sage 1985
10. George N Gorden, Hustings Hower, The language of Communication, 1969

B.Sc (Visual Communication) Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards

FOURTH SEMESTER
PART IV: SBC II - WEBDESIGNING II

Maximum CE: 75
Total Hours: 36

Course Objective:

To inculcate the knowledge and learn digital art and design principles and conceptualize ideas in graphic form.

Unit - I   (7 Hours)
        Concept of CSS: Creating Style Sheet - CSS Properties -CSS Styling(Background, Text Format, Controlling Fonts) - Working with block elements and objects - Working with Lists and Tables.

Unit - II   (7 Hours)
        CSS Id and Class - Box Model(Introduction, Border properties, Padding Properties, Margin properties) - CSS Advanced(Grouping, Dimension, Display, Positioning, Floating, Align,Pseudo class, Navigation Bar, Image Sprites, Attribute sector) - CSS Color - Creating page Layout and Site Designs.

Unit - III   (8 Hours)
        Defining a Dreamweaver site Using the Welcome screen - Selecting a CSS layout - Saving a page - Modifying the page title - Changing headings - Inserting text - Inserting images - Selecting and modifying CSS styles - Adjusting text fonts, colors, and sizes - Using the Property inspector - Previewing a page in Live view - Previewing pages in a browser.

Unit - IV   (7 Hours)
        Web design basics working with thumbnails and wireframes - Previewing your completed file - Adding a background image to the header - Inserting an image placeholder - Inserting placeholder text - Modifying the footer.

Unit - V   (7 Hours)
        Creating a template from an existing layout - Inserting editable regions - Producing child pages - Updating a template - Using Library items - Using server-side includes.

Course outcomes:
CO1: Students can understand the concept of CSS: Creating Style Sheet
CO2: They are able to learn &understand the CSS Id and Class
CO3: Students can learn how to define a Dreamweaver site Using the Welcome screen.
CO4: They would be able to understand about how web design basics working with thumbnails and wireframes.
CO5: Students can understand how to Create a template from an existing layout

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1				M				
CO2								
CO3		M						
CO4				M				
CO5				M				

Reference Books:

1. Ian Pouncey, Richard York Beginning CSS: Cascading Style Sheets for Web Design Wiley India.
2. Dreamweaver CS4 in Simple Steps, Kogent Learning Solutions Inc, Dreamtech Press, 2010
3. Adobe Dreamweaver CS5 Revealed, Sherry Bishop, Cengage Learning, 2010.

B.Sc (Visual Communication) Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards.

FOURTH SEMESTER
PART IV: SBCII- MOBILE & SOCIAL MEDIA ADVERTISING

Maximum CE:75
Total hours:36

Unit - I
Definition, Nature and Scope of advertising. Role - elements - Advertising in marketing mix - merits and demerits - advertising and consumers - buying systems – target plans.

Unit- II
Functions of advertising: economic impact - informative function - persuasive function - Corporate and Promotional Advertising.- Web Advertising.

Unit - III
Advertising process, Consumer, Corporate, Industrial, Retail, Cooperative and Public service advertising. - tone and content; reading the advertisement.

Unit - IV
Role of Advertisement in Mobile and Social Media - Kinds of Advertisements in Social Media– Types of advertising in Mobile phones; Banner Ads, PushUps, Pop Ups.

Unit - V
Advertising in India– Advertising policy in India – Advertising Agency System – Code and Ethics in Advertisement.

Course Outcome:
CO1: Students understand the nature and scope of advertising.
CO2:They can learn the functioning of agencies.
CO3:They would be able to know the tone and content of advertisements.
CO4:They can learn the role of advertisements in mobile and social media
CO 5:Students get exposed to the Advertising policy in India with the ethical system.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1						M		
CO2								L
CO3							L	
CO4	H					H		
CO5						M		

Reference Books:

1. Mohan, M; "Advertising Management Concepts and Cases"; Tata McGraw Hill; New Delhi.1995.

 2. Contemporary Advertising —William F. Arens& Courtland L. Bovee. Sydney: Irwin,1994.

 3. How Advertising Works And The People Who Make It Happen — Jan Greenberg. New York: Henry Holt,1987.

  4. Advertising & Sales Promotion —S.H.H. Kazmi&Satish K. Batra. New Delhi: Excel Books, 2006.

B.Sc (Visual Communication) Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards.

FOURTH SEMESTER
PART IV: EDCII- BASICS OF SOUND AND ACOUSTICS

Maximum CE:50
Total hours:24

Course Objective:

To understand the nature and characteristic of sound wave, human hearing mechanism and various acoustics methods and treatments.

Unit-I

What is Sound? Nature and characteristics of a Sound Wave, Amplitude, Frequency, Velocity, Wave length, Phase, Harmonic content-Intervals, Octaves, Partials, and Harmonics. Overtone and Timbre. How sound travels in air - Sound Transmission and Medium Density.

Unit-II

Basic acoustics – sound pressure and sound power, inverse square law, Echo reverberation, Reverberation time, sabine formula. Resonance effect. Free and Reverberant Field.

Unit- III

Anatomy of Hearing and Auditory perception The ear – threshold of hearing – Dynamic Range. Loudness, Pitch, Critical Bands, Mics, and its types.

Unit- IV

Psycho Acoustics-Spectral Analysis- perception of frequency and loudness, beats, combination tones, Masking, Perception of space .

Unit- V

Typical Reverberation periods of a speech studio, music studio, Drama studios, Television studios, control and monitoring rooms, listening rooms, concert halls and theatres, multipurpose spaces. Acoustical features and design of Auditoriums.

Course Outcome:

CO1: Students are able to know the nature and characteristics of a sound.
CO2:They are aware of acoustics and setup.
CO3:Students would be able to know the auditory perceptions.
CO4:They can understand masking in sound.
CO5:They can learn various reverberation periods.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M						H	
CO2				M				
CO3					L			
CO4			M					
CO5			H			H		

Reference books:

1. The Basics of Sound and Sound Systems : Tony Moscal Acoustics and psycho-acoustics Howard Davis M, James Angus
2. Michael Talbot – Smith. Broadcast Sound Technology. Oxford: Focal Press. 2002.
3. Francis Rumsay and TimMick. Sound and Recording: An Introduction. Oxford: Focal Press.
4. Tim Amyes. Audio Post – production in Video and Film. Oxford: Focal Press. 2001.

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FOURTH SEMESTER
PART III: ALC I - NEWMEDIA STUDIES

Maximum CE: 100

Course Objective:

To inculcate the knowledge with regard to new media and Information society.

Unit - I

New media Technology – characteristics: Information Superhighway, Convergence, Structure and Functions; - social and cultural consequences: fragmentation and digital Isolation; Social Control and Democracy – Privatization and Competition – New media access and control – Digital Divide: - E-governance – process, social and legal frameworks – Policy initiatives.

Unit - II

Information and Knowledge society – Definitions and characteristics of Information Society, Post-industrial society – Information Society Theories: Daniel Bell, Machlup, Webster, Schiller – Evolution of New media audiences: Elite, Mass, Specialized and Interactive – New media uses and gratifications – Influencing factors.

Unit - III

Social and Cultural effects of New Media: Social Networking, Information Overload, Information Rich and Information Poor, Knowledge Gap and Cultural Alienation New media impact on old media – ICTs for Development – Empowerment, right to information.

Unit – IV

New Media Theory – Perspectives, Technological Determinism, Constructivism, Functionalism, Postmodernism, Characteristics of New Media – Uses, Adoption ICT and Social Transformation – socio-technical paradigm, Information commoditization - new consumption norms – knowledge gap.

Unit - V

New media issues: Invasion of Privacy, Piracy, Cybercrimes and Pornography IT policies, Information Bill and Regulations.

Course outcome:

CO1: Students are able to know the Characteristics of New media technology.
CO2: They are aware of post industrial society and information theories.
CO3: They understand the social and cultural effects of New media.

CO4: They would be able to know the Post modernism and usage of ICT.

CO5: Students are aware of new media issues and challenges.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1				M				
CO2						L		
CO3		M						H
CO4				M			H	
CO5				M				

Reference Books:

1. Hamid Mowlana, Global Communication in Transition: The end of diversity, Sage Publications, Newbury Park, 1996
2. Subhash Bhatnagar and Robert Schwann, Information and Communication Technology in Development: Cases from India – Ed. Sage Publications, New Delhi, 2000
3. Mark Hukill et al. Electronic Communication Convergence: Policy challenges in Asia – Ed. Sage publications, New Delhi, 2000
4. Hamid Mowlana, Global Information and World Communication (2nd edition)– Sage Publications, New Delhi, 1997
5. Barrie Oxford and Richard Huggins, New media and Politics Ed. Sage Publications, New

All UG Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards

FOURTH SEMESTER
CERTIFICATE COURSE – VIDEO EDITING

Total hours: 30

Course Objective**:**

To instill the Students With the Basic Knowledge Of Video Editing Principles with the creative editing softwares.

Unit - I
Introduction to the history of film editing. The language of cinema; introduction to the editor as storyteller and understanding the narrative structure.

Unit - II
Overview of Adobe Premiere; Workflow and workspace -Project Setup Importing Footage - Monitoring Assets - Editing Sequences and clips -Editing Audio - Titling and the Title Effects and Transition -Animation and Key frames ;Compositing –Exporting

Unit – III
Introduction to Final Cut Pro ; Keyboard shortcuts ; -Review and skim media - Create and Manage Projects ;-Edit your project ;-Edit Audio Resources ; Add transitions, titles, effects, and generators - Exporting media

Unit-IV
Edit decision list; Video mash ups; List of video editing software; Linear &Non linear editing, Online editing; Offline editing;

Unit-V
Creative editing Phase with Graphic relations; Rhythmic relations ; Spatial relations; temporal relations ;

Course Outcome:
CO1: Students can learn the basics of film editing and its growth in the film.
CO2: They are able to understand to work with Adobe premiere Pro software.
CO3: Also they understand the concepts in FCP software.
CO4: Students can learn how to make EDL preparation while doing their editing process.
CO5:They are able to create the relationship with various editing Phases.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1					H			
CO2		M	M					
CO3						H		
CO4	M							
CO5							H	

Reference Books

1)Browne, Steven E. (1989): Videotape Editing – A Post Production Primer , New Delhi. Focal Press.
2) Solomons , Tony (1999) : The Avid Digital Editing Room Handbook, 2ndEdition, Los Angeles. Silman- James Press.
3) The Technique of Film and Video Editing: History, Theory, and Practice by Ken Dancyger
4) Colour Correction for Digital Video: Using Desktop Tools to Perfect Your Image by Jaime Fowler

B.Sc (Visual Communication) Degree Examination- Syllabus for candidates admitted from the academic year 2019 - 2020 onwards

FOURTH SEMESTER
MEDIA INTERNSHIP TRAINING REPORT

Course Objective**:**
The aim of sending students for training is to enrich their practical skills and to choose their area of interest by experiencing the day to day operation of the Media Industry.
Basic framework

The stages in Project Work are given below:
- Project guide will be allotted by the department to each student.
- The student has to pursue the training program as prescribed in regulations.
- Student has to maintain the log book signed by the department head of the organization/ Department they are working at.
- Student should prepare a MIR (Media Internship Report)Training report at the end of his/her training .The student should submit the MIR Report to the department in the sixth semester beginning..

Project work Requirements
- The MIR training should be carried out individually and personally by the student.
- The MIR Report should demonstrate the learning's of the students.

Submission of Project report
- The training work should be done personally by the student in conformity with the approved Media organization.
- A certificate from the Media organization should also be enclosed in the Project Report as provided in the format for project report. The student should submit hard bound copies of the project Report.
- None of the project report will be returned to the student.

Department of Commerce
Regulations for M. Com
(Effective from the academic year 2019-2020 onwards)

Introduction:

The Department of Commerce came into being along with the inception of the College in the year 1991. The Department stretched itself by incorporating Post Graduate Programmes during the year 2002-03 by starting M.Com along with Research Programme leading to M.Phil and Ph.D Programmes.

Objective:

The knowledge in Commerce enables the student to understand and participate in the modern business and economic world. It also enriches them for subsequent studies and to achieve success in their professional career at domestic and global level.

Eligibility: PG Programme

The basic eligibility criterion for pursuing M.Com degree is having graduation degree
in any of the Commerce stream from Colleges affiliated under any of the University.

Duration of PG Programme

M.Com Programme is of 2 years duration in which each year is comprised of two semesters with various subjects specialized in Commerce including research work.

Vision:

Empowering Youth towards Universal Excellence.

Mission:

To empower our students by providing continuous learning environment so as to enrich them in professional, ethical, moral and social aspects that add values to their future career and community as a whole.

Programme Outcomes

On completion of the M.Com Programme, The graduates will be able to

PO1. Strong knowledge inputs in Commerce which caters the Local, National and Global requirements

PO2. Skill set to enter into a career either in Academics, Research or alternatively in other professional areas of Commerce and Finance such as Taxation, Human Resources, Marketing and Financial services.

PO3. Professional knowledge and interpersonal skills that fosters holistic development

PO4. Ethical responsibility and contribute to the society through active research.

PO5. Contemporary knowledge of business that will enhance the skills for lifelong learning

Prepare for post graduate studies and to achieve success in their professional career

Programme Specific Outcomes

PSO1.Students shall experience problem solving skills related to Accounting, Costing & Analyze Financial Statements of Companies.

PSO2.Reveal knowledge of forms of organization and key areas of marketing & Apply laws

pertaining to Business

PSO3.Demonstrate knowledge of key concepts in Entrepreneurship, Direct & Indirect taxes.

Master of Commerce (M.Com)
Scheme of Examination (CBCS and OBE Pattern)
For the Candidates admitted from the Academic Year
2019-2020 onwards

Sub Code	Paper	Subject Title	Ins. Hrs/Week	Dur. Hrs.	CIA	CE	Total	Credit
						Examination		
SEMESTER I								
19MCM101	Core 1	Corporate Accounting	6	3	30	70	100	4
19MCM102	Core 2	Managerial Economics	4	3	30	70	100	3
19MCM103	Core 3	Human Resource Management	5	3	30	70	100	4
19MCM104	Core 4	International Business	5	3	30	70	100	4
19MCM105	Core 5	Legal Aspects in Banking and Insurance	5	3	30	70	100	4
19MCM106	Core 6	Business Environment	5	3	30	70	100	4
		Total	**30**				**600**	**23**
SEMESTER II								
19MCM201	Core 7	Advanced Cost Accounting	5	3	30	70	100	4
19MCM202	Core 8	Indirect Taxation	5	3	30	70	100	4
19MCM203	Core 9	Marketing Management	5	3	30	70	100	4
19MCM204	Core 10	Financial Management	5	3	30	70	100	4
19MCME01/ 19MCME02/ 19MCME03	Elective I	Elective	5	3	30	70	100	4
19MCMID1	IDC 1	Business Research Methods	5	3	30	70	100	3
		Total	**30**				**600**	**23**
SEMESTER III								
19MCM301	Core 11	Direct Taxes	5	3	30	70	100	4
19MCM302	Core 12	Investment Management	5	3	30	70	100	4
19MCM303	Core 13	Labour Law and Industrial Relations	4	3	30	70	100	4
19MCM304	Core 14	E-Commerce and MIS	4	3	30	70	100	4
19MCMP01	Practical I	Computer Application in Business	5	3	40	60	100	3

19MCME04/ 19MCME05/ 19MCME06	Elective II	Elective	5	3	30	70	100	4
19MCMED1	EDC 1	Business Ethics	2	3	-	50	50	2
19MCMRA1		Research Article 1						
		Total	**30**				**650**	**25**
		SEMESTER IV						
19MCM401	Core 15	Management Accounting	5	3	30	70	100	4
19MCM402	Core 16	Strategic Management	5	3	30	70	100	3
19MCME07/ 19MCME08/ 19MCME09	Elective III	Elective	5	3	30	70	100	4
19MCMPR1	Project	Major Project		3	50	100	150	8
19MCMRA2		Research Article 2						
		Total	**15**				**450**	**19**
						Total	**2300**	**90**

List of Elective Courses		
Elective I	19MCME01	Foreign Exchange Management
	19MCME02	Institutional Facilitating International Trade
	19MCME03	Export and Import Procedures
Elective II	19MCME04	Security Analysis and Portfolio Management
	19MCME05	Fundamental and Technical Analysis
	19MCME06	Futures and Options
Elective III	19 MCME07	Entrepreneurship & Small Business Management
	19MCME08	Micro finance Management
	19MCME09	Retail Marketing Management

Additional Credit Courses

Sem	Code	Subject Title	Marks	Credits
II	19MCMAC1	Logistics and Supply Chain Management	100	2
III	19MCMAC2	Cost Audit and Operational Audit	100	2

Part	No of Papers	Total Credits	Total Marks
Paper , Elective and Project	20	84	2150
IDC –Inter Disciplinary Course	1	4	100
EDC –Extra Department Course	1	2	50
Total		90	2300

REGULATIONS FOR MASTER OF COMMERCE

(Effective from the academic year 2019-2020 onwards)

1. **Submission of Record Note Books for practical examinations**

Candidates appearing for practical examinations should submit Bonafide Record Note Books prescribed for practical examinations, Otherwise the candidate shall not be permitted to appear for the Practical Examinations.

2. Ratio of Comprehensive Examination, Pre- Model and Model Examinations Marks for UG and PG Courses

Part	Internal Assessment	External Assessment	Total Marks
I (Languages)	30	70	100
II (English)	30	70	100
III(Core, IDC)	30	70	100
IV (SBC)	-	75	75
IV (EDC/Foundation Course)	-	50	50
V (NCC/NSS/Sports/Ext. Activity)	50	-	50

3. Project Work Mark Distribution

Particulars	IA	CE	Total
Project Work (UG)	50	50	100
Project Work (PG)	100	100	200
Project Work(M.Sc(CS)/M.Sc(ECS)	150	100	250
Project Work (M.Com/MIB)	50	100	150

4. Practical Mark Distribution for all UG and PG Courses

Internal -40 External-60 Total Marks -100

5. Break up for Internal Marks

S. No	Internal Marks	Distribution of Marks
1	Pre Model Examination	70
2	Model Examination	70
3	Seminar	30
4	Attendance	10
Total		**180/6=30**

6. Seminar Split up

S.NO	Seminar split up	Marks
1	Content	10
2	Flow of the presentation	10
3	Stage management and Body language	10
Total		**30**

7. Attendance Break up

S.NO	Attendance split up	Marks
1	65% to 74%	4
2	75% - 80%	6
3	81% - 90%	8
4	91% - 100%	10

8. Internal Marks for Practical (Maximum 40)

Maximum Marks : 40		
S No	Internal Marks	Distribution of Marks
1	For Completion of the Practical List	20
2	Test –I	10
3	Test –II	10
Total		**40**

9. External Marks for Practical (Maximum 60)

Maximum Marks : 60		
S. No	Comprehensive Examination	Distribution of Marks
1	Record	10

2	Program – I Algorithm Coding Execution	5 10 10 TOTAL (25)	
3	Program – II Algorithm Coding Execution	5 10 10 TOTAL (25)	
Total		**60**	

10. Internal and External Marks for Project Work (Maximum 150)

S.No	Internal Marks	Distribution of Marks
1	**INTERNAL** Three Project Reviews Report	 25 25 **Total (50)**
2	**EXTERNAL** Presentation Viva	 50 50 **Total (100)**
Total		**150**

11. Pattern of Question Paper

For Pre model Test, Model and Comprehensive Examination under – Graduate and Post - Graduate Courses.

Maximum Marks : 70 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×4=20)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 50 / Time 3 Hrs			

Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×3=15)	Each question carries four marks	Internal Choice
Section – C	(5×5=25)	Each question carries eight marks	Internal Choice
Maximum Marks : 100 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×8=40)	Each question carries four marks	Internal Choice
Section – C	(5×10=50)	Each question carries eight marks	Internal Choice

Note:

1. The questions should be numbered continuously running through the Sections A, B and C.

2. Questions should be evenly distributed among the unit in the syllabus in all the sections of the Question paper

3. While framing questions with internal choice the questions must be identified as (a) or (b). (e.g 11. a or b). Further, the internal choice must be from the same unit.

4. The Controller of the Examinations shall arrange for the setting of question papers on the basis the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies.

12. Conduct of Practical Examinations:

Practical examinations shall be conducted with one internal examiner and one external examiner and the question paper for practical examination shall be set by both Internal and External examiners.

13. Publication of Research Article :

The Student has to undertake Research study in any area of Commerce and has to publish two Research Articles one in III semester and another in IV Semester in any reputed journal during their course of study. The status of completion shall be evaluated by an examiner.

M.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards

FIRST SEMESTER

CORE 1: CORPORATE ACCOUNTING

Maximum CIA:30

MaximumCE:70

Total Hours: 72

Course Objective:

    To enable the students to learn principles and concepts of Corporate Accounting

Unit I   (14 Hours**)**

Preparation of Final accounts – Schedule VI Part I and Part II – Profit prior to incorporation – Managerial remuneration – Dividend declaration out of the past and the current profits – Issue of Bonus shares – Preparation of Balance Sheet.

Unit II   (15 Hours)

Amalgamation – Absorption (Excluding inter – company holdings) – External reconstruction – Internal reconstruction (Excluding scheme of reconstruction).

Unit III   (14 Hours)

Holding company accounts (excluding inter-company holdings) – Liquidation of companies.

Unit IV   (15 Hours)

Accounts of Banking companies (new format) and Insurance Companies.

Unit V   (14 Hours)

Human Resource Accounting - Principles of Government accounting – Responsibility Accounting.

Note: Distribution of marks: Theory 20% and Problems 80%.

Course Outcomes:

    On completion of the course the students will be able to

- To enable the students to prepare final accounts of companies

- To provide knowledge on amalgamation , absorption and external reconstruction

- To enable the students to prepare the accounts of holding companies and gain idea of liquidation of companies

- To make them aware of the accounts of banking company and insurance company

- To develop the knowledge on Human Resource Accounting, Government Account and Responsibility Account

Text Book:

1. S.P.Jain and K.L. Narang , Advanced Accounting, 5th Edition, Kalyani Publishers, 2008,New Delhi.

Reference Books:

1. Dr.Maheshwari.S.N and Dr.Maheshwari S.K, Corporate Accounting,5th Edition, Vikas Publishing House Pvt Ltd,2010,New Delhi.

2. Gupta.R.L and Radhaswamy. M, Corporate Accounting , 13th Edition, Sultan Chand and Sons, 2006, NewDelhi

M.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards

FIRST SEMESTER
CORE 2 - MANAGERIAL ECONOMICS

Maximum CIA:30
MaximumCE:70
Total Hours: 48

Course Objective:

On the Successful completion of this paper the students should have developed their knowledge on Principles of Managerial Economics.

Unit –I   (10 Hours)

Managerial Economics – Meaning, Nature and scope – Managerial Economics and business Decision Making – Role of Managerial Economist – Fundamental concepts of Managerial Economics – Demand Analysis – Determinants and types of demand – Elasticity of demand.

Unit- II   (10 Hours)

Supply – Determinants – Production decisions – Production functions – Isoquants, Expansion path – Cobb-Douglas function. Cost concepts and its Functions – Cost-Output relationship – Economies and diseconomies of scale.

Unit –III   (10 Hours)

Market structure – Characteristics – Pricing and Output decisions – Methods of Pricing – Differential Pricing – Transfer Pricing – Price discrimination – Government intervention and Pricing.

Unit –IV   (8 Hours)

Profit – Meaning and nature – Profit Policies – Profit Planning and forecasting – Cost volume profit analysis – Investment analysis.

Unit- V   (10 Hours)

National income – Business Cycle – Inflation and Deflation – Balance of payments – Monetary and fiscal policies.

Course Outcomes:

On completion of the course the students will be able to

- Define and learn the importance of Managerial Economics in Decision Making in Business.

- Understand the Supply and its Determinants, Production functions and Cobb-Douglas

function, Cost concepts, Economies and diseconomies of scale.

- Distinguish the types of Competition in Market Structure such as Perfect, Monopoly, Monopolistic and Oligopoly competitions, Methods of Pricing and Government intervention in Pricing.
- Understand the meaning of Profit and Profit Policies besides Planning, Cost volume profit analysis and Investment analysis
- Educate the importance of National income and Business Cycle, inflation and deflation, Balance of payments, Monetary and Fiscal policies.

Text Books:

1. Joel Dean, Managerial Economics, 3rd Edition, Prentice Hall, 2004, New Delhi.

Reference Books:

1. Athmanand. R, Managerial Economics, 3rd Edition, Excel Publishers, 2002, New Delhi.
2. P.L. Mehta, Managerial Economic Analysis, Problems and cases, 1st Edition, S. Chand and Sons Company Ltd, 2004, New Delhi.

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FIRST SEMESTER
CORE 3: HUMAN RESOURCE MANAGEMENT

Maximum CIA:30
MaximumCE:70
Total Hours: 60

Course Objective:
To enable the students to learn the principles and concepts of Human Resource Management.

Unit I   (12 Hours)

Introduction to HRM -Role of a HR Professional & HR Policies- HR Planning and Forecasting: Job Analysis -Need, Writing Job Specification and Job Description, Manpower Planning Process, Assessing Demand and Supply, Methods of Forecasting.

Unit II   (12 Hours)

Recruitment and Selection: Sources of Recruitment, Selection Process- Training and Development : Process, Induction , Methods, Management Development.

Unit III   (12 Hours)

Compensation –Job Evaluation: Identifying compensable factors, Establishing Pay rates, Competency based pay, Variable pay and Incentives, Benefits and Services

Unit IV   (12 Hours)

Employee Relations – Nature - Importance, Approaches, Role of Trade Unions. Ethics in HR

Unit V   (12 Hours)

Emerging Trends in HR -Managing HR in Small and Medium Enterprises - Managing Employees in the Global Context – IT for HR, Employee Engagement Practices and Retention Management in companies, Role of HR in CSR

Course Outcome

   On completion of the course the students will be able to

   • Understand the Role of HR Professional in an organization and also Interpret HR Policies

   • Summarize the various functions of HR Department in connection with Recruitment , Selection and Training

- Design tools for Performance Appraisal, Establish pay rates.

- Understand the Importance of Employee Relations and the role of Trade unions.

- Demonstrate appropriate HR Competencies at the workplace.

- Gain knowledge on emerging trends in HR

Text Book:

1. Rao V.S.P, Human Resource Management, 2nd Edition, Excel Books Publication, 2008(Last Edition), Mumbai.

Reference Books:

1. K.Aswathappa, Human Resource Management; Text and Cases, MC Graw Hill Education, 2013.

2. Prasad .L.M, Human Resource Management, 2nd Edition, Sultan Chand & Co, 2014, New Delhi.

M.Com Degree Examination – Syllabus – for candidates admitted from the Academic Year 2019– 2020 onwards
FIRST SEMESTER
CORE 4- INTERNATIONAL BUSINESS

Maximum CIA : 30
Maximum CE : 70
Total Hours: 60

Course Objective:

To familiarize the students with intricacies of International Business in terms of Investment, Monetary and Strategies

Unit I   (12Hours)

International Business – Meaning – Nature – Significance - Changing Dimensions in International Business - Driving forces for Globalization - Factors affecting International Business Decision- Types of International Business- International Stages and Orientation- Social and Ethical responsibility in International Business.

Unit II   (12 Hours)

International Business Environment- Political Environment- Economic Environment- Legal Environment- Cultural Environment- Religion – Language- Education- Culture and Work Place- Difference in Culture- Stages in Transition –Cultural Change- Cross Cultural literacy- Culture and Competitive environment- Risk in international Business.

Unit III   (12 Hours)

International Trading Environment- Trade Strategies- Export and Import Policy – Regulation and Promotion of foreign Trade- Arguments for Free Trade - Protection – Methods of Protection- Tariff and Non Tariff Barrier- Balance of Payments – Determinants of Exports and Imports- Trade Deficit- Major Problems faced by the India's Exports in balance of Payment

Unit IV   (12 Hours)

Global Trade and Investment Environment- International Trade Theory – Introduction- Overview of Trade Theory- New Trade theory- Overview of Competitive Advantage- National Competitive Advantage- Porter Diamond theory- Development of Multi Trading System- Regional Grouping of Countries and Impacts

Unit V   (12 Hours)

FDI Introduction- Types of FDI- Global Monetary System- Foreign Exchange Market- WTO – Evaluation of WTO- GATT- TRIPs- Copy Rights- Industrial Property TRIMs- Strategies in International Business- Strategic Alliance- Export and Import Finance- Export Assistance

Course Outcome:

- Understand the basic concepts of International Business and factors affecting international Trade
- Learn the various international business environment and various risks in international business
- Gains the knowledge regarding EXIM policy , BOP and the problems faced in International trade
- Aware about various international trade theories
- Gain the knowledge of FDI, Global monetary system, Forex Market and various trade associations

Text Book :

1. Francis Cherunilam, International Business , PHI Learning Pvt Ltd, 2009

Reference Books:

1. Anant K.Sundaram/J.Stewart Black, The International Business Environment PHI Learning Pvt Ltd, 2000, Sixth Edition, New Delhi.
2. P.K. Vasudeva, International Trade, Excel Books, 2011, First Edition, New Delhi

M.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards

FIRST SEMESTER
CORE 5 – LEGAL ASPECTS IN BANKING AND INSURANCE

Maximum CIA: 30
Maximum CE :70
Total Hours   : 60

 Course Objective: To enable the students to learn principles and concepts of laws relating to the Banking and Insurance Business.

Unit -I   (12 Hours)

Banking Laws – Meaning - Scope – Types of Accounts – Types of Customers – Relationship between and Customer – Rights and Obligations – Commercial Banks vs. Central Banks – Banking Regulation Act 1949 – RBI – Functions.

Unit -II   (12 Hours)

Negotiable Instruments – Meaning – Characteristics - Types – Features – Crossing – Marking and Endorsement – Cheque - Feature of Valid Cheque – Collection of Cheque – Payment of Cheque – Refusal of Payment of Cheque – E- Cheques

Unit –III   (12 Hours)

Paying Bank – Paying Banker - Statutory Protection -- Duties of Paying Banker and Collecting Banker.- Bank Loan and Advances - Bankers Lien. Modern Banking - Recent Developments of Modern Banking: ATM- Tele Banking- EFT- SWIFT- Demat Accounts - Online Banking- Digital Payment System

Unit -IV   (12 Hours)

The Principles of the Law of Contract –Indian Contract Act 1872 - Ingredients of a Valid Contract – Contracts of Indemnity - Guarantee – Bailment – Assignment - Law of Agency – Law of Arbitration – Application to Insurance.

Unit –V   (12 Hours)

Insurance Act 1938 – Life Insurance Corporation Act, 1956 – Insurance Regulatory Development and Authority - General Insurance Business Act 1973- - Motor Vehicle Act 1939 and 1988 -Marine Insurance Act – The Indian Railways Act 1980.

Course Outcome

At the end of this course students should be able to:

- Helps the students to understand the basics of banking law and the rights of the customers.
- Familiarity with the instruments in bank and how to practically use them.
- Knowledge on the various advancements in banking sector and the tools of online banking.
- Provides knowledge on the various contracts and its application with insurance and to understand
- the various elements of regulation and control in the insurance industry.
- To understand the nature of regulation in the Insurance industry.

Text Book:

1. Gordon and Natarajan, Banking theory law and practice, Himalaya publishing house, New Delhi 2014

References Books:

1. N.C. Majumdar, Fundamentals of Modern Banking , New Central Book Agency (P) Ltd, Mumbai 2010.
2. Nalini Prava Tripathy, Financial Services, Prentice Hall of India Private Limited ,New Delhi,2012

M.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards
FIRST SEMESTER
CORE 6 : BUSINESS ENVIRONMENT

Maximum CIA:30
Maximum CE: 70
Total Hours: 60

Course Objective:

To enable the students to understand the business environments.

Unit I (12 Hours)

Concept of Business Environment – Significance – Types of environment – External and Internal – Macro environment –Impact of environment on business and strategic decisions – Culture and business – Social responsibilities of business

Unit II (12 Hours)

Industrial policies and regulations – Industrial policy up to 1991 – New industrial policy – public private , joint and co – operative sectors – Privatization and Disinvestment – Ways of privatization – Benefits and arguments against privatization – Privatization in India.

Unit III (12 Hours)

Economic systems – Meaning – Characteristics – Types of economic systems – Capitalism – Socialism – Mixed economy – Economic planning – Nature, Scope and Significance of economic planning in India – Achievements and failures of economic planning. Monetary policy and fiscal policy.

Unit IV (12 Hours)

Technological environment- factors governing technological environment – Management of technology – Patents and Trademarks – Financial institution in India – IFCI – ICICI – IDBI – IIBI – SIDBI – SFCs.

Unit V (12 Hours)

Globalization – Meaning and Dimensions – Features of Current Globalization – Essential conditions for Globalization- Globalization of Indian Business – Foreign Direct Investment – Concept, Advantages , Disadvantages and Determinants – India's policy toward FDI – Multinational Corporation – Meaning – Merits and Demerits – Control over MNCs in India.

Course Outcomes

- Identify the perception and significance of business environment and realize the types of environment, impact of environment of business and public responsibilities of business
- Classify the different economic systems, economic planning and develop the new industrial policy.
- Recognize and describe the Globalization and FDI and know the social ethics of the Business.
- Categorize the different technological environment and to develop the awareness of Constitutional environment.
- Classify the different technological and management technology and the impact of technology in business

Text Book

1. Francis Cherunilam, Business Environment,1st Edition, Himalaya Publishing house, 2006,Mumbai.

Reference Books

1. Justin Paul, Business environment, 1st Edition, Tata McGraw- Hill Publishing company Ltd,2006, New Delhi.
2. Raj Agarwal, Business environment.2nd Edition, Dorling Kindersley India pvt Ltd ,2002, New Delhi.

M.Com Degree Examination – Syllabus for Candidates admitted from the academic year 2019-2020 onwards

SECOND SEMESTER
CORE 7- ADVANCED COST ACCOUNTING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:

    To enable the students to learn principles and concepts of Cost Accounting

Unit I   (12 Hours)

Introduction of Cost Accounting — Difference between Financial and Cost Accounting – Relationship with Management Accounting – Nature and Significance of Cost Accounting – Installation of Costing System – Characteristics of Ideal Costing System – Elements of Cost – Cost Concept – Preparation of Cost Sheet- Tenders and Quotations.

Unit II   (12 Hours)

Classification of Materials - Coding of Materials –Level setting– EOQ – Purchase Procedure – Storage of Materials – ABC, VED Analysis- Issue of Materials (FIFO, LIFO, Simple Average, Weighted Average, Standard Price, Base Stock) – Pricing of Material Issues and Returns – Inventory Control –Physical verification – periodical and perpetual inventory – Analysis of Discrepancies - Correction Measures.

Unit III   (12 Hours)

Labour: Classifications of Labour – Wage Payment and Incentive System (Halsey, Halsey-weir, Rowan's plan) – Idle Time – Over Time- Accounting of Labour cost - Labour Turnover - Work Study – Time and Motion Study. Over Heads – Classification – Absorption of Overhead – Over Absorption and Under Absorption.

Unit IV   (12 Hours)

Process Costing – Features of Process Costing – comparison between Job Costing and Process Costing – Process Losses - Inter-Process Profits and Loss - Equivalent Production - Job Costing- Joint Products and By Products – Distinction between By – products, Main products and Joint Products. Reconciliation of Cost and Financial Accounts

Unit V   (12 Hours)

Marginal Costing – Meaning, Definition, Benefits and Limitations of Marginal Costing – Break Even Analysis – Application of Marginal Costing in Business Decision Making.

Note: Distribution of marks: Theory 20% and Problems 80%.

Course Outcome:

On completion of the course the students will be able to

- Understand the fundaments of cost accounting and preparation of cost sheet

- Gains the knowledge on various stock levels and material issuing technique

- Demonstrate wage calculation, time and motion study

- Aware about overheads and their absorption techniques

- Elaborate the features of process costing and method to compute process losses, inter process profit and loss and equivalent production

- Enumerate the procedure for reconciliation of cost and financial accounts

- Develops the knowledge regarding managerial application of marginal costing

Textbook:

1. S.P.. Jain & K.L. Narang, Cost accounting, 2nd Edition, Tata McGraw Hill, 2015, New Delhi.

Reference Books:

1. A.Murthy & S.Gurusamy, Cost Accounting, 3rd Edition, Vijay Nicole Publishers 2017,Chennai

2. T.S.Reddy & Y. Hari Prasad Reddy , Cost accounting, 4th Edition, Margham Publishers 2016, Chennai.

M.Com Degree Examination – Syllabus for Candidates admitted from the academic year 2019-2020 onwards
SECOND SEMESTER
CORE 8: INDIRECT TAXATION

Maximum CIA :30
Maximum CE :70
Total Hours   : 60

Course Objective:

To enable the students to learn the basic principles and concepts of Goods and Service Tax.

Unit I   (12 Hours)

Indirect Taxation – Origin and Importance – Features – Contribution to Government Revenues – Taxation under the Constitution – Direct Taxes and Indirect Taxes – Advantages and Disadvantages of Indirect Taxes.

Unit II   (12 Hours)

GST – Introduction and Origin – Features – Objectives – Benefits: Central Government, State Government, Individuals and Companies – Goods and Service Tax Network (GSTN)-Difference between Previous Taxation and New GST in India

Unit III   (12 Hours)

GST Constitutional Amendment Bill 2016 - CGST Act – IGST Act – SGST Act — Provision of demand under GST- Types of GST in India: CGST, SGST, IGST – Categories GST Exemptions: Exempted, Essential, Standard and Special Goods & Services Categories.

Unit IV   (12 Hours)

Authorities implementing GST - Registration Procedure – Penalties for Non Compliance – Self Assessment under GST – Goods and Service Tax System

Unit V   (12 Hours)

Application of GST – Mechanism of GST – Applicable GST Rate – Levy of GST – Implementation of GST Bill: Benefits and Challenges.

Course Outcomes

- Recognize the essential principles underlying the Indirect Taxation Statutes
- Identify and analyze the technical aspects under disparate relevant statutes related to indirect taxation and to know the kinds of GST.

- Scrutinize the concepts used in indirect tax, assessment, powers, duties, offences, penalties etc. and categories of GST exemptions
- Discriminate the registration procedure and to analyse the Goods and Service Tax System
- Examine Practice the application of GST and Mechanism of GST, Implementation of GST.

Text Books:

1. Dr. R.Parameswarn, Indirect taxation,1st Edition, Kavin Publications, 2018,Gujarat.

Reference Books:

1. CA. Kamal Garg Neeraj Kumar, Beginner's guide to Goods & Services, Bharat Law House Pvt. Ltd., New Delhi,2018
2. Radhakrishnan P, Indirect Taxation, Kalyani publishers, 4th Edition, 2016,

M.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards
SECOND SEMESTER
CORE 9: MARKETING MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:

To enable the students to understand the Marketing and management skills..

Unit I   (12 Hours)

Introduction- Concept- nature- scope and importance of marketing- Marketing concept and its evolution- Strategic marketing planning--Market Analysis and Selection-Marketing environment- Macro and micro components and their impact on marketing decisions- Market segmentation and positioning- Buyer behavior- Consumer versus organizational buyers- Consumer decision-making process-

Unit II   (12 Hours)

Production Decisions- Concept of a product- Classifications of products- Major product decisions- Product line and product mix- Branding- Packaging and labeling- Product life-cycle- New product development and consumer adoption process- Pricing Decisions- Factor affecting price determination- Pricing policies and strategies- Discounts and rebates

Unit III   (12 Hours)

Distribution Channels and Physical Distribution Decisions-Nature and functions of distribution channels- Distribution channel intermediaries- Channel management decisions-Retailing and wholesaling- Logistics of distribution

Unit IV   (12 Hours)

Promotion Decisions- Communication process- Promotion mix - advertising- personal selling- publicity and public relations- Determining advertising budget-Copy designing and its testing- Media selection- Advertising effectiveness-Marketing Organization and Control-Organizing and controlling marketing operations.

Unit-V   (12 Hours)

Issue and Developments in Marketing- Social- ethical and legal aspects of marketing- Marketing of service- International marketing- Green marketing- Cyber Marketing-Relationship marketing and other development in marketing

Course Outcome

On Completion of the course the student will be able to

- Understand the nature, scope and importance of Marketing, marketing environment and its components and market segmentation
- Gain knowledge on production, production decisions, product mix and factors affecting the price determination
- Demonstrate the various channels of the distribution
- Aware of promotional techniques and prepare advertising budget
- Acquire the knowledge regarding social, ethical and legal aspects of marketing

Text Book:

1. Kotler- Philip, Marketing Management-Analysis, planning, Implementation and Control, Prentice Hall, 2015,New Delhi.

Reference Books:

1. Majumdar, Ramanujam, Product Management in India, Prentice Hall, 2011 New Delhi.
2. Dr. K. Karunakaran, Marketing Management, First Edition, 2007,Himalaya Publishing House, Mumbai

M.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards

SECOND SEMESTER

CORE 10 : FINANCIAL MANAGEMENT

Maximum CIA:30

Maximum CE: 70

Total Hours: 60

Course Objective :

    To enable the students to learn principles and concepts of Financial Management.

Unit I   (12 Hours)

Financial Management - Meaning, Nature, scope and objectives – Role and functions of Financial Management – Financial decisions – relationship between Risk and Return – Sources of finance – Short-term and Long-term finance.

Unit II   (12 Hours)

Cost of Capital - Meaning and importance – Cost of Debt, Preference, Equity and Retained Earnings – Weighted Average Cost of capital – Capital budgeting – Techniques – ROI, Payback period and NPV method.

Unit III   (12 Hours)

Leverages - Financial Leverage – Operating leverage – EBIT and EPS analysis – Theories of Capital Structure – Net income approach – Net operating income Approach. MM Hypothesis – Determinants of capital structure- Capitalization – Over and Under Capitalization- Merits and Demerits.

Unit IV   (12 Hours)

Leasing - Nature and Types- Advantages and Disadvantages-Dividend Theories: Walter's model – Gordon and MM's models – Dividend policy - Forms of Dividend – Determinants of dividend policy.

Unit V   (12 Hours)

Working Capital Management– Meaning- Classification- Importance–Determinants and Computation of Working Capital-Cash Management – Determining optimum cash balance-Models and Motives for Holding Cash-Factors Determining Cash Needs-Receivables management -Forming of credit policy.

Note: Distribution of marks: Theory 40% and Problems60%.

Course Outcomes

- Define and identify the concepts of Financial Management
- Understand Cost of Capital and Capital Budgeting techniques for strategic Financial Decision Making
- Understand types of leverages and analyze in-depth principles of capital structure theories like net income approach, net operating income approach and MM hypothesis.
- Explain the concept of leasing and various dividend theories.
- Familiarize with various types of management- working capital, cash, receivables Management.

Text Books

1. Khan.M.Y and Jain P.K, Theory and Problems of Financial Management, 3rd Edition, Tata McGraw- Hill Publishing Company Ltd,1992, New Delhi.

Reference Books

1. Kulkarni P.V and Satya Prasad. B.G, Financial Management, 11th Edition, Himalaya Publishing house, 2002,Mumbai.
2. Pandey I.M, Financial Management, 8th Edition, Vikas Publishing House Pvt Ltd, 2005, New Delhi.

M.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards

SECOND SEMESTER

ELECTIVE I: FOREIGN EXCHANGE MANAGEMENT

Maximum CIA:30

MaximumCE:70

Total Hours: 60

Course Objective:

The objective of this subject is enriching students with the mechanism of the foreign exchange markets, measurement of exposure and hedging against risk.

Unit- I   (12 Hours)

Introduction: Foreign Exchange Markets and Transactions.- Quoting Foreign Exchange Rates, Spread, Official and Free market rates - Direct, Indirect and Cross Rates- Forward Rates: Quoting and Structure. Forward Exchange Rates versus Expected Future Spot Rate- Outright Forwards versus Swaps.

Unit -II   (12 Hours)

Currency Futures and Option Markets-Currency Futures, Marking to Market-Futures Contract versus Forward Contract-The link between the Future and the Forward Contract-Currency Options, Exchange Traded Options-Quotation Conventions and market organization-Determining market value of Options-Over the Counter (OTC) Options.

Unit-III   (12 Hours)

Determination of Exchange Rates: The Balance of Payment Accounts -The net International Investment Position- Supply and Demand View of Exchange Rates -Modern Theories of Exchange Rates -Alternative Systems of Exchange Rate -Hybrid System and Target Zone Arrangement.

Unit-IV   (12 Hours)

Foreign Exchange Exposure and Risk: The nature of Exchange Rate Risk and Exposure - Types of Foreign Exchange Exposure - Alternative Strategies for Exposure Management - Exposure Management Techniques - Hedging Risk and Exposure.

Unit-V   (12 Hours)

International Taxation: Different Forms of Taxes, Import Duties-Organizational structures for reducing taxes - Tax Reliefs - Tax Treatment of Foreign Exchange Gains and Losses.

Course Outcome:

The student will be able to

- Identify foreign exchange risk management and the techniques available to small business operators for risk exposure containment;
- Analyze alternative currency translation methods for settlement of goods;
- Examine the organization of the Foreign Exchange Market, the Spot Market, and the Forward Market, and how the information driven in these markets can be used by small business operators in controlling and managing foreign exchange;
- Identify operational difficulties in financing, and settling in foreign currency, and currency forecasting;
- Evaluate the intercompany funds-flow mechanisms, cost and benefits, pertaining to all foreign sales and settlements.

Text Books
1. "Foreign Exchange Management"- Subbulakshmi V Seethapathi K, Publisher: Institute Of Chartered Financial Analyst, 2004 Edition.

Reference Books
1. "Foreign Exchange Management and International Finance"- Vivek Viswan V. & M.M. Sulphey, viva books publishers, 6th edition, 2016
2. Foreign Exchange & Risk Management - C. Jeevanandam, Schand publishers, 6th Edition, 2013.

M.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards

SECOND SEMESTER
ELECTIVE I - INSTITUTIONS FACILITATING INTERNATIONAL TRADE

Maximum CIA : 30
Maximum CE:70
Total Hours: 60

Course Objective :

To enable the students to acquire knowledge on the various institution facilitating International Trade.

Unit I   (12 Hours)

Export promotion in India-Department of Commerce- Functional divisions- Advisory bodies-Commodity organizations-Export promotion councils (EPCs)- Commodity Boards-Autonomous bodies- Service Institutions and organizations-Government trading organizations-State trading corporations- Major STCs in India- State export –Promotion agencies- Impediments in Export Promotion.

Unit II   (12 Hours)

Role of RBI in export finance –Role of Commercial Banks-Small Industrial Development Bank of India (SIDBI) - Objectives-Schemes-Export and Import bank of India (EXIM) - Objectives-Functions-Export Credit Guarantee Corporation of India (ECGC) – Functions – Special functions of ECGC.

Unit III   (12 Hours)

World Trade Organisation – GATT – Objectives-Evolution of WTO-Functions- Principles of WTO- Organisation structure- WTO agreements-GATS-TRIMS-TRIPS-Objectives of IPRS benefits-Limitations-Procedure of Dispute settlement –WTO and Anti Dumping measures-Evaluation of WTO- Drawbacks/Criticisms.

Unit IV   (12 Hours)

International Monetary Fund (IMF)-Objectives- Organisation and Management- Resources-Financing facilities- Conditions on borrowers- Special drawing rights-World Bank-Purpose-Organisation structure- Guiding principle- Leading programs.

Unit V   (12 Hours)

International Development Association (IDA)-Objectives-Memberships – Loan assistance-International Financial Corporation (IFC)- Objectives-Main features- Asian Development Bank(ADB)- Objectives-UNCTAD-Functions-Basic principles- International Trade Centre.

Course Outcome

- Gain the knowledge regarding Export Promotions in India, Government and State Trading Corporations and State Export
- Learn the Concept of role of RBI in Export finance , role of Commercial Banks, EXIM Bank and ECGC
- Understand the concept of GATT, WTO Functions , TRIMS and TRIPS objectives
- Able to Gain the knowledge of IMF objectives Resource facilities , SDR and World Bank
- Learn the Concept regarding IDA objectives, IFC objectives, features , ADB and UNCTAD functions.

Text Book

1. International Business (Text & cases) : Francis cherunilam PHI Learning Pvt. Ltd, 2009.

Reference Book

1. Rakesh Mohan Joshi., International Marketing, Oxford University Press, 2005.
2. Bimal Jaiswal and Sunita Srivastava, International Trade, New age International Publishers,Delhi, 2017

M.Com Degree Examination – Syllabus for Candidates admitted from the Academic Year 2019-2020 onwards

SECOND SEMESTER
ELECTIVE I - EXPORT AND IMPORT PROCEDURES

Maximum CIA : 30
Maximum CE: 70
Total Hours: 60

Course Objective: To enable the students to learn the procedures of Export and Imports.

Unit I   (12 Hours)

Exports – Recent measures to boost Country's Exports – Rules for successful exporting – Preliminaries for starting export business – Deemed Exports and its benefits – Finance for Exports.

Unit II   (12 Hours)

Different Categories of exporters - Registration of Exports – Appointing Overseas agents – Obtaining an export license – Arranging finance for exports – Packing goods for exports – Marketing Goods for export.

Unit III   (12 Hours)

Excise procedure – Insuring goods against Marine risks – Preparing Export documents – Institutional support for Exports – Compulsory quality control and Pre-Shipment Inspection – Labeling – Shipping and Customs Clearance of Goods.

Unit IV   (12 Hours)

Import Trade law in India – Preliminaries for starting Import Business – Registration of Importers – Arranging Finance for Import – Arranging letter of Credit for Imports – Balance of Payments – Liberalization of Imports.

Unit V   (12 Hours)

Retirement of Import Documents and RBI's directives for making payment for Imports – Customs clearance of Imported Goods and Payments of Customs Duty – Imports under Special Schemes.

Course Outcome:
- Understand the preliminaries to start export business and the finance source for exports
- Demonstrate the different categories of exporters.
- Prepare export and Insurance documents relating to shipment of goods

- Inculcate knowledge on import trade laws
- Learn the procedure for clearance and payment of customs duty

Text Book :

1.Rama Gopal, Export Import Procedures, Documentation and Logistics, New Age International, 2016, New Delhi.

Reference Books:

1. P.K. Khurana, Export Management, Galgotia Publishing Co., 2009, New Delhi.

2. T.A.S. Balagobal, Export Management, Himalaya Publishing House, Mumbai, 2011

M.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards

SECOND SEMESTER

ACC 1 - LOGISTICS AND SUPPLY CHAIN MANAGEMENT

Maximum CE: 100

Course Objective :

On successful completion of the paper the student should understand to manage the interaction of business functions across companies in the supply chain as well as in the Logistics Management.

Unit – I

Overview of Logistics : Nature and concepts – Evolution of the Logistics Concept – Logistical Mission and Strategic Issues – Logistics in India – Growing Importance of Logistics Management – Logistical Competitive Advantage – Strategic Logistics Planning Process – Components of Logistics Management – Functions of Logistics Management

Unit - II

Supply Chain Management: Introduction – Value Chain – Functions and Contributions – Supply Chain Effectiveness and Indian Infrastructure – Framework for Supply Chain Solution – Outsourcing and 3PLs – Fourth-party Logistics (4PLs) –Supply Chain Relationships – Conflict Resolution Strategies for Harmonious Relationships.

Unit – III

Elements of Logistics & Supply Chain Management: Introduction – Positioning of Information in Logistics and Supply Chain Management – Logistics Information System (LIS) – Operational Logistical Information System –Emerging Technologies in Logistics and Supply Chain Management.

Unit – IV

Warehousing and Distribution Centres : Introduction– Concepts of Warehousing– Types of Warehouse– Functions of Warehousing– Warehousing Strategy– Warehouse Design– Operational Mechanism of Warehouse.

Unit - V

Logistics Administration: Introduction– Evolutionary Trends of Logistics and Supply Chain Organization– Basic Organization Principles– Factors Influencing Organizational Structure.

Text Book:

1. D.K.Agarwal, Logistics and Supply Chain Management, Macmillan Publishers India Limited, 2009, 8th edition.

References Books :

1. Gaurdin, Kent N., Global Logistics Management (2001), Blackwell Publishers Ltd., Oxford.

2. Martin Christopher, Logistics and Supply Chain Management (2000), Financial Times Management, Pitman Publishing, London.

Course Outcome

On Successful completion of the course the student will

- Understand the growing importance of Logistics management
- Understand fundamental supply chain management concepts.
- Apply knowledge to evaluate and manage an effective supply chain.
- Understand the foundational role of logistics as it relates to transportation and warehousing.
- To align the management of a supply chain with corporate goals and strategies.
- Analyze and improve supply chain processes.

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THIRD SEMESTER
CORE 11 - DIRECT TAXES

Maximum CIA-30
Maximum CE-70
Total Hours: 60

Course Objective :

To enable the students to learn principles and concepts of Direct Taxes

Unit I   (12 Hours)
Direct tax- Meaning –Merits –Demerits- Income –Features-Types – Agricultural Income - Assessment Year - Previous year- Assesses - Types of Assesses - Residential status of Person - Exempted Income.

Unit II   (12 Hours)

Heads of Income- Income from Salaries – Characteristics of Salary - Treatment of Provident Fund – Allowances – Types of Allowances- Perquisites- Taxability of Perquisites - Valuation of Rent free Accommodation - Gratuity – Pension –Leave Encashment - Calculation of Income from Salary.

Unit III   (12 Hours)
Income from House Property – Annual Value - Different Types of   Rental Value – Determination –Deduction U/S 24 – Calculation of Income from House Property. Profits   and Gains of Business or Profession – Computation of Income from Business or Profession.

Unit IV   (12 Hours)
Capital Gains- Types –Exemption - Determination of Cost of Acquisition –Treatment of Capital Loss - Set-off and Carry Forward of Losses – Income from Other Sources –Tax treatment of Gift - Deduction of Tax at Source .

Unit V   (12 Hours)
Deductions to be made from Total Income –Assessment of Individuals - Computation of Tax Liability –   E-Filing – Procedure.
NOTE: Distribution of marks: Theory 40% and Problems 60%

Course Outcomes:

CO1: Evaluate the concepts and schedule of tax rates, tax liability, penalties and prosecution

CO2: Know the total taxable income of an assessee

CO3:Apply and practice the computation of total income.

CO4: Know the Determination of Cost of Acquisition and Deduction of Tax at Source.

CO5: Analyse the Computation of Tax Liability, deductions , E-Filing & its Procedures.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	L					M		
CO2		H						
CO3					L			
CO4					H			
CO5								H

Text Books:

1. Gaur.V.P and Narang.D.B, Puja Gahai,Rajeev Puri , Income Tax Law and Practice ,44th edition, Kalyani Publishers , 2016, New Delhi.

2. T.S.Reddy and Y.Hari Prasad Reddy, Income Tax Law and Practice, 16th Edition, Margam Publication, Chennai

Reference Book:

1. Hariharan.N, Income Tax, 10th edition, Tata McGraw hill, 2016, New Delhi.

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THIRD SEMESTER
CORE 12 : INVESTMENT MANAGEMENT

Maximum CIA-30
Maximum CE-70
Total Hours: 60

Course Objective:

To explore contemporary knowledge and gain a conceptual understanding of Various Investment options and its management techniques.

Unit I   (12 Hours)

Introduction to Investments **-** Meaning– Nature- Scope- Objectives - Importance - Elements of investment –Factors influencing investment -Difference between investor and speculator-Financial System in India

Unit II   (12 Hours)

Investment Alternatives - Investment in Shares and Debentures -LIC schemes-Bank deposits-Government securities-Mutual fund schemes-Post office schemes-Provident fund-company deposits-real estate-gold & silver.

 Unit III   (12 Hours)

Securities Markets **-** Financial Market -Segments –Types -Primary Market – Methods of floating new issues–Role of primary market- Secondary Market- Mutual Funds- Stock exchanges in India –BSE, OTCEI, NSE, and ISE–SEBI.

 Unit IV   (12 Hours)

Security Analysis and Risk Management - Security analysis-Fundamental Analysis: Economic, Industry and Company analysis- Technical analysis- Dow theory-Types of Shares -Important share patterns -Risk- kinds-Measures of risk-returns-Valuation of securities - Valuation of bonds

Unit V   (12 Hours)

Portfolio Management - Nature- scope - SEBI guidelines in Portfolio Management-Portfolio investment process-Elements - An optimum selection problem - Markowitz Portfolio Theory – Sharpe – Single Index Model –APT Model

Course Outcomes:

CO1: Know the scope and importance of investment.

CO2: Understand the patterns of investment in different schemes.

CO3: Acquire knowledge about the various stock exchanges and Securities market.

CO4: Gather knowledge about valuation risk and returns in securities.

CO5:Acquire complete knowledge about portfolio management.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1			M					
CO2					L			L
CO3					L		M	
CO4		L				M		
CO5					M		H	

Text Books:

1. Dr Preeti Singh, Investment Management , Himalaya Publishing House, 2016
2. V. A. Avadhan, Securities Analysis and Portfolio Management, Himalaya Publishing House, 2011

Reference Books:

1. S. Kevin, Securities Analysis and Portfolio Management, PHI Learning, 2012.
2. Bodi, Kane, Markus, Mohanty, Investments, 8thedition, Tata McGraw Hill, 2011.

M.Com Degree Examination – Syllabus for Candidates admitted from the academic year 2019-2020 onwards

THIRD SEMESTER

CORE 13– LABOUR LAW AND INDUSTRIAL RELATIONS

Maximum CIA:30
Maximum CE:70
Total Hours: 48

Course Objective:

To explore contemporary knowledge and gain a conceptual understanding of Industrial Relations.

Unit I   (10 Hours)

Industrial Relations: Concepts – Importance – Industrial Relations problems in the Public Sector – Growth of Trade Unions – Code of conduct.

Unit II   (10 Hours)

Industrial Conflicts**:** Disputes – Impact – Causes – Strikes – Prevention – Industrial Pease – Government Machinery – Conciliation – Arbitration – Adjudication.

Unit III   (10 Hours)

Labour Welfare: Concept – Objectives – Scope – Need – Voluntary Welfare Measures – Statutory Welfare Measures – Labour Welfare Funds - Education and Training Schemes.

Unit IV   (10 Hours)

The Factories Act, 1948 – The Trade Unions Act, 1926 – The Payment of Wages Act, 1936 – The Minimum Wages Act, 1948 – The Industrial Disputes Act, 1947 – The Workmen's Compensation Act, 1923 – The Payment of Gratuity Act, 1972 – The Payment of Bonus Act, 1965.

Unit V   (8 Hours)

The Employee 's Provident Fund & Miscellaneous Act, 1952 –EPFO Portal - The Employees State Insurance Act, 1948 – The Industrial Employment (Standing Orders) Act, 1946 – The Apprentice Act, 1961 – The Equal Remuneration Act, 1976 - The Maternity Benefit Act, 1961 - Contract Labour Regulations and Abolition Act, 1970. The Child Labour Prevention and Regulation Act, 1986.

Course Outcomes:

CO1: Know the importance and concepts of Industrial Relations.

CO2: Know the impact and causes of Industrial Conflicts.

CO3: Know the concepts and education of Labour Welfare Measures

CO4: Know the categories of Labour Welfare Act.

CO5: Acquire a complete knowledge about Employee benefit schemes.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	L							
CO2			L				M	
CO3			L				M	
CO4							H	
CO5					L			

Text Books**:**

1. Mamoria C.B. and Sathish Mamoria, Dynamics of Industrial Relations, Himalaya Publishing House, New Delhi, 2007
2. P.K. Padhi, Industrial Laws, Prentice Hall of India. 2008

Reference Book:

1.S.C. Srivatsava, Industrial Relations and Labour Laws, 7th Edition ,S.Chandh Publishing, New Delhi, 2020

M.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards

THIRD SEMESTER
CORE 14-E-COMMERCE AND MIS

Maximum CIA:30
MaximumCE:70
Total Hours: 48

Course Objective:

 To enable the students to learn principles and concepts involved in E-commerce and concepts in utilization of business information for decision making to suit to the present IT industry.

Unit I   (10 Hours**)**

E-Commerce –Classification of Electronic Commerce-Anatomy of E-commerce Applications-Electronic Data –Interchange-Benefits-EDI Legal,Security&privacy issues-EDI Software Implementations.

Unit II   (10 Hours)

Consumer Oriented Electronic Commerce : Consumer Oriented Applications-Mercantile Process Models-Mercantile Models from the Consumers &Merchants perspective-Electronic Payment Systems-Types-Smart cards & Credit card Electronic Payment systems-Risk.

Unit III   (9 Hours)

Management information systems:Meaning-Features-Requisites of an effective MIS-MIS Model-Components-Role and Importance-Corporate Planning for MIS-Growth of MIS in an Organisation-Limitation of MIS.

Unit IV   (10 Hours)

Information System in Business and Management: System Concepts-Characteristics of Systems-Types –Categories of Information System-System Development Life Cycle-System Enhancement-Transaction processing System-Information Repeating and Executive Information System.

Unit V   (9 Hours)

Database & Functional Management Information System-Client server Architectures Network-Business Process Re-Engineering –Financial –Accounting –Marketing-Production-Human Resource- Business Process Outsourcing.

Course Outcomes:

On completion of the course the students will be able to

CO1: Acquire knowledge about e-commerce applications.

CO2: Gain skills about online payments and models of e-commerce applications.

CO3: Know the importance and role of Management information systems.

CO4: Understand the concepts and categories of Information System.

CO5: Gain knowledge about functional Management and business process.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1			M					
CO2			M				H	
CO3							H	
CO4				M				
CO5			M				H	

Text books:

1. Dr.Shivani Arora, E-commerce , Taxmann Publications Pvt. Ltd. (8 August 2019),2nd Edition,2019.

2.C.S.V.Moorthy, E-Commerce ,Himalaya Publishing House,2016,New Delhi

Reference Book:
1. Dr.K.Abirami Devi,Dr.M.Alagammai, E-Commerce, Margham Publications.2012

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M.Com Degree Examination – Syllabus for Candidates admitted from the Academic Year 2019-2020 onwards

THIRD SEMESTER
PRACTICAL I: COMPUTER APPLICATION IN BUSINESS

Maximum CIA-40
Maximum CE-60
Total Hours: 60

Course Objective:

To train the students to attain practical skill essential for modern office

MS-WORD, MS-EXCEL, MS – POWERPOINT, MS - ACCESS

1. Drafting a questionnaire for Research Problem

2. Calculate Mean, Median, Mode, Standard Deviation and Correlation

3. Create a presentation for exhibiting the details of a newly launched product

4. Prepare a Report based on Invoice details such as product number, quantity, price etc., for five products

TALLY

5. Introduction of Tally – History of Tally version– Features and configuration—company creation - Tally Short keys.

6. Ledgers, Vouchers, Trial Balance

7. Preparation of final Accounts.

8. Preparation of Stock summary – Creation of Stock group – Creation of stock category - Unit of measurement – Stock item creation.

9. Bill of materials, stock valuation

10. Payroll accounting and compliance

11. Configuring and creating payroll in tally

12. Creation of payroll masters

13. Processing and generating Payroll reports

14. Introduction to GST - Getting Started with GST (Goods) - Accounting entries for goods purchased and sold.

15. Getting Started with GST (Services)

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M					M		
CO2			H			L		
CO3					L		L	
CO4		M				H		
CO5					M			

Text Books:

1. R.K.Taxali, PC Software, 1 st Edition Tata MC Graw Hill , 2005, (Last Edition).

2. Nitya Tax Associates, Basics of GST, 1 st Edition Taxmann's , 2016

Reference Books:

1. Ashok Kisor, Tally 9, 2 nd Edition BPB Publication, 20011,New Delhi.

2. Dinesh Veerma, Computer Basics and PC Software, Gullybaba Publishing House, 2012.

M.Com Degree Programme – Syllabus for Candidates admitted from the academic year 2019-2020 onwards

THIRD SEMESTER

ELECTIVE II : SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective:

To expose the students to the concepts of Investment risks and Securities and to enable the understand and utilize the tools available for analysis .

Unit I   (12 Hours)

Security Analysis and Portfolio Management :Overview-The Investment process-Investment Environment-Concept of Returns and Risk-Measurenment of Returns and Risk-Investment Alternatives and their Evaluations-Portfolio Management process

Unit II   (12 Hours)

Methodology of Conducting Security Analysis –Fundamental Analysis –Economic Analysis-Economic Forecasting-Industrial Analysis –Company Analysis-Technical Analysis-Tools and Technique of technical Analysis Dow Theory-Eliot Wave Theory-Test of Different forms of Market Efficiency-Emotional and Social Influences

Unit III   (12 Hours)

Valuation and Management of Securities-Bond Valuation –Bond Returns and Risks –Bond Price Chnages-Measuring Bonds and Price volatility-Bond Yield-Measuring Yield –Equity Valuation –Equity Returns and Risks-Guidelines for Equity Investment-

Unit IV   (12 Hours)

Portfolio Theory-Measuring portfolio returns and Risks - Efficient Portfolios-Capital Market Theory-Capital asset pricing model(CAPM)-Capital Market Line(CML)-Security Market Line(SML)-Behavioural models

Unit V   (12 Hours)

Portfolio Selection,Performance Evaluation and Portfolio revision-Formula plan-Time Weighted Returns.

Course Outcomes:

CO1: Know and understand the concepts of investment Environment.

CO2: Understand the methodology of Industrial analysis.

CO3: Know the risk and returns of management of Securities.

CO4: Understand the impact of Portfolio theory.

CO5: Evaluate the revision of Portfolio and Time Weighted Returns.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1		M					H	
CO2		M					H	
CO3		M					H	
CO4		M					H	
CO5				L				

Text Books:

1.Preethi singh, Security Analysis and portfolio management, Himalaya Publishing House, P Ltd 1st edition 2017.

2.V.K. Bhalla, Investment Management,4th Edition, Tata McGraw- Hill Publishing Company Ltd,2005, New Delhi.

Reference Books :

1.Avadhani V.A. Security Analysis and Portfolio Management,19th Revised   Edition, Himalaya Publishing House,2010,New Delhi.

2.Prasanna Chandra, Investment analysis and portfolio management, 2nd edition, Tata McGraw Hill, Mumbai.

M.Com Degree Examination – Syllabus for Candidates admitted from the academic year 2019-2020 onwards

THIRD SEMESTER

ELECTIVE -II : FUNDAMENTAL AND TECHNICAL ANALYSIS

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective:

To enable the students to understand the concepts of fundamental and technical analysis.

Unit I   (12 Hours)

Investment –Meaning- Importance-Security Analysis –Risk and Return- various approaches to security valuation.

Unit II   (12 Hours)

Fundamental analysis- Meaning- Market analysis- Indices of NSE and BSE

Unit III   (12 Hours)

Industry analysis- Meaning –Methods- Company analysis-Meaning- Methods.

Unit IV   (12 Hours)

Technical analysis-Meaning-Dow theory- Elliot Wave theory

Unit V   (12 Hours)

Moving Averages- Charts-MACD- relative strength.

Course Outcomes:

CO1: Understand the concept of various security analysis and its risk, return

CO2: Know the factors influencing technical analysis and its tools.

CO3: Know the market analysis, NSE and BSE

CO4: Analyse the various theory and its use in Investments.

CO5: Provide technical to get an overall idea of the trends in moving average related to commodity market

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1		M					H	
CO2		L					M	
CO3		M					L	
CO4		H					M	
CO5				L				

Text Books**:**

1.Investment management Security Analysis and Portfolio Management, Preeti sing, 14 th Edition, Himalaya Publishing house, New Delhi

2. Investments: An Introduction to analysis and management, Amling, Prentice hall, New Jersey, 1984.

Reference Book**:**

1.Financial decision making- Concepts, problems and cases, I.M. Pandey 3rd Edition, Prentice hall of India Pvt. Ltd, New Delhi.

M.Com Degree Examination – Syllabus for Candidates admitted from the academic year 2019-2020 onwards

THIRD SEMESTER

ELECTIVE- I : FUTURES AND OPTIONS

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective:

To enable the students to understand the concepts of futures and options.

Unit I   (12 Hours)

Introduction to derivatives- Definition of derivatives products- participants in derivatives market, economic forever of derivatives market.

Unit II   (12 Hours)

Index derivatives- Index numbers- economic significance of index movements- types of indices- desirable attributes of an index- derivative in Nifty and Sensex.

Unit III   (12 Hours)

Forward contracts- Limitations of forward markets- futures- distinction between future and forward contracts- future terminitory options- option terminitory, call options and put option.

Unit IV   (12 Hours)

Pay off for buyer (long futures) of futures- pay off for seller (short futures) of futures- hedging, speculation and arbitrage- options payoff- pay off profit for buyer of call options-pay off profit for writer of call options. Hedging and speculation in option.

Unit V   (12 Hours)

Evolution of commodity markets- Commodity markets in India- Newyork mercantile Exchange- London Metal Exchange, Chicago Board of traders- Tokyo Commodity Exchange, Chicago Mercantile Exchange.

Course Outcomes:

CO1: Provide knowledge the concept of derivative market

CO2: Give knowledge about the index movement Nify and Sensex

CO3: Understand the forward market and future market

CO4: Analyse the Hedging ,Speculation and arbitrage in commodity market.

CO5: Evaluation of commodity market in India and other countries.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1		L					H	
CO2		M					L	
CO3		H					M	
CO4		M					H	
CO5				H				

Text Books:

1. Financial Services and Markets: Dr. S.Gurusamy, Vijay Nicole Imprints (p) Ltd.
2. Financial management: M.Y. Khan and P.K.Jain,Tata Mc Graw- Hill Publishing Company Limited

Reference Books:

1.Financial Services: M.Y.Khan, Tata Mc Graw- Hill Publishing Company Limited.

2.Financial Services: Dr. D. Joseph Anbarasu and others, Sultan chand & sons.

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THIRD SEMESTER
EDC I – BUSINESS ETHICS

Maximum CE: 50

Total Hours: 24

Course Objectives:

The objectives of this course are to help students gain an understanding of Business Ethics and its applications in managerial decision – making.

Unit I   (4 Hours)

The Nature and Purpose of Ethical Reflections: Introduction - Definition of Ethics - Moral Behavior - Characteristics of Moral Standards.

Unit II   (5 Hours)

Business Ethics: Mediating between Moral Demands and Interest - Relative Autonomy of Business Morality - Students in Business Ethics - Role of Ethics in Business - Theory of Voluntary Mediation - Participatory Ethics - Competition Commission of India.

Unit III   (5 Hours)

Moral Responsibility: Introduction - Balanced concept of Freedom - Individual Responsibility- Implications related to Modern Issues - Public Accountability and Entrepreneurial Responsibility- Moral Corporate Excellence - Corporate Social Responsibility.

Unit IV   (5 Hours)

Business Ethics and Individual Interest: Interest based Outlook - Impact of Interest on Moral Goals and Moral Principles - Utilitarian Views on Business Ethics - Enlightened Egoism.

Unit V   (5 Hours)

Duty Ethics in the Business Environment – Theories of Virtue: Productive Practices and Team Motivation - Prospects of Virtues in Business Ethics and Management Theory.

Course Outcomes:

CO1: Acquire a basic and clear understanding of philosophical ethics

CO2: Understand the principles of moral decision-making in global business.

CO3: Identify the trade-offs that face an ethical manager.

CO4: Understand how competitive advantage maps on to corporate social responsibility.

CO5: Acquire ethical frameworks, so as to attack moral problems critically and comprehensively.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1								
CO2				M				
CO3				M				H
CO4				M				H
CO5		L						

Text Books:

1. Murthy, Business Ethics, Himalaya Publishing House, 2009.
2. Andrew Crane and Dirk Mattern, Business Ethics, Oxford University Press, 2011.

Reference Book:

1. Richard T De George, Business Ethics, Pearson Education Indian Ltd., 7th Edition, 2014.

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FOURTH   SEMESTER
CORE 15 - MANAGEMENT ACCOUNTING

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective:
        To enable the students understand the practical Knowledge of Management Accounting

Unit I   (12 Hours)

Nature and scope of Management Accounting– Functions – Limitations – Distinction between Financial Accounting and Management Accounting – Relationship between cost and management Accounting – Tools and Techniques , Management Accounting . Position – Role and Responsibility..

Unit II   (12 Hours)

Financial statement Analysis and Interpretation. Financial statement Analysis- Types – Comparative Financial Statement – Comparative Balance sheet – Comparative Income Statements – Common Size Balance sheet Analysis – Common Size Income Statement Analysis – Interpreting the Financial Statements- Limitation of Financial Statement Analysis.

Unit III   (12 Hours)

Accounting Ratio – Classification- Liquidity Ratio – Profitability ratio – Turn Over Ratio – Solvency Ratio – Leverage Ratio – Rations as Predictors of Insolvency – Significance – Limitations – Interpretation of Ration analysis.

Unit IV   (12 Hours)

Working Capital – Meaning – Kinds of Working Capital - Need and Objectives of Working Capital   - Importance of Adequate Working Capital   - Factors Deterring Working Capital Requirements – Schedule of Changes in Working Capital. Fund Flow statement – Meaning – Functions – Uses of Fund Flow Statement - Preparation of Funds Flow statement – Cash Flow statement – Definition - Uses of Cash Flow Statement – Limitations- Preparation of Cash Flow

Unit V   (12 Hours)

Budgeting and Budgetary control : Budget- Meaning of Budgetary Control - Definition – Budget, Budgeting and Budgetary Control - Objectives of Budgetary control –Budgetary control

– Advantages – Limitations – Classification and Types of Budgets – Materials Budget – Production Budget, Production Cost Budget- Labour Budget- Capital Expenditure Budget- Selling and Distribution Overhead Budget- Sales Budget - Flexible Budgets – Cash Budget – Master Budget – Fixed Budget – Zero based Budgeting.

Note: Distribution of marks: Theory 20% and Problems80%.

Course Outcomes:

CO1: Identify differences between various forms of accounting—Financial, Managerial and Cost and the role of a Management Accountant.

CO2: Understand various financial statement Analysis.

CO3: Evaluate ratio analysis for measuring the financial performance.

CO4: Analyze the fund flow and cash flow statements.

CO5: Understand about Different Budgets and budgetary control.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1			M					
CO2			L					
CO3	M							
CO4							H	
CO5							M	

Text Books:

1. Shashi K. Gupta, R.K. Sharma, Neeti Gupta, Management Accounting, 2nd Edition, Kalyani Publishers, 2009, New Delhi.

2. Dr. R. Ramachandran, Dr. R. Srinivasan, Management Accounting – Theory, Problems and Solutions, Fourteenth Revised Edition, Sri Ram Publications, 2010, Tiruchy.

Reference Books:

1. B.S. Raman, Management Accounting, 2nd Edition, United Publishers, 2008, Mangalore.

2. S.N. Maheswari, S.K.Maheswari, A Text Book of Accounting for Management, 5th , Vikas Publishing House.

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FOURTH SEMESTER
CORE 16 : STRATEGIC MANAGEMENT

Maximum CIA-30
Maximum CE-70
Total Hours: 60

Course Objective:

To explore contemporary knowledge and gain a conceptual understanding of Various Strategies of Modern Business.

Unit I   (12 Hours)

Introduction to Strategic Management : Strategy - Strategic Management Process. Levels of Strategies - Corporate, Business and Operational level. Types of Strategies - Functional Strategies – Human Resource Strategy - Marketing Strategy - Financial Strategy - Operational Strategy.   Benefits and Risks of Strategic Management. Formulation of Strategy. Business Environment: Components of Environment - Environmental Scanning - Analysis of Strategies and Choice of Strategy.

Unit II   (12 Hours)

Competitive Advantage: Introduction – Meaning and Definition – Competitive Advantage of Nations and its implication on Indian Business – Michael Porter's 5 Forces Model – Pest analysis –Building blocks of Competitive Advantage - Avoiding Failures and Sustaining Competitive Advantage. Portfolio Analysis: SWOT Analysis – GAP analysis – TOWS Matrix – Experience Curve analysis – Life Cycle Analysis – BCG growth share Matrix – GE Nine -Cell Matrix.

Unit III   (12 Hours)

Corporate Restructuring: Introduction to Corporate Restructuring - Need for corporate restructuring and forms of corporate restructuring. Corporate Level Strategies - Mergers and Acquisitions, Takeovers, Joint Ventures, Diversification, Turnaround, Liquidation.

Unit IV   (12 Hours)

Strategic Control and Evaluation: Strategic Control system – Meaning – Types – Characteristics & Guidelines for Effective Control system – Strategy Evaluation and Control – Objectives -

Process – Techniques- The Control Process-Feedback Model - Designing Control Systems. Strategy Implementation – Framework - Mc Kinsey's 7 – S Framework- Approaches – Issues.

Unit V   (12 Hours)

 Corporate Governance: Meaning – Importance - Structure - Principles and Practices in India. Corporate Social Responsibility (CSR): Meaning – Driving Forces – Dimensions of Corporate Performance – Areas of Social Responsibility - Strategies for growing green economies - Strategies for Governing Public Private Participation of Business Sector in India. Strategies for Environmental Accounting and Auditing.

Course Outcomes:

CO1: Understand the concept of strategic management and formulation of strategic management.

CO2: Know about the Competitive Advantage of Nations and its implication on Indian Business.

CO3: Understand about the Mergers and Acquisitions, Takeovers, Joint Ventures, Diversification, Turnaround, Liquidation.

CO4: Gather knowledge regarding various Strategy Evaluation and Control.

CO5: Know about Corporate Social Responsibility in India.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1		M						
CO2		H				L		
CO3								
CO4								
CO5								

Text books:
1. L.M. Prasad, " Strategic Management", Sultan Chand & Sons, Sixth Edition 2016
2. P.K. Ghosh, "Strategic Planning and Management", Sultan Chand & Sons, 12th Edition 2016

Reference book:
1. Francis Cherunilam, " Strategic Management", Himalaya Publishing House, 4th Revised Edition 2016

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FOURTH SEMESTER

ELECTIVE III : ENTERPRENEURSHIP AND SMALL BUSINESS MANAGEMENT

Maximum CIA-30
Maximum CE-70
Total Hours: 60

Course Objective:
Highlight the need for entrepreneurship and to manage the small business by learning the various topics to familiarize the growth of entrepreneurship in India.

Unit I   (12 Hours)

Entrepreneur- Meaning – Importance – Qualities, Nature Types, Traits, Culture, Similarities and Differences between Entrepreneur and Intrapreneur. Entrepreneurship and Development – Its Importance – Role of Entrepreneurship – Entrepreneurial – Environment.

Unit II   (12 Hours)

Evolution of Entrepreneurs – Entrepreneurial Promotion: Training and Developing- Motivation-Factors – Mobility of Entrepreneurs – Entrepreneurial Change – Occupational Mobility – Factors in Mobility – Role of Consultancy Organizations in Promoting Entrepreneurs – Forms of Business for Entrepreneurs.

Unit III   (12 Hours)

Project Management - Sources of Business Idea – Project Classifications – Identifications – Formulation and Design – Feasibility Analysis – Preparation of Project Report and Presentation. Financial analysis – Concept and Scope – Project Cost Estimate – Operating Revenue Estimate – Ratio Analysis – Investment Process – BE Analysis-Profit Analysis-Social Cost Benefit Analysis-Project Appraisal Methods-Project Report Preparation.

Unit IV   (12 Hours)

Entrepreneurs and Ideas: The Basis of Small Business – Small Business Ethics – Small Business Entrepreneurs – Small Business Ideas- Small Business Paths and Plans-Small Business Entry – Path to Part Time Entrepreneurship – Paths to Full Time Entrepreneurship – Small Business Strategies – Business Plans.

Unit V   (12 Hours)

Marketing in the Small Business : Small Business Marketing - Small Business Promotion – Small Business Distribution and Location – Marketing Plans- Cash Accounting and Finance in the Small Business : Small Business Accounting – Cash- Life blood of the Business – Small Business Finance – Small Business Protection - Legal Issues – Human Resource Management - Achieving Success in the Small Business

Course Outcomes:

CO1: Know about Entrepreneur ial Environment

CO2: Know about Role of Consultancy Organizations in Promoting Entrepreneurs.

CO3: Understand about preparation of project report and presentation

CO4: Understand about Small Business Paths and Plans.

CO5: Provide Knowledge about Role of Marketing and Finance in the Small business.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	L							
CO2						L		
CO3	H					M		
CO4	M						M	
CO5								L

Text Books:

1. Vasanth Desai, Dynamics of Entrepreneurial Development and Management Himalaya publishing house, 2011, New Delhi.

2. N.P.Srinivasan & G.P.Gupta, Entrepreneurial Development, Sultanchand &Sons.

Reference Book:

1.Katz, Jerome and Richard, Green – Entrepreneurial Small Business, McGraw Hill Education, New Delhi, 2015.

2.Scarborough, M. Norman, Cornwall, R. Jeffrey - Essentials of Entrepreneurship and Small Business Management, Pearson Education, New Delhi, 2016

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FOURTH SEMESTER
ELECTIVE III : MICRO FINANCE MANAGEMENT

Maximum CIA-30
Maximum CE-70
Total Hours: 60

Course Objective:
On the successful completion of the course, the student will acquire the in depth knowledge about Micro Finance.

Unit I (12 Hours)

Microfinance – An Introduction – Demand and Supply of Microfinance – Microfinance: A Development Strategy and an Industry – Role of Grameen Banks in Micro finance – Microfinance Innovative Concepts, Approaches and Financial Inclusion

Unit II (12 Hours)

Analyzing and Managing Financial Performance of MFIs – Analyzing and Managing Financial Statements of MFIs/RRBs – Financial Ratios, Capital Adequacy, IRAC and Provisioning Norms – Revenue Models of Microfinance –Role of Subsidies and Donors in Microfinance – Benchmarking and Rating of MFIs – Operational Evaluation

Unit III (12 Hours)

Market Evaluation of Microfinance– Products and Services - Pricing of Financial Services – Legal and Regulatory Compliance In Microfinance – Social Evaluation of Micro finance – Role of Ethics in Microfinance

Unit IV (12 Hours)

State Intervention in Rural Credit –Bank Linkup and Programme – Governance and the Constitution of the Board of Various Forms of MFIs in India – Intermediaries for Microfinance – Microfinance Delivery Models and Banks Linkages Programme

Unit V (12 Hours)

Emerging Issues in Microfinance – Gender Issues in Microfinance – Role of Technology in Microfinance – Micro Credit as Priority Sector Advance – Impact of Micro finance on Empowerment of Women.

Course Outcomes:

CO1: Acquire knowledge about the concepts and approaches of micro finance

CO2: Analyse financial statement of managing financial performance and the role of subsidies

CO3: know about the market evaluation and pricing of financial service

CO4: Understand the governance and constitutions of MFI and its intermediaries

CO5: Study the emerging issues and women empowerment in micro finance.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H							
CO2						L		
CO3	L					H		
CO4	M						H	
CO5								M

Text Books:

    1.Principles and Approaches, Dr.V.Rengarajan, 4th edition, Notion Press Publication, 2016

    2.Micro Finance- Perspective and Operations, IIBF MacMillan Publication, 2015

Reference Book:

    1.The Economic of Micro Finance, B.Armendariz, PHI Publication, 2015

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FOURTH SEMESTER
ELECTIVE III : RETAIL MARKETING MANAGEMENT

Maximum CIA-30
Maximum CE-70
Total Hours: 60

Course Objective :

To enable the students to learn the basics in retailing, T-tailing and recent trends in retailing.

Unit I   (12 Hours)

Retail Management - Concept - Definition and Meaning- Characteristics– Elements of Retail Marketing Management-Functions- Role of retailing- Trends in Retailing- Types of Retailing - - Economic Significance of Retailing- Retailing Management Decision Process- Product Retailing vs. Service Retailing- Types of Retailers.

Unit II   (12 Hours)

Retail Market segmentation- Need- Criteria- Dimensions of segmentation-Introduction- Retail Marketing Mix- Importance of Marketing Mix- Segmentation in Retail-Targeted Marketing Efforts- Criteria for Effective Segmentation- Dimensions of Segmentation- Limitations of Market Segmentation

 Unit III   (12 Hours)

Merchandise Planning- Understanding Merchandising Management, Activities of a Merchandiser, Retail Merchandising Management Process- -Identifying Customer Needs and Wants- Presenting the Merchandise –Visual Merchandising–Category Management- Product Movement and Stocking Plans- Retail Facilities: Cold Storage- Display- Demo- Warehouse- Customer Convenience.

Unit IV   (12 Hours)

E-Tailing - Introduction- Role of Technology in Satisfying Market Demand- Technology in Retail Marketing Decisions- Structure and Developments in E-tailing- Factors Influences the Growth of E-Tailing- Advantages & Disadvantages of E-Tailing- Future of Electronic Retailing.

Unit V   (12 Hours)

Retail Markets in India and Global - Evolution and Size of retail in India – Drivers of retail

change in India – Challenges to retail developments in India- Global retail markets retailing – Challenges facing global retailers –Factors affecting the success of a global retailing strategy.

Course outcomes:

CO1: Know the concepts and Trends in Retailing

CO2: Acquire knowledge about segmentation in retailing

CO3: Understand about retail merchandising management

CO4: Know about development and growth of e –tailing

CO5: Understand about Global retail markets retailing and Global retailing strategic.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	L							
CO2						H		
CO3	M					M		
CO4	M						L	
CO5								L

Text Books:

1. Swapna Pradhan: Retail Management Text and cases, (Tata McGraw-Hill Education) 2015.

2. Helen Goworek, Peter Mc Goldrick : Retail Marketing Management Principles and Practice, Pearson Education Limited, 2015

References Books:

1. Gibson G. Vedamani: Retail Management Functional Principles and Practices, Jaico Publishing House, 2011.

2.Dr. Harjit Singh: Retail Management A Global Perspective, Vikas Publishing house, 2014.

M.Com Degree Examination – Syllabus for candidates admitted from the academic year 2019-2020 onwards

THIRD SEMESTER

PART III : ALC II - COST AUDIT AND OPERATIONAL AUDIT

Maximum CE-100

Course Objectives:

To make the students to understand the rules, procedures and techniques for preparing Cost audit and Operational audit Report.

Unit I

Cost Audit- Basic of Cost Audit- Appointment of Cost Auditor- Nature and Scope of Cost Audit- Provisions under Companies Act relating to Maintenance of Cost Records and Cost Audit.

Unit II

Provisions of Cost Audit Report - Rules 2001- Forms of Cost Audit Report- Annexure to the Cost Audit report- Proforma to the Cost Audit Report- Usefulness of Cost Audit.

Unit III

Cost Accounting Record Rules- Procedure for Prescription of Cost accounting Record Rules- Cost Accounting Record Rules and its Applicability- Provisions of Cost Accounting Record Rules of Various Industries.

Unit IV

Operation Audit- Basics of Operational Audit- Concept of Internal and Operational Audit- Internal Audit- Techniques and Procedures- Internal Audit Report- Operational Audit Techniques and Procedure.

Unit V

Various Types of Audit and their Process - Due Diligence Audit- SOX Audit- Energy Audit- Meaning and Methodology- Productivity Audit- VAT Audit.

Course Outcomes:

CO1:Understanding the basics of Cost Audit and maintenance of Cost Audit

CO2: Inculcate knowledge about Cost Audit Report.

CO3: Understand the rules and procedure of cost accounting.

CO4: Know the techniques and operations of Audit

CO5: Learn the various types of Audit.

CO/PO&PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M					H		
CO2		H						
CO3			M					
CO4			M					
CO5					H			

Text Book:

1. Saxena & Vashist, Cost Audit and Management Audit , Sulthan Chand &Sons Pvt. Ltd.,2011

2.Dhruba Dutta Chowdhury, Cost Audit and Management Audit, New Central Book Agency ,2010

Reference Books:

1.A.R. Ramanathan, Cost and Management Audit, Margham Publication(Last Edition)

DEPARTMENT OF MANAGEMENT STUDIES
Master of Business Administration
Regulations for Master of Business Administration
(Effective from the Academic year 2019-20 onwards)

Introduction

The MBA Two year programme was started in the year 2001. The curriculum of the continuously evolving MBA Two- Year Programme rests on two pillars: one, providing a strong analytical foundation in key functional areas and the other, enabling a high degree academic flexibility, thereby allowing students to customize their MBA experience.

At VLBJCAS, the MBA programme structure is closely aligned with the contemporary business requirements with four specializations (ie) Human Resources, Marketing, Finance, and Logistics & Supply Chain Management.

Programme Educational Objectives (PEOs)

- MBA programme curriculum is designed to prepare the post graduate students

- To have a thorough understanding of the core aspects of the business.

- To provide the learners with the management tools to identify, analyze and create business opportunities as well as solve business problems.

- To prepare the students to have a holistic approach towards management functions.

- To motivate the students for continuous learning and to get involved into management research.

- To inspire and make them practice ethical standards in business management and research.

- To ignite the passion for entrepreneurship in management graduates.

Eligibility Criteria

A pass in a recognized Bachelor's degree of minimum 3 years duration and obtained at least 50% (45% in the case of candidates belonging to reserved category) in the qualifying degree examination.

(a) 10 + 2 + 3/4 years pattern (or)

(b) 10 + 3 years Diploma + 3 years pattern (or)

(c) B.E. / B.Tech. / B.Arch. / B.Pharm (or)

(d) (i) 10 + 2 + AMIE* (or)

   (ii) 10 + 3 Years diploma (awarded by the State Board of Technical Education) + AMIE*
*AMIE stands for Associate Member of Institution of Engineers. AMIE is a B.Tech level examination in engineering, recognized by all State Governments, Central Govt., AICTE, UPSC etc as equivalent to B.E/B.Tech.

Entrance Exam

A pass in any degree and should have appeared for **TANCET** entrance test conducted by **Anna University** OR should have appeared for **CET** conducted by **TNSFCONSORTIUM** (Consortium of Self-Financing Professional, Arts and Science Colleges in Tamilnadu) **OR MAT conducted by AIMA OR CAT conducted by IIM**

Duration of the Programme

The number of Semesters for the MBA programme is four. Students should be available in the College during the working hours – on all working days for the duration of the programme of curricular, co-curricular and extra-curricular activities assigned to them. Each semester shall normally consist of 90 working days with lecture hours of each 60 minutes duration.

Vision of the Department

To create leaders in the emerging areas of business management and research.

Mission of the Department

To educate and empower the lives of our students by enriching learning experience, providing exposure to advanced areas of knowledge in business management and reinforcing the commitment to human values.

Programme Outcomes (POs)

On successful completion of the programme the students will have,

PO 1: The ability to apply and understand the business acumen gained in practice solves managerial issues.

PO 2: The ability to communicate and negotiate effectively and upgrade their professional and managerial skills in their workplace.

PO 3: The ability to take up challenging assignments even in a dynamically unstable environment.

PO 4: To understand one's own ability to set achievable targets and complete them.

PO 5: To acquire in-depth knowledge of business management and entrepreneurship embedded with ethics and fulfilling business career pursue lifelong learning.

Programme Specific Outcomes (PSO)

PSO 1: To guide and channelize the transformation process of every management graduate by providing in-depth knowledge of business management and entrepreneurship embedded with ethics and a sense of social commitment and to make them to strive towards personal victory and value creation to society.

PSO 2: To ignite a passion for multidisciplinary approach for problem solving, critical analysis and decision making by giving due importance for lateral thinking so that

management graduates see things from a perspective which are not just simple but effective and will gain an understanding of the global arena and competitive environments which are bringing paramount changes in business practices.

PSO 3: To give in-depth knowledge in the areas of generic electives (ie) marketing, finance, human resource, supply chain & logistics management and demonstrate leadership and team membership skills which are ardently required for effective implementation and coordination of organizational activities and communication skills to communicate effectively with a range of audiences through enhanced written and oral communication skills.

Course Description- Credit Courses

S. No	Type of Course	Code	Semester	Description
1	Core Foundation Course	CFC	I	To be compulsorily studied as the courses gives the foundational knowledge and skill for Business Administration.
2	Core Functional Course	CFLC	II	To be compulsorily studied to gain various functional domain knowledge in Managing Business
3	Skill Based Course	SB	I& II	The courses are intended to be those that will help students enhance their skills for pursuing successful professional careers.
4	Inter-Disciplinary Course	IDC	I & II	Courses offered by the related departments to the students of a particular programme.
5	Integrated Course	IC	III & IV	Course that integrates the various verticals in the main discipline.
6	Generic Elective Course	GEC	III & IV	Course which is very specific or specialized or advanced or

				supportive to the discipline/subject of study or which provides an extended scope or which enables an exposure to some other discipline or nurtures the candidate's proficiency/skill.
7	Project	PR	III	Project work is a special course intended to be involving the application of knowledge in solving/analyzing/ exploring a real life situation/difficult problem for 30days.
8	Summer Internship Course	SIP	III	The Summer Internship Course is intended to be a minimum of 20 days intensive immersion in industry for the students to gain an exposure to industry practices and learn the application of management theory in practice.

Course Description- Additional-Credit Courses

S.No	Type Of Course	Code	Semester	Description
1	Additional Credit Course	AC	III	Course which support the self improvement & skill development of the students.
2	Online Course	AC	IV	The Course is intended to help students to acquire/gain knowledge beyond books/class and enhance technology-based learning among students at their own pace and place.

3	Publication	AC	IV	Publication of Journals with ISSN /ISBN will enhance the knowledge of the students about research paper publications, plagiarism of papers, and formats of publications.

Course Description- Value Added Courses

S.No	Type of Course	Code	Semester	Description
1	Value Added Course	VA	III & IV	Courses that are mandatory which support overall program objectives have 2 credits.
2	Practice Course	PC	I & III	The courses are intended to be those that will help students learn how to apply their theoretical knowledge to practical issues in management.

Part	Subject Code	Subject Title	Ins. Hours/ Week	Dur. Hours	CIA	C.E	Total marks	Credit
		MASTER OF BUSINESS ADMINISTRATION (MBA) **SCHEME OF EXAMINATIONS (CBCS and OBE PATTERN)** **For candidates admitted from Academic Year 2019-2020 onwards**						
		SEMESTER– I						
III	19MBA101	Core Foundation : I- Business Organization and Management	5	3	30	70	100	4
III	19MBA102	Core Foundation : II - Organizational Behavior	5	3	30	70	100	4
III	19MBA103	Core Foundation : III - Managerial Economics	5	3	30	70	100	4
III	19MBA104	Core Foundation : IV- Accounting for Managers	5	3	30	70	100	4
III	19MBASB1	Skill : I – Executive Communication	5	3	30	70	100	4
III	19MBAID1	Inter –Disciplinary : I - Quantitative Methods for Management	5	3	30	70	100	4
III	19MBAPC1	Practice : I - Personality Development Programme	COMPLETED/NOT COMPLETED					
		Total	30	-	-	-	600	24
		SEMESTER– II						
III	19MBA201	Core Functional : I - Operations Management	4	3	30	70	100	4
III	19MBA202	Core Functional : II - Marketing Management	4	3	30	70	100	4
III	19MBA203	Core Functional : III - Financial Management	5	3	30	70	100	4
III	19MBA204	Core Functional : IV - Human Resource Management	4	3	30	70	100	4
III	19MBA205	Core Functional : V- Research Methods for Management	4	3	30	70	100	4
III	19MBAVA1	Value Added : I - Professional Ethics	2	2	-	50	50	2
III	19MBAID2	Inter –Disciplinary : II - Quantitative Techniques	5	3	30	70	100	4
III	19MBASB2	Skill :II: Practical: I – Advanced Excel for Managers	2	3	40	60	100	4
		Total	30	-	-	-	750	30
		SEMESTER– III						
III	19MBA301	Integrated : I - Business Environment	5	3	30	70	100	4
III	19MBA302	Integrated : II - Legal Aspects of Business	5	3	30	70	100	4
III	19MBAE--	Generic Elective : I - (Specialization 1)	5	3	30	70	100	4
III	19MBAE--	Generic Elective : II - (Specialization 1)	5	3	30	70	100	4
III	19MBAE--	Generic Elective : III - (Specialization 2)	5	3	30	70	100	4
III	19MBAE--	Generic Elective : IV - (Specialization 2)	5	3	30	70	100	4
III	19MBAPR1	Summer Internship	-	3	50	-	50	2
III	19MBAPR2	Major Project(viva voce)	-	3	50	50	100	4
III	19MBAPC2	Practice : II - Outbound Training Programme	COMPLETED/NOT COMPLETED					
		Total	30	-	-	-	750	30
		SEMESTER– IV						
III	19MBA401	Integrated : III - Entrepreneurship and Project Management	4	3	30	70	100	4
III	19MBA402	Integrated : IV - Strategic Management	4	3	30	70	100	4
III	19MBAE--	Generic Elective: V - (Specialization 1)	5	3	30	70	100	4
III	19MBAE--	Generic Elective: VI - (Specialization 1)	5	3	30	70	100	4
III	19MBAE--	Generic Elective: VII - (Specialization 2)	5	3	30	70	100	4
III	19MBAE--	Generic Elective: VIII - (Specialization 2)	5	3	30	70	100	4
III	19MBAVA2	Value Added : II - Women and Leadership	2	2	-	50	50	2
		Total	30	-	-	-	650	26
	1127	Total	-	-	-	-	**2750**	**110**

List of Electives For III Semester And Electives For IV Semester

Marketing (Group A)

Subject Code	Subject
19MBAEA1	Brand Management
19MBAEA2	Retail Management
19MBAEA3	Integrated Marketing Communication
19MBAEA4	Services Marketing
19MBAEA5	Digital and Social Media Marketing
19MBAEA6	Agricultural and Rural Marketing

Human Resources (Group B)

Subject Code	Subject
19MBAEB1	Recruitment and Selection
19MBAEB2	Labour Welfare and Industrial Relations
19MBAEB3	Performance Management
19MBAEB4	Personal Growth and Interpersonal Effectiveness
19MBAEB5	Coaching and Mentoring
19MBAEB6	Human Resource Accounting

Finance (Group C)

Subject Code	Subject
19MBAEC1	Security Analysis and Portfolio Management
19MBAEC2	Advanced Financial Services
19MBAEC3	Taxation
19MBAEC4	Principles and Practices of Banking
19MBAEC5	Risk Management and Insurance
19MBAEC6	Wealth Management

Logistics and Supply Chain Management (Group D)

Subject Code	Subject
19MBAED1	Supply Chain Management
19MBAED2	Logistics Management
19MBAED3	Supply Chain Analytics
19MBAED4	Export Trade and Documentation
19MBAED5	Warehouse Management
19MBAED6	Enterprise Resource Planning

Self Development Courses – (Additional Credit Courses)

Subject Code	Subject Title	Ins. Hours/Week	Examinations				Credit
			Dur.Hours	CIA	C.E	Total Marks	
19MBAAC1	**III Semester-** Disaster Management	-	3		100	100	2
19MBAAC2	**IV Semester -** Online Course/ Journal Publication with ISBN or ISSN.	-	-	-	-	-	2

Regulations for Master of Business Administration for the Academic Year 2019-20 Onwards

1. Practicals

a) Submission of Record Work for Practical Examinations, Candidates appearing for Practical Examinations shall submit Bonafide Record work for the concerned Practical Examination. If not the Candidates has to submit a Bonafide Certificate issued by the concerned subject in charge duly signed by the Head of the Department in order to be permitted to take-up the Practical Examination. The Candidate so permitted will not be eligible for the Record work mark.

b) Distribution of Internal Mark**s** for Practical.

The distribution of marks for External and Internal for **practical course** of Master of Business Administration.

Distribution of Marks for Practical Examination

Internal Marks for Practical

1. Experiment	15 Marks
2. Practical Test - I	7 Marks
3. Practical Test – II	8 Marks
4. Observation & Record	10 Marks
	40 Marks

External Marks for Practical

1. Experiment 1	25 Marks
2. Experiment 2	25 Marks
3. Record	10 Marks
	60Marks

2. Regulation for Summer Internship

(a) During the second semester vacation the student shall do a summer internship in a business organization under a faculty guide and submit the report in the third semester.

(b) The report shall be printed and bound with not less than 50 pages.

(c) The students shall prepare at least 2 copies of the report: a) one copy for submission to the organization b) one copy for the student.

(d) The work has to be done individually

(e) The duration for the summer internship is for 2-3 weeks

(f) A certificate showing the duration of the training shall be obtained from the organization for which the training was done and it shall be included in the training report.

3. Summer Internship

The students have to do a summer internship during the vacation of second semester. The students are advised to finalize their company with the approval of respective guide. The students should report to their guide, about the progress at least once in a week and carry out the suggestion and corrections made by the guide.

Components of Summer Internship Report

1. Acknowledgment

2. Table of Contents

3. Executive Summary

4. Industry Profile

5. Introduction – Company Profile

5.1 Organization Chart

5.2 Major Departments

6. Specific Assignment (Optional)

7. Conclusion

8. Bibliography/Reference

Work Plan:

An internee may develop work plan to pursue while doing training, as given below

Week One:

- Orientation of overall organization.

- Visiting different sections/units and collecting all relevant materials on the organization.

- Starting work in specific section.

- Getting all relevant written materials on that section.

- Study each aspects of the assigned section.

Week Two:

- Interviewing concern people based on review of material collected so far.

- Taking notes of all interviews.

- Writing a draft chapter on existing situation in the assigned section.

- Collecting and incorporating any missing information.

Week Three:

- Recording all observations with a view to write chapter on analysis.

- Writing the final chapters.

Documents and other details to be submitted to the faculty coordinator: Completion certificate obtained from the organization in which the study was conducted, mentioning the duration of the study and successful completion of the same.

Summer Internship Report: After getting the approval for the final draft from the guide, the students should prepare the report and submitted the same to the department on or before the last date of submission. The report submitted by the student after the notified day (the last date of submission), will be rejected and the same will be treated as "NOT COMPLETED".

4. Distribution of Marks

Internal Mark for Summer Internship

Component	Max Marks	Authority
Report(Physical make up and entry of the report)	25	Marks to be allotted by the Internal Examiner
Viva – Voce	25	
Total	50	

5. Regulation for Major Project

The students of Master of Business Administration have to undergo a Major Project Work during the end of Second Semester for a period of 30 days and submit the same to the Department at the end of the Third Semester. During the end of the Second Semester the students will be allotted a Supervisor (Guide) and the same will be treated as Internal Examiner for the final project Viva- Voce.

The students are advised to finalize their topic, before they take up the project and the same has to be approved by the respective Supervisor. The students should report to their respective guide about the progress of their work at least once in a week and carry out the suggestions and corrections made by the guide.

Internal Mark for Major Project

Criteria	Maximum Marks	Total
First Review		
Comprehensiveness literature review and development of research background	5	
Industry analysis and Company Profile	2	
Research questions, Objectives	3	
Appropriateness and justification of overall research design	3	
Sampling Design and data collection Tools/ sources	2	
Report –Chapters I to III	10	
Total of First Review		**25**
Second Review		
Completion & tabulation of Data Analysis	5	
Interpretations of results	5	
Suggestions & Conclusion	5	
Complete report draft	10	
Total of Second Review		**25**
Total		**50**

External Mark for Major Project

Component	Max Marks	Authority
Report(Physical make up and entry of the report)	25	Marks to be allotted by both the examiners jointly
Viva – Voce	25	
Total	50	

6. Total Marks for Summer Internship & Major Project

Component	Max Marks	Authority
Internship Report – Internal Viva-Voce	50	Marks to be allotted by the internal examiners
Major Project – Internal Marks	50	Marks to be allotted by both the examiners jointly
Major Project – External Marks	50	
Grand Total	150	

7. Regulation for Theory Courses

The following are the distribution of marks for External and Internal for **theory courses of** Master of Business Administration Course.

Total Marks	External		* Internal Max. marks	Overall Passing Minimum for total marks (Internal +External)
	Max. marks	Passing Minimum for external alone		
100	70	35	30	50

*There is no Minimum Mark for Internal.

The following are the Distribution of **Internal Marks** for theory courses of Master of Business Administration Program.

S. No	CIA	Distribution of Marks
1	Pre Model Examination	70
2.	Model Examination	70
3.	Seminar	30
4.	Attendance	10
Total		**180/6=30**

8. Seminar:

S.No	Seminar Split Up	Marks
1	Content	10
2	Flow of the Presentation	10
3	Stage Management and Body Language	10
	Total	**30**

9. Regulation for Non-Credit Courses

The 'Personality Development Programme', 'Outbound Training Programme' will be non-credit courses and be evaluated and graded as 'COMPLETED/NOT COMPLETED'. Students securing 'NOT COMPLETED' grade in any of these programmes will need to repeat the programme when it is offered next time.

10. Regulation for Online Courses (Additional Credit Courses)

The students can take up any Online Course from the reputed Online Educational Portal such as NPTEL, SWAYAM MOOCS, Udemy, edX, Coursera. The students must complete the course before the commencement of Semester IV in order to obtain an additional credit of 2 points.

11. Regulation for Publication Courses (Additional Credit Courses)

The students can publish their Major Project – Research Work done in Semester III in UGC Approved Journals with ISSN/ISBN within the commencement of Semester IV in order to obtain additional credit of 2 points.

Question Paper Pattern

For Pre-Model, Model and Comprehensive Examinations

Max. Marks: 70

Time: 3 Hours

Short Answers

Section – A (5 x 5 = 25 Marks)

Answer all the Questions

(Each Question carries FIVE Mark)

Section – B (3 x 15 = 45 Marks)

Answer any three out of five Questions

(Each Question Carries FIFTEEN Marks)

(10th question is compulsory to be attended -Case Study)

Question Paper Pattern for Additional Credit Course

Max marks: 100

Time: 3Hours

Section – A (10 x 2 = 20 Marks)

Answer all the Questions

Short Answers

Section – B (5 x 12 = 60 Marks)

Answer all the Questions

Each Question carries Twelve Marks

(INTERNAL CHOICE only)

Section – C (1 x 20 = 20 Marks)

Compulsory Question

Case Study or any application oriented questions may be asked

Question Paper Pattern for Value Added Courses

For Model Examinations

<div align="right">

Time: 3 Hours
Max. Marks: 50

</div>

Short Answers
Section – A (10 x 2 = 20 Marks)
Answer all the Questions
(Short Answers)
Section – B (5 x 6 = 30 Marks)
Answer all Questions
(Each Question Carries SIX Marks)
(Internal Choice)

Note:

1. The questions should be numbered continuously running through the Sections A, B and C.

2. Questions should be evenly distributed among the unit in the syllabus in all the sections of the question paper.

3. While framing questions with internal choice the questions must be identified as (a) or (b). (e.g. 1. a or b). Further, the internal choice must be from the same unit.

4. The Controller of the Examinations shall arrange for the setting of question papers on the basis the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies**.**

12. Conduct of Practical Examinations:

    Practical examinations shall be conducted with one internal examiner and one external examiner and the question paper for practical examination shall be set by both Internal and External examiners.

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
FIRST SEMESTER
PART III – CORE FOUNDATION - I - BUSINESS ORGANISATION AND MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: This subject aims to develop an understanding of the nature, functioning and design of organization as social collectivities. The students will acquire knowledge in the principles and functions of management, scientific decision making process and problem solving techniques.

Unit I   (12 Hours)
Business - Meaning -Business and Profession, Requirements of a Successful Business- Forms of Business Organization-Sole Traders, Partnership, Joint Hindu Family Firm - Joint Stock Companies - Cooperative Organizations - Public Utilities and Public Enterprises- Case Study.

Unit II   (12 Hours)
Management – Concept - Art and Science - Taylor and Scientific Management - Fayol's Administrative Management – Introduction to Global Management – International Management Vs Domestic Management – Approaches to International Business Management - Case Study.

Unit III   (12 Hours)
Planning - Nature- Purpose of Planning -Types of Plans, Planning - Process of Planning - MBO. Nature and purpose of Organizing - Organization Structure - Line and Staff Authority - Departmentation - Span of Control - Centralization and Decentralization - Delegation of authority - Case Study.

Unit IV   (12 Hours)
Staffing - Concept - Manpower Planning – Recruitment – Sources of Recruitment - Selection – Steps in Selection –Directing - Concept- Leadership - The Characteristics of Leadership - Functions of Leaders - Leadership Styles - Case Study.

Unit V   (12 Hours)
Controlling – Concept -Types of Control – Prerequisites of a good control system - Control Process – Benchmarking - Old Control Techniques and New Control Techniques- Case Study.

Course Outcome
• Understanding the concept of business, forms of business organisation
• Understanding the concept of management in Domestic and Global perspective
• Understanding the concept of planning, process of planning forms of organisational structure.
• Understanding staffing, recruitment and selection process, knowing the leadership qualities, application of case studies.
• Know about controlling techniques.

Text Book

1. P C Tripathi , P N Reddy.,Principles of Management.,5 edi / 2013., McGraw Hill Education

References Books

1. L.M.Prasad., Principles and Practice of Management. 9th edition, reprint 2016. Sultan Chand Sons.

2. Robbins S.P And Decenzo David A, Fundamentals Of Management Essential Concepts And Applications , 9th Edition,2014., Person Education, New Delhi.

3. Harold Koontz.,HeinzWeihrich., Essentials of Management : International and Leadership Perspective (English) 9th Edition., 2012., Mcgraw Hill Education

Journals

1. Effective Executive ICFAI University.

2. Journal of Management History, Emerald Group Publishing Ltd.

Websites

1. www.safaribooksonline.com/management/9789332501416

2. www.authorstream.com/tag/principles of management evolution.

3. www.zainbook.com/books/management/ principles of management html/

4. www.mindtools.com.

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
FIRST SEMESTER
PART III - CORE FOUNDATION: II - ORGANIZATIONAL BEHAVIOR

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: On successful completion of this course students would ultimately poses supreme knowledge in one's attitude and behaviour.

Unit - I   (12 Hours)
Reasons for Organization Existence - Definition of OB - Nature of OB- Foundations of OB- Contemporary OB- Determinants of OB- OB Model- Challenges and Opportunities of OB- Disciplines Contributing to OB - Case Study.

Unit - II   (12 Hours)
 Define Intelligence- Theories of Intelligence- Measurement of Intelligence- Factors influencing Intelligence. Emotional Intelligence- Implications of Emotional Intelligence on Managers Performance. Personality - Determinants, Structure, Assessment – Personalities theories: Psychoanalytical theory- Social Learning theory – Trait theory (Big five traits)-Self theory- Case Study.

Unit - III   (12 Hours)
Perceptions - Process- Factors influencing Perception. Attitudes –Sources of Attitude- Work Attitudes – Formation of Attitudes. Learning- Elements-Principles of Learning- Theories: Classical – Operant and Social Cognitive Approaches- Case Study.

Unit – IV   (12 Hours)
Conflicts- Types-Conflicts Resolution Strategies. Foundations of Group Behaviour- Types- Stages of group form. Teams– Types – Team Effectiveness- Team Decision Making Techniques- Issues in Managing Teams. Organization Culture – Ethical Issues in Organizational Culture - Case Study.

Unit – V   (12 Hours)
Organization Change –Forces of Change- Resistance to Change. Organization Politics- Factors-Managing Political Behaviour. Motivation- Importance- Theories - Maslow's Need Hierarchy-Herzberg Two Factor- ERG –X, Y,Z theory - Case Study.

Course Outcome
• Ability to understand the Core aspect in Evolution of the Course
• Awareness on integral concepts like personality and emotional intelligence in humankind
• To understand the basics of learning, perceptual and attitudinal formation in mankind.
• Ability to understand and resolve conflicting situation in a workplace and better understanding on managing teams and important in maintaining organisational culture
• Prepares an individual to accept and adopt towards organisational change and well understand about the theories behind motivation

Text Book

1.Aswathappa K, Organization Behavior, 10th Edition.,2012, Himalaya Publishing House, New Delhi.

References Books

1. C B Gupta., A Textbook of Organizational Behaviour : With Text and Cases (English) 1st Edition.,2013., S.Chand Publication.

2. Bharathi Rathore., Organizational Behaviors: Principle, Theory And Practice (English).,2013., Asian Books.

1. Butler, Michael Rose, Edward; Introduction to Organizational Behaviors (English) 1st Edition., 2011., Jaico Publishing.

Journals

1. Journal of Organization and human behavior, Publishing India Group

2. International Journal of Organizational Behaviour, e-journal

3. Journal of Organizational Behavior, e-journal

Websites

1. myorgnisational.behaviour.com

2. www.open.edu/openlearn

3. http://knowledge.inseed.edu

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
FIRST SEMESTER
PART III - CORE FOUNDATION: III- MANAGERIAL ECONOMICS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: To orient the students on micro economic techniques and macro economic analysis as a decision making process for business managers.

Unit I   (12 Hours)
Managerial Economics - Meaning, Nature and Scope - Managerial Economics and Business Decision Making - Role of Managerial Economist - Fundamental Concepts of Managerial Economics- Demand Analysis - Meaning, Determinants and Types of Demand - Elasticity of Demand - Case Study.

Unit II   (12 Hours)
Supply- Meaning and Determinants - Production Functions-Types - Isoquants, Expansion Path - Cobb-Douglas Function - Cost Concepts – Types - Cost - Output Relationship - Economies and Diseconomies of Scale- Case Study.

Unit III   (12 Hours)
Market Structure - Characteristics - Pricing and Output Decisions - Methods of Pricing - Differential Pricing - Government Intervention and Pricing - Case Study.

Unit IV   (12 Hours)
Profit - Profit Policies - Profit Planning and Forecasting - Cost Volume Profit Analysis - Macroeconomics – Issues and Concepts, Macro – economic aggregates and Measurement of National Income, – Analysis of Business Cycles, Economic Stabilization - Case Study.

Unit V
(12Hours) Inflation and Deflation- Types - Balance of Payments - Monetary and Fiscal Policies- Global Financial Crisis and its impact on World Economy - Case Study.

Course Outcome

• Understand the relative importance of Managerial Economics

• Introduce the microeconomic concepts - demand, pricing, cost determination, entry into and exit from markets, price - output decisions.

• Evaluate features of different kinds of markets & discuss on cost price behavior in each structure, Be equipped with the various tools for analyzing pricing strategies.

• Understand the concept of profits and analysis of profits.

• Know about Macro economic variables and its real time impact on economy and government policies.

Text Book
1. N. Gregory Mankiw., Principles of Economics 6th Edition (English) 6th Edition., 2012.,Cengage Learning

References Books
1. Athmanand.R., Managerial Economics, Excel, New Delhi, 2002.
2. P.L.Mehta, Managerial Economics, S.Chand and Sons Company Ltd., New Delhi, 2004.
3. Peterson Lewis, Managerial Economics, Prentice Hall of India, New Delhi, 2002.
4. Rangarajan - Principles of Macro Economics, Tata McGraw Hill.
Journals
1. South Asia Economic Journal , Sage Publication.
2. International Journal of Applied Business and Economic Research, Serials Publication.
3. Reserve Bank of India Bulletin, Monthly Magazine, RBI.
Websites
1. MIT Open Course Ware – http://ocw.mit.edu
2. Online Library of Wiley Publications - http://onlinelibrary.wiley.com
3. Oxford University Press - http://www.oup.co.in

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
FIRST SEMESTER
PART III – CORE FOUNDATION: IV- ACCOUNTING FOR MANAGERS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: On successful completion of the paper, students acquire knowledge of the concepts of Financial Accounting and managerial applications of Cost and Management Accounting.

Unit - I   (12 Hours)
Financial Accounting - Basic Accounting Concept – Kinds of Accounts – Steps in Accounting Process - Financial Accounting Vs. Cost Accounting Vs. Management Accounting - Preparation of Journal and Ledger Accounts - Case Study.

Unit - II   (12 Hours)
Trial Balance – Preparation of Trial Balance- Preparation of Final Accounts (With Simple Adjustment) – Depreciation Methods - Straight Line Method - Written Down Value Method - Case Study.

Unit - III   (12 Hours)
Financial Statement Analysis - Comparative Statement - Common Size Statement- Trend Percentage - Ratio Analysis - Construction of Balance Sheet Using Ratios - Case Study.

Unit - IV   (12 Hours)
Cost Accounting – Preparation of Cost Sheet - Marginal Costing – Budget- Budgetary Control - Types of Budgets (Cash Budget, Sales Budget, Flexible Budget) - Case Study.

Unit - V   (12 Hours)
Management Accounting - Fund Flow Statement - Preparation of Fund Flow Statement - Cash Flow Statement- Preparation of Cash Flow Statement - Difference between Funds Flow Statement and Cash Flow Statement – Case Study.

Note: 80 % of the questions shall be on problems
       20 % of the questions shall be on theory.

Course Outcome

• The students able to understand the in the financial concepts

• Its help them to fetch a job in the field of finance.

• The student's ability to know construct the financial statement.

• Prepare a cost sheet for a company and well understand about the cost accounting.

• The students able to understand the management accounting and how to maintain the

company management accounting.

Text Book

1. M.Y.Khan and P.K.Jain, Management Accounting, 6th Edition ,Tata McGraw Hill, 2013, New Delhi.

References Books

1. S N Maheshwari, Sharad K Maheshwari&Suneel K Maheshwari., A Textbook of Accounting for Management, 3/e., 2012.,Vikas Publishing .
2. Cost Accounting Principles & Practice (English)(Paperback)., A Mahavir Publication., 2015.
3. R.K.Sharma and S.C.Gupta, Management Accounting., 2013., Kalyani Publishers, New Delhi.

Journals

1. Journal of Accounting and Finance, The Research Development Association.
2. Accounting Research and Audit Practices, The ICFAI University Press.

Websites

1. http://www.accountinglearner.com
2. www.ocwsearch.com
3. www.accountingcoach.com

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2018-2019 onwards
FIRST SEMESTER
PART III – SKILL -I- EXECUTIVE COMMUNICATION

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: To make the student understand the purpose of communication in an organization and also to give orientation in the preparation of business letters and reports.

Unit - I   (12 Hours)
Communication- Meaning and Significance for Management – Types of Communication – Media – Barriers – Principles of Effective Communication - Case Study.

Unit - II   (12 Hours)
Non – Verbal Communication – Characteristics- Functions- Importance- Sign Language- Kinesics- Paralanguage- Artifactual Communication- Proxemics- Chronemics- Listening- Case Study.

Unit - III   (12 Hours)
Business letters- Functions of a business letter- Kinds of letter- The Layout- Orders and their Execution- Credit and Status Enquiries- Complaint - Collection Letters- Bank Correspondence- Negative News & Persuading Letters- Sales Letters- Case Study.

Unit – IV   (12Hours)
Job Application Letters- Bio-Data- Covering Letter-Interview Letter- Letters of References- Testimonials- Letter of Appointment- Promotion- Resignation- Case Study.

Unit – V   (12 Hours)
Memos, Office Orders- Circulars, Notices- Preparing Agenda, Minutes and Resolutions — Communication through E- Mail - Case Study.

Course Outcome

- Understand the basics of communication process
- Gain knowledge about the non-verbal communication techniques
- Understand the various types of business letters
- Develop job application letter, bio data, and preparation for Interview
- Basic concepts of meetings, agenda preparation and communications in an organisation

Text Book
1. Rajendra Pal, J.S.Korlahalli, Essentials of Business Communication, S.Chand, 13th edition.
References Books
1. Sengupta, Business and Managerial Communication, PHI Learning Private Limited-New Delhi (2011)
2. P.D.Chaturvedi, Managerial Communication, Pearson Education; First edition (2012).
3. J.David Johnson,Managerial Communication: Evaluating the right dose Business Expert Press (1 January 2013)
Journals
1. Journal of Business Communication, Sage Journals.
2. Journal of Business Communication, University of Washington.
Websites
1. http://knowledge.inseed.edu
2. www.open.edu/openlearn

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
SECOND SEMESTER
PART III – CORE FUNCTIONAL - I - OPERATIONS MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hours: 48

Course Objective: To focus on key analytical methods and provide a practical insight into Operations Management and Supply Chain Management.

Unit I   (8 Hours)
Operations Management – Meaning – Importance - Historical Contributions – System View Of OM – Operation Strategy And Competitiveness - Functions Of OM – Types Of Production System - Case Study.

Unit - II   (12 Hours)
Product Design And Process Selection – Evaluation And Selection Appropriate Production And Operations Technology - Types Of Layout – Analysis – And Selection Of Layout - Product And Process Layout, Cellular, Lean And Agile Manufacturing Systems - Assembly Line Balancing - Case Study.

Unit - III   (10 Hours)
Materials Management – Functions – Material Planning And Budgeting – Value Analysis - Inventory Control – Types Of Inventory – Inventory Control System – Production Planning Control – Meaning – Functions - Master Production Schedule (MPS) - Material Requirement Planning (MRP) - Capacity Requirement Planning (CRP) - Case Study.

Unit - IV   (8 Hours)
Total Quality Management Concept – Statistical Quality Control For Acceptance Sampling And Process Control – Concept Of Type I And Type II Error - An Introduction To MRP II And ERP – ISO Quality Assurance - Six Sigma Concept – Types – JIT – KANBAN - Case Study.

Unit - V   (10 Hours)
ISO 9000 SERIES- Poka Yoke- Kaisen- BPR- Supply Chain Management: Introduction – The Need For The Supply Chain – Introduction To Logistics Management – Scope – Functions – Integrated Logistics Management – Role Of Logistics In Supply Chain - Transportation – Role Of Transportation In Logistics – Modes Of Transportation – Intermodal Operations.
Note: 75% of the questions shall be on theory
        25% of the questions shall be on problems
Problems in Material requirements planning, Inventory models, Quality Control Charts.
Course Outcome
• Understand the trends in production and concepts of production.
• Understand the Product design and process of selection in manufacturing industry.
• Understand the material management functions and production planning process
• The students able to know the total quality management concepts, quality control and ISO quality assurance for production unit.
• Understand the movement of goods one place to other places and well understand the role of transportation.

Text Book
1. Pannerselvam R- Production and Operations Management.,3rd Edition., 2012., Prentice Hall India.
References Books
1. KANISHKA BEDI., Production and Operations Management (With CD) (English) 3rd Edition., 2013., Oxford University Press.
2. Everest.E.Adam& Ebert- Production and Operations Management- PHI Publication- 4th Edition New Delhi.
3. D K Agrawal, Textbook of Logistics and Supply Chain Management, MacMillan 2015, 1st Edition

Journals
1. Poms.org/journal.
2. Emeraldinsight.com/ijopm.htm.

Websites
1. www.openj.edu/openlearn
2. MIT Open Course Ware – http://ocw.mit.edu
3. Oxford University Press - http://www.oup.co.in

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
SECOND SEMESTER
PART III- CORE FUNCTIONAL - II - MARKETING MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hours: 48

Course Objective: The aim of this subject is to develop an understanding of the underlying concepts, strategies and issues involved in marketing management.

Unit - I   (8 Hours)
Introduction - Marketing Concepts - Core Marketing Concepts - Marketing Environment - Role of Marketing in Modern Management - Marketing Information System - Customer Value and Loyalty - Value Creation by the Firm - Case Study.

Unit - II   (12 Hours)
Buyer Behavior - Determinants of Consumer Buying Behavior - Buying Decision Process- Buying Roles - Market Segmentation- Need and Requirements of Effective Segmentation- Basis for Segmentation. Selecting Target Markets - Positioning the Market Offering- Marketing Mix - Case Study.

Unit - III   (8 Hours)
Product - Classification of Product – Levels - Product Mix Decision - Product Line Decisions - Product Life Cycle - New Product Development Process – Pricing – Methods – Strategies - Case Study.

Unit - IV   (10 Hours)
Promotion Mix - Elements of the Promotion Mix - Packaging and Labeling – Advertising - Types of Advertising-Sales Promotion - Objectives - Types of Sales Promotion – Telemarketing - Types – Limitations - Case Study.

Unit - V   (10 Hours)
Channels of Distribution – Channel Flows – Channel Levels – Channel Intermediaries – Factors influencing the Choice of Distribution Channels - Terms and Responsibility of Intermediaries - Channel Management Decisions – Recent trends in Marketing - Case Study

Course Outcome

- Gain a solid understanding of key marketing concepts and skills.

- Develop the students' skills in applying the analytic perspectives, buyer behaviour decision tools and concepts of marketing to decisions involving segmentation, targeting and positioning.

- Develop an understanding of the underlying concepts, strategies and the issues involved in product life cycle, new product development

- Develop strong marketing promotion plans and persuasively communicate your recommendations and rationale

- Understand the channel of distribution to reach the target audience. Recent Marketing terms.

Text Book

1. Philip Kotler, Kevin Lane Keller, Abraham Koshy, Mithileshwar Jha, "Marketing Management, 14th Edition, 2013, Pearson Education.

Reference Books

1. Rajen Saxena, Marketing Management, 3rd Edition, 2002, TMH, New Delhi, 2002.
2. Joel R Evan and Barry Berman, Marketing, 8e-Marketing in 21st Century, 2nd Edition, 2005, Biztantra- An imprint of Dreamtech press.
3. Michael.R.Czinkota and Masaaki Kotabe, Marketing Management-2e, 2nd Edition, 2008, south western publishing Company, Cengage Learning, New Delhi.

Journals / Magazines

1. Indian Journal of Marketing, New Delhi.
2. Current index of Management – Marketing IIM -A

Websites

1. http://knowledge.inseed.edu
2. www.open.edu/openlearn

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
SECOND SEMESTER
PART III- CORE FUNCTIONAL - III - FINANCIAL MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: To facilitate students have an insight into various functions of financial management.

Unit I   (12 Hours)
Financial Management-Objective and Functions - Role of Financial Management in the Organization - Profit Maximization and Wealth Maximization –Risk and Return- Concept of Risk and Concept of Return- Time Value of Money- Time preference rate and Required rate of Return - Problems on Case Studies.

Unit II   (12 Hours)
Capital Budgeting –Capital Budgeting Process – Factors Influencing Capital Budgeting-Preparation - Non-Discounted Cash Flow Methods- Discounted Cash Flow Methods– Problems - Methods of Ranking Investment Proposals - Problems on Case Studies.

Unit III   (12 Hours)
Cost of Capital -Classification of Cost- Factors affecting Cost of Capital- Computation for each Source of Finance – Cost of Equity Capital- Cost of Preference Capital- Cost of Debenture- Cost of Retained Earnings- Cost of Public Deposit- Weighted Average Cost of Capital –Factors affecting Weighted Average Cost of Capital- Leverages- Operating Leverage- Degree- Financial Leverage - Degree- Differences between Financial and Operating Leverage - Problems on Case Studies.

Unit IV   (12 Hours)
Capital Structure - Types- Capital Structure Theory -Net Income Approach –Traditional Approach - Net Operating Income Approach – MM Approach. Dividend Policy –Types –Importance of Dividend Policy –- Problems on capital structure approaches only.

Unit V   (12 Hours)
Working Capital Management – Classification-Factors affecting Working Capital Requirements – Components of Working Capital. Cash Management -Motives of Holding Cash - Receivables Management –Factors affecting the size of Receivables - Problems on Working Capital Management only.

Note: 60% of the questions shall be on theory, 40% of the questions shall be on problems.

Course Outcome
• Understand both the theoretical and practical role of financial management in the business firm.
• Apply financial management concepts and tools to the Problems faced by a manager in Budgeting decisions.
• Understand the outside influences of economic and political factors on various sources of funds with their costs.
• Justify the contemporary financial management strategies which are preferred to specific projects and financial decision.
• Analyze the finances of individual corporations both in terms of their performance and capital requirements.

Text Book
1. M.Y.Khan, P.K.Jain, "Financial Management, Text, problems and cases", 6th Edition, 2008, Tata Mcgraw -Hill publishing company Limited, New Delhi.

References Books
2. I.M.Pandey, "Financial Management", 9th Edition, 2006, Vikash Publishing House Pvt Ltd., New Delhi.
3. Shashi K.Gupta, R.K.Sharma, "Financial Management Theory and Practice", 5th revised enlarged Edition, 2006, Kalyani Publishers, New Delhi.
4. Dr.S.N.Maheshwari, "Financial Management Principles and Practice", 1st Edition, 2005, Sultan Chan & Sons, New Delhi.
5. Prasanna Chandra, "Financial Management–Theory & Practice", 7th Edition, 2004, Tata McGrawHill, New Delhi.

Journals / Magazines
1. International Economics and Finance Journal, Serials Publications.
2. Chartered Secretary, The Institute of Company Secretaries of India.

Websites
1. http://ocw.mit.edu/courses/sloan-school-of-management
2. http://www.safaribooksonline.com.
3. http://www.universalclass.com

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
SECOND SEMESTER
PART III- CORE FUNCTIONAL IV - HUMAN RESOURCE MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hours: 48

Course Objective: To enable the student to acquire knowledge and develop the skill set that requires them to perform HR function in corporates

Unit I`   (8 Hours)
Introduction - Evolution of HRM –- Importance of HRM- Personnel Management vs Human Resource Management- – Using HRM to attain Competitive Advantage – Trends in HRM – Line And Staff Functions – SHRM- Case Study.

Unit II   (12 Hours)
Employment Planning and Forecasting -Job Analysis- – Process of Job Analysis – Job Description- Job Specification. Recruitment-. Selection- Selection Techniques- Barriers. Basic Testing Concepts, Types of Test, Work Samples & Simulation - Case Study.

Unit III   (12 Hours)
Interview-Common Interviewing Mistakes-Designing and Conducting the Effective Interview - Placement- Induction/Orientation – Training and Development- Methods- Special Purpose Training- Training via the Internet. Career Planning & Succession Planning - Case Study

Unit IV   (8 Hours)
Job Evaluation- Job Evaluation vs Performance Appraisal-.Performance Appraisal- Types - Essential Characteristics of an Effective Appraisal System- Compensation Plan- Objectives- Factors determining Pay Rater- Components of Pay Structure in India. Promotion- Demotion- Transfer- Separation - Case Study.

Unit V   (8 Hours)
Industrial Relations- Trade Unions- Collective Bargaining- Employee Grievances- Redressal Methods- HR audit. IHRM- Domestic HRM vs IHRM- E-HRM- E-HRM Activities - Case Study.

Course Outcome

• To understand the Core aspect in evolution of the Course.

• Improves the Awareness and understanding level of the individual towards HR's role in the organisational setup.

• To understand the essential aspects in preparing and conducting an interview and to know well about the need for T&D among employees.

• Understand the methodology in evaluating individuals task performance and the concepts behind Payroll Processing and generation.

• To be aware on the traditional concepts of industry like functioning of trade union & bargaining in negotiation process etc.

Text Book
1.VSP Rao, Human Resource Management: Text and cases, 3nd edition, 2010, Excel Books, New Delhi..

References Books
2.Gary Dessler, Human Resource Management, 10th edition, 2008, Dorling Kindersly, India Pvt Ltd., New Delhi.
David A. DeCenzo & Stephen P.Robbins, Personnel/Human Resource Management, 3rd edition, 2006, PHI/Pearson, Indian reprint.
3.John Bernardin, Human Resource Management: An experiential approach, Special Indian Edition, 2007, Tata McGraw Hill, New Delhi.

Journals / Magazines
1. The Human Factor, Plan man media pvt. ltd.,
2. Indian Journal of Management
3. International Journal of Human Resource Management, Inder science Publisher.
Websites
1. www.authorstream.com/tag/humanresourcemanagementdefinition
2. www.citehr.com
3. www.my.safaribooksonline.com/book/hr-organiastional management.

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
SECOND SEMESTER
PART III- CORE FUNCTIONAL - V- RESEARCH METHODS FOR MANAGEMENT
Maximum CIA: 30
Maximum CE: 70
Total Hours: 48

Course Objective: To make students have an understanding of the research methods to enable students complete the project work with ease.

Unit I   (8 Hours)
Introduction to Business Research - Characteristics of good research -Types of Research – Research Process - Problems in Research – Identifying Research problem - Case Study.

Unit II   (8 Hours)
Hypothesis - Types - Formulation of Research Design - Types - Features of Good Design - Measurement - Techniques of Measurement - Scaling Techniques - Types of Scales - Scale Construction Techniques - Case Study.

Unit III   (12 Hours)
Sampling Design - Concepts - Steps in Sampling - Types of Sample Designs - Probability and Non-Probability Samples - Data collection:- Types of data - Sources -Tools for Data Collection-Methods of Data Collection – Constructing Questionnaire - Data Processing:- Coding - Editing - and Tabulation of Data - Case Study.

Unit IV   (12 Hours)
Test of Significance: - Assumptions about Parametric and Non-Parametric Tests - Parametric Test – T-Test, F-Test and Z-Test - Non Parametric Test - Multivariate Analysis - Factor, Cluster, MDS, Discriminant analysis (No Problems) - SPSS and its Applications - Case Study.

Unit V   (8 Hours)
Interpretation - Report Writing – Steps in Report Writing - Layout of Report - Types of Reports - Mechanics of Writing a Research Report - Norms for Using Tables, Charts and Diagrams – Norms for Using Bibliography - Case Study.

Note: 80% of Questions shall be allotted to theory
        20% of Question shall be allotted to problems

Course Outcome

• Understand the basic framework of research process

• To formulate the hypothesis for business problems, know the scaling techniques.\

• Understand the sampling techniques, preparation of questionnaire and coding techniques

• Apply various parametric tests to test hypothesis

• Develop necessary critical thinking skills in order to formulate the report writing

Text Book
1. Kothari.C.R., Research Methodology, 2nd Edition, 2012,Excel Book.
References Books
 1. Donald R.Cooper and Pamela S.Schindler, Business Research Methods, 9th Edition, 2007, Tata McGraw Hill, New Delhi.
2. R. Paneerselvam, Research Methodology, Sixth printing, 2008, PHI, New Delhi, April.
1. William.G.Zigmund, Business Research Methods, 7th Edition, 2007, Cengage Learning.
Journals / Magazines
1.   International Journal of Management Research and Technology, Serials Publications.
2. International Journal of Applied Business and Economic Research, Serials Publications.
Websites
1. www.open.edu/openlearn
2. www.studymode.com
3. www.managementparadise.com

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year2019-2020 onwards
SECOND SEMESTER
PART III –VALUE ADDED: I-PROFESSIONAL ETHICS

Maximum CE: 50
Total Hours: 24

Course Objective:
Examine Ethics from both personal and professional perspectives. Understand the decision process one goes through in determining what is right and wrong, and how those decisions affect a person's character both in personal and professional life. Explore successful ethical values of visionary companies.

Unit I   (4 Hours)
Personal Ethics – Importance of Ethics – Ethical Principles - Personal beliefs, values, attitudes and behavior – difference between personal and professional ethics – conflict between personal and professional ethics -solving ethical problems.

Unit II   (5 Hours)
Professional Ethics and Code of Conduct - basic principles governing professional ethics - professional ethics at work place - How do I act in a given situation.

Unit III   (5 Hours)
Corporate Ethics – More than Profits – Core Values and Purpose - Core ideologies in the visionary companies – Understanding Core value statements of successful Global, National and Regional Companies – Ethical behavior both at good and bad times.

Unit IV   (5 Hours)
Workplace Ethics: Introduction, needs, Principals, Workplace Ethics for Employees – Ethical behaviour in workplace – Ethical violation by employees, Employee Attitude and Ethics, Employee Etiquettes. Benefits of ethics in Workplace.

Unit V   (5 Hours)
Workplace Privacy & Ethics: Watching what you say and what you do in the workplace, Hardware, Software and Spyware, Plagiarism and Computer Crimes, Convenience and Death of Privacy, Defense of employee privacy rights.

Course Outcome
• Understanding personal ethics with help to overcome real problems in life.
• Evaluate situations and apply ethical principles in professional life.
• Give importance to the core purpose of the institution.
• Apply workplace etiquettes in different environments,
• Create awareness among employees rights privacy and cyber crime.

Text Book:
1. Ethical Theory and Business, 8th Edition, Tom L. Beauchamp, Norman E. Bowie and Denis Arnold

References Books
1. Ethics in the Workplace, Dean Bredeson, Keith Goree, Cengage Learning, 2011.
2. Ethics in Workplace: System Perspective, William F Roth, Pearson, 2014

JOURNALS/ MAGAZINES:
1. Journal of business ethics-Springer
2. Behavior Ethics in Organization:a Review –SAGE journal

WEBSITES:
1. www.ijbssnet.com
2. www.iosrjournals.org

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
SECOND SEMESTER
PART III – PRACTICAL 2 – COMPUTER APPLICATION FOR BUSINESS

Maximum CIA: 60
Maximum CE: 40
Total Hours: 24

Course Objective: The subject aims to build a strong application oriented understanding of Microsoft Excel and its usage in the Managerial Roles. The student should be able to use Excel effectively to analyze and represent data effectively, as well as to solve problems in the management domain using Microsoft Excel.

MS EXCEL
1. Using Basic Functions: Sum, Average, Max, Mini, Count, Counta, Absolute, Mixed and relative referencing.
2. Mathematical Functions: Sumif, Sumifs, Countif, Countifs, Averageif, Averageifs, Protecting Excel: File level protection, Workbook, Worksheet protection.
3. Text Functions: Upper, Lower, Proper, Left, Mid, Right, Trim, Len, Exact, Concatenate, Find, Substitute.
4. Date and time Functions: Today, Now, Day, Month, Year, Date, Date if, Date Add, EO Month, Weekday.
5. Advanced Paste Special Techniques: Paste Formulas, Paste Formats, Paste Validations, Transpose Tables.
6. New in Excel: New Charts – Tree map & Waterfall, Sunburst, Box and whisker Charts, Combo charts – Secondary Axis, Adding Slicers Tool in Pivot & Tables, Using Power Map and Power View, Forecast Sheet, Sparklines – Line, Column & Win / Loss,
7. Using 3-D Map, New controls in Pivot Table- Field, Items and Sets, Various Time lines in Pivot Table, Auto complete a data range and list, Quick Analysis Tool, Smart Lookup and manage Store.
8. Sorting and Filtering: Filtering on Texts, Numbers and Colors, Sorting Options, Advanced Filters on 15-20 different criteria(s).
9. Printing Workbooks: Setting Up Print Area, Customizing Headers and Footers, Designing the Structure of a template, Print Titles – Repeat Rows/Columns.
10. Lookup Function: Vlookup, Hlookup - Pivot Tables: Creating Simple Pivot Tables – Worksheet/Workbook Operations: Merge Worksheets using Macro, Merge multiple excel files into one sheet, Split worksheets using VBA filters, Worksheet copiers.

Course Outcome

• Gain practical knowledge to work in Excel. This will give you a great set of tools which you will

be able to apply in many different situations, limited only by your imagination!

• Understand data keeping, applying functions to the data stores, and data analysis.

• Knowing Conditional formatting, Data validation, Paste special, Pivot table and charts, Excel

tables, Excel charts and graphs can be placed in the next level of the organisation.

Text Books:
1. Excel 2010 Bible by John Walkenbach, John Wiley & Sons, 2010 Edition.

Reference Books:
1. Excel 2007 for Dummies by Greg Harvey.
2. Microsoft Excel Practical Formulae: From Basic Data Analysis to Advanced Formulae Manipulation (Learn Excel Visually Journey Book 3) Kindle Edition by Diane Griffiths

3. Microsoft Excel 2016 - Data Analysis and Business Modeling Paperback – 1 May 2017
   By Wayne L. Winston

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PART III - INTEGRATED: I - BUSINESS ENVIRONMENT

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective:

    To create an awareness and understanding about the environment in which they have to work as managers and the importance of taking managerial decision making ethically.

Unit I   (12 Hours)
Business Environment - The Concept and Significance - Constituents of Business Environment: Environmental Analysis and Forecasting, Economic Environment - Political and Government Environment – Nature and Technological Environment- Demographic Environment-Case Study.

Unit II   (12 Hours)
Business and Society: Societal Environment, Business and Culture, Social Responsibility of Business, Consumer Rights, Consumerism and Business- Corporate Governance- Case Study.

Unit III   (12 Hours)
Managing Ethics - Frame work of Organizational Ethics, Ethics across Cultures, Factors influencing Business Ethics, Ethical Decision Making, Ethical Values and Stakeholders, Ethics and Profit- Case Study.

Unit IV   (12 Hours)
Industrial Policy- Industrial Licensing - Privatization and Disinvestment - Patents and Trade Marks- Intellectual Property Rights – TRIPS – TRIMS - WTO and GATT- Regional Grouping of Countries and its impact- Case Study.

Unit V   (12 Hours)
Planning in India - Industrial Development Strategy - Regulation of Foreign Trade - FEMA - Foreign Trade Act - Foreign Trade Policy – EPZs – EOUs - SEZs. - Role of RBI and SEBI - Case Study.

Course Outcome:
CO 1:Best knowledge about the Environment that Impact the Business Decision.
CO 2:Awareness about Important Concept and Terminology used in Business.
CO 3:Understand the Value and Do's and Don'ts of Ethics in Business Environment.
CO 4:Better Understand the Concepts that used in International Perspective.
CO 5:Understand the Role and Functions of Regulatory Agencies.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M		M				H	H
CO2	M				H	H		M
CO3	L		L		H		L	M
CO4				M			H	
CO5		L					L	M

Text Book:
   1.Francis Cherunilam, Business Environment Text and Cases, Revised Edition, 2018, Himalaya Publications, New Delhi.

Reference Books:
   1.Kitson.A and Campbell.R, The Ethical Organization, 2nd Edition (October15, 2008),Palgrave Publishers.
   2.Shaikh Saleem, Business Environment, Pearson Education, 2010.
   3.Fernando.A.C. ,Business Ethics: An Indian Perspective, First edition,2009,Pearson Education, Newdelhi.

Journals/ Magazines:

1.International Journal of Business Environment. IJBE publishes.

2.Journal of Business Ethics, Springer Netherlands

3.Business Ethics: A European Review, John Wiley & Sons Ltd

Websites:

1.www.hbs.edu/environment

2.http://www.businessenvironment.org

3.http://www.csu.edu.au/

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PART III- INTEGRATED: II - LEGAL ASPECTS OF BUSINESS

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective:

The course is designed to provide an understanding of legal processes involved in the management of an organization. The main focus is on understanding the basic laws affecting the operation of a Business Enterprise.

Unit I   (12 Hours)
The Indian Contract Act, 1872 Introduction – Definition of contract – agreement – offer – acceptance – consideration capacity to contract – contingent contract – Quasi contract – performance – Discharge – Remedies to breach of contract- Case Study.

Unit II   (12 Hours)
Partnership- essentials of partnership, Rights and duties of partner, types of partners. Dissolution of partnership. Sale of Goods Act: Sale and Agreement to sell, Conditions and Warrantees, Transfer of property, Finder of goods, Performance of contract of sale, Rights of an unpaid seller- Case Study.

Unit III   (12 Hours)
Contract of Agency- Essentials of Contract of Agency – Creation of Agency – Kinds of Agents – Comparison Between an Agent and Servant – Comparison Between an Agent and Independent Contractor – Relationship of Principal and Agent – Duties of an Agent – Rights of an Agent – Duties and Rights of the Principal – Delegation of authority by an Agent – Sub Agent – Position of Principal and Agent in relation to third Parties – Termination of Agency- Case Study.

Unit IV   (12 Hours)
Company – Formation – Memorandum – Articles – Prospective Shares – debentures – Directors – appointment – Powers and duties. Meetings – Proceedings – Management – Accounts – audit – oppression & mismanagement – winding up- Case Study.

Unit V   (12 Hours)
The Consumer Protection Act, 1986; Object – Rights of Consumers –Important Terms Consumer Complaint - Consumer Protection Councils – Redressal Machinery – District Forum – State Commission - National Commission. Cyber Law -Need for Cyber laws – Cyber law In India – Information Technology Act – 2000 – Defining Cyber Crime – Types of Cyber Crimes – Preventing of Computer Crime - Case Study.

Course Outcome:

CO 1: Understand the Basics of Law of Contract.

CO 2: Understand the Functionality of the Business through Partnership Act and Sales of good.

CO 3: To Know about the Agency, Principal Parties Involved to the Other

CO 4: Better Awareness about the Law that Pertained to Company Act.

CO 5: Understand Various Terminology and Techniques that are used in Business.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M					M	M	
CO2		M						L
CO3				L		M		
CO4			M				H	L
CO5	M				H		M	M

Text Book
   1. Business Law, N.D.Kapoor, Sultan Chand Publications, 2013.
Reference Books
   1. Company Law, M.C.Shukla, S.Chand Publications, 2019.
   2. A Manual of Mercantile Law,M.C.Shukla, S.Chand Publications, 13th Edition2019.
   3. The Negotiable Instrument Act,Universal law publishing company, 2016.
Journals/ Magazines
   1. Journal of business law-Penn law-university of Pennsylvania
   2. International Journal of Business and Law Research-SEAHI publications

Websites
   1. www.jblenet.com
   2. www.legalsolutions.thomsonreuters.com

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PART III – GENERIC ELECTIVE- BRAND MANAGEMENT

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective:

To understand the basic principles of branding and to know the key issues crafting and evaluating the brand strategies.

Unit I   (12 Hours)
Concept of Brand - Evolution, Perspectives, Anatomy - Types of Brand Names - Brand Name Associations - Brand Versus Products - Advantages of Brand to Consumers and Firms - Brand Elements: Components and Choosing Brand Elements - Branding Challenges and Opportunities - Case Study.

Unit II   (12 Hours)
Brand Positioning - Basic Concepts - Alternatives - Risks - Brands and Consumers - Strategies for Positioning - The Brand For Competitive Advantage - Points of Parity - Points of Difference - Buying Decision Perspectives on Consumer Behavior - Building a Strong Brand - Method and Implications - Case Study.

Unit III   (12 Hours)
Brand Image, Image Dimensions - Brand Associations and Image, Brand Identity - Perspectives, Levels and Prisms - Managing Brand Image - Stages - Functional, Symbolic and Experiential Brands - Brand Equity - Sources of Equity - Brand Equity Models - Brand Audits - Brand Loyalty and Cult Brands - Case Study.

Unit IV   (12 Hours)
Leveraging Brands - Brand Extensions - Extendibility, Merits and Demerits - Line Extensions - Line Trap - Co-Branding and Licensing Brands- Reinforcing and Revitalization of Brands - Need, Methods, Brand Architecture - Product, Line, Range - Umbrella and Source Endorsed Brands - Brand Portfolio Management - Case Study.

Unit V   (12 Hours)
Brand Valuation - Methods of Valuation - Implications for Buying and Selling Brands - Applications - Branding Industrial Products, Services and Retailers - Building Brands Online - Idealization of Foreign Brands and Taking Indian Brands Global - Issues and Challenges - Case Study.

Course Outcome
CO1: The Students Understand the Brands Elements.
CO2: Students Aware about the Strategies for Brand Positioning.
CO3: Understand the Basics of Brand Image, Image Dimensions, Brand Associations.
CO4: The Students Understand the Various Brand Portfolio Management.
CO5: Understand the Issues and Challenges of Brand Valuation.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1		L				L		
CO2	M		M		L		H	
CO3		M	H			H		M
CO4	L			L			L	
CO5					M			M

Text Book:
1. Kevin lane Keller, Strategic Brand Management, PHI/Pearson, New Delhi, Fourth Edition 2015.

Reference Books:
1. William D'Arienzo, Brand Management Strategies, Fairchild Books, First Edition, 2016.
2. Sengupta, Brand Positioning, Tata McGraw Hill, 2014.

Journals/Magazines:
1. International Journal of Brand Management | SAGE Journals
2. Marketing Association of India: RMAI

Websites:
1. https://doi.org/10.1057/s41262-018-0093-5
2. https://link.springer.com/journal/41262/16/8

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PART III – GENERIC ELECTIVE- RETAIL MANAGEMENT

Maximum CIA :30
Maximum CE :70
Total Hours: 60

Course Objective:
        On successful completion of this course the students should have understood the manufacturer's Perspective on retailers, retailers understanding of the retail business and also emerging trends in retailing.

Unit I   (12 Hours)
An Introduction to retail: Functions of Retailer - Significance of a Retail as an Industry- Key Issues faced by the Retailer- Retail as a Career – Evolution of retail formats – Understanding retail formats- Case Study

Unit II   (12 Hours)
Concept of organized retail- Evolution of retail in India- the Indian retail market and key sectors- Challenges to retail development in India- Understanding the Retail Consumer: Need for Studying Consumer Behavior – Factors Influencing the Retail Shopper – The Consumer Decision Making Process –Case Study

Unit III   (12 Hours)
Store site selection: Types of retail locations- Choosing a retail location- Concept of FDI- Retail Merchandising: Concept – Evolution of Merchandising – Factors Affecting Merchandising - Merchandiser Role and Responsibilities - Merchandise Planning Process- Tools for merchandise planning - Case Study

Unit IV   (12 Hours)
Retail Pricing: Elements of Retail Price – Methods Determining the Price – Retail Pricing Policies. Evaluating Merchandise Performance - The Concept of Private Label- Process of Private Label- Concept of Category Management- Components- Case Study

Unit V   (12 Hours)
 Concept of Retail store operations- 5S's of retail operations- Concept of store design- Elements of store design- Visual merchandising- Growth of retail malls in India- Future prospects of Malls- Significance of technology in retail- E-Commerce as a channel of retail- Case study

Course Outcome:
CO 1: Understand the Overview about Retail Industry.
CO 2: To Understand the Evolution of Retail in India and to have an Insight of the Retail Consumer.
CO 3: Insights about Selection of Retail Stores Sites and Merchandising.
CO 4: Understand the Concepts of Pricing in Retail Industry, Private Label and Category Management.
CO 5: Understand the Retail Store Operations and Future of Retail.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M			M		M	H	H
CO2	M				H	H	L	M
CO3	L		L		H		L	M
CO4		H					H	
CO5		L						M

Text Book:
1. Swapna Pradhan, Retailing Management Text and Cases, Tata McGraw Hill Co, 5th edition, 2016.

Reference Books:
1. Michael Levy, Barton and Ajay Pandit, Retailing Management, Tata McGraw Hill Co, 8th Edition, 2017.
2. Rosemary Varley and Mohamed Raffiq, Principles of Retail Management, Palgrave Macmillan, 2nd edition, 2014.

Journals/ Magazines
1. International Journal of Retail and Distribution Management.
2. International Journal of Retail Management and Research.

Websites
1. www.researchgate.net

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PART III – GENERIC ELECTIVE- INTEGRATED MARKETING COMMUNICATION

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:

The objective of the course is to help students understand the principles and practices of marketing communications, involving tools used by marketers to inform consumers and to provide a managerial framework for integrated marketing communications planning.

Unit I   (12Hours)
Marketing Communication: Objectives of Marketing Communication –Functional Areas of Marketing Communication- Integrated Marketing Communication (IMC) - Concepts and Process - Factors Contributing to Integrated Marketing Communication (IMC) - Role of Integrated Marketing Communication (IMC) in Branding - IMC Partners – Promotion Mix – Integrating IMC in Marketing Mix– Challenges in IMC - case study.

Unit II   (12Hours)
Advertising Management- Meaning, Nature and Scope of Advertising – Classification of Advertising– Process of Advertising– STP Strategies for Advertising- Communication Model with reference to Advertising AIDA -Advertising Campaigns, Fundamentals of Advertising Campaigns– The Creative Brief, Big Idea, Getting Creative to find the Big Idea– Advertising Appeal, Advertising Agencies- their role, Functions – Advertising Agencies: organization, Compensation, Client Agency Relationship– Management of Advertising Agencies -case study.

Unit III   (12Hours)
Advertising Budget, Ad Appropriation– Methods of Budgeting – Measuring Effectiveness of Advertisement - Legal and Ethical concepts and issues in Advertising – Advertising Research. Message Design-The Creative Concept Development – The Creative Processes of the Different Forms of IMC – Source of the Message, Message Integration - case study

Unit IV   (12Hours)
International Advertising and Promotion: Global vs Local Advertising – Decision Areas in International Advertising – Role of Promotional Mix Elements in International Marketing - Media Planning and Strategy – Media Types and their characteristics – Setting Media objectives – Steps involved in Media Planning – Media Strategy - Cross-Media Advertising Concept – Media Research – case study

Unit V   (12Hours)
Emerging Concepts and Issues in Marketing Communications– Programmatic, Native Advertising: Video, Mobile, Digital, Sponsorship – Role of E-Commerce in Marketing Communication –Corporate Advertising-Advertorials and Infomercials-Public Relations- Types & Tools of PR-Sales Promotion- Different Types of Sales Promotion- Publicity- Types of Publicity-Personal Selling-Direct Marketing- Event Management. Unconventional Promotional Methods – case study.

Course Outcome:

CO1: Insight into the Role of Integrated Marketing Communication and its Challenges.
CO2: Awareness on Advertising Campaigns, Gain an overall Understanding about Advertising Agencies.
CO3: Knowledge about Advertising Budget Preparations and its Research.
CO4: In Depth Knowledge on Indian Mode of Advertising with International Advertising and Promotion.
CO5: Understanding on Emerging Concepts and Issues in Marketing Communications.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1			H		M	H		M
CO2				H		M	H	
CO3	M						M	
CO4			H		L		H	L
CO5	M		H	H		L	H	M

Textbook:
1. Kirti Dutta, Integrated Marketing Communications, Oxford University Press, First edition, 2016.
Reference books:
1. Terence A. Shimp and J.Craig Andrews, Advertising Promotion and other Aspects of Integrated Marketing Communications, CENGAGE Learning, 9th edition, 2016.
2. Kruti Shah, Advertising and Integrated Marketing Communications, McGraw Hill, 2014.

Journals:
1.Integrated Marketing Communications and Social Marketing, *in* Journal of Social Marketing, July 2015
2. https://link.springer.com/chapter/10.1057/9781137388551_2

Websites:
1. https://theintactone.com/2019/02/26/rmbmk05-integrated-marketing-communication/
2.https://study.sagepub.com/copley/student-resources/integrated-marketing-communications-and-its-environment

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards

THIRD SEMESTER

PART-III-GENERIC ELECTIVE-RECRUITMENT AND SELECTION

Maximum CIA:30

Maximum CE:70

Total Hours:60

Course Objective:

To familiarize the students with concepts and principles, procedure of Recruitment and Selection in an organization and to give an in-depth insight into various aspects of Human Resource Management and make them acquainted with practical aspect of the subject.

Unit I   (12Hours)

Manpower Planning- Concept- Concepts of Recruitment – Meaning, Objectives, Importance of Recruitment Job Analysis – Concept, Description, Process and Methods, Job Design – Definition, Modern Techniques, Factors Affecting Job Design, Contemporary Issues in Job Designing– Case Study.

Unit II   (12Hours)

Source or Type of Recruitment – (a) Direct/Indirect, (b) Internal/ External.Internal – Notification, Promotion Types, Transfer Types, Reference. External– Campus Recruitment, Advertisement, Job Boards, Website/Portals, Internship, Placement. Consultancies – Traditional (In-house, Internal Recruitment, On Campus, Employment and Traditional Agency). Modern (Recruitment Books, Niche Recruitments, Social media Recruitment, Service Recruitment and Candidate Paid Recruiters) Probing and head hunting - Pouching- Case Study.

Unit III   (12Hours)

Selection – Concept of Selection, Criteria for Selection, Process, Advertisement and Application (Blank Format)- Screening – Pre and Post Criteria for Selection, Steps of Selection-Interviewing – Types and Guidelines for Interviewer and Interviewee, Types of Selection Tests, Effective Interviewing Techniques- Selection Hurdles and Ways to Overcome Them - Case Study.

Unit IV   (12Hours)

Induction – Concept, Types – Formal/Informal, Advantages of Induction, - Orientation and On boarding of employees – Cold calling - Socialization – Types – Anticipatory, Encounter, Setting in, Socialization Tactics- Current Trends in Recruitment and Selection Strategies with respect to Service, Finance, IT, Law and Media Industry- Case Study.

Unit V   (12Hours)

Preparing Bio-data and C.V- Social and Soft Skills Group Discussion and Personal Interview, Video and Tele Conferencing Skills- Presentation and Negotiation Skills, Aesthetic Skills-Etiquettes – Different Types and Quitting Techniques- Exit Interview – Meaning, importance-Case Study.

Course Outcome:

CO 1: Understand the Foundation of Recruitment, Concepts of Job Analysis and Job Design.

CO 2: Aware of the Various Sources of Recruitment.

CO 3: Understand the Concepts of Selection, Types of Tests in Selection, Interviewing Hurdles.

CO 4:Understand the Concepts of Induction, Socialization Tactics, Trends in Recruitment. .

CO 5: Prepare the CV, Interview Etiquettes.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	L	H				L	M	H
CO2		H				L		M
CO3			M					H
CO4		M	L	H				H
CO5	L	M	M			L	M	H

Text Book
1. Vaneeta Raney, Dr. Veena Prasad, BoomaHalpeth, Arti Sharma, ByshiPanikar., Recruitment and Selection., Himalaya Publishing House., 1st Edition., 2015.

Reference Books
1. Human Resource Selection, Robert D. Gatewood and Hubert S. I, South western Cengage Learning, Mason, Ohio, 2016.
2. Staffing Organization, Herbert G. Heneman III, Timothy A. Judge, 5th Edition, McGraw Hill International.

Journals/Magazines
1. International Journal of Scientific and Research Publications
2. European Journal of Business and Management

Websites
1. https://www.mooc-list.com/course/recruiting-hiring-and-onboarding-employees-coursera
2. https://www.shrm.org/academicinitiatives/universities/teachingresources/Documents/09-0152%20Gusdorf_Instructor_Notes.pdf
3. https://www.asu.edu/hr/documents/RecruitmentHandbook.pdf

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year2019-2020 onwards
THIRD SEMESTER
PART III – GENERIC ELECTIVE- LABOUR WELFARE AND INDUSTRIAL RELATIONS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:

The course aims to provide an understanding, application and interpretation of the various labor laws and their implications for industrial relations and labor issues.

Unit I   (12 Hours)
Industrial Relations- Impact of Industrial Revolution- - The Management & Government- Factors Affecting IR- Approaches to IR- Causes of Poor Industrial Relations- Remedies. Trade Unions- Functions of Trade Unions in India, Types - Structure of Trade Unions in India - their strength and weakness- Case Study.

Unit II   (12 Hours)
Industrial Disputes Act 1947 – Causes - Handling and Settling Disputes. Strikes – Forms - Effects of Strikes- Lockout - Lay-off- Retrenchment& Closures - Misconduct - Employee Grievances – Redressal – Methods - Collective Bargaining - Principles and Forms of Collective Bargaining - Procedure- Condition for Effective Collective Bargaining - Case Study.

Unit III   (12 Hours)
The Factories Act, 1948 - The Payment of Wages Act, 1936 - The Minimum Wages Act, 1948 – The Payment of Bonus Act, 1965 – The Pension Act 1971 – Sexual Harassment at Workplace (Prohibition, Prevention, Redressal Act 2013)- Case Study.

Unit IV   (12 Hours)
The Maternity Benefit Act, 1961- The Employee's State Insurance Act, 1948 - The Employee's Provident Funds and Miscellaneous Provisions Act, 1952 – The Payment of Gratuity Act, 1972- Case Study.

Unit V   (12 Hours)
The Tamilnadu Shops & Establishment Act, 1947: Registration of Establishments- Shops & Commercial Establishments- Residential Hotels, Restaurants and Eating Houses- Theatres or Other Places of Public Amusement or Entertainment- Case Study.

Course Outcome:
CO1: To Understand about Industries and Composition of Industry.
CO2:To Awareness about The Problems of Employee in Industrial Settings.
CO3:To Understand the Basics of Law that Pertained to Wages.
CO4:To Understand the Various Retirement Benefits for Employee.
CO5:To Understand the Rule that Pertained to Special Service Industry Establishment

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H	L				M		L
CO2	L	M					M	L
CO3			H			H		
CO4	L			M				
CO5	L					L		

Text Book:
1. Sinha. P.R.N, Industrial Relations, Trade Unions &Labour Legislation., 2ⁿᵈ Edition., Pearson Education., 2017

Reference Books:
1. N.D. Kapoor , Elements of Mercantile Law, 34ᵗʰ Revised Ed., Sultan chand & Sons, 2014.
2. P.C.Tripathi, Personnel Management & Industrial Relation, 21ˢᵗ Ed.,Sultanchand & Sons, 2013.

Journals/ Magazines:
1. Labour Welfare and Industrial Relation –World Wide Journals.
2. Journal of Workplace and Behavioral Health.
3. IJMRA-Labour Welfare Measures in Cement Industries in India.

Websites:
1. www.ijmra.us.
2. www.ijecbs.com.

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PART-III-GENERIC ELECTIVE- PERFORMANCE MANAGEMENT

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective:

The objective of this course is to equip students with comprehensive knowledge and practical skills to improve their ability for performance appraisal in their organizations. It is particularly intended for future managers who will develop suitable strategies & policies for performance management and conduct the performance appraisal of their subordinates.

Unit I   (12 Hours)
Introduction to Performance management: Characteristics, Objectives and Principles of Performance Management, Performance Appraisal to Performance Management, Challenges to Performance Management - Case Study.
Unit II   (12 Hours)
Performance Management System: Objectives, Functions, Characteristics of effective PMS, Competency based PMS, Electronic Performance Management. Performance Planning: Characteristics, Objectives, Importance & Methodologies, Process & Barriers to Performance Planning, Competency Mapping, Methods of Competency Mapping - Case Study.
Unit III   (12 Hours)
Performance Appraisal: KRA, KPI, Process, Approaches, Methods & Common Rating Errors. Performance Monitoring: Characteristics, Process of Performance Monitoring. Appraisal of Millennials-Case Study.
Unit IV   (12 Hours)
Performance Counseling: Principles of Performance Counseling, Performance Counseling Skills & Performance Counseling for higher job performance. Performance Management Implementation: Bottlenecks, Strategies & Factors affecting PM implementation, Building & Leading high performance team, Organizational Culture and Performance Management- Case Study.
Unit V   (12 Hours)
Ethics in Performance Management: Principles, Ethical Issues & Dilemmas, Developing Code of Ethics, Performance Management in MNCs. Role of HR Professionals in Performance Management System: Appraising HR function, Future role of HR Professionals in Performance Management in Knowledge Millennium - Case Study.

Course Outcome:
CO 1: An outline of Performance Management System and its Challenges
CO2: Understand about the Performance Managing System and the Performance Planning Process in an Organization.
CO3: Explore and Apply Innovative ways of Rewarding Employee by Appraising and Monitoring the Employees.
CO4: Identify the Issues in the Employees and Perform Counseling and Implementation of the Changes.
CO5: Analyze Critical Ethical Issues Relating to Performance Management and the Future Role of HR Professionals in Performance Management.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	L			L	M	M		
CO2		H			L			H
CO3	L						M	
CO4			M		L	L		M
CO5			M	L			H	

Text Book:
1. Rao, T.V, Performance Management: Toward Organizational Excellence, New Delhi: Sage Publishers, 2017.

Reference Books:
1. T V Rao, Performance Management & Appraisal Systems -Response Books, 2015
2. B D Singh, Compensation and Reward Management -Excel Books, 2014

Journals:
1. International Journal of Productivity and Performance Management
2. International Journal of Business Performance Management

Websites:
1. https://www.mooc-list.com/course/project-performance-management-apnacourse
2. https://www.coursera.org/learn/employee-performance

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PART III – GENERIC ELECTIVE- SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective:
On successful completion of the course the students should have acquired the concepts and applications of investment settings.

Unit I   (12 Hours)
Investment – Financial meaning of investment - Economic meaning of Investment Characteristics and objectives of Investment- Types of Investment - Investment alternatives Choice and Evaluation - Risk and return concepts- Case Study.

Unit II   (12 Hours)
Securities Markets- Financial Market - Types of financial markets   Participants in financial Market- Regulatory Environment Methods of floating new issues- Book building- Role & Regulation of primary market Stock exchanges in India- Case Study

Unit III   (12 Hours)
Fundamental Analysis- Fundamental Analysis- Economic Analysis Economic forecasting - stock Investment Decisions- Forecasting Techniques Industry Analysis- Industry classification- Industry life cycle- Company Analysis   Measuring Earnings- Forecasting Earnings- Applied Valuation Techniques Graham and Dodds investor ratios- Case Study

Unit IV   (12 Hours)
Technical Analysis- Fundamental Analysis Vs Technical Analysis Points & Figures chart, bar chart, confidence index, RSA, RSI, Moving Average analysis, Japanese candlesticks, behavior of stock market prices, the market mechanism,- Market Indicators.- Trend , Trend Reversals Patterns- Moving Average & Exponential Moving Average Oscillators- Market Indicators- Efficient Market Theory- Case Study.

Unit V   (12 Hours)
Portfolio Management- Portfolio Analysis- Portfolio construction, Portfolio Revision, active & passive strategies & formula plans in Portfolio Revision- Portfolio Performance & Evaluation, Sharpe, Treynor & Jensen's Measure,- Case Study.

Note: 80% of the Questions shall be on Theory, 20% of the Questions shall be on Problems in Share and Bond Valuation, Fundamental and Technical Analysis

Course Outcome
CO1: To Understand Investment Alternatives Choice and Evaluation and its Risk and Return Concepts.
CO2: To Get Depth Knowledge about Securities Markets and Methods of Floating New Issues through IPO.
CO3: To Know the Factors Influencing Fundamental Analysis and Applied Valuation Techniques.
CO4: This Unit will Help to Know the Factors Influencing Technical Analysis through Charting Methods.
CO5: On Completion of the Course, the Students are Expected to be Familiar with Different Concepts of Portfolio Management. They would Understand How to Develop an Efficient Portfolio based Upon Risk and Return Criteria.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M			L			L	L
CO2					L			M
CO3		H					M	L
CO4			M		M		M	L
CO5	M						M	L

Text Book:
1. PunithavathyPandian, Security Analysis and Portfolio Management,S.Chand (G/L) &Company Ltd; Second edition (2012)

Reference Books:
1. Prasanna Chandra, Investment analysis and Portfolio Management, Tata McGraw Hill, 5th Edition, 2017.
2. V.A.Avadhan, Securities Analysis and Portfolio Management, Himalaya Publishing House, Twelfth Revised Edition : 2016
3. S. Kevin ,Security Analysis and Portfolio Management, PHI Publication,2012
4. V.K.Bhalla, Investment Management, S.Chand& Company Ltd., Nineteenth Edition 2013

Journals/ Magazines:
1. Journal of Portfolio Management
2. Applied Security Analysis and Portfolio Management-Jstor
Websites:
 1.www.jlem.com

Master Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PART III – GENERIC ELECTIVE - ADVANCED FINANCIAL SERVICES

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective:

On successful completion of the course the students must have gained knowledge from various financial services provided by NBFCs and the modes of raising capital from domestic and foreign market- mutual funds- venture capital- mergers and acquisitions.

Unit I   (12 Hours)
Indian Financial System - Merchant Banking in India - Merchant Banking Services
Capital market, structure of Indian capital market, New issue Market – Issue Mechanism, IPO, Rights issue, private placement, Processes of Book – Building, Issue of Bonus Shares, Stock Options, Functions of new issue market. Stock Exchange: definition, features, functions, organization and structure, membership, speculators, listing of shares, trading procedures in stock exchange, Demat Account and depository services, SEBI-Meaning, objectives and functions, BSE,NSE, OTCEI, SENSEX, Nifty.(Only Theory) -–Case Study

Unit II   (12 Hours)
Hire Purchase -Features- Parties Involved- Tax Implications- Evaluation. Leasing – Features-Elements- Major players- Parties Involved- Leasing process- Types of Leasing- Legal Aspect-Lease Vs. Hire Purchase- Evaluation of Leasing -Case Study

Unit III   (12 Hours)
Mutual Funds – Characteristics – Difference between Mutual Funds & Investment Companies-Operations of Mutual Funds- Types – Risk Associated with Mutual Funds – Net Asset Value – Importance of Mutual Funds - Regulation of Indian Mutual Funds – RBI Guidelines – SEBI Guidelines – New Regulations-Case Study

Unit IV   (12 Hours)
Venture Capital – Characteristics- Objectives- Forms- Venture Capital Investment Process-Stages of Venture Capital Financing– Bills Discounting – Types of Bills – Precautions-Factoring- Features-Types-Functions of Factor- Process of Factoring - Forfeiting- Needs.

Unit V   (12 Hours)
Mergers –Merger in Nature of Acquisition- Types of Mergers- Merger Process- Reasons-Disadvantages- Reasons for Strategic Failures in Acquisition- Acquisition/Takeovers-Types-Steps Involved in Takeovers- Difference between Mergers & Acquisition.

Course Outcome

CO1: The students will have Enhanced Awareness of Indian Financial System &Non Banking Financial Companies (NBFCs),Financial Inclusion, Micro finance and its Implication on the Economy.
CO2: Compare Hire-Purchasing and Leasing Concepts.
CO3: To Know about the Process of Mutual Funds and RBI Guidelines..
CO4: This Course will help the Students Meaningfully Participate in the Stages of Venture Capital and its Risk.
CO5: To Know the Reasons, Difference between Mergers & Acquisition.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1					M	H		M
CO2				H		M	H	
CO3	M						M	
CO4			H	H	L	L	H	
CO5	M		H	H		L	H	M

Text Book:
1. Dr. R.Shanmugam- Financial Services- Wiley India Pvt. Limited – 2009 – Third edition.

Reference Books :
1. Dr.S.Gurusamy- Indian financial System – Tata McGraw-Hill – Second edition - 2009
2. M.Y.Khan- Indian Financial systems- Tata McGraw-Hill- 8th Edition- 2019
3. Varshney.P.N. and Mittal D.K, Indian Financial System- Sultan Chand & Sons- 2015.
4. Management of Banking and Financial Services, Latha Suresh, Justin Paul, Pearson, 3/e, 2014.

Journals/Magazines
1. Journal of Financial Services Research – Springer
2. International Journal of Financial Services Management (IJFSM)

Websites
1. http://www.economist.com/topics/financial-services
2. http://www.mckinsey.com/industries/financial-services/our-insights
3. http://www.zyen.com/publications/professional-articles/sectors/financial-services-articles.html

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PART-III- GENERIC ELECTIVE - TAXATION

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective:

On successful completion in the course the student should have acquired the Basic knowledge on the tax structure, the income tax rates, the various sources of income, goods and services.

Unit I   (12 Hours)
Concept of Tax, Nature and Characteristics, Direct and Indirect Taxes, Tax evasion, Tax planning, and Tax avoidance, Distinction between tax, fees and cess, Rights and powers of Taxation.

Unit II   (12 Hours)
The Income Tax Act, 1961, Basis of taxation of Income, Basic Concepts, Person, Residential Status and incidence of Tax, Income from Salary, Income form House Property, Profits & Gains from Business or Profession, Capital Gains, Income from Other sources, Permissible deductions, Income Tax Authorities

Unit III   (12 Hours)
Taxation of Individuals including Non-residents, Hindu Undivided Family, Firms, LLP, Association of Persons, Cooperative Societies, Trusts, Charitable and Religious Institutions

Unit IV   (12 Hours)
Corporate Taxation – classification, Tax Incidence, computation of Taxable Income and Assessment of Tax Liability, Dividend Distribution Tax (DDT), Minimum Alternate Tax and other Special provisions relating to Companies Wealth Tax Act, 1957

Unit V   (12 Hours)
GST, Introduction, Genesis, Council, Role of CBEC, features, Benefits, Good, Services, Input Tax Credit, Computation and Collection of CGST and SGST, Registration, Electronic Way Bills.

Course Outcome

CO1: Understanding of the tax, its nature and characteristics, and the basic concepts in tax, analyzing tax evasion, tax avoidance and tax planning.
CO2: Understanding the various sources of income for an individual and applying the concept to calculate the total income and tax liability of an individual.
CO3: Understanding the sources of income for HUF. Firms, AOP etc., and the tax structure for various persons.
CO4: Understanding the computation of corporate tax and its implications, MAT
CO5: Understanding the concept of GST, its implications on revenue on central and state governments, and collection of CGST and SGST

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	L		L	M			H	H
CO2	L		L				H	M
CO3	L		L				H	M
CO4				L			H	
CO5				L			H	

Text Book:
1. Students guide to Income Tax – Vinod K Singhania – Taxmann Publications, 2017.
2. GST in India – Sumit Dutt Majumdar, 2016.

Reference Books:
1. The Law and Practice of Income Tax – Arvind P Datar, Kanga and Palkivala – LexisNexis, 2014.

Journals /Magazines (Online):
1. http://nptel.ac.in/courses/109104071/Module7/lecture28.pdf

Websites:
1. http://www.gstindia.com/goods-and-service-tax-a-detailed-explanation-with-examples-2/
2. http://www.dor.gov.in/Gstintro
3. http://icmai.in/upload/Students/Syllabus-2012/Study_Material_New/Inter-Paper7-Revised.pdf 4. https://sol.du.ac.in/mod/book/view.php?id=805&chapterid=454

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PART-III- GENERIC ELECTIVE-SUPPLY CHAIN MANAGEMENT

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective:

On successful completion of the course the student should understand to manage the interaction of business functions across companies in the supply chain management.

Unit I   (12 Hours)
Introduction to Supply Chain Management - Concept of SCM –Components – Features – The Need for Supply Chain- Understanding the Supply Chain Management– Participants in Supply Chain – Levels of Supply Chain, Role of a Manager in Supply Chain - Case Study
Unit II   (12 Hours)
Strategic Issues in SCM - the Supply Chain Revolution Strategic Warehousing – Warehousing Operations –Warehousing Ownership Arrangements – Warehouse Decisions-Case Study
Unit III   (12 Hours)
Supply Chain Network – Performance Measures in Decisions in the Supply chain World – Models for Supply Chain Decision Making - Supply Chain Synchronization – case study
Unit IV   (12 Hours)
Role of Transport in supply chain – Basic Modes of Transportation – Characteristics of different Modes - Transport Functionality–Transport Administration – Documentation –Case Study
Unit V   (12 Hours)
Rationale for ERP Implementation – ERP System Design – Supply Chain Information System Design – Enterprise Facility Network – Warehouse requirements - Case Study

Course Outcome

CO1: The students understand the Concepts and components of supply chain management.

CO2: Students Aware about the strategic issues in supply chain management.

CO3: Understand the basics of supply chain network performance.

CO4: The students understand the Introduction to transportation in supply chain management.

CO5: Understand the ERP implementation an its design.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1		L				M		L
CO2	M		H				M	
CO3				M	M			L
CO4	L		L		M		M	
CO5		M				H		

Text Book:
1. Logistics and Supply Chain Management, by. D.K.Agarwal, Macmillan Publishers India Limited, 2009, 8th edition.

Reference Books:
1. Supply Chain Logistics Management, by. Bowersox, Closs, Cooper, McGraw Hill, 2017.
2. Supply Chain Management (Strategy, Planning and Operation), by. Sunil Chopra, Peter Meindl, Pearson Education, India, Global Edition, 2015.

Journals/Magazines
1. International Journal of Logistics Systems and Management.
2. Supply Chain Management: An International Journal : EmeraldInsight.
3. International Journal of Logistics Research and Applications.

Websites
1. http://www.inboundlogistics.com/cms/tags/articles/supply-chain-management/
2. http://www.scmr.com/article/supply_chain_management_in_2015_and_beyond
3. http://www.logisticsmgmt.com/topic/tag/Supply_Chain_Management

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PART III - GENERIC ELECTIVE – LOGISTICS MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course objective

On successful completion of the paper the student should understand to manage the interaction of business functions across companies in the Logistics Management.

Unit I   (12 Hours)
Concepts of Logistics – Evolution – Nature and Importance – Components of Logistics Management – Competitive Advantages of Logistics – Functions of Logistics management – principles – Logistics Network – Integrated Logistics system- Case study.

Unit II   (12 Hours)
Elements of Logistics and Inventory carrying – Ware housing – Material handling – Order processing – Transportation – Demand Forecasting – Impact of Forecasts on Logistics and Performance measurement- Case study.

Unit III   (12 Hours)
Transportation – participants in Transportation Decisions – Modes of Transportation – Factors influencing Transport economics – documents in Transport Decision Making Warehousing / Distribution – Functions of Warehouse – benefits of Warehouse – Service – Warehousing Alternatives – Warehouse site selection – Factors while initiating Warehouse Operations- Case study.

Unit IV   (12 Hours)
Warehouse Management Systems Packing and Materials Handling – Functions of packaging – Communication – Packaging cost – Types of Packaging Material – Unitization – Containerization – Designing a package factors affecting choice of packaging materials- Case study.

Unit V   (12 Hours)
Organization for effective logistics performance – centralized and decentralized structures – stages of functional aggregation in organization, financial issues in logistics performance – Measures – Steps in ABC costing – Financial Gap Analysis integrated Logistics – Need for Integration - Activity Centers in Integrated Logistics Role of 3PL and 4PL – Principles of LIS- Case study.

Course outcome:

CO1:Ability to analyze and make decisions that impact the performance of the firm as well as the entire Logistics system.
CO2:To Analyze the strengths and weaknesses of various transportation modes and warehousing materials handling.
CO3:To develop the strategies that can be taken to find the best paths to route vehicles to deliver and collect goods at multiple stops.
CO4: To develop the strategies that can be taken to manage inventories, including deciding the timing and quantity for replenishments without hurting the level of product availability along with costs of warehousing and materials handling activities.
CO5:To use computing software to solve various logistics decision-making problems, including inventory policies and vehicle routing.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1				H	M	H		M
CO2	H			H		M	H	
CO3	L						M	
CO4	H		H		L	L	H	
CO5			H	H		L	H	M

Textbook:

1. D.K.Agarwal, Logistics and Supply Chain Management, Macmillan Publishers India Limited, 2009, 8th edition

Reference Books:

1. Logistics Management and Seaborne Trade, by Muthiah K, Himalaya Publishing House 2014.
2. Logistics and Supply Chain Management, by Martin Christoper, Pearson Education, 2016.
3. Business Logistics and Supply chain Management, by. Ronald H. Ballou, Pearson Education, 2011

Journals/Magazines:

1. International Journal of Logistics Systems and Management.
2. Supply Chain Management: An International Journal : EmeraldInsight.
3. International Journal of Logistics Research and Applications.

Websites:

1. http://www.inboundlogistics.com/cms/tags/articles/supply-chain-management
2. http://www.scmr.com/article/supply_chain_management_in_2015_and_beyo
3. http://www.logisticsmgmt.com/topic/tag/Supply_Chain_Management

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PART-III- GENERIC ELECTIVE-SUPPLY CHAIN ANALYTICS

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective:
        To provide a strong foundation in supply chain analytics in order to handle complex data bases and deliver effective visualization product and comprehensive reports.

Unit I   (12 Hours)
Introduction to supply chain management – evolution of supply chain management – analytics in supply chain management – supply chain planning – different view of supply chain – case study.

Unit II   (12 Hours)
Supply chain strategy – supply chain drivers – developing supply chain strategy – strategic fit in supply chain – demand forecasting in supply chain – case study.

Unit III   (12 Hours)
Bullwhip effect and time series analysis – exponential smoothing method of forecasting – Measures of forecasting errors – tracking signal and seasonality models – forecasting using multiple characteristics in demand data – case study.

Unit IV   (12 Hours)
Inventory management in supply chain – Multi echelon inventory management – multi echelon inventory management stations – case study.

Unit V   (12 Hours)
Network design in supply chain – network design in global supply chain – alternative channels of distribution – location decisions in supply chain – different types of analytics in supply chain - case study.

Course Outcome

CO1: The students understand the Analytics in supply chain management.

CO2: Students Aware about the Strategic fit in supply chain.

CO3: Understand the basics of bullwhip effect and time series analysis.

CO4: The students understand the Multi echelon inventory management.

CO5: Understand the Network design in supply chain.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1				L			H	
CO2	L	H				H		
CO3	M				M		M	
CO4		M					L	
CO5			M		M			M

Text book:
1. Supply Chain Management and Advanced Planning: Concepts, Models, Software and Case Studies", by. Stadler Hartmut and Kilger Christoph, Third Edition, Springer, 2010.

Reference book:
1. Dynamic Modelling for Supply Chain Management, by. Marquez Adolfo Crespo Springer, 2010
2. The Logic of Logistics Theory, Algorithms, and Applications for Logistics Management, Simchi-Levi, David, Chen, Xin, Bramel, Julien, Third Edition, Springer, 2014
3. Supply Chain Analysis: A Handbook on the Interaction of Information, System and Optimization, by. Tang Christopher S, Teo Chung-Piaw and Wei Kwok-Kee (Eds), Springer, 2008.

Journals
1. International Journal of Logistics Research and Applications.
2. Supply Chain Management: An International Journal : EmeraldInsight.
3. International Journal of Logistics Systems and Management.

Websites
1. http://www.inboundlogistics.com/cms/tags/articles/supply-chain-management
2. http://www.scmr.com/article/supply_chain_management_in_2015_and_beyond
3. http://www.logisticsmgmt.com/topic/tag/Supply_Chain_Management

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
PART III - INTEGRATED: III-ENTERPRENEURSHIP AND PROJECT MANAGEMENT

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course objective:

Highlight the need for entrepreneurship and to familiarize the growth in entrepreneurship in India and expose the students regarding the assistance from financial Institutions and Government.

Unit I   (12 Hours)
Entrepreneur- Meaning – Importance – Qualities, Nature Types, Traits, Culture, Similarities and Differences between Entrepreneur and Intrapreneur. Professionalism vs Family Business Management, Startup Ecosystem, Entrepreneurship in Residence, Freelancing – Entrepreneurial Environment- Case Study.

Unit II   (12 Hours)
Evolution in Entrepreneurs – Entrepreneurial Promotion: Training and Developing Motivation: Factors – Mobility in Entrepreneurs – Entrepreneurial Change – Occupational Mobility – Factors in Mobility – Role in Consultancy Organizations in Promoting Entrepreneurs – Forms in Business for Entrepreneurs- Case Study.

Unit III   (12 Hours)
Project Management: Sources in Business Idea – Project Classifications – Identifications – Formulation and Design – Feasibility Analysis – Preparation in Project Report and Presentation. Financial analysis – Concept and Scope – Project Cost Estimate – Operating Revenue Estimate – Ratio Analysis – Investment Process – BE Analysis- Social Cost Benefit Analysis-Project Appraisal Methods-Project Report Preparation - Case Study.

Unit IV   (12 Hours)
Project finance: Sources in Finance-Institutional Finance-Role in developmental bank and Commercial Bank- Appraisal in Bank For Loans. Institutional Aids for Entrepreneurship Development – Role in DICS, SIDCO, NSICS, IRCI, NIDC, SIDBI, SISI, SIPCOT, SHG, Functions of MSME, MUBRA Bank and the Role of Venture capitalist, Angel Investors - Entrepreneurial Guidance Bureau – Approaching Institution for Assistance - Case Study.

Unit V   (12 Hours)
Setting Small Scale Industries- Location in Enterprise – Step in Setting SSI unit – Problems in Entrepreneurs – Sickness in Small Industries – Reason and Remedies – Incentives and Subsidies- Evaluating Entrepreneurial Performance – Rural Entrepreneurship – Case Study.

Course Outcomes:

CO 1: Understand the basic concepts of Entrepreneurship.

CO 2: Understand the scope of entrepreneurship.

CO 3: Understand the project selection procedure.

CO 4: Awareness about the financial institution in rendering financial services.

CO 5 : Awareness about schemes that available for retrieving sick industry.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	L			L	H	H		M
CO2	L			L	H	H		M
CO3			L	L	L	L	M	L
CO4	L						M	
CO5			M			H		

Text Book:
   1. Vasanth Desai., Dynamics in entrepreneurial Development and Management, Himalaya publishing house, 2015, Fifth Edition, New Delhi.

Reference Books:

   1. Dr.N.P.Srinivasan ,Dr.C.B.Gupta, Entrepreneurial Development, Sultan Chand & Sons; 2017. edition.
   2. S.S.Khanka – Entrepreneurial Development, Sultan Chand& Sons; 2015.

Journals/Magazines

   1. International Journal of Entrepreneurship and Small Business
   2. The Journal of Entrepreneurship | SAGE Journals
   3. International Journal of Entrepreneurship and Project Management

Websites

   1. www.entrepreneur.com/topic/project-management
   2. https://www.freelancer.com/community/entrepreneurship/project-management
   3. https://innovation-entrepreneurship.springeropen.com/articles

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
PART-III-INTEGRATED-IV-STRATEGIC MANAGEMENT

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective:
          The course is designed to assist the students in understanding and developing the holistic perspective of enterprise.

Unit-I   (12Hours)
Introduction to SM- Policy –Strategy- Tactics- Strategic Planning- Strategic Decision Making-Strategic Management Process-Strategic Intent- Vision- Mission- Goals & Objectives – Case Study.
Unit-II   (12Hours)
Environmental Analysis - Environmental Factors- Industry Analysis- Competition Analysis-Scenario Development- Organizational Analysis – TOWS Matrix - Strategic Audit-SWOC-Case Study.
Unit-III   (12Hours)
Corporate Strategies - Business Strategies – ETOP - GAP Analysis - Balance Score Card - Case Study.
Unit-IV   (12Hours)
Choice of Strategy - Mc Kinsey's 7 S Frame Work- GE 9 Cell Model - Selection of Matrix – Structural Implementation- Forms of Organization structure Politics - Case Study.
Unit-V   (12Hours)
Behavioral Implementation- Leadership styles – Organization Culture- Organization Politics-Designing Strategic Control Systems- Matching Structure & Control to Strategy - Techniques of Strategic Evaluation & Control - Case Study.

Course Outcome:
CO1: Understand the fundamentals of strategic management.
CO2: To understand the fundamental principles of and relationships among business functions such as: finance, human resources, marketing, and operations.
CO3: To understand the relationships of business to individuals, other organizations, government and society.
CO4: Analyze the integrative nature of strategic management & Create strategy -implementation plans.
CO 5: To serve as an opportunity to develop skills for strategic thinking and analysis, leadership and design strategic control system.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H							M
CO2			H				M	
CO3		L			M		M	
CO4				H			H	
CO5		L			L	H		L

Text Book
1. Prasad.L.M., Strategic Management., Sultan Chand & Sons., 6th Thoroughly Revised Edition., 2018.

Reference Books
1. Francis Cherunilam., Strategic Management, Himalaya Publishing House, 3rd Edition., 2018.
2. Srinivasan.R., Strategic Management- The Indian Context., 5th Edition., Prentice-Hall of India Pvt. Limited, 2014.

Journals/Magazines
1. SMJ - SMS | Strategic Management Journal.
2. International Journal of Strategic Management.
3. Strategic Management Journal – SCImago.

Websites
1. https://www.linkedin.com/pulse/5-most-popular-strategic-management-articles-nishlan-pillay
2. https://hbr.org/2015/03/defining-strategy-implementation-and-execution
3. https://channels.theinnovationenterprise.com/articles/the-art-in-strategy-formulation

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
PART-III- GENERIC ELECTIVE - SERVICES MARKETING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:

This course aims at making students to understand and appreciate the growing importance of services in every organization and to provide an in-depth understanding of the unique challenges inherent in managing and delivering quality services.

Unit I   (12 Hours)

Introduction to service marketing: Definition – Classification of services - Service Economy – Evolution and growth of service sector – Nature and Scope of Services – Unique characteristics of services - Role of Services in Economy - Challenges and issues in Services Marketing – case study.

Unit II   (12 Hours)

Service marketing opportunities: Assessing service market potential - Classification of services – Expanded marketing mix – Service marketing – Environment and trends – Understanding customer expectations and zone of tolerance - Service market segmentation, targeting and positioning – case study.

Unit III   (12 Hours)

Service design and development Service Life Cycle: New service development - Quality Issues and Quality Models – Service Blue Printing – GAP's model of service quality – Measuring service quality – SERVQUAL – Service Quality function development - Services failure, service recovery, Customer retention, Customer Relationship management – case study.

Unit IV   (12 Hours)

Service delivery and promotion: Service product planning - Positioning of services – Services promotions - Services distributions - Designing service delivery System, Service Channel – Pricing of services, methods – Service marketing triangle - Integrated Service marketing communication - Role of technology in services marketing – case study.

Unit V   (12 Hours)

Marketing of Services in Practice: Service strategies - Service Marketing Strategies for health care services – Hospitality – Tourism Services Marketing – Marketing of financial services – Logistics management – Marketing of educational services – Entertainment & public utility Information technique Services – case study.

Course Outcomes:

CO 1: Demonstrate an extended understanding of the unique characteristics and challenges of services marketing.

CO 2: Demonstrate knowledge of the extended marketing mix for services.

CO 3: Demonstrate integrative knowledge of marketing issues associated with service productivity, perceived quality, customer satisfaction and loyalty.

CO 4: Prepare, communicate and justify marketing mixes and information systems for service-based organizations.

CO 5: Critically appraise the way in which this theory can be practically applied in the service sector.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H	L				M		L
CO2	L	M					M	L
CO3			L			H		M
CO4	L			M				
CO5	L					L		

Text Books:

1. Christropher H.Lovelock and Jochen Wirtz, Services Marketing, Pearson Education, New Delhi, 7th Edition 2011.

Reference Books:

1. Hoffman, Marketing of Services, Cengage Learning, 1st Edition, 2008.
2. Valarie Zeithaml et al, Services Marketing, 5th International Edition, 2007.

Journals

https://www.tandfonline.com/toc/wzps20/21/1

https://www.scimagojr.com/journalsearch.php?q=130049&tip=sid

https://www.emeraldgrouppublishing.com/jsm.htm

Websites:

https://www.ebsglobal.net/documents/course-tasters/english/pdf/h17se-bk-taster.pdf

http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.475.4612&rep=rep1&type=pd

https://www.mooc-list.com/course/services-marketing-selling-invisible-openlearning

https://books.google.co.in/books/about/Services_Marketing.html

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
PART III - GENERIC ELECTIVE - DIGITAL AND SOCIAL MEDIA MARKETING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:

      The Course aim to provide students with the knowledge about business advantages of the digital marketing and its importance for marketing success and to get introduced to various digital channels, their advantages and ways of integration.

Unit – I   (12 Hours)
Introduction to digital marketing: Strategies in Digital Marketing - Aligning Internet with Business Objectives – User Behaviour & Navigation - Branding & User Experience - Stakeholders in Search - Customer Insights - Case Study.

Unit – II   (12 Hours)
Search marketing and web site analytics: Campaign Management - Conversion Tracking - Targeting & Analytics – Keyword Selection -Conversion Metrics: CPA, CTR - Goal Configuration &Funnels - Intelligence Reporting - Conversions, Bounce Rate, Traffic Sources, Scheduling etc-Case Study.

Unit – III   (12 Hours)
Social media: What is Social Media Marketing? - Overview of Facebook, Twitter, LinkedIn, Blogging, Youtube and Flickr- Google Ads, Facebook Ads and Instagram Ads - Building Brand Awareness Using Social Media - Social Media Management-Case Study.

Unit – IV   (12 Hours)
Email and mobile marketing: User Behaviour - Market Segmentation, Key Metrics - Best Practice Case Studies - Split Testing - Campaign Process Optimisation - SMS Strategy - Mobile Advertising - Mobile Optimized Websites - 7 Step Process for Mobile Apps - Proximity Marketing - Strategic Steps - Review & Testing -Case Study.

Unit – V   (12 Hours)
Display advertising and strategic planning: Tracking your Campaign - Optimizing the Campaign - Campaign Planning - Running Effective Ads - Situation Analysis, Planning, Budget, Measurement - Information Gathering & Research - Key Strategy & Planning Concepts & Methodologies -Case Study.

Course Outcome
CO 1: Understand what social media is, the various channels through which it operates and its role in marketing strategy.
CO 2: Use principles of consumer and social psychology to develop social media content and campaigns that engage consumers.
CO 3: Draw on knowledge about word-of-mouth marketing to develop effective approaches for propagating ideas, messages, products, and behaviors across social networks.
CO 4: Measure the impact of a social media campaign in terms of a specific marketing objective.
CO 5: Implement the camping strategy.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M			M		M		H
CO2	M				H	H	L	M
CO3	L		L		H	H		
CO4		M					H	
CO5		L					L	M

Text Book

1 Dave Chaffey, Fiona Ellis Chadwick, Digital marketing, Pearson publications, 6th edition, 2016.

Reference Books

1 Aleksej Heinze, Gordon Fletcher, Tahir Rashid, Ana Cruz, Digital and Social Media Marketing, Routledge publishers, 2017.

2 Bell, D., J. Choi, and L. Lodish, "What Matters Most in Internet Retailing" Sloan Management Review. 2012.

Journals

1 https://www.pauladaunt.com/books/Social%20Media%20Marketing.pdf

2 http://netmining.com/wp-content/uploads/2015/09/Netmining-Marketing-Big-Book.pdf

Websites:

https://www.smartinsights.com/social-media-marketing/
https://www.intechnic.com/blog/the-best-online-resources-for-digital-marketing/
https://www.wordstream.com/social-media-marketing

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
PART-III- GENERIC ELECTIVE-AGRICULTURAL AND RURAL MARKETING
Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective:
        To create awareness about the applicability of the concepts, techniques and process of marketing in rural context.

Unit-I   (12 Hours)
Agricultural Marketing - Concepts- Objectives - Importance- History- Growth- Challenges - Farm products - Marketing- Packaging – Material – Types - Transportation - Methods- Case Study.
Unit -II   (12 Hours)
Market for agricultural inputs – Nature of demand – Nature of competition - Storage and Warehousing – Marketing Agencies & Institutions - External Trade in Agricultural products – Financing - Case Study.
Unit –III   (12 Hours)
Introduction to rural market – Nature and attractiveness - Factors affecting rural market - Rural Consumer - Rural Marketing Mix - Rural vs Urban Marketing - Rural Marketing Environment - Rural Consumer Behaviour - Factors - Bases in Segmentation – Targeting – Positioning - Case Study.
Unit-IV   (12 Hours)
Product Strategy - Product Classifications – Significance – Scope – Product mix – Competitive Product strategies - Pricing strategy – concepts – Significance & Objectives policies - Case Study.
Unit-V   (12 Hours)
Distribution Strategy - Distribution Channels – Old, new, pragmatic approaches – approaches strategy - Promotion Strategy – exploring – target audience – Designing - Case Study.

Course Outcome
CO1: The students understand the Agricultural marketing concepts.
CO2: Students Aware about the marketing agencies & institutions.
CO3: Understand the basics of rural marketing concepts and environment.
CO4: The students understand the various product strategies.
CO5: Understand the distribution strategy and distribution channels.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M				M			M
CO2		L	M				L	
CO3		L			M		H	
CO4			H	L				
CO5				M		H		

Text Book:
1. Krishnamacharayalu.C.S.G & Lalitha Ramakrishnan., Rural Marketing Text & Cases, Pearson, 2ndEdition, 2012.

Reference Books:
1. Pradeep Kashyap with a Foreword by Jagdish.N.Sheth., Rural Marketing, Pearson, 2nd Edition, 2012.
2. T.P.Gopalasamy., Rural Marketing - Environment, Problems and Strategies, Vikas Publishing House, 2010.

Journals/Magazines:
1. International Journal of Rural Management | SAGE Journals
2. Rural Marketing Association of India: RMAI
3. International Journal of Agricultural Marketing - Premier Publishers

Websites:
1. http://agritech.tnau.ac.in/agricultural_marketing/agrimark_India.html
2. http://www.economicsdiscussion.net/agriculture/marketing/agricultural-marketing-in-india-defects-and-their-remedial-measures/12854
3. https://www.ibef.org/industry/indian-rural-market.aspx

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
PART-III-GENERIC ELECTIVE- PERSONAL GROWTH AND INTERPERSONAL EFFECTIVENESS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
         To develop the self and personality of an individual with exercises and experiential learning.

Unit I   (12 Hours)
Personal Growth- Meaning - Self Definition and Perception, Johari Window– Gaining Self Knowledge, Self-Knowledge, Self-awareness, Self-effectiveness, Self-presentation motives and Strategies, Self-monitoring- Case Study.

Unit II   (12 Hours)
Understanding human personality- Meaning & Determinants- PF 16- Guilford Peogut-Emotional Intelligence- Meaning, Dimensions and Emotionally Intelligent Organizations-Assertive Training: Nature, importance & relevance to organizational life - Assertion and aggression- Case study

Unit III   (12 Hours)
Personal Change meaning, nature and requisites. Locus of control- Habit formation- Habits of personal effectiveness- Goal Setting, SMART Principles & Conflict Management- Creativity and Innovation- Blocks to creativity- Convergent & Divergent thinking- Six thinking Hats-Case Study.

UnitIV   (12 Hours)
Transactional Analysis: Introduction, Ego States, exclusion contamination, strokes, Life positions, Types of Transactions, Time Structures - Withdrawal, Rituals, Pastimes, activities, games - types, Stamps, Rackets and sweat shirts, scripts. Advantages and disadvantages of TA-Case Study.

Unit V   (12 Hours)
Counseling - Introduction - other interventions - steps, Elements of Counseling - Counseling in organizations, Training for Counseling. Anxiety and stress, an introduction to NLP- Case Study.

Course Outcome:

CO 1: Understand about the self-concepts& Strategies.
CO 2: Know about the concepts of human personality, assertive training and emotional intelligence of people.
CO 3: Understand the concept of personal change, Creativity and innovation.
CO 4: Understanding the concepts & Application of Transactional Analysis tools and techniques.
CO 5: Get to know about counseling and its methods and counseling in organizations.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M	H		M	L		H	M
CO2	H	H	M	L		H	M	M
CO3				H			M	
CO4		M				M		
CO5			M	M		H	M	

Text Book:
1. P M Meera Mohiadeen, Managing Interpersonal Effectiveness, Nahidha Publishers, 2018.

Reference Books:
1. S. Narayan Rao & Prem Sahajpal, Counseling and Guidance, McGraw Hill Publishing Co. Ltd, New Delhi, 2017.
2. Hunskar& Robbins, Training in Interpersonal Skills, Pearson Publishers, 6th edition, 2013.

Journals/Magazines:
1. Psychology and Behavioral Sciences, Science Publishing Group(an open access publisher)
2. International journal of psychology, Wiley-Blackwell

Websites
1. www.helpself.com

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
PART-III- GENERIC ELECTIVE– COACHING AND MENTORING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course objective:

   To create an awareness and understanding about the coaching and mentoring techniques in which students have to work as mentor as well as coach by handling their own team for a successful and effective performance.

Unit I   (12 Hours)
Coaching and mentoring meaning, definitions – the difference between coaching and mentoring – benefits of coaching and mentoring - coaching and mentoring as performance management. Mentoring/ coaching lifecycle or different phases – practical hints and tips for each stage - Case study.

Unit II   (12 Hours)
Understanding poor performance – reasons for poor performance – more discussions on attitude problems –key roles and responsibilities of mentor/coach – what makes and effective mentor/coach? – KSA of mentees /coaches – KSA of mentors/coaches - Case study.

Unit III   (12 Hours)
The coaching continuum – characteristics of a successful coach – skills of a great coach – performance management basics – benefits, laying the foundation for successful performance management – code of professional conduct and ethics- Case study.

Unit IV   (12 Hours)
preparing the mentees/coaches : suggestions for getting started – preparing mentor/coach models: the grow model, egan's skilled helpers model, oskar model, wheel of life model, ideal problem solving model, clear model – importance of goal setting and PDPs - Case study.

Unit V   (12Hours)
Performance development program(PDP) – giving feedback – feedback giving & receiving hints and tips - coaching a team – building high performance team – team assessment – twelve conditions for a high performance team – achieving a high performing team - Case study.

Course Outcome:
CO1:Best knowledge about the coaching and mentoring as performance management& its phases.
CO2: Awareness about key roles and responsibilities of mentor/coach
CO3: Understand the value successful coach and foundation for successful performance
CO4: Better understand the models of coaching and mentoring.
CO5: Understand the role of Performance development program in team performance.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M			M		M	H	H
CO2	M	H			H	H		
CO3	L		L				L	M
CO4		M					H	
CO5			H				L	M

Text Book:
1. Julie Haddock Millar & Eliot Tom, Coaching and Mentoring for Work-life Balance, Routledge Publishing, 2019.

Reference Books:
1. W. Brad Johnson&Charles R. Ridley, The Element of Mentoring, St. Martin's Press, 3rd ed. Edition, 2018.
2. Ravi ShankarGundalapalli, The Art of Mentoring, CreateSpace Independent Publishing, 2017.

Journals/ Magazines:
1. The International Journal of Mentoring and Coaching.

2. The Scope of coaching in the context of organizational change.

Websites:
1. https://www.thebcfgroup.co.uk/business-coaching/coaching-and-mentoring-for-managers.php
2. http://www.coachingnetwork.org.uk

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
PART III - GENERIC ELECTIVE – HUMAN RESOURCE ACCOUNTING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course objective:

To explicate the relevant knowledge on taking decisions based on monetary valuation of employees, and to give comprehensive understanding of structured HR accounting decisions on budgeting.

Unit - I   (12 Hours)
Meaning & Definition of HRA – Importance - Development of the Concept – History of Score Card - HRA for Managers & HR Professionals – HR business partnership- Investment in Human Resources – Quality of Work Force and Organizations' Performance – Modern Market Investment Theory - Enumerating the Assets- Calculating the Market Value of Assets – Illiquid and Non- Marketable Assets – Human Capital – Case study

Unit – II   (12 Hours)
Human Resource Planning – Human Capital Investment – Expenditure Vs Productivity – Training – Human Capital & Productivity - Human Resource Accounting – Measurement of Human Value addition into Money Value – Objectives of Human Resources Accounting – Approaches to Human Resource Accounting - Case study

Unit – III   (12 Hours)
Investment Approach – Investment in Human Resources - HR Value – Concepts, Methods & Mechanisms - Recruiting and Training Costs – Depreciation –Rates of Return – Organization Behavior Vs Turnover – Non Value Adds in the Management of Human Resources, Measures and Prevention - Case study

Unit - IV   (12 Hours)
HR Accounting – Design, Preparation & Implementation - Responsibility Accounting and Management Control - Management Control Structure and Process - Design of HR Accounting Process & Procedures for each of the HR Sub-system including Recruitment, induction, Performance Appraisal and Training - Classification of Costs in HR Accounting – Behavioral Aspects of Management Control – Social Control - Case study

Unit - V   (12 Hours)
HR Auditing and Accounting – HRA Software - HRA Oriented Reporting Processes Including P & L Accounts & Balance Sheet - Experiences and Extrapolations on HRA. Reference - Case study

Course Outcome:
CO1: Adequate Knowledge in Modern Theory concept
CO2: Capable to do planning for productivity
CO3: Clear Knowledge in Investment Approach
CO4: In depth knowledge in HR Accounting concepts and Managements
CO5: Trained to use HRA Software to do accounting and auditing

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1				H	M	H		M
CO2	H			H		M	H	
CO3	L						M	
CO4	H		H	H	L	L	H	
CO5			H	H		L	H	M

Text book:
1. Dr. TruptiShivram, Human Resource Accounting& Auditing, Himalayan Publishing House, First edition, 2019.

Reference books:
1. Dr. P K Sinha & Dr. Padmini, HR Accounting & compensation management, Everest Publications, First edition, 2018.
2. Nisamudheen. T, Human Resource Accounting & Auditing, Lakshmi Book Publications, 2016.

Journals:
1. Global Journal of Management and Business Research Accounting and Auditing
2. IOSR Journal of Business and Management.

Websites:
1. https://shodhganga.inflibnet.ac.in/bitstream/10603/148281/8/08_chapter%202.pdf
2. https://www.researchgate.net/profile/Sunil_Kumar649/publication/325358064_Human_Resource_Accounting_and_Organisational_Performance/links/5b0779920f7e9b1ed7f1e392/Human-Resource-Accounting-and-Organisational-Performance.pdf

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
PART-III- GENERIC ELECTIVE -PRINCIPLES AND PRACTICES OF BANKING

Maximum CIA:30
MaximumCE:70
Total Hours: 60

Course Objective:

To understand the banking system and structure in India and to know the nature of banker-customer relationship.

Unit – I   (12 Hours)

Banking system and structure in India- Evolution of Indian Banks-Types of banks –Public Sector, Regional Banks, Fundamental role and evolution - Banking structure in India – Licensing of banks in India - Branch licensing - Foreign Banks - Private Banks –Capital and Voting rights – Dividend - Corporate Governance - CRR -SLR – Repo - Reverse Repo - Open Market Operations -Role of Reserve Bank and GOI as regulator of banking system – Provisions of Banking Regulation Act & Reserve Bank of India Act- Case Study.

Unit – II   (12 Hours)

Banker and customer – Types of relationship between banker and customer – Bankers obligations to customers – Right of lean, setoff, appropriation–Bankers legal duty of disclosure and related matters. Customers` accounts with banks – Opening- operation – KYC norms and operation – Types of accounts and customers – Nomination – Settlement of death claims-Case Study.

Unit – III   (12 Hours)

Banking Technology- Concept of Universal Banking-Home banking – ATMs- Internet banking – Mobile banking- Core banking solutions – Debit, Credit, and Smart cards – Electronic Payment systems-MICR- Cheque Truncation-ECS- EFT – NEFT-RTGS- Case Study.

Unit – IV   (12 Hours)

Banker as lender – Types of loans – Overdraft facilities – Discounting of bills – Financing book dates and supply bills- Charging of Security bills- pledge – mortgage – assignment. Asset Liability Management (ALM) in banks: Components of Liabilities and Components of Assets, Significance of Asset Liability management, Purpose and objectives. Prerequisites for ALM, Assets and Liabilities Committee (ALCO)- Activities of ALCO- Case Study.

Unit – V   (12 Hours)

International banking – International Banking: Exchange rates and Forex Business, Correspondent banking and NRI Accounts, Letters of Credit, Foreign currency Loans, Facilities for Exporters and Importers, Role of ECGC, RBI and EXIM Bank-Case Study.

Course Outcome

CO1: Help to understand Indian Banking system and structure in India.
CO2: This unit focused Banker and customer relationship, Obligation.
CO3: Help to know the Banking Technology as MICR, Cheque Transaction, ECS, EFT, NEFT & RTGS.
CO4: How Asset Liability Management (ALM) in banks are working.
CO5:To know the International banking Techniques in Facilities for Exporters and Importer.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	L		L			L		
CO2				L		M		
CO3		L				M		M
CO4		L				M		L
CO5			M				M	L

Text Book:
1. Natarajan & Gordon: Banking Theory and Practice, 3rd revised edition, 2015, Margham Publications, Chennai.

Reference Books:
1. Sundharam and Varshney, Banking theory Law & Practice,Latest Ed, Sultan Chand & Sons, 2015,New Delhi.
2. Indian Institute of Banking and Finance, Principles and Practices of Banking, 2nd Edition, 2015, Macmillian, Mumbai.
3. Maheswari S.N, Banking Law & Practice,2014, Kalayani Publications, New Delhi
4. NSE Academy's Banking Sector Module Handbook, 2017

Journals / Magazines:
1. The IUP journal of Bank Management, IUP Publications
2. Journal of Accounting and Finance, The Research Development Association Jaipur (INDIA)

Websites:
1.http://kalyan-city.blogspot.com/2011/02/what-is-bank-introduction-definition.html
en.wikipedia.org/wiki/Bank account
2.www.allbankingsolutions.com/Banking-Tutor/ALM.shtml

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
PART-III- GENERIC ELECTIVE -RISK MANAGEMENT AND INSURANCE

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective:

On successful completion in the course the student should have acquired the functioning in Insurance Industry in India.

Unit – I   (12 Hours)
Risk – Risk identification evaluation, Property and liability Loss exposures, Life, Health, and Loss of Income exposures and non insurance risk management techniques. Selecting and Implementing Risk management techniques- Advance issues in risk Management- Case Study.

Unit – II   (12 Hours)
Property and liability risk Management- Risk Management of commercial property, Business liability and risk management insurance - Workers' compensation and alternative risk managing- Case Study.

Unit – III   (12 Hours)
Risk Management of Auto owners - Insurance Claims –the need for insurance-personal automobile policy-personal automobile rating- premium and death rates-cost containment advances in driver and auto safety. Risk management of home owners policy coverage-perils covered by the policy-flood Insurance-personal articles floater-personal risk management- Case Study.

Unit – IV   (12 Hours)
Fire & theft Insurance- Burglar Insurance- Loss of life –types of life insurance- tax incentives for life insurance- Life insurance contract provisions. Loss of Health- Health insurance providers- mechanics of cost sharing - health insurance policy provisions – health care reforms. Annuities- structures of annuities- annuity characteristics- annuity taxation - Case Study.

Unit – V   (12 Hours)
Regulation for Life and General insurance-Reinsurance, micro-insurance, Licensing of insuring agent, registration of insurance companies and protection of policy holders- IRDA Act-Duties/Powers of IRDA- Investment norms.

Course Outcome

CO1: Risk identification and Risk management techniques in Life & Health.
CO2: This unit focused Property and liability risk Management.
CO3: Help to know the Risk Management of Auto owners and Home owners' policy coverage.
CO4: This unit focused Health Insurance, Annuities and Employees benefit.
CO5: Recent scenario in Life and General insurance industry in India, IRDA.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M		L					H
CO2			M			M	M	
CO3	M						H	
CO4				L			M	
CO5		M						H

Text Book:
1. Dorfman Mark S Introduction to Risk Management and Insurance, 10th Edition Prentice Hill India, 2011, New Delhi.

Reference Books:
1. Misra M.N. and Misra S.R Insurance Principles and Practice, Revised Edition, S Chandand Co., 2014, New Delhi.
2. Jave S. Trieschimam, Sandra G. Gustarson, Robert E Houyt, Risk Management andInsurance, 12th Edition, Thomson Sowlla Western, Singapore.

Journals / Magazines (Online) :
1. http://journalofriskandinsurance.smeal.psu.edu/
2. http://www.aria.org/journals.html

Websites:
1. http://www.riskworld.com/books/topics/riskmana.htm
2. http://www.irmi.com/online/default.aspx

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
PART-III- GENERIC ELECTIVE - WEALTH MANAGEMENT

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective:
On successful completion in the paper the student should have acquired the Basic knowledge on the financial Planning, Investment & Risk Management, Elements of taxation on Investment products for reaching ultimate goal of Wealth Management.

Unit – I   (12 Hours)
Introduction to Investment Management: Meaning, objectives of financial investment, types, financial & non-financial forms of investment, investment methods, security & non-security forms of investment, sources of investment information, investment instruments. (Theory and Problems)

Unit – II   (12 Hours)
Risk and Return Analysis: Risk and returns concepts, concept of risk, types of risk- systematic risk, unsystematic risk, calculation of risk and returns, portfolio risk and return, expected returns of a portfolio, calculation of portfolio risk and return, portfolio with two assets, portfolio with more than two assets. (Theory and Problems)

Unit – III   (12 Hours)
 Fundamental and Technical Analysis: Economy-Industry-Company framework, economic analysis & forecasting, theory of technical analysis, points & figures chart, bar chart, confidence index, RSA, RSI, moving average analysis, Japanese candlesticks, behavior of stock market prices, the market mechanism, testable hypothesis about market efficiency, implications of efficiency market hypothesis in portfolio management. (Theory and Problems)

Unit – IV   (12 Hours)
Valuation of Securities: Valuation of bond, features, types of bonds, determinants of interest rate, bond management strategies, bond valuation, bond duration, preference shares concepts, features, yields, equity shares, concepts, valuation, dividend valuation models. (Theory and Problems)

Unit – V   (12 Hours)
Portfolio Management: Markowitz model-portfolio selection, opportunity set, efficient frontier, beta measurement and Sharpe single index model, Capital asset pricing model, basic assumptions, CAPM equation, security market line, extension of Capital asset pricing model, capital market line, SML VS CML, Arbitrage pricing Theory, arbitrage, equation, assumption, equilibrium, APT and CAPM. Portfolio construction, Portfolio performance evaluation, Sharpe, Treynor & Jensen's measure, portfolio revision, active & passive strategies & formula plans in portfolio revision, mutual funds, types, performance evaluation of mutual funds, functions of asset management companies. (Theory and Problems)

Course Outcome

CO1: Understand the empirical and theoretical implications of the financial investments.
CO2: Apply portfolio theory and evaluate the risk and returns associated with individual and collective stocks.
CO3: Evaluate stock price using fundamental analysis and technical analysis tools.
CO4: To learn valuation of equity, debt and mutual funds.
CO5: Analyze the fundamental drivers of diversification as an investment strategy for investors and create optimal portfolio.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	L		L	M			H	H
CO2	L		L				M	M
CO3			L				H	M
CO4		H			L		H	
CO5			L				H	M

Text Book:
1. V.K Balla, Investment Management, S. Chand & Co, 19/e, 2013.
2. Donald E.Fischer& Ronald J.Jordan , Security Analysis and Portfolio Management, Pearson,6thEdition.
3. Punithavathy Pandian ,Security Analysis and Portfolio Management, Vikas Publishing House, 3rdEdition, 2009.

Reference Books:
1. Prasanna Chandra, Investment Analysis and Portfolio Management, Tata Mc Graw Hill, 4thEdition, 2012.
2. Dr.Mahipal Singh, Security Analysis with Investment and Portfolio Management, 2011.
3. Alexander, Sharpe, Bailley, Fundamentals of Investment, PHI, 3rd Edition, 2008

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
PART III – GENERIC ELECTIVE- EXPORT TRADE AND DOCUMENTATION

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective:
On successful completion of the paper the student will be familiarized with the various methods and procedures of foreign trade financing, foreign exchange rate, costing and pricing for exports and the various institutions involved in export financing.

Unit I   (12 Hours)
Export – Preliminary for starting export business – Rules for successful exporting – deemed exports and its benefits - Recent Measures to boost country's Export – Case study.
Unit II   (12 Hours)
Different categories of exports – registration of exporters - Appointing Overseas Agents – Obtaining Export license – arranging for finance for exports – packing goods for exports – marking goods for exports - Case Study
Unit III   (12 Hours)
Export documentation – excise clearance – customs clearance – role of clearing and forwarding agents – insuring goods against marine risks – shipment of export cargo - Case Study
Unit IV   (12 Hours)
Introduction to export finance – terms of international payments – methods of international payments – financing for export credit needs – short, medium and log terms sources of finance – case study.
Unit V   (12 Hours)
Pre shipment finance – categories of pre shipment finance – facilities of pre shipment credit – pre shipment credit in foreign currency – post shipment credit in rupees and foreign currency – case study.

Course Outcome

CO1: The students understand the Preliminary for starting export business.

CO2: Students Aware about the Different categories of exports.

CO3: Understand the basics of Export documentation.

CO4: The students understand the Introduction to export finance.

CO5: Understand the Pre shipment finance and post shipment finance.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1					M			L
CO2		M		L		M		
CO3	M						H	
CO4	L		H					
CO5		L			M			M

Text Book:
1. Export Management by TAS Balagopal, Himalayan publication, 2016, Delhi

Reference Books:

1. International Trade and Export Management, Francis Cherunilam, Himalaya Publishing House (2016)
2. Export management A Complete Guide by Gerardus Blokdyk, 5starcooks publishers (A-2019 Edition Paperback – Import, 21 December 2018.
3. Export and Import Procedures Paperback by Jignesh Vidani, Educreation Publishing – 8 January 2019.
4. Export Import Management Paperback, by Parul Gupta McGraw Hill Education; First edition 2 October 2017.

Journals/Magazines:
1. International Journal of Export Marketing (IJExportM)
2. Journal of International Marketing and Exporting (JIME)
3. Exporting Journals

Websites:
1. https://www.taxprofessionalsresource.com/articles/view.php?article_id=6749
2. http://howtoexportimport.com/Export-procedures-and-documentation-1397.aspx
3. http://howtoexportimport.com/Export-procedures-and-documentation-1397.aspx

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
PART III - GENERIC ELECTIVE – WAREHOUSE MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course objective:

To know about the move of inventory in a supply chain effectively and efficiently to extend the desired level of customer service at the least cost in materials handling, with modern warehousing methods.

Unit - I   (12 Hours)

Introduction Warehousing – Basic Warehousing Decisions – Warehouse Operations – Types of Warehouses – Functions – Centralized & Decentralized – S rage Systems – Warehousing Cost Analysis – Warehouse Layout – Characteristics if Ideal Warehouse

Unit - II   (12 Hours)
Inventory: Basic Concepts – Role in Supply Chain – Role in Competitive Strategy – Independent Demand Systems – Dependent Demand Systems – Functions – Types _ Cost – Need for Inventory – Justin Time

Unit - III   (12 Hours)
Inventory Control – ABC Inventory Control – Multi-Echelon Inventory Systems – Distribution Requirement Planning – Bull Whip Effect – Using WMS for Managing Warehousing Operations

Unit - IV   (12 Hours)
Principles and Performance Measures of Material Handling Systems – Fundamentals of Material Handling – Various Types of Material Handling Equipments – Types of Conveyors –Refrigerated Warehouses- Cold Chain- Agri SCM

Unit - V   (12 Hours)
Modern Warehousing – Au mated S rage & Retrieval Systems & their Operations – Bar Coding Technology & Applications in Logistics Industry – RFID Technology & Applications Advantages of RFID

Course outcome:
CO1: To understand how Logistics, Supply Chain, Operations, Channels of Distribution fit in to various types of Business viz., Manufacturing, Service and Project.
CO2: Analyze Warehouse Management and, other functions in Logistics fits into Logistics & Supply Chain Management.
CO3: To understand how Managers, take decisions for inventory control and how they are taken in warehouse management functional area.
CO4: Examine systematically the planning mechanisms in materials handling.
CO5: Best knowledge about modern warehousing methods and its advantages.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H			L	H	H		M
CO2	L					H		
CO3		H	L				M	L
CO4	L						M	M
CO5			M			H		

Text Book:
1. Warehouse Management, by BalajiKannapan (Author), HariTripathy (Author), Vinay Krishna, Shroff/SAP Press; First edition 2015

Reference Books:
1. Principles and Practice of Supply Chain Management, by Judy Dickens, Publishers Willford Press, 3 June 2019.
2. Warehousing and Supply Chain Management- by Jaipur National University- First Edition 2013.

Journals:
1. Warehouse Management System: A Bibliometric Study, oct 2016
2. Journal of Supply Chain Management Systems, Publishing India Group - ISSN Number: 2277-1387

Websites:
1. http://ebooks.lpude.in/management/mba/term_4/DMGT523_LOGISTICS_AND_SUPPLY_CHAIN_MANAGEMENT.pdf
2. http://jnujprdistance.com/assets/lms/LMS%20JNU/MBA/MBA%20-%20Retail%20Management/Sem%20III/Warehousing%20and%20Supply%20Chain%20Management/Warehousing%20and%20Supply%20Chain%20Management.pdf

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
PART III - GENERIC ELECTIVE - ENTERPRISE RESOURCE PLANNING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:

To provide a contemporary and forward-looking on the theory and practice of Enterprise Resource Planning Technology and to aim at preparing the students technological competitive and make them ready to self-upgrade with the higher technical skills.

Unit I   (12 Hours)
Overview of enterprise systems:Need for Enterprise Resource Planning - Evolution of Enterprise Resource Planning - Pre material requirement planning (MRP stage) - Material requirement planning – ERP - Extended ERP - ERP Planning –II - Risks and benefits - Fundamental technology of ERP - Issues in planning design and implementation of integrated ERP systems – case study.

Unit II   (12 Hours)
ERP Solutionsand functional modules:Overview of ERP software solutions: Small, medium and large enterprise vendor solutions - Business process Reengineering - Business process Management - Steps of BPM - Functional Modules: ERP Production planning module - ERP purchasing module - ERP Inventory control module - ERP Sales module - ERP Marketing module - ERP Financial module - ERP HR module – case study.

Unit III   (12 Hours)
ERP implementation:Planning Evaluation and selection of ERP systems - ERP Implementation life cycle - Pre-evaluation Screening - Package Evaluation - Project Planning Phase - Gap-Analysis – Reengineering - Configuration - ERP Implementation: Implementation Team Training – Testing - Going Live - End-user training - Post – implementation - ERP implementation, Methodology and Frame work - Training - Data Migration - People Organization in implementation - Consultants and Vendors – Employees – case study.

Unit IV   (12 Hours)
Post implementation:ERP Implementation **-** Maintenance of ERP **-** Organizational and Industrial impact - Success factors of ERP Implementation **-** Key success factors **-** Failure factors of ERP Implementation – case study.

Unit V   (12 Hours)
Emerging trends on ERP:Extended ERP systems and ERP add-ons - CRM - Benefits of ERP Module - Supply Chain Management (SCM) - Business analytics & Intelligence - Wireless Technology used in ERP - Future trends in ERP - Cloud Computing - SAP and the Internet – case study.

Course Outcomes:

CO 1: Make basic use of Enterprise software, and its role in integrating business functions

CO 2:Examine systematically the planning mechanisms in an enterprise, and identify all components in an ERP system and the relationships among the components

CO 3:Design the ERP implementation strategies.

CO 4:Analyze the strategic options for ERP identification and adoption.

CO 5:Create reengineered business processes for successful ERP implementation.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M		L		M		M	L
CO2	L			L				L
CO3		M	H	L	L			M
CO4	L		H	M		L	L	
CO5			M			M		

Text Book:

1. Enterprise Resource Planning, by Alexis Leon, Publisher McGraw Hill; Fourth Edition, July 2019

Reference Books:

1. Enterprise Systems for Management, Luvai F. Motiwalla, Jeff Thompson, Pearson Education., 2nd Ed., 2011. ISBN-10: 0132145766 | ISBN-13: 978- 0132145763
2. Enterprise Resource Planning, Publishers: McGraw Hill; Fourth Edition, by Alexis Leon, 25 July 2019.
3. Monk, E. F., Wagner, B. J. 2009, Concepts in Enterprise Resource Planning, 3rd edn, Course Technology engage Learning.

Journals:

1. " The Mobile ERP Revolution" , Compare Business Products
2. " Solving Real Business Issues During the ERP Selection Process" , Sage
3. http://www.erpgenie.com/publications/magazines.htm

Websites:

1. www.sap.com 14.
2. www.oracle.com

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
PART III –VALUE ADDED-II- WOMEN AND LEADERSHIP

Maximum CE: 50
Total Hours: 24

Course Objective:

This course examines key leadership concepts, in general, and women in particular. The course is set up to teach the students how to be a leader, by highlighting how successful women and men have navigated power and authority, applied core competencies, and have secured a work-life balance.

Unit I   (5 Hours)
Women in Society -The Glass Ceiling -The Glass Cliff -The Glass Escalator - Women in Communication -The Single Story- Women in Politics - Case Study

Unit II   (5 Hours)
Women in Business- Concept of Women Entrepreneurs – Evolution of Women entrepreneurs in India- Functions- Factors- Qualities of Women Entrepreneurs -Challenges faced by women entrepreneurs –Case Study.

Unit III   (6 Hours)
Women Entrepreneurship in India- Investing Women Entrepreneurship- National Resource Centre for Women(NRCW)- Women's India Trust(WIT)- Self-Employed Women's Association(SEWA)- Self- Help Group(SHG) - PMRY - Case Study

Unit IV   (4 Hours)
Introduction to Women Leadership Theory - Leader-Follower Relationship - Situational Leadership Theory - Transactional Leadership Theory -Leader-Member Exchange Theory - Servant Leadership Theory - Case study.

Unit V   (4 Hours)
Role models & Success stories of Women Leaders- Indira Nooyi, Ela Bhatt, KiranMazumdar-Shaw, Sudha Murthy- Upcoming Women Leaders-Aditi Gupta, Shraddha Sharma, FalguninNayar, and RadhikaGhai Aggarwal -Case Study.

Course Outcome:
CO 1: Understand the role of women in society.
CO 2: Foster entrepreneurship and innovation among women.
CO 3: Offer idea to business journey with the help of financial aids in a structured way through the various government schemes.
CO 4: Impart actionable awareness regarding the systematic process of developing leadership in women.
CO 5: Stimulate the managerial, financial and interpersonal skills through the role models and success stories.

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	L			L	H	H		M
CO2	L			L	H	H		M
CO3			L	L	L	L	M	L
CO4	L						M	
CO5			M			H		

Text Book:
1. E. Gordon and K. Natarajan, Fundamentals of Entrepreneurship, Himalaya Publishing House, 6th Edition, 2017.

Reference Books:
1. Dr.S.S Khanka, Entrepreneurial Development, S. Chand& Company Pvt., Limited, , Revised edition, New Delhi, 2018.
2. Elizabeth B. Hurlock, Personality Development, Tata McGraw Hill Publishing Co. Ltd, New edition, 2017.

Journals/Magazines:
1. Journal of Women's Entrepreneurship and Education.
2. Journal of Entrepreneurship & Management.

Websites:
1. http://www.simplynotes.in/e-notes/mbabba/entrepreneurship-development/women-entrepreneurs-problems-and-measures-for-development/
2. http://www.yourarticlelibrary.com/entrepreneurship/women-entrepreneurs-concept-and-functions-of-women-entrepreneurs-explained/41096
3. http://yourkalaiselvan.blogspot.com/2013/02/women-entrepreneurship-in-india.html
4. https://www.tutorialspoint.com/women_in_leadership/women_in_leadership_introduction.htm

Master of Business Administration Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PART III –ADDITIONAL CREDIT COURSE I – DISASTER MANAGEMENT

Maximum CE: 100

Course Objective:

To understand the causes & effect of disasters that threatens the human life and hampers the development of nation also mainly focus to create awareness on common signs and symptoms of natural calamities.

Unit I

Introduction to disasters Definition – fundamental aspects of disasters- components-causal factors of disasters-phases of disasters-classification: natural and human caused- dimensions: meteorological / climatic, hydrological, geological- effect of disasters on human life- disaster mitigation – hazards.

Unit II

Disasters preparedness and planning Disaster preparedness: public participation, consolidation, co-ordination and training, precautions of community realities, building human relationship network. – Disaster planning: anticipation, preparation of moderate sized disasters, preparing more common disasters, predictable disaster task, adapting routine emergency, moderate expansion, cost sharing and executing the plan.

Unit III

Major Disasters in India Earthquake- tsunami –flood- cyclone- landslide- drought- hurricane- storm surge- recent disasters 2004-till now.

Unit IV

Disasters management Disaster management act (2005) - disaster management cycle (2P3R) - national level disaster management response agencies: NDMA, NIDM, national disaster response force, Disaster Management operations: Pre- post disaster management – warning system – Relief measures – Rehabilitations - Coping up with all natural disaster and preventing loss to human lives and property

Unit V

Leading and controlling Disasters management - Creating awareness about common signs – symptoms of natural calamity related stress – mitigating impact of disaster. –Preparedness towards disaster: Community disaster preparedness – psychosomatic aspects of preparedness - Evaluating, assessing and predicting disaster: Warning signals – managing disaster by scientific and tested disaster management apparatus.

Course Outcome:

CO1: Integrate knowledge and manage the different aspects of disaster events at a local and global levels.

CO2: Capacity to obtain, analyze, and communicate information on risks, relief needs and lessons learned from earlier disasters in order to formulate strategies.

CO3: Work theoretically and practically in the processes of disaster management

CO4: Ability to describe, analyze and evaluate the environmental, social, cultural, economic, legal and organizational aspects influencing vulnerabilities and capacities to face disasters.

CO5: Capable to design and perform research on the different aspects of the emergencies and disaster events

CO/PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H							M
CO2			H				M	
CO3		L			M		M	
CO4				M			H	
CO5		L			L	H		L

Text book:
1. R. Subramanian- Disaster Management, Vikas Publishing, 2018.

Reference Books:
1. Baron, Robert A, Psychology,Pearson Education (Singapore) Pte. Ltd, Delhi, 5th edition, 2018.
2. SatishModh, Introduction to disaster management, Macmillan Publication India Ltd, 2015.

Journals/Magazines:
1. NOLEGEIN: Journal of Disaster and Business Continuity Management Assessment of Emergency Communication Number Used in Nepal.
2. Journal of Emergency Management.

Websites:
1. http://www.sofweb.vic.edu.au/blueprint/fs1/polt.asp
2. http://www.studymode.com/essays/Role-Of-Students-In-Disaster-Management764157.html

Department of Computer Science

M.Sc Computer Science
Regulations for M.Sc Computer Science
(Effective from the academic year 2019-2020 onwards)

Introduction

The department of computer science started the PG Programme in 1996. PG Programme is M.Sc computer Science.

Objective

Students will be able to design, develop, document, and test software using current techniques.

Eligibility: PG Programme

Candidates for admission to the first year programme leading to the Degree of Master of Science in Computer Science (M. Sc-CS) will be required to possess:

A Pass with 50% of marks in B.Sc. Computer Science / BCA /B.Sc. Computer Technology / B.Sc. Information Technology / B.Sc. Information Science / B.Sc. Information Systems / B.Sc. Software Science / B.Sc. Software Engineering / B.Sc. Software Systems. In case of SC/ST candidates, a mere pass in any of the above Bachelor"s degree will be sufficient

Duration of PG Programme

The programme shall be offered on a full-time basis. The programme will consist of four semesters of course work and laboratory work. Also, the fourth semester consists of project work.

Vision

To empower students of Computer Science Department to be technologically adept, innovative, self-motivated and responsible global citizen possessing human values and enable them to contribute in the industrial development innovation, high quality technical education and research with the ever-changing world.

Mission

To create, share, and apply knowledge in Computer Science, including in interdisciplinary areas that extend the scope of Computer Science and benefit humanity; to educate students to be successful, ethical, and effective problem-solvers and life-long learners who will contribute positively to the economic well-being of our region and nation and who are prepared to tackle complex 21st Century challenges facing the world

Programme Outcome

After completion of the Program the graduate will

PO1: Have the ability to pursue inter-departmental research.

PO2: Understand the importance of critical thinking, social interaction, effective citizenship, ethics, environment and sustainability.

PO3: Acquire a holistic professional carrier

PO4: To build the necessary competencies and creativity and prepare them to undertake entrepreneurship as a desirable and feasible career option.

PO5: Able to work effectively as a team member and leader in an ever changing professional environment.

Program Specific Outcome

A graduate with a M.Sc in Computer Science will have the ability to

PSO1: Communicate computer science concepts, designs, and solutions effectively and professionally.

PSO2: Apply knowledge of computing to produce effective designs and solutions for specific problems.

PSO3: Identify, analyze, and synthesize scholarly literature relating to the software development tools, software systems, and modern computing platforms.

COMPUTER SCIENCE BOARD
Scheme of Examination (CBCS and OBE Pattern)

For the Candidates Admitted from the Academic Year 2019-2020 onwards
Programme : M.Sc Computer Science

Sub Code	Paper	Subject Title	Ins.Hrs/Week	Dur. Hrs.	CIA	CE	Total	Credit
					Examination			
SEMESTER I								
19MSC101	Paper 1	Design and Analysis of Algorithms	5	3	30	70	100	4
19MSC102	Paper 2	Modern Operating Systems	5	3	30	70	100	4
19MSC103	Paper 3	Research Methodology	5	3	30	70	100	4
19MSC104	Paper 4	Object Oriented Analysis and Design	5	3	30	70	100	4
19MSC105	Paper 5	Principles of Compiler Design	5	3	30	70	100	4
19MSCP01	Practical 1	Object Oriented Analysis and Design Lab	5	3	40	60	100	4
		Total	30				600	24
SEMESTER II								
19MSC201	Paper 6	Advanced Software Engineering	6	3	30	70	100	4
19MSC202	Paper 7	Networking and Communication Technologies	6	3	30	70	100	4
19MSC203	Paper 8	Advanced Java Programming	5	3	30	70	100	4
19MSCP02	Practical 2	Advanced Java Programming Lab	5	3	40	60	100	4
19MSCE01/ 19MSCE02/ 19MSCE03	Elective I	Distributed Computing/ Grid Computing/ Mobile Computing	5	3	30	70	100	4
19MSCID1	IDC 1	8085 Microprocessor and its interfacing	3	3	30	70	100	4
		Total	30				600	24
SEMESTER III								
19MSC301	Paper 9	Internet of Things	5	3	30	70	100	4
19MSC302	Paper 10	Information Security	4	3	30	70	100	4
19MSC303	Paper 11	Data Mining and Warehousing	5	3	30	70	100	4
19MSC304	Paper 12	Web Technology	4	3	30	70	100	4
19MSCP03	Practical 3	Web Technology Lab	5	3	40	60	100	4
19MSCE04/ 19MSCE05/ 19MSCE06	Elective II	Bioinfomatics/ Neural Networks and Fuzzy logic/ Wireless Application Protocol	5	3	30	70	100	4
19MSCED1	EDC 1	Management Information System	2	3	-	50	50	2
		Total	30				650	26
SEMESTER IV								
19MSC401	Paper 13	Digital Image Processing	5	3	30	70	100	4
19MSCE07/ 19MSCE08/ 19MSCE09	Elective III	Ethical Hacking/ Artificial Intelligence/ Software Testing	5	3	30	70	100	4
19MSCPR1	Project Viva Voce	Project and Viva Voce	-	3	150	100	250	8
		Total	10				450	16
						Total	2300	90

List of Elective Courses

Elective I			
Sem	**Code**	**Subject Title**	**Credits**
II	19MSCE01	Distributed Computing	4
II	19MSCE02	Grid Computing	4
II	19MSCE03	Mobile Computing	4
Elective II			
III	19MSCE04	Bioinfomatics	4
III	19MSCE05	Neural Networks & Fuzzy logic	4
III	19MSCE06	Wireless Application Protocol	4
Elective III			
IV	19MSCE07	Ethical Hacking	4
IV	19MSCE08	Artificial Intelligence	4
IV	19MSCE09	Software Testing	4

List of Extra Disciplinary Courses

Sem	Code	Subject Title	Max Marks	Credits
III	19MSCED1	Management Information System	50	2

List of Additional Credit Courses

Sem	Code	Subject Title	Max Marks	Credits
II	19MSCAC1	Multimedia and its Applications	100	2
III	19MSCAC2	Big Data Analytics	100	2
IV	19MSCAC3	Parallel Computing	100	2

Summary

Part	No of Papers	Total Credits	Total Marks
CORE,ELECTIVE & PROJECT	20	84	2150
IDC –Inter Disciplinary Course	1	4	100
EDC –Extra Department Course	1	2	50
Total		**90**	**2300**

REGULATIONS FOR BOARD OFCOMPUTER SCIENCE (FOR PG COURSES ONLY)

(Effective from the academic year 2019-2020 onwards)

1. Project and Viva Voce:

Each student in the PG final year shall compulsorily undergo Project Work in the 4th semester. Projects shall be done individually. Project Reviews shall be conducted thrice in which the progress of project work shall be strictly evaluated by respective Project Guides. Viva-Voce shall be conducted only in the presence of Industrialists or academicians. Out of the Total of 250 marks, 150 marks shall be allocated for CIA and 100 for CE VIVA VOCE.

2. Submission of Record Note Books for practical examinations

Candidates appearing for practical examinations shall submit bonafide Record Work for the concerned Practical Examinations. If not the candidate has to submit a bonafide certificate issued by the concerned subject in-charge duly signed by the Head of the Department in order to be permitted to take up the Practical Examination. The Candidate so permitted will not be eligible for the Record Work mark.

3.Distribution of Marks:

The following are the distribution of marks for Comprehensive Examinations and CIA for Theory, Practical and Project.

Part	Internal Assessment	External Assessment	Total Marks
III –Core	30	70	100
III – IDC	30	70	100
III – Elective	30	70	100
III – EDC	-	50	50
III- Project	150	100	250
III-SBC	30	70	100

4. Distribution of Internal Mark for Theory:
    (No Passing Minimum for CIA

S. No	CIA	Distribution of Marks
1	Pre Model Examination	70
2.	Model Examination	70
3.	Seminar	30
4.	Attendance	10
Total		**180/6(Months)=30**

5. Breakup for Attendance:

S.NO	Attendance split up	Marks
1	65% to 74%	4
2	75% - 80%	6
3	81% - 90%	8
4	91% - 100%	10

6.Seminar Mark Split up:

S.NO	Seminar split up	Marks
1	Content	10
2	Flow of the presentation	10
3	Stage management and Body language	10
Total		**30**

7. Distribution of Mark for Project VIVA-VOCE:

S.No	CIA	Distribution of Marks
1	INTERNAL	
	Review –I	40
	Review –II	40
	Documentation & Final Review	70 Total (150)
2	EXTERNAL *	
	Presentation	60
	Viva	40 Total (100)
Total		250

*Marks to be awarded by both External and Internal Examiners.

8. Question Paper Pattern

Maximum Marks : 70 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×4=20)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 50 / Time 2 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×3=15)	Each question carries three marks	Internal Choice
Section – C	(5×5=25)	Each question carries five marks	Internal Choice
Maximum Marks : 50 / Time 2 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×8=40)	Each question carries eight marks	Internal Choice
Section – C	(5×10=50)	Each question carries ten marks	Internal Choice

NOTE:

1. The questions should be numbered continuously running through the Sections A, B and C.
2. Questions should be evenly distributed among the unit in the syllabus in all the sections of the question paper.
3. While framing questions with internal choice the questions must be identified as (a) or (b). (e.g. 11. a or b). Further, the internal choice must be from the same unit.
4. The Controller of the Examinations shall arrange for the setting of question papers on the basis the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies.

9. Conduct of Practical Examinations:

Practical examinations shall be conducted with one internal examiner and one external examiner and the question paper for practical examination shall be set by both Internal and External examiners.

M.Sc (Computer Science) Degree Examination-Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards
FIRST SEMESTER
PAPER 1: DESIGN AND ANALYSIS OF ALGORITHMS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To impart knowledge about how to analyze & design searching and sorting algorithms.

Unit- I   (12 Hours)
Introduction: What is an Algorithm? – Algorithm Specification – Performance Analysis – Elementary Data Structures: Stacks and Queues, Trees. Analysis of Algorithms: Computational Complexity – Average-Case Analysis – Example: Analysis of Quick Sort.

Unit- II   (12 Hours)
Divide and Conquer: General Method – Binary Search – Merge Sort – Quick Sort. Greedy Method: General Method – Knapsack Problem – Minimum Cost Spanning Tree – Single Source Shortest Path.

Unit- III   (12 Hours)
Dynamic Programming: General Method – Multistage Graphs – All Pair Shortest Path – Optimal Binary Search Trees – 0/1 Knapsack - Traveling Salesman Problem – Flow Shop Scheduling.

Unit- IV   (12 Hours)
Backtracking: General Method – 8 Queens Problem – Sum of Subsets – Graph Coloring – Hamiltonian Cycles – Knapsack Problem.

Unit- V   (12 Hours)
NP-Hard and NP-Complex Problem: Basic Concepts – Traveling Salesperson Decision Problem – Scheduling Identical Processors – Implementing Parallel Assignment Instructions.

Course Outcome:
- Compute the complexity of various algorithms
- Implement operations like searching, insertion, and deletion, traversing mechanism etc. on various data structures
- To introduce various techniques for representation of the data in the real world
- To design and implement various data structure algorithms
- Have the mathematical foundation in analysis of algorithms

Text Book:
 1. Ellis Horowitz, Sartaj Sahni, Sanguthevar Rajasekaran, Fundamentals of Computer Algorithms, Universities Press, Second Edition, Reprint 2015.

Unit 1: Chapter 1 (1.1 - 1.3), Chapter 2 (2.1, 2.2).
Unit 2: Chapter 3 (3.1, 3.2, 3.4, 3.5), Chapter 4 (4.1, 4.2, 4.4, 4.8).
Unit 3: Chapter 5 (5.1 - 5.3, 5.5, 5.7, 5.9, 5.10).
Unit 4: Chapter 7 (7.1 - 7.6), Chapter 8 (8.1 - 8.3).
Unit 5: Chapter 11 (11.1, 11.3.5, 11.4.1, 11.5.2).

Reference Books:
1. Robert Sedgewick, Phillipe Flajolet, An Introduction to the Analysis of Algorithms, Addison-Wesley Publishing Company, 2016.
2. Alfred V. Aho, John E. Hocroft, Jeffrey D. Ullman, Data Structures and Algorithms, Pearson Education, Reprint 2012
3. Goodrich, Data Structures and Algorithms in Java, Wiley, Third Edition, 2014

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M.Sc (Computer Science) Degree Examination-Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards
FIRST SEMESTER
PAPER 2: MODERN OPERATING SYSTEMS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To impart knowledge about three different types of advanced Operating System namely, distributed, multiprocessor and database operating systems.

Unit-I   (12 Hours)
Operating System Overview: Functions of Operating System – Design Approaches – Types of Advanced Operating System. Synchronization Mechanisms: Concept of a Process - Concurrent Process – The Critical Section Problem - Other Synchronization Problems – Language Mechanisms for Synchronization – Axiomatic Verification of Parallel Programs. Process Deadlocks: Preliminaries–Models of Deadlocks–Resources-System State– Necessary and sufficient conditions for a Deadlock – Systems with Single-Unit Requests-Consumable Resources-Reusable Resources.

Unit-II   (12 Hours)
Distributed operating System: Issues - Communication Primitives. Theoretical Foundations. Distributed Mutual Exclusion: Non-Token Based Algorithms - Lamport's Algorithm - Token-Based Algorithms – Suzuki - Kasami's Broadcast Algorithm. Distributed Deadlock Detection: Issues - Centralized Deadlock - Detection Algorithms - Distributed Deadlock-Detection Algorithms. Agreement Protocols - Classification - Solutions - Applications.

Unit-III   (12 Hours)
Distributed File systems: Architecture – Mechanisms – Design Issues. Distributed Shared Memory: Architecture – Algorithm – Protocols - Design Issues. Distributed Scheduling: Issues – Components – Algorithms.

Unit- IV   (12 Hours)
Recovery : Basic Concepts-Classification of Failures – Basic Approaches to Recovery - Recovery in Concurrent System - Synchronous and Asynchronous Checkpointing and Recovery - Check pointing in Distributed Database Systems. Fault Tolerance: Issues – Two phase and Nonblocking Commit Protocols - Voting Protocols - Dynamic Voting Protocols.

Unit-V   (12 Hours)
Multiprocessor operating systems : Structures – Design Issues – Threads – Process Synchronization – Processor Scheduling –Memory Management – Reliability / Fault Tolerance. Database Operating Systems: Concurrency Control – Distributed Database Systems: Distributed Database System – Concurrency Control Algorithms: Lock based Algorithms – Time Stamp based Algorithms.

Course Outcome:
• Analyze the structure of OS and basic architectural components involved in OS design
• Understand the Mutual exclusion, Deadlock detection and agreement protocols of Distributed operating system
• Interpret the mechanisms adopted for file sharing in distributed Applications
• To appreciate role of Process synchronization towards increasing throughput of system
• Conceptualize the components involved in designing a contemporary OS

Text Book
1. MukeshSinghal and N. G. Shivaratri, Advanced Concepts in Operating Systems, McGraw Hill, Reprint 2017.

Unit 1: Chapter 1 (1.1 - 1.3, 1.5), Chapter 2 (2.2 - 2.5, 2.7), Chapter 3 (3.2 - 3.4, 3.6 - 3.9).
Unit 2: Chapter 4 (4.5, 4.7), Chapter 5 (5.1), Chapter 6 (6.5, 6.6, 6.10, 6.11), Chapter 7 (7.4, 7.6, 7.7), Chapter 8 (8.3 - 8.5).
Unit 3: Chapter 9 (9.1 - 9.4), Chapter 10 (10.1 - 10.3, 10.5, 10.6), Chapter 11 (11.1, 11.3, 11.4, 11.6)
Unit 4: Chapter 12 (12.1 - 12.6, 12.8 - 12.10), Chapter 13 (13.2, 13.4, 13.5 - 13.7).
Unit 5: Chapter 17 (17.1 -17.8), Chapter 19 (19.6, 20.3, 20.4).

Reference Books:
1. William Stallings, Operating Systems-Internals and Design Principles, Pearson Education, Sixth Edition, Reprint 2016.
2. Achyut S. Godbole, Operating Systems, Tata McGraw Hill, Reprint 2013.

M.Sc (Computer Science) Degree Examination-Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards
FIRST SEMESTER
PAPER 3: RESEARCH METHODOLOGY

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To impart knowledge about research, methodologies, identifying research topics, selecting and defining research problem, and writing thesis.

Unit-I   (12 Hours)
Research Methodology: Introduction - Meaning of Research - Objectives of Research - Types of Research - Research Approaches - Significance of Research - Research Methods versus Methodology - Research and Scientific Method - Importance of Knowing How Research is Done - Research Process - Criteria of Good Research - Problems Encountered by Researchers in India. Defining the Research Problem: Research Problem - Selecting the Problem - Necessity of Defining the Problem - Technique Involved in Defining a Problem.

Unit-II   (12 Hours)
Research Design: Meaning of Research Design - Need for Research Design - Features of a Good Design - Important Concepts Relating to Research Design - Different Research Designs - Principles of Experimental Designs. Design of Sample Surveys: Sample Design – Sampling and Non-Sampling Errors – Types of Sampling Designs.

Unit-III   (12 Hours)
Data Collection: Collection of Primary Data - Observation Method - Interview Method - Collection of Data through Questionnaires - Collection of Data through Schedules - Difference between Questionnaires and Schedules - Some Other Methods of Data Collection - Collection of Secondary Data - Selection of Appropriate Method for Data Collection. Data Preparation: Data Preparation Process – Types of Analysis – Statistics in Research.

Unit-IV   (12 Hours)
Testing of Hypotheses: What is a Hypothesis? – basic concepts concerning testing of hypothesis – testing the hypothesis – test statistic and critical region – critical value and decision rule – procedures for hypothesis testing. Analysis of Variance – ANOVA Techniques - Basic Principle of ANOVA – One way ANOVA – Two Way ANOVA

Unit-V   (12 Hours)
Technique of Interpretation: Precaution in Interpretation - Significance of Report Writing - Different Steps in Writing Report - Layout of the Research Report - Types of Reports - Oral Presentation - Mechanics of Writing a Research Report - Precautions for Writing Research Reports.

Course Outcome:
• Develop understanding on various kinds of research, objectives of doing research, research process, and research designs.
• Understand and describing the method of collecting data and sampling it.
• Have adequate knowledge on measurement & scaling techniques as well as the quantitative data analysis
• Have basic awareness of data analysis-and hypothesis testing procedures
• Formulate and writing practices in research report.

Text Book:
1. C.R.Kothari, Research Methodology Methods and Techniques, New Age International (P) Limited, Publishers, India

   Unit 1: Chapter 1 (1.1 to 1.10), Chapter 2 (2.1 to 2.4).
   Unit 2: Chapter 3 (3.1 to 3.6), Chapter 4 (4.1 to 4.5).
   Unit 3: Chapter 6 (6.1 to 6.5), Chapter 7 (7.1, 7.4, 7.5).
   Unit 4: Chapter 10 (10.1 to 10.6), Chapter 12 (12.1 to 12.4).
   Unit 5: Chapter 19 (19.1 to 19.10).

Reference Books:
1. Panneerselvam, Research Methodology, PHI Pvt. Ltd, 2014.
2. Wilson, Essential of Research Methods, SAGE Publication, 2010.

M.Sc (Computer Science) Degree Examination-Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards
FIRST SEMESTER
PAPER 4: OBJECT ORIENTED ANALYSIS AND DESIGN

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To acquire knowledge on C++ programming concepts.

Unit –I   (12 Hours)
Object Model: Evolution of the Object Model – Elements of the Object Model – Applying the Object Model - Classes and Objects: Nature of an Object – Relationships Among Objects –Nature of a class – Relationships Among Classes – Interplay of Classes and Objects – On Building Quality Classes and Objects.

Unit-II   (12 Hours)
Classification- The Importance of Proper Classification – Identifying Classes and Objects – Key Abstractions and Mechanisms - The Notation: Elements of the Notation Class Diagrams – State Transition Diagrams – Object Diagrams – Interaction Diagrams – Module Diagrams – Process Diagrams – Applying the Notation.

Unit-III   (12 Hours)
Overview of C++, Classes and Objects – Arrays, Pointers, References, and the Dynamic Allocation-Operators – Function Overloading, Copy Constructors and Default Arguments – Operator Overloading – Inheritance – Virtual Functions and Polymorphism – Templates.

Unit-IV   (12 Hours)
Exception Handling – The C++ I/O System Basics – C++ File I/O – Namespaces -Conversion Functions – Introducing the Standard Template Library.

Unit –V   (12 Hours)
Standard C++ I/O Classes – The STL Container Classes – The STL Algorithms – STL Iterators, Allocators and Function Objects – The String Class – The Numeric Classes – Exception Handling and Miscellaneous Classes.

Course Outcome:
• be able to analyze information systems in real-world settings and to conduct methods such as interviews and observations
• have a general understanding of a variety of approaches and perspectives of systems development, and to evaluate other IS development methods and techniques
• Describe the concept of function overloading, operator overloading, virtual functions and polymorphism
• Classify inheritance with the understanding of early and late binding, usage of exception handling, generic programming
• Demonstrate the use of various OOPs concepts with the help of programs

Text Books:
1. Grady Booch, Object-Oriented Analysis and Design with Applications, Pearson Edition, 2nd Edition, Reprint 2016.

Unit 1: Chapter 2, Chapter 3
Unit 2: Chapter 4, Chapter 5

2. Herbert Schlidt, The Complete Reference C++, Tata McGraw-Hill Edition 2003

Unit 3: Chapter 11, Chapter 12, Chapter 13, Chapter 14, Chapter 15, Chapter 16, Chapter 17, Chapter 18.
Unit 4: Chapter 19, Chapter 20, Chapter 21, Chapter 22, Chapter 23, Chapter 24.
Unit 5: Chapter 32, Chapter 33, Chapter 34, Chapter 35, Chapter 36, Chapter 37, Chapter 38.

Reference Books
1. Ashok N. Kamthane, Object-Oriented Programming with ANSI & Turbo C++, Pearson Education, 2006

M.Sc (Computer Science) Degree Examination-Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards

FIRST SEMESTER
PAPER 5: PRINCIPLES OF COMPILER DESIGN

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To impart knowledge about design and implementation of lexical analyzer, parser, schemes and optimization of codes.

Unit- I   (12Hours)
Compilers – Analysis Of The Source Program – Phases Of A Compiler – Cousins Of The Compiler – Grouping Of Phases – Compiler Construction Tools – Lexical Analysis – Role Of Lexical Analyzer – Input Buffering – Specification Of Tokens-Recognition Of Tokens-Finite State Automata.

Unit-II   (12Hours)
Syntax Analysis- Role Of The Parser –Writing Grammars –Context-Free Grammars – Top Down Parsing – Recursive Descent Parsing – Predictive Parsing – Bottom Up Parsing – Shift Reduce Parsing – Operator Precedent Parsing – LR Parsers –SLR Parser – Canonical LR Parser – LALR Parser.

Unit- III   (12 Hours)
Intermediate Languages – Declarations – Assignment Statements – Boolean -Expressions – Case Statements – Back Patching – Procedure Calls. Runtime Environments– Storage Organization – Storage Allocation Strategies – Access to Non-Local Names – Parameter passing.

Unit- IV   (12 Hours)
Issues In The Design Of Code Generator – The Target Machine – Runtime Storage Management – Basic Blocks And Flow Graphs – Next-Use Information – A Simple Code Generator – Register Allocation And Assignment-DAG - Representation Of Basic Blocks – Code Generator And Generators.

Unit - V   (12Hours)
Principal Sources of Optimization – Peephole Optimization - Optimization of Basic Blocks – Loops in Flow Graphs - Introduction to Global Data Flow Analysis.

Course Outcome:
- Able to convert any instruction of a program to convert from source language to target language and should be recognize what happens at each and every phase of a compiler
- Student should be in a position to understand the different types of parsing techniques and should be in a position to solve the problem
- To realize different translation languages
- To know about compiler generation tools and techniques
- Student should analyze the program and minimize the code by using optimizing techniques which helps in reducing the no. of instructions in a program and also utilization of registers in an effective way

Text Books
1. Alfred Aho, Ravi Sethi, Jeffrey D Ullman, Compilers Principles, Techniques And Tools, Pearson Education Asia, Reprint 2017.

Unit 1: Chapter 1 (1.1 - 1.6), Chapter 3 (3.1 - 3.4, 3.6)
Unit 2: Chapter 4 (4.1 - 4.7)
Unit 3: Chapter 8 (8.1 -8.7), Chapter 7 (7.2, 7.3)
Unit 4: Chapter 9 (9.1 - 9.8, 9.11)
Unit 5: Chapter 10 (10.1 – 10.3)

Reference Books
    1. Alfred Aho, Ravi Sethi, Jeffrey D Ullman, Compilers Principles, Techniques And Tools, Pearson Education Asia, Reprint 2017.
    2. Ravendra Singh, Vivek Sharma, Manish Varshney, Design And Implementation Of Compiler,   New Age International, Reprint 2019
    3. SantanuChattopadhyay, Compiler Design , Prentice Hall Of India, 2016..
    4. C. N. Fischer And R. J. Leblanc, Crafting A Compiler With C , Benjamin Cummings, 2012.

M.Sc (Computer Science) Degree Examination-Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards
FIRST SEMESTER
PRACTICAL I: OBJECT ORIENTED ANALYSIS AND DESIGN LAB

Maximum CIA: 40
Maximum CE: 60
Total Hours: 60

Course Objective:
To inculcate knowledge on implementation of algorithms using C++.

List of Practical's:

1. Design the following sorting algorithms using C++
     a. Bubble Sort
     b. Insertion Sort
     c. Selection Sort
     d. Heap Sort
     e. Quick Sort
2. Design the following Searching algorithms using C++
     a. Linear Search
     b. Binary Search
     c. Matrix Manipulations
4. Prepare the Polynomial Addition & Multiplication using C++.
5. Develop the Operations on Stack and Conversion of expressions using C++.
6. Illustrate the Operations on Queue using C++.
7. Develop the Operations on Linked List using C++.
8. Construct the Operations on Doubly Linked List using C++.
9. Develop the Operations on Binary tree and Traversals using C++.
10. Develop the Dijkstra's Algorithms to find the Shortest Path using C++.
11. Prepare 8-Queens Problem using C++.
12. Develop Knapsack Problem using C++.

Course Outcome:
- Understand the relative merits of C++ as an object oriented programming language.
- Understand how to produce object-oriented software using C++
- Understand the behavior of basic data structures.
- Analyze a problem and determine the appropriate data structure for the problem.
- Understand and analyze elementary algorithms: sorting & searching.

M.Sc (Computer Science) Degree Examination-Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards
SECOND SEMESTER
PAPER 6: ADVANCED SOFTWARE ENGINEERING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To enable the students to learn the concepts of software engineering, web engineering, Component based software engineering.

Unit-1   (12Hours)
Software and software engineering: Evolving Role Software – Software – Changing Nature of Software – Software Myths - Agility - Agility and the Cost of Change - Agile Process - Extreme Programming (XP)

Unit-II   (12Hours)
System Engineering : Computer Based Systems – System Engineering Hierarchy – Requirements Engineering: Requirements Engineering Tasks – Eliciting Requirements - Design Engineering Design within the Context of Software Engineering – Design Process and Design Quality – Design Concepts – Design Model

Unit-III   (12Hours)
Web Engineering: Attributes of Web Based Systems and Applications – WebAPP Engineering Layers – Web Engineering Process – Web Engineering Best Practices Formulation and planning for Web Engineering: Formulating Web-Based Systems – Planning for Web Engineering Projects – Web Engineering Team - Project Management Issues for Web Engineering - Analysis Modeling for Web Applications - Requirements Analytics for Webapps – Content Model – Interaction Model – Functional Model

Unit- IV   (12Hours)
Advanced Topics in Software Engineering: Formal Methods – Basic Concepts – Mathematical Preliminaries – Mathematical Notations – Formal Specification Languages – Object Constraint Language – Z Specification Language – Ten Commandants of Formal Methods – Cleanroom Software Engineering Cleanroom Approach – Functional Specification – Cleanroom Design – Cleanroom Testing

Unit- V   (12Hours)
Component Based Software Engineering – Engineering of Component Based Systems – CBSE Process – Domain Engineering – Component Based Development – Classifying and Retrieving Components – Economics of CBSE – Re-Engineering – Business Process Reengineering - Software Reengineering –Reverse Engineering – Restructuring – Forward Engineering – The Economics of Reengineering

Course Outcome:
• Ability to analyze, design, verify, validate, implement, apply, and maintain software systems
• Ability to design a system, component, or process to meet desired needs within realistic constraints
• Ability to identify, formulate, and solve engineering problems
• An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

- Ability to work in one or more significant application domains

Text Book:

1. Roger S. Pressman, Software Engineering – A practitioner's Approach, McGraw Hill International Edition, 6th Edition, Reprint 2016.

Unit 1: Chapter 1 (1.1, 1.2, 1.3, 1.4, 1.5, 1.6), Chapter 4 (4.1, 4.2, 4.3)
Unit 2: Chapter 6 (6.1, 6.2), Chapter 7 (7.1, 7.2, 7.4), Chapter 9 (9.1, 9.2, 9.3, 9.4)
Unit 3: Chapter 16 (16.1, 16.2, 16.3, 16.4), Chapter 17 (17.1, 17.2, 17.3, 17.4)
Unit 4: Chapter 28 (28.1, 28.2, 28.3, 28.4, 28.5, 28.6, 28.7) – Chapter (29.1, 29.2, 29.3, 29.4)
Unit 5: Chapter 30 (30.1, 30.2, 30.3, 30.4), Chapter 31 (31.1, 31.2, 31.3, 31.4, 31.5, 31.6)

Reference Books:

1. Kassem A. Saleh, Software Engineering, J. Ross Publishing, Reprint 2017.
2. Jibitesh Mishra, Software Engineering, Pearson Education, Reprint 2015.

M.Sc (Computer Science) Degree Examination-Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards
SECOND SEMESTER
PAPER 7: NETWORKING AND COMMUNICATION TECHNOLOGIES

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To inculcate knowledge on networking concepts and protocols.

Unit –I   (15Hours)
Introduction and Overview: Network Technologies – Internetworking Concepts and Architectural Model – Internet Addresses – ARP – RARP.

Unit-II   (15Hours)
Internet Protocol: Connectionless Datagram Delivery – Forwarding IP Datagrams – Error and Control Messages (ICMA) – Protocol Layering -CIDR.

Unit-III   (15Hours)
UDP, TCP, Routing – Cores, Peers and Algorithms – Exterior Gateway Protocols and Autonomous Systems (3GP) –In an autonomous System (RIP, OSPF, HELLO).

Unit-IV   (15Hours)
Internet Multicasting – TCP/IP Over ATM Networks – Mobile IP – Private Network Interconnection – Internet Management (SNMP) – Client Server Model of Interaction.

Unit –V   (12Hours)
DNS – Remote Login – File Transfer and Access – Email – World Wide Web (HTTP) – Voice and Video over IP (RTP) .

Course Outcome:
• To understand the various standards on data communication
• To understand the functionality of datagram delivery and error
• Ability to understand the various layers of different protocols
• Choose key Internet applications and their protocols, and apply to develop their own applications (e.g. Client Server applications, Web Services) using the sockets API
• To develop effective communication mechanisms using techniques like online connection establishment, queuing theory, recovery, etc

Text Book:
1. Douglas E. Comer, Internetworking with TCP/IP, Vol-I - Principles, Protocols and Architecture, , Prentice Hall of India, New Delhi, 5th edition, 2006.

Unit 1: Chapter 1 (1.1 - 1.9, 2.1 - 2.6, 3.1 - 3.6, 4.1 - 4.15, 5.1 - 5.14
Unit 2: 6.1 - 6.8, 7.1 - 7.11, 8.1 - 8.15, 9.1 - 9.22, 10.1 - 10.11
Unit 3: 11.1 - 11.9, 12.1 - 12.30, 13.1 - 13.9, 14.6 - 14.10, 15.1 - 15.15
Unit 4: 16.1 - 16.25, 18.1 - 18.5, 19.1 - 19.11, 29.1 - 29.10, 20.1 - 20.7
Unit 5: 23.1 - 23.22, 24.1 - 24.9, 25.12 - 25.14, 26.12 - 26.9, 27.1 - 27.17, 28.1 - 28.17
Reference Books:
1. Andrew S.Tananbaum, Computer Networks, Pearson Education Publishing as Prentice Hall,USA,5th edition, 2011.
2. Behrouz A Forouzan, TCP/IP Protocol Suite 3rd Edition – Tata McGraw-Hill, 2016.

M.Sc (Computer Science) Degree Examination-Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards
SECOND SEMESTER
PAPER 8: ADVANCED JAVA PROGRAMMING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To utilize The Sun J2EE Architecture For Creating Comprehensive Multi-Tiered Software In Java.

Unit- I   (15 Hours)
Enterprise Architecture: Architecture Types-Introducing the Java EE platform-Features of Java EE5-Exploring the Java EE5 platform-Architecture of Java EE5-Describing Java EE containers. Web Applications and Java EE5: Introducing web applications-Describing Web containers-Building Web applications. Java Database Programming: Introduction to JDBC-JDBC Drivers-Features of JDBC-Implementing JDBC processes with java.sql package-Implementing JDBC processes with javax.sql package-Working with transactions.

Unit-II   (15 Hours)
Understanding Servlet Programming: Features of Java Servlet – Servlet API – Servlet Life Cycle-Servlet Configuration-Working with ServletConfig and ServletContext-Creating a simple servlet-Working with HttpServletRequest and HttpServletResponse-Request Delegation and Request Scope-Servlet Collaboration. Handling Sessions in Servlets: Introducing Session Tracking-Session Tracking Mechanism – Session Tracking & Servlet API. Event Handling in Servlets: Types of Servlet Events.

Unit- III   (15 Hours)
Understanding Java Server Pages: Architecture of JSP page-Understanding JSP Page Lifecycle-JSP Elements-JSP Expression Languages-Debugging with Jsp Debug-Performance-Using JSP Best Practices. Implementing JSP Tag Extension: Elements of Tag Extension-Tag Extension API-Classic Tag Handlers-Simple Tag Handlers-JSP Fragments-Understanding Tag Files. Implementing Java Server Pages Standard Tag Library: Working with core Tag Library, XML Tag Library, Internationalization Tag Library, SQL Tag Library and Functions Tag Library.

Unit- IV   (15 Hours)
Understanding EJB 3.0-EJB 3.0 Fundamentals-Classifying EJBs-Understanding Session Bean-Implementing Session Bean-Understanding Message Driven Bean-Implementing Message Driven Bean-Managing Transactions in Java EE Applications-Understanding EJB 3.0 Timer services-Implementing EJB 3.0 Timer Services-Understanding EJB 3.0 Interceptors-Interceptor Class-Lifecycle Callback methods in Interceptor Class.

Unit - V   (12 Hours)
Implementing Entities and Java Persistence API: Introducing Entities-Life cycle of Entity-Entity Relationship Types-Mapping Collection Based Relationships-Understanding Java Persistence Query Language (JPQL). Implementing Java Persistence Using Hibernate: Introduction to Hibernate-Architecture of Hibernate-Hibernate Query Language-Implementing O/R Mapping with Hibernate.

Course Outcome:
• Ability to understand enterprise edition of java and database connectivity
• Grasp the knowledge about servlet activities
• Understanding the ability to apply java to develop web pages
• Explore programming techniques of Java beans and swing

- Know about Java Persistence Query Language

Text Book:
1. Kogent Solutions Inc, Java Server Programming, Java EE 6 Black Book, Dream Tech Press - Platinum Edition.

Unit 1: Chapter 1, Chapter 3
Unit 2: Chapter 4, Chapter 5
Unit 3: Chapter 7, Chapter 8, Chapter 9
Unit 4: Chapter 13
Unit 5: Chapter 14, Chapter 15

Reference Book:
1. Eric Jendrock,IanEvans,DevikaGollapudi,KimHaase,ChinmayeeSrivathsa , The Java EE 6 Tutorial Basic Concepts by Dorling Kindersley , Fourth Edition,India.

M.Sc (Computer Science) Degree Examination-Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards
SECOND SEMESTER
Practical 2 : ADVANCED JAVA PROGRAMMING LAB

Maximum CIA: 40
Maximum CE: 60
Total Hours: 60

Course Objective:
To inculcate knowledge about Advanced Java and helps to specialize in J2EE.

List of Practical's:
1) Design a program to get username and password and display it in new page using JSP.
2) Program to illustrate usage of at least four JSP tags.
3) Design a program to get user input and validate it with database using JSP.
4) Prepare a program to upload an image into database using JSP.
5) Design a program to display cookies using JSP.
6) Design a program for servlet configuration.
7) Develop a program to insert and delete data in a database using servlet.
8) Design a program to implement Entity Bean.
9) Construct a program to implement Session Bean.
10) Design a program to implement Message Driven Bean.
11) Construct a program to insert records into database using Hibernate
12) Design a program to create application using Hibernate and EJB for maintaining employee details.

Course Outcome:
- Understand the multi-tier architecture of web-based enterprise applications using Enterprise JavaBeans (EJB).
- Learn to access database through Java programs, using Java Data Base Connectivity
- Create dynamic web pages, using Servlets and JSP.
- Create a full set of UI widgets and other components, including windows, menus, buttons, checkboxes, text fields, scrollbars and scrolling lists, using Abstract Windowing Toolkit (AWT) & Swings
- Map Java classes and object associations to relational database tables with Hibernate mapping files

M.Sc (Computer Science) Degree Examination-Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards

SECOND SEMESTER
ELECTIVE 1: DISTRIBUTED COMPUTING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To inculcate knowledge on Distributed Computing Concepts in real time applications.

Unit –I   (12 Hours)
Goals of Distributed Systems: Making Resources Accessible - Distribution Transparency - Openness Scalability - Pitfalls. Types of Distributed Systems: Distributed Computing Systems - Distributed Information Systems - Distributed Pervasive Systems. Architectural Styles. System Architectures: Centralized Architectures - Decentralized Architectures - Hybrid Architectures. Architectures Versus Middleware: Interceptors - General Approaches to Adaptive Software. Self-Management In Distributed Systems - Feedback Control Model.

Unit- II   (12 Hours)
Threads: Introduction to Threads - Threads in Distributed Systems. Virtualization: Role of Virtualization in Distributed Systems - Architectures of Virtual Machines. Clients: Networked User Interfaces - Client-Side Software for Distribution Transparency. Servers: General Design Issues - Server Clusters - Managing Server Clusters. Code Migration: Approaches to Code Migration - Migration and Local Resources - Migration in Heterogeneous Systems.

Unit- III   (12 Hours)
Names, Identifiers, and Addresses. Flat Naming: Simple Solutions - Home-Based Approaches - Distributed Hash Tables - Hierarchical Approaches. Structured Naming: Name Spaces - Name Resolution. Attribute-Based Naming: Directory Services. Clock Synchronization: Physical Clocks - Global Positioning System - Clock Synchronization Algorithms. Logical Clocks: Lamport's Logical Clocks - Vector Clocks. Mutual Exclusion: Centralized Algorithm - Decentralized Algorithm - Distributed Algorithm - Token Ring Algorithm - Comparison of the Four Algorithms. Global Positioning of Nodes. Election Algorithms: Traditional Election Algorithms - Elections in Wireless Environments - Elections in Large - Scale Systems.

Unit- IV   (12 Hours)
Fault Tolerance: Basic Concepts - Failure Models - Failure Masking by Redundancy. Process Resilience: Design Issues - Failure Masking and Replication - Agreement in Faulty Systems - Failure Detection. Reliable Client-Server Communication: Point-to-Point Communication - RPC Semantics in the Presence of Failures. Reliable Group Communication: Basic Reliable-Multicasting Schemes - Scalability in Reliable Multicasting - Atomic Multicast. Distributed Commit: Two-Phase Commit – Three -Phase Commit. Recovery: Checkpointing - Message Logging - Recovery-Oriented Computing.

Unit- V   (12 Hours)
Security: Security Threats, Policies, and Mechanisms - Design Issues - Cryptography. Secure Channels: Authentication - Message Integrity and Confidentiality - Secure Group Communication. Access Control: General Issues in Access Control - Firewalls - Secure Mobile Code - Denial of

Service. Security Management: Key Management - Secure Group Management - Authorization Management.

Course Outcome:
- Ability to understand the distributed system and available resources
- Identify the important issues in threads and clusters
- Learn the importance of naming and clusters in distributed systems
- Examine the reasons for getting faults and making reliable communications
- Identify the core concepts of distributed systems by which several machines orchestrate to correctly solve problems in an efficient, reliable and scalable way

Text Book:
1. Andrew S. Tanenbaum, Maarten van Steen, Distributed Systems: Principles and Paradigms, Second Edition, Pearson Education, Reprint 2016.

Unit I - Chapter 1 (1.2, 1.3), Chapter 2 (2.1, 2.2, 2.3.1, 2.3.2)
Unit II - Chapter 3 (3.1, 3.2, 3.3, 3.4, 3.5)
Unit III - Chapter 5 (5.1, 5.2, 5.3.1, 5.3.2, 5.4.1), Chapter 6 (6.1, 6.2, 6.3, 6.4, 6.5)
Unit IV - Chapter 8 (8.1, 8.2, 8.3, 8.4, 8.5, 8.6
Unit V - Chapter 9 (9.1, 9.2.1, 9.2.2, 9.2.3, 9.3, 9.4)

Reference Books:
1. M.L.Liu, Distributed Computing Principles and Applications , Pearson Education, First Edition, 2015.
2. Vijay K.Garg, Elements Of Distributed Computing , A John Wiley & Sons, Inc., Publications, Reprint 2016

M.Sc (Computer Science) Degree Examination-Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards
SECOND SEMESTER
ELECTIVE 1: GRID COMPUTING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To acquire knowledge about how Grid Computing is evolving as an open standard for resource sharing.

Unit –I   (12 Hours)
Early Grid Activities - Current Grid Activities - An Overview of Grid Business Ares - Grid Applications - Grid Infrastructure. Grid Computing Organization and their Roles.

Unit- II   (12 Hours)
Grid Computing Anatomy - Grid Computing Road Map - Merging the Grid Services Architecture with the Web Services Architecture.

Unit - III   (12 Hours)
Open Grid Services Architecture (OGSA) - Some Sample Use Cases that drive the OGSA - OGSA Platform.

Unit- IV   (12 Hours)
Open Grid Service Infrastructure: Introduction - Grid Services - Technical Details of OGSI Specification.

Unit –V   (12 Hours)
OGSA Basic Services: Common Management Model - Service Domains - Policy Architecture - Security Architecture. GLOBUS GT3 Toolkit: A Sample Implementation.

Course Outcome:
- Able to appreciate the necessity of grid computing and thus its evaluation
- Ability to understand the architecture of grid computing
- To Understand and explain the key concepts of open architecture
- To identify the resource selection for Grid environment
- To understand the recent versions of Globus toolkit

Text Book:
1. JoshyJoesph, Craig Fellenstein, Grid Computing, IBM Press, USA, 2nd edition, Reprint 2015.

Unit 1: Chapter 1, Chapter 2
Unit 2: Chapter 3, Chapter 4, Chapter 5
Unit 3: Chapter 6, Chapter 7, Chapter 8
Unit 4: Chapter 9, Chapter 10
Unit 5: Chapter 12, Chapter 13

Reference Book:
1. Fran Berman,GeoffreyFox,Anthony J. G. Hey,Grid Computing: Making the Global Infrastructure a Reality ,Wiley India Pvt Ltd., 2015.

M.Sc (Computer Science) Degree Examination-Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards
SECOND SEMESTER
ELECTIVE 1: MOBILE COMPUTING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To make the Students to get Familiarized with the Application Areas of Mobile Computing Environment.

Unit – I: (12   Hours)
Introduction: Applications – Vehicles, Emergencies, Business, and Replacement of Wired Networks, Infotainment and more, Location dependent services, Mobile and Wireless devices – A short history of wireless communication – A market for mobile communications – Some open research topics – A simplified reference model – Overview. Wireless Transmission: Frequencies for radio transmission – Regulations – Antennas – Signal Propagation – Path loss of radio signals, Additional signal propagation effects, Multi-path propagation – Multiplexing – SDM, FDM, TDM, CDM – Modulation.

Unit –II: (12   Hours)
Medium Access Control: Motivation for a specialized MAC – Hidden and exposed terminals, Near and far terminals – SDMA – FDMA – TDMA – Fixed TDM, Classical Aloha, Slotted Aloha, Carrier Sense Multiple Access, PRMA, Reservation TDMA, Multiple access with collision avoidance, Polling, Inhibit Sense Multiple Access – CDMA – Spread Aloha Multiple Access, Comparison of S/T/F/CDMA. Telecommunications Systems: GSM – Mobile Services, System Architecture, Radio Interface, Protocols, Localization and calling, Handover, Security, New Data Services.

Unit – III: (12 Hours)
Satellite Systems: History – Applications – Basics – GEO, LEO, MEO – Routing – Localization – Handover – Examples. Broadcast Systems: Overview – Cyclical repetition of data – Digital audio broadcasting – Multimedia object transfer protocol – Digital Video Broadcasting – DVB data broadcasting, DVB for high – speed internet access – Convergence of broadcasting and mobile communications.

Unit – IV: (12 Hours)
Wireless LAN: Infrared vs radio transmission – Infrastructure and ad-hoc network – IEEE 802.11 – System Protocol Architecture, Physical Layer, Medium Access Control Layer, MAC Management, 802.11b, 802.11a, Network Developments – HIPERLAN – Historical: HIPERLAN1, WATM, BRAN, HIPERLAN2 – Bluetooth – User Scenario, Architecture, Radio Layer, Baseband Layer, Link Manager Protocol, L2CAP, Security, SDP, Profiles, IEEE 802.15.Mobile Network Layer: Mobile IP – Goals, assumptions and requirements, Entities and Terminology, IP packet Delivery, Agent Discovery, Registration, Tunneling and Encapsulation, Optimizations, Reverse tunneling – Ipv6 – IP micro-mobility support – Dynamic host configuration Protocol – Mobile Ad-hoc Networks – Routing, Destination sequence distance vector, Dynamic source routing, Alternative metrics, Overview ad-hoc routing protocols.

Unit – V: (12Hours)
Mobile Transport Layer: Traditional TCP – Congestion Control, Slow start, Fast retransmit/fast recovery, Implications of mobility – Classical TCP improvements – Indirect TCT, Snooping TCP,

Mobile TCP, Fast retransmit/fast recovery, Transmission/time-out freezing, Selective retransmission, Transaction-oriented TCP – TCP over 2.5/3G wireless networks – Performance enhancing proxies.Support for Mobility:File Systems – Consistency, Coda, Little Work, Ficus, Mlo NFS, Rover – WWW.

Course Outcome:
- Grasp the concepts and features of wireless transmission
- Have a good understanding of access control and telecommunication system
- Identify the important issues in satellite systems and broadcasting
- Organize the functionalities and components of mobile computing systems into different layers and apply various techniques for realizing the functionalities
- Ability to understand the importance of avoiding congestion control with different approaches

Text Books
1. Jochen Schiller - Mobile Communications, Pearson Education, II Edition, 2011.

Unit 1: Chapter 1 (1.1 - 1.6), Chapter 2 (2.1 - 2.8).
Unit 2: Chapter 3 (3.1 - 3.6), Chapter 4 (4.1 - 4.4).
Unit 3: Chapter 5 (5.1 - 5.6), Chapter 6 (6.1 - 6.4).
Unit 4: Chapter 7 (7.1 - 7.5), Chapter 9 (9.1 - 9.4).
Unit 5: Chapter 10 (10.1 - 10.8), Chapter 11 (11.1 - 11.3).

Reference Books
1. Mobile Computing Asoke K TalukderRoopa R Yavagal TMH, Reprint 2015
2. Jochen Schiller Mobile Communications PHI/Pearson Education 2ndEdition, Reprint 2013.
3. V.JeyasriArokiaMary, Mobile Computing, Technical Publications, Pune ,2nd Revised Edition, 2018.
4. SipraDasBit and BipLab K. Sikdar, Mobile Computing, Eastern EconomyEdition, PHI Learning Private Limited, 2017.

M.Sc (Computer Science) Degree Examination-Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards
FIRST SEMESTER
ADDITIONAL CREDIT COURSE - MULTIMEDIA AND ITS APPLICATIONS

Maximum CE: 100

Course Objective:
On successful completion of the paper the students should have acquired knowledge in the concepts of Multimedia, Images, Animation and Desktop Computing.

UNIT I
Multimedia: Where to Use Multimedia - Multimedia in Business - Multimedia in Schools - Multimedia at Home - Multimedia in Public Places - Virtual Reality - Delivering Multimedia - CD-ROM, DVD, Flash Drives - The Broadband Internet.

UNIT II
Text: About Fonts and Faces - Using Text in Multimedia - Computers and Text - Font Editing and Design Tools - Hypermedia and Hypertext.

UNIT III
Images: Before Start to Create - Making Still Images - Color - Image File Formats. Sound: Power of Sound - Digital Audio - MIDI Audio - MIDI vs. Digital Audio - Multimedia System Sounds - Audio File Formats - Vaughan's Law of Multimedia Minimums - Adding Sound to Your Multimedia Project.

UNIT IV
Animation: The Power of Motion - Principles of Animation - Animation by Computer - Making Animations That Work.

UNIT V
Video: Using Video - How Video Works and Is Displayed - Digital Video Containers - Obtaining Video Clips - Shooting and Editing Video.

Course Outcome:
 * Identify multimedia components
 * Understand the tools available for processing the multimedia
 * Discuss about audio digitization, audio file format and audio software
 * Develop a multimedia content for web page
 * Applying knowledge through multimedia systems

Text Book:
   1. Tay Vaughan, Multimedia making it works, 8thEdition, Tata McGraw Hill, Reprint 2017.

Unit I: Chapter 1
Unit II: Chapter 2
Unit III: Chapter 3, Chapter 4

Unit IV: Chapter 5

Unit V: Chapter 6

Reference Books:

1. Prabhat K. Andleigh, KiranThakrar, Multimedia System Design, 3rd Edition, Pearson Education, 2010, New Delhi.
2. Vic Costello, Multimedia Foundations, Taylor & Francis, 2012.
3. John F. Koegel Bufford, Multimedia Systems, 4th Edition, Pearson Education, 2013, Asia (Unit V).

M.Sc (Computer Science) Degree Examination-Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards
SECOND SEMESTER
ADDITIONAL CREDIT COURSE: BIG DATA ANALYTICS

Maximum CE: 100

Course Objective:
To inculcate knowledge on concepts related to Big Data Analytics, Mining Data Streams, Clustering, and Visualization.

Unit –I
Big Data -The Arrival of Analytics -Value -More to Big Data Than Meets the Eye - Dealing with the Nuances of Big Data - An Open Source Brings Forth Tools. Big Data Matters - Big Data Reaches Deep - Obstacles Remain - Data Continue to Evolve -Data and Data Analysis Are Getting More Complex.

Unit –II
Big Data and the Business Case :Realizing Value - The Case for Big Data-The Rise of Big Data Options - Beyond Hadoop - With Choice Come Decisions. Building the Big Data Team :The Data Scientist - The Team Challenge-Different Teams, Different Goals -Don't Forget the Data - Challenges Remain - Teams versus Culture -Gauging Success.

Unit –III
Big Data Sources: Hunting for Data -Setting the Goal -Big Data Sources Growing -Diving Deeper into Big Data Sources - A Wealth of Public Information - Getting Started with Big Data Acquisition - Ongoing Growth, No End in Sight. The Nuts and Bolts of Big Data: The Storage Dilemma - Building a Platform - Bringing Structure to Unstructured Data - Processing Power.

Unit –IV
Security, Compliance, Auditing, and Protection : Pragmatic Steps to Securing Big Data - Classifying Data - Protecting Big Data Analytics - Big Data and Compliance - The Intellectual Property Challenge . The Evolution of Big Data :The Modern Era - Today, Tomorrow, and the Next Day Changing Algorithms.

Unit –V
Best Practices for Big Data Analytics: Start Small with Big Data - Thinking Big - Avoiding Worst Practices - Baby Steps 98- The Value of Anomalies - Expediency versus Accuracy - In-Memory Processing. Bringing It All Together : The Path to Big Data- The Realities of Thinking Big Data- Hands-on Big Data- The Big Data Pipeline in Depth -Big Data Visualization- Big Data Privacy.

Course Outcome:
- Analyzing the data to reduce the obstacles
- Creating a challenge and goals through data analysis
- Effective storage of data for ongoing growth
- Providing the security for complex data
- Visualizing the data for better understanding

Text Book:
1. Frank J. Ohlhorst, Big Data Analytics: Turning Big Data into Big Money , John Wiley & Sons, Inc, 2012.

Unit I: Chapter 1, Chapter 2
Unit II: Chapter 3, Chapter 4
Unit II: Chapter 5, Chapter 6
Unit IV: Chapter 7, Chapter 8
Unit V: Chapter 9, Chapter 10

Reference Books:

1. Bill Franks, Taming the Big Data Tidal Wave: Finding Opportunities in Huge Data Streams with Advanced Analytics, John Wiley & sons, 2012.
2. AnandRajaraman and Jeffrey David Ullman, Mining of Massive Datasets, Cambridge University Press, 2013.

M.Sc (Computer Science) Degree Examination - Syllabus for candidates admitted from the academic year 2019 – 2020 and onwards.
THIRD SEMESTER
PAPER 9: INTERNET OF THINGS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:

Students will be explored to the interconnection and integration of the physical world and Emerging IoT Applications.

Unit- I   (12 Hours)
Demystifying the IoT Paradigm: IoT Is Strategically Sound - Brewing and Blossoming Trends in IT Space - Envisioning the IoT Era - Device-to-Device/ Machine-to-Machine Integration Concept - Aspect of Device-to-Cloud (D2C) Integration - Emergence of IoT Platform as a Service (PaaS) - Key Application Domains - Emerging IoT Flavors.

Unit- II   (12 Hours)
Realization of IoT Ecosystem Using Wireless Technologies: Architecture for IoT Using Mobile Devices - Mobile Technologies for Supporting IoT Ecosystem - Energy Harvesting for Power Conservation in IoT System - Mobile Application Development Platforms - Mobile Use Cases for IoT - Low Power Wide Area Networking Technologies - Weightless.

Unit – III   (12 Hours)
Infrastructure and Service Discovery Protocols: Layered Architecture for IoT - Protocol Architecture of IoT - Infrastructure Protocols - Routing Protocol - Bluetooth Low Energy - Device or Service Discovery for IoT - Protocols for IoT Service Discovery - Prominent IoT Service Discovery Products.

Unit – IV   (12 Hours)
Integration Technologies and Tools for IoT Environments: IoT Portion for Smarter Enterprises and Environments - Sensor and Actuator Networks - IoT Device Integration Concepts, Standards, and Implementations - Device Integration Protocols and Middleware - Protocol Landscape for IoT.

Unit – V   (12 Hours)
Next-Generation Clouds for IoT Applications and Analytics: Reflecting Cloud Journey - Cloud Technology - Cloud Service Ecosystem - Key Motivations for Cloud-Enabled Environments - Cloud-Inspired Enterprise Transformations - IoT and Cloud-Inspired Smarter Environments - Era of Hybrid Clouds - Envisioning Federated Clouds - Special-Purpose Clouds - Building Blocks of Software-Defined Clouds - Software-Defined Storage.

Course Outcome:
CO 1: Understand the technology and standards relating to IoT.
CO 2: Understand IoT in real world perspective.
CO 3: Analyze basic protocols of IoT.
CO 4: Understand the critical parts of the ICT ecosystem required to mainstream IoT.
CO 5: Acquire ideas about IoT in cloud computing strategies.

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	M						M	
CO 2		H						
CO 3				M				H
CO 4			L			M		
CO 5					H		M	

Text Book:
1. Pethuru Raj, Anupama C. Raman, The Internet of Things - Enabling Technologies, Platforms, and Use Cases, CRC Press, Taylor and Francis Group, 2017.
   Unit 1: Chapter 1.
   Unit 2: Chapter 2.
   Unit 3: Chapter 3.
   Unit 4: Chapter 4.
   Unit 5: Chapter 5.

Reference Books:
1. Networks, Crowds, and Markets: Reasoning About a Highly Connected World - David Easley and Jon Kleinberg, Cambridge University Press – Reprint 2015.
2. Honbo Zhou, The Internet of Things in the Cloud: A Middleware Perspective, CRC Press, Reprint 2016.

M.Sc (Computer Science) Degree Examination-Syllabus for Candidates admitted from the academic year 2019 – 2020 and onwards.
THIRD SEMESTER
PAPER 10: INFORMATION SECURITY

Maximum CIA: 30
Maximum CE: 70
Total Hours: 48

Course Objectives:
In this course students learn basics of information security, authentication/identification using biometrics, information security using cryptography, information hiding and steganography, network security, and operating system security.

Unit - I   (10 Hours)
What is Information Security? Introduction – What is security? - Models for discussing security – Attacks – Defense in depth - Information security in the real world. Authentication: Introduction – Objectives of Identification Protocols – Entity Authentication Techniques – Authentication Mechanisms – Digital Signature – Single-use-Password Tokens – Two-factor Authentication – Digital Certificates.

Unit - II   (10 Hours)
Authentication/Identification: Biometrics: Introduction – What is Biometrics? – Features of Biometric Identification – Biometric Application Types – Biometric Application: What are they used for? - Face Recognition - Fingerprint Recognition - Iris Recognition - Voice – DNA as Biometric Identifier.

Unit - III   (09 Hours)
Information Security: Cryptography: Modern Cryptographic Tools – Protecting data at rest, in motion and in use – Cryptography in the Real World. Information Hiding: Steganography: Evolution of Steganography – Steganography System – Other Techniques – Modern Techniques – Some more Techniques – Audio –Video – Textual Steganography – Real-Time Steganography – Steganalysis – Applications – Digital Watermarks.

Unit- IV   (09 Hours)
Network Security: Introduction – Protecting Networks – Protecting Network Traffic – Mobile Device Security – Network Security Tools – Additional Resources - Network Security in the Real World. Firewalls: - Introduction – Firewall Deign Goals – Types of Firewall – Firewall Configurations.

Unit - V   (10 Hours)
Operating System Security: Introduction – Operating System Hardening – Protecting against malware – Virus and Worms: History – Defenses Against Virus – Mitigating Malware Risks – Additional Resources – Operating System Security Tools - Operating System Security in the Real World.

Course Outcome:

CO 1:   Describe what Information Security and Authentication is.
CO 2:   Appreciate the value of Biometrics.
CO 3:   Understand the concepts of Cryptography and Steganography.

CO 4: The importance of Network Security and Firewalls.
CO 5: Be aware of Operating Systems Security.

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	M			L			M	
CO 2		L				H		
CO 3			L			M		
CO 4					M		H	
CO 5			H					M

Text Books:
1. Jason Andress, Steven Winterfeld, The Basics of Information Security, Syngress - Second Edition, Reprint 2018.
   Unit 1: Chapter 1
   Unit 2: Chapter 2
   Unit 3: Chapter 5
   Unit 4: Chapter 10
   Unit 5: Chapter 11

2. Dhiren R.Patel, Information Security-Theory and Practice, Prentice-Hall of India Private Limited, 2019.
   Unit 1: Chapter 7 (7.1, 7.2, 7.3, 7.6, 7.8, 7.9, 7.11, 7.16)
   Unit 2: Chapter 8 (8.1, 8.2, 8.3, 8.4, 8.5, 8.7, 8.8, 8.9, 8.10, 8.11)
   Unit 3: Chapter 4 (4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10, 4.11, 4.12, 4.13)
   Unit 4: Chapter 10 (10.14, 10.15, 10.16, 10.17)

Reference Books:
1. William Stallings, Cryptography and Network Security, Fifth Edition, Pearson Publications, Reprint 2017.
2. Denis Trcek, Managing Information System Security and Privacy, Springer, First Edition Reprint 2019.

M.Sc (Computer Science) Degree Examination Syllabus for Candidates admitted from the Academic Year 2019-2020 and onwards.
THIRD SEMESTER
PAPER 11: DATA MINING AND WAREHOUSING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To inculcate the knowledge of Data Mining and Warehousing.

Unit- I   (12 Hours)
Introduction: Data warehousing components –Introduction: Overall Architecture - Data warehouse database-Sourcing, Acquisition, Cleanup and Transformation tools – Metadata. Access Tools: Accessing and Visualizing Information - Tool Taxonomy - Query and Reporting tools – Applications - OLAP tools - Data Mining tools. Data Marts-Data Warehouse Administration and Management-Impact of the Web - Approaches to using the Web

Unit -II   (12 Hours)
Data Mining – The Mining Analogy – Measuring Data Mining Effectiveness – (Accuracy Speed – Cost) Embedding Data Mining into a Business Process – Data Mining Methodology.

Unit -III   (12 Hours)
Classical Techniques – Statistics, Neighborhoods and Clustering. Next Generation Techniques – Trees, Network rules – When to use Data Mining..

Unit -IV   (12 Hours)
The Business Value – Customer Profitability, Customer Acquisition, Cross Selling, Customer Retention – Customer Segmentation.

Unit- V   (12 Hours)
Business Intelligence and Information Mining – Text Mining and Knowledge Management – Text Mining Technologies – Text Mining Products.

Course Outcome:
CO 1:   Understand the functionalities of various data warehousing components.
CO 2:   Know about data mining analogies, effectives and methodologies.
CO 3:   Analyze the various data mining techniques such as classical, clustering and next generation techniques in detail.
CO 4:   Describe the range of techniques for designing data mining systems for CRM applications.
CO 5:   Aware of using text mining technologies and products.

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1				M		M		
CO 2	M			L			L	
CO 3			M		L			M
CO 4		M			M		M	
CO 5		L		M			M	

Text Book:
1. Alex Berson, Stephen Smith & Kurt Thearling, "Building Data Mining Applications for CRM", Tata McGraw Hill Edition, Reprint 2018.
   Unit 1: Chapter 1.(1.1,-1.6)
   Unit 2: Chapter 2.(2.3-2.7)
   Unit 3: Chapter 3.(3.3.-3.9)
   Unit 4: Chapter 4.(4.1-4.12)
   Unit 5: Chapter 5.(5.1-5.10)

Reference Books:
1. Pang-Ning Tan, Vipin Kumar, Michael Steinbach , Introduction to Data Mining , New International Edition, Pearson Education, 2018.
2. Jiawei Han and Michelin Kamber, Data Mining Concept and Techniques, 2nd Edition, Morgan Kaufmann Publishers, Reprint 2019.

M.Sc (Computer Science) Degree Examination- Syllabus for Candidates admitted from the Academic Year 2019-2020 and onwards.

THIRD SEMESTER
PAPER 12: WEB TECHNOLOGY

Maximum CIA: 30
Maximum CE: 70
Total Hours:48

Course Objective:
To know about the basic understanding of server side scripting language concepts PHP & ASP.Net.

Unit- I   [10 Hours]
XML Fundamentals: Creating XML documents Syntax, The Components of an XML document, Introduction to Name Spaces - Understanding and Creating Elements Structuring Element tag, The Role of Elements in the DOM, Writing Well-Formed documents, Getting an Element from a Database, Understanding and Creating Attributes and Entities.

Unit- II   [10 Hours]
XML Data design: XML Design Principle-Creating your own DTD-an Introduction to XMLSchemas, Writing XML Schemas.

Unit- III   [09 Hours]
Introduction to Javascript:Functions ,DOM,Forms, and Event Handlers- window object-Constraint validation for form controls- Loops, Additional controls, Manipulating CSS with Javascript. JSON. Document Object Model: Nodes and Objects. JQuery Selection.-jQuery Traversal and Manipulation.-jQuery Events- Data Attributes and Templates..

Unit- IV   [09 Hours]
Basic PHP Techniques: An HTML Refresher – PHP Script Working with Databases: Establishing a Database Connection with PHP - Creating and Populating Database Tables: Create a Database Table, Inserting Data, Select and Display Data.

Unit- V   [10 Hours]
ASP.net Application : Code behind, The Global.asax application file, Understanding Asp.net Classes, Configuration, Web Form fundamentals: Simple Page Applet, Improving the Currency Converter, HTML Control Classes and The Page Class, Web Controlling: Stepping up to Web Control Classes, Auto Post back and Web Control Event, Simple Web Page Applet, Accessing Web Control 7.

Course Outcome:
CO 1: Understand the technology and standards relating to server side scripting languages.
CO 2: Understand the fundamentals of XML with data design.
CO 3: Know the basics of JavaScript and JQuery scripting language.
CO 4: Understand the basics of PHP scripting language with database connectivity
CO 5: Acquire ideas about the ASP.net programming languages.

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1				M		M		
CO 2	L						M	
CO 3			M					H
CO 4					L	M		
CO 5		H					M	

Text Books:
1. XML Complete, Dr.Shruti Kohil, BPB Publications, Third Edition, Reprint 2018.
   Unit 1: Chapter 1, 2, 3.
   Unit 2: Chapter 6, 7, 8.
2. Dane Cameron, HTML5, JavaScript, and jQuery 24-Hour Trainer, John Wiley & Sons, Second Edition, Reprint 2017.
   Unit 3: Chapter 3,4,5.
3. Wesley J. Chun, "Core Python Applications Programming", Dorling Kindersley Publishers,Pearson Education, Third Edition, Reprint 2018
   Unit III : Chapter 1,2.
4. Julie C Melori, "PHP Essentials", BPB Publications, Reprint 2018
   Unit IV :Chapter 10,11,12
5. Matthew Mac Donald, "The Complete Reference ASP.net", Tata McGraw Hill Company Limited,2017.
   Unit V : Chapter 5,6,7

Reference Books:
1. ASP.NET 4.5, Covers C# and VB Codes, Black Book, Kogent Learning Solutions Inc, Reprint 2017.
2. Jon Galloway, Brad Wilson, K. Scott Allen, David Matson, "Professional ASP.NET MVC 5", John Wiley & Sons, Reprint 2018.

M.Sc (Computer Science) Degree Examination Syllabus for Candidates admitted from the Academic Year 2019-2020 and onwards.

THIRD SEMESTER
PRACTICAL 3: WEB TECHNOLOGY LAB

Maximum CIA: 40
Maximum CE: 60
Total Hours: 60

Course Objective:
To implant knowledge by implementing tools and techniques in web application.

1. Write a JavaScript to design a simple calculator to perform the following operations: sum, product, difference and quotient.
2. Write a JavaScript that calculates the squares and cubes of the numbers from 0 to 10 and outputs HTML text that displays the resulting values in an HTML table format.
3. Write a JavaScript code that displays text "TEXT-GROWING" with increasing font size in the interval of 100ms in RED COLOR, when the font size reaches 50pt it displays "TEXT-SHRINKING" in BLUE color. Then the font size decreases to 5pt.
4. Create a web page to insert student details at the time of Admission enquiry and validate it using Jscript.
5. Design an XML document to store information about a student in an engineering college affiliated to VTU. The information must include USN, Name, and Name of the College, Branch, Year of Joining, and email id. Make up sample data for 3 students. Create a CSS style sheet and use it to display the document.
6. Write a PHP program to keep track of the number of visitors visiting the web page and to display this count of visitors, with proper headings.
7. Write a PHP program to display a digital clock which displays the current time of the server.
8. Write the PHP programs to do the following:
     i. Implement simple calculator operations
     ii. Find the transpose of a matrix
     iii. Multiplication of two matrices
     iv. Addition of two matrices
9. Write a PHP program to sort the student records which are stored in the database using selection sort.
10. Create a web application to perform validation process using ASP.Net validation controls.
11. Develop an application to create access and rename the directories and files in ASP.Net Environment.
12. Develop a web application in ASP.NET to implement tree view, Grid view and chart control.

Course Outcome:
CO 1: Analyze a web page and identify its elements and attributes.
CO 2: Create web pages using XHTML and Cascading Style Sheets.
CO 3: Build dynamic web pages using JavaScript (Client side programming).
CO 4: Create XML documents and Schemas.
CO 5: Analyze given assignment to select sustainable web development and design methodology.

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1		M				H		
CO 2	H						L	
CO 3			M					H
CO 4					M	H		
CO 5				M				H

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THIRD SEMESTER
ELECTIVE II: BIOINFORMATICS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objectives:
1. To inculcate the knowledge about genomes and gene analysis.
2. To introduce fundamentals of molecular biology and recent advance in genomics technology with the social cum ethical considerations of emerging technology and overwhelming information.

Unit- I   [12 Hours]
Introduction: The dawn of sequencing – What is bioinformatics? – The biological sequence/structure deficit – Genome project- Why is bioinformatics important? – Pattern Recognition and Prediction – The folding Problem – The role of chaperones – Sequence analysis – Homology and analogy. Information Networks: EMBnet – NCBI – Bioinformatics Programme in India – Virtual Tourism.

Unit- II   [12 Hours]
Protein Information Resources: Introduction – Biological databases – Primary Sequence databases – Composite protein sequence databases – Secondary databases – Comosite Protein Pattern databases – Structure Classification databases. Genome Information resources: Introduction – DNA Sequence databases – Specialised Genomic resources.

Unit- III   [12 Hours]
DNA Sequence Analysis: Why analyse DNS? – Gene Structure and DNA Sequences – Features of DNA Sequence analysis – Issues in the interpretation of EST searches – Two approaches to gene hunting – The expression profile of a cell – cDNA libraries and ESTs – Different approaches to EST analysis – Effects of EST data on DNA database – Example. Pairwise Alignment Techniques: Database searching – Alphabets and complexity – Algorithms and programs – Comparing two sequences – Sub sequences – Identity and Similarity –dotplot – Local and Global Similarity – Global Alignment – Local Alignment – Dynamic programming – Pairwise database searching.

Unit- IV   [12 Hours]
Multiple Sequence Alignment: The goal of multiple sequence alignment – A Definition – The consensus – Computational Complexity – Manual methods – Simultaneous methods – Progressive methods – Databases of multiple alignments – Searching databases. Secondary Database Searching: Why bother with secondary database searches? – What's in a secondary database.

Unit- V   [12 Hours]
Building a Sequence Search Protocol: A Practical approach – When to believe a result? – Structural and functional Interpretation. Analysis Packages: What's in an analysis package? – Commercial database – Commercial software – Comprehensive Packages – Packages specializing in DNA analysis – Intranet packages – Internet packages – Laboratory Information Management System (LIMS).

Course Outcome:

CO 1: Gain knowledge and awareness of the basic principles and concepts of biology, computer science and mathematics.

CO 2: The students will be able to describe the contents and properties of the most important bioinformatics databases, perform text- and sequence-based.

CO 3: searches, and analyze and discuss the results in light of molecular biological knowledge.

CO 4: The students will be able to explain the major steps in pairwise and multiple sequence alignment, explain the principle for, and execute pairwise sequence alignment by dynamic programming.

CO 5: The students will be able to predict the secondary and tertiary structures of protein sequences.

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	M						M	
CO 2		H						L
CO 3				M		H		
CO 4			L			M		
CO 5					H			L

Text Book:

1. T.K. Attwood, D.J. Parry-Smith, Introduction to Bioinformatics, Pearson Education Asia, Reprint 2018.

   Unit 1: Chapter 1(1.1 – 1.11), Chapter 2 (2.8 - 2.11)

   Unit 2: Chapter 3 (3.1 – 3.7), Chapter 4 (4.1 – 4.6)

   Unit 3: Chapter 5 (5.1 – 5.11), Chapter 6 (6.1 – 6.13)

   Unit 4: Chapter 7 (7.1 – 7.11), Chapter 8 (8.1 – 8.3)

   Unit 5: Chapter 9 (9.1 – 9.4), Chapter 10 (10.1 – 10.8)

Reference Books:

1. Dan E. Krane, Michale L. Raymer, Fundamental Concepts of Bioinformatics, Pearson Education Asia, Reprint 2017.
2. Jeremy Ramsden, Bioinformatics: An Introduction, Springer, 2019.

M.Sc (Computer Science) Degree Examination Syllabus for Candidates admitted from the Academic Year 2019-2020 and onwards.

THIRD SEMESTER
ELECTIVE II: NEURAL NETWORKS AND FUZZY LOGIC

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To introduce and develop the skills to gain a basic understanding of neural network theory and fuzzy logic theory.

Unit-I   (12 Hours)
Fundamentals of Neural Networks: Basic Concepts of Neural Networks – Human Brain – Model of an Artificial Neuron – Neural Network Architectures – Characteristics of Neural Networks – Learning Methods – Taxonomy of Neural Network Architectures – History of Neural Network Research – Early Neural Network Architectures – Some Application Domains.

Unit-II   (12 Hours)
Backpropagation Networks: Architectures of a Backpropagation Network – Backpropagation Learning – Illustration – Effect of Tuning Parameters of tha Backpropagation Neural Network – Selection of Various Parameters in BPN – Variations of Standard Backpropagation Algorithm.

Unit-III   (12 Hours)
Adaptive Resonance Theory: Introduction – ART1 - ART2 –Applications – Sensitivities of Ordering of Data.

Unit -IV   (12 Hours)
Fuzzy Set Theory: Fuzzy Versus Crisp – Crisp Sets – Fuzzy Sets - Crisp Relations – Fuzzy Relations.

Unit-V   (12 Hours)
Fuzzy Systems: Crisp Logic – Predicate Logic – Fuzzy Logic – Fuzzy Rule Based System – Defuzzification Methods.

Course Outcome:
CO 1: Understand basic knowledge of fuzzy sets and fuzzy logic.
CO 2: Provide an emphasis on the differences and similarities between fuzzy sets and classical sets theories.
CO 3: Apply basic fuzzy inference and approximate reasoning.
CO 4: Understand principles of neural networks.
CO 5: Apply basic fuzzy system modelling method

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1					M	M		
CO 2		H						M
CO 3			M				H	
CO 4	L							L
CO 5		M				H		

Text Book:
1. G.A.Vijayalakshmi Pai, S.Rajasekaran, Neural Networks, Fuzzy Logic and Genetic Algorithm: Synthesis and Applications Prentice Hall India, Reprint 2019.

        Unit 1: Chapter 2 (2.1 - 2.10)
        Unit 2: Chapter 3 (3.1 – 3.7)
        Unit 3: Chapter 5 (5.1 – 5.5)
        Unit 4: Chapter 6 (6.1 – 6.5)
        Unit 5: Chapter 7 (7.1 – 7.5)

Reference Books:
1. Lakhmi C. Jain, N.M. Martin, Fusion of Neural Networks, Fuzzy Systems and Genetic Algorithms: Industrial Applications, CRC Press, Reprint 2019.
2. Rajesh Kumar, Fundamental of Artificial Neural Network and Fuzzy Logic, University Science Press, 2017.

M.Sc (Computer Science) Degree Examination Syllabus for Candidates admitted from the Academic Year 2019-2020 and onwards.
THIRD SEMESTER
ELECTIVE II: WIRELESS APPLICATION PROTOCOL

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To inculcate knowledge on WAP concepts.

Unit-I   (12 Hours)
The Rise of Mobile Data-Market Convergence-Enabling Convergence-Key Services for the Mobile Internet-Productivity applications-Information and Tranactional Services-Life Enhancing Application-Telephony Account and Subscription Management-Business Opportunities-Mobile internet Access provider-Infrastructure Vendor-Overview of wireless Application protocol.

Unit-II   (12 Hours)
The Wireless Markup Language-Overview-The WML Document Model- WML Authoring-URLs Identity Content-Markup Basics-WML Basics-Basic content-Events, task and bindings-variables-controls-miscellaneous markup-Sending Information-Meta Data element-DTD-Wireless Binary extensible Markup Language.

Unit-III   (12 Hours)
Enhanced WML: WML Script and WTAI-WMLScript- Overview-Language Basics-WMLScript Standard Libraries-Other WML Script Libraries -User Interface Design: Making Wireless Application Easy to Use.

Unit-IV   (12 Hours)
Push Messaging-Overview of WAP push-Push Access Protocol-WAP Push Addressing-Push Message-MIME Media Types for push messages-Push Proxy Gateway-Push Over-the-Air Protocol-Push Initiator Authentication and Trusted Content.

Unit-V   (12 Hours)
Wireless Telephony Application-Overview of the WTA architecture-The WTA client Framework-The WTA server and security-Design Considerations-The Mobile Internet Future.

Course Outcomes:
CO 1: Understand fundamentals of wireless communications.
CO 2: Analyze security, energy efficiency, mobility, scalability, and their unique characteristics in wireless networks.
CO 3: Demonstrate basic skills for cellular networks design.
CO 4: Apply knowledge of TCP/IP extensions for mobile and wireless networking.
CO 5: To compare and contrast multiple division techniques, mobile communication systems, and existing wireless networks.

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1			L			M		
CO 2	M							H
CO 3		H				M		
CO 4					M		H	
CO 5				H		L		

Text Book:
1. Sandeep singhal, WAP-Wireless Application Protocol, First Impression, Reprint 2019.
   Unit 1: Chapter 2, 3,4 and 6
   Unit 2: Chapter 7 and 8
   Unit 3: Chapter 9 and 10
   Unit 4: Chapter 12
   Unit 5: Chapter 13 and Chapter 15

Reference Books:
1. Steve Mahn, Scott sbihli, The Wireless Application Protocol: A Wiley Tech Brief, 2017.
2. SCN Education B.V., Mobile Networking with WAP: The Ultimate Guide to the Efficient Use of Wireless Application Protocol, Vieweg Teubner Verlag, 2018.

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THIRD SEMESTER
EDC 1 -MANAGEMENT INFORMATION SYSTEM

Maximum CE: 50
Total Hours: 24

Course Objective

On Successful Completion of this subject the students will acquire knowledge in

Management Roles and responsibilities, Decision support systems etc.

Unit- I   [5 Hours]
Introduction : MIS Concept – MIS Definition – Role of the MIS – Impact of the MIS. MIS and Computers-MIS and Academics- MIS and the User. Role and Importance of Management: Introduction - Approaches to Management – Functions of the Manager – Managers and the Environment- Management as a Control System – Management by Exception- Process of Management: Management Effectiveness-Planning- Organizing – Staffing-Coordinating and Directing –Controlling- MIS: A Tool for management process.

Unit- II   [5 Hours]
Organization Structure and Theory – Strategic Management of Business : Basics of Management Information Systems : Decision Making – Information Systems.

Unit- III   [4 Hours]
System Analysis and Design – Development of MIS – Choice of Information Technology – Applications of Management Information System: Applications in Manufacturing Sector– Application in Service sector- Decision Support Systems.

Unit -IV   [5 Hours]
Enterprise Management Systems – Technology of Information Systems – Database Management Systems – Object Oriented Technology (OOT): Conceptual Presentation – Client Server Architecture.

Unit -V   [5 Hours]
Client Server Architecture-Networks – Business Process Re-Engineering (BPR)

Course Outcome
CO 1: Understand and apply the fundamental concepts of Information Systems.
CO 2: Develop the knowledge about the management of Information Systems.
CO 3: Interpret and recommend the use of information technology to solve business problems.
CO 4: Apply the framework and process for aligning organizations IT objectives with business strategies.
CO 5: The students will be able to predict the importance of applications using information systems.

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	M						M	
CO 2		H						L
CO 3				M		H		
CO 4			L			M		
CO 5					H			L

Text Book:

1. W.S.Jawadekar ,Management Information Systems , 2nd edition , Tata McGraw Hill, New Delhi, Reprint 2017.

Unit 1: Chapter 1 (1.1 - 1.7)
Unit 2: Chapter 2 (2.1 - 2.7)
Unit 3: Chapter 3 (3.1-3.9)
Unit 4: Chapter 6(6.1-6.3)
Unit 5: Chapter 6(6.4-6.8)

Reference Books:

1. Robert .Schultheis, Mary Sumner, Management Information System, 4th edition, Tata McGraw Hill, New Delhi, Reprint 2015.
2. Kenneth C. Laudon, Jane P. Laudon, Management Information Systems, Pearson Education, Limited, Reprint 2016.

M.Sc (Computer Science) Degree Examination Syllabus for Candidates admitted from the Academic Year 2019-2020 onwards.

FOURTH SEMESTER

PAPER 13: DIGITAL IMAGE PROCESSING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objectives:

To develop a theoretical foundation for fundamental concepts of digital image processing.

Unit - I   (12 Hours)

Introduction: Digital Image Processing: The Origins of Digital Image – Examples of Fields that Use Digital Image Processing - Fundamental Steps in Digital Image Processing – Components of an Image processing System – Digital Image Fundamentals: Elements of Visual Perception – Light and Electro Magnetic Spectrum – Image sensing and Acquisition – Image Sampling and Quantization – Some Basic Relationships between Pixels.

Unit - II   (12 Hours)

Intensity transformations and Spatial Filtering: Histogram Processing- Fundamentals of Spatial Filtering -Smoothing (Lowpass) Spatial Filters- Sharpening- (Highpass) Spatial Filters Highpass, Bandreject, and Bandpass Filters from Lowpass Filters. Filtering in the Frequency Domain: Preliminary Concepts Sampling and the Fourier Transform of Sampled-Functions -The Discrete Fourier Transform of One Variable -Extensions to Functions of Two Variables -Some Properties of the 2-D DFT and

Unit - III   (12 Hours)

Image Restoration and Reconstruction: A Model of the Image Degradation/Restoration-process - Noise Models-Restoration in the Presence of Noise Only—Spatial Filtering - Periodic Noise eduction Using Frequency Domain Filtering -Linear, Position-Invariant Degradations -Estimating the Degradation Function -Inverse Filtering -Minimum Mean Square Error (Wiener) Filtering - Constrained Least Squares Filtering -Geometric Mean Filter -Image Reconstruction from Projections.

Unit – IV   (12 Hours)

Color Image Processing: Color Fundamentals-Color Models-Pseudocolor Image Processing-Basics of Full-Color Image Processing-Color Transformations - Color Image Smoothing and Sharpening -Using Color in Image Segmentation-Noise in Color Images -Color Image Compression .Image Compression and Watermarking: Fundamentals-Huffman Coding - Golomb Coding-Arithmetic Coding -LZW Coding -Run-length Coding -Symbol-based Coding.

Unit - V   (12 Hours)

Image Segmentation: Fundamentals -Point, Line, and Edge Detection -Thresholding -Segmentation by Region Growing and by Region Splitting and-Merging -Region Segmentation Using Clustering and Superpixels -Segmentation Using Morphological Watersheds. Feature Extraction: Background - Boundary Preprocessing -Boundary Feature Descriptors -Region Feature Descriptors -Principal Components as Feature Descriptors.

Course Outcome:

CO 1: The students should be able to Know and understand the basics and fundamentals of digital image processing, such as digitization, sampling, quantization, and 2D-transforms.

CO 2: Operate on images using the techniques of smoothing, sharpening and enhancement.

CO 3: Understand the restoration concepts and filtering techniques.

CO 4: Learn the basics of segmentation, features extraction, compression and recognition methods for color models.

CO 5: They can understand the need for image transforms different types of image transforms and their properties

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	H						M	
CO 2		M				M		
CO 3				M			H	
CO 4			L					M
CO 5					H	H		

Text Book:

1. Rafael C. Gonzalez, Richard E.Woods, "Digital Image Processing," Prentice Hall, Fourth Edition by Pearson Education Limited 2018.

    Unit 1: Chapter 1,2

    Unit 2: Chapter 3,4

    Unit 3: Chapter 5

    Unit 4: Chapter 7,8

    Unit 5: Chapter 10,12

Reference Books:

1. Anil.K.Jain, "Fundamentals of Digital Image Processing," Prentice-Hall, reprint 2016.

2. Chanda and Majumdar, "Digital Image Processing and Analysis," Second Edition, Prentice Hall, reprint2017.

M.Sc (Computer Science) Degree Examination Syllabus for Candidates admitted from the Academic Year 2019-2020 and onwards.
FOURTH SEMESTER
ELECTIVE III: ETHICAL HACKING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective :
To inculcate the knowledge of Ethical Hacking.

Unit- I   (12 Hours)
Ethical Hacking Overview: Introduction to Ethical Hacking- What you can do Legally-What you Cannot do legally- TCP/IP Concepts Review: Overview of TCP/IP-IP Addressing- Overview of Numbering Systems- Network and Computer Attacks: Malicious Software- Protecting against malware attacks- Intruder attacks on networks and computers-Addressing physical security.

Unit –II   (12 Hours)
Footprinting and Social Engineering: Using web tools for Footprinting- Conducting Competitive Intelligence- Using DNS Zone Transfers-Introduction to Social Engineering- Port Scanning-Introduction to Port Scanning- Types of Port Scans- Using Port Scanning Tools.

Unit -III   (12 Hours)
Microsoft Operating System Vulnerabilities: Tools to identify Vulnerabilities on Microsoft Systems-Microsoft OS Vulnerabilities - Vulnerabilities in Microsoft Services – Best Practices for hardening Microsoft Systems- Linux Operating System Vulnerabilities-Review of Linux Fundamentals- Linux OS Vulnerabilities- Remote Access Attacks on Linux Systems- Countermeasures against Linux Remote Attacks.

Unit –IV   (12 Hours)
Hacking Web Servers: Understanding Web Applications - Understanding Web Application Vulnerabilities –Tools of Web Attackers and Security Testers- Hacking Wireless Networks: Understanding Wireless Technology- Understanding Wireless Networks Standards- Understanding Authentication- Understanding Wardriving- Understanding Wireless Hacking.

Unit- V   (12 Hours)
Cryptography- Understanding Cryptography basics - Understanding Symmetric and Asymmetric Algorithms- Understanding Public Key Infrastructure - Understanding Cryptography Attacks-Protecting Networks with Security Devices: Understanding Network Security devices-Understanding Firewalls- Understanding IDS- Understanding Honeypots.

Course Outcome:
CO 1:   Technical foundation of cracking and ethical hacking
CO 2:   Identify and analyze the stages an ethical hacker requires to take in order to compromise a target system.
CO 3:   Identify tools and techniques to carry out a penetration testing.
CO 4:   Critically evaluate security techniques used to protect system and user data.
CO 5:   Demonstrate systematic understanding of the concepts of security at the level of policy and strategy in a computer system.

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1				H		M		
CO 2		L					L	
CO 3			M					H
CO 4					L		M	
CO 5	H						H	

Text Book:

1. Michael T.Simpson , Ethical Hacking and Network Defense, Cengage Learning, India Edition, Reprint 2018.

Unit 1: Chapter 1, 2
Unit 2: Chapter 4, 5
Unit 3: Chapter 8
Unit 4: Chapter 10, 11
Unit 5: Chapter 12, 13

Reference Books:

1. Atul Kahate, Cryptography and Network Security, Tata McGraw Hill, 3rd Edition, 2018..
2. Elaiya Iswera Lallan, Ethical Hacking and Computer Securities For Beginners, Blue Micro Solutions, 2019.

M.Sc (Computer Science) Degree Examination Syllabus for Candidates admitted from the Academic Year 2019-2020 and onwards.
FOURTH SEMESTER
ELECTIVE III: ARTIFICIAL INTELLIGENCE

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To learn the basics of designing intelligent agents that can solve general purpose problems, represent and process knowledge, plan and act, reason under uncertainty and can learn from experiences.

Unit -I   (12 Hours)
Introduction – Agents - Problem formulation – uninformed search strategies – heuristics – informed search strategies-constraint satisfaction.

Unit -II   (12 Hours)
Logical agents-propositional logic-inferences-first-order-logic-inferences in first-order logic-forward chaining-backward chaining – unification – resolution.

Unit -III   (12 Hours)
Planning with state-space-search – partial-order planning – planning graphs – planning and acting in the real world.

Unit -IV   (12 Hours)
Uncertainty – review of probability – probabilistic Reasoning – Bayesian networks – inferences in Bayesian networks – Temporal models – Hidden Markov modes.

Unit -V   (12 Hours)
Learning from observation – Inductive learning – Decision trees – Explanation based learning – Statistical Learning methods – Reinforcement Learning.

Course Outcome:
CO 1: Demonstrate fundamental understanding of the history of artificial intelligence (AI) and its foundations.
CO 2: Apply basic principles of AI in solutions that require problem solving, inference, perception knowledge representation, and learning.
CO 3: Demonstrate awareness and a fundamental understanding of various applications of AI techniques in intelligent agents, expert systems, artificial neural networks and other machine learning models.
CO 4: Demonstrate proficiency developing applications in an 'AI language', expert system shell, or data mining tool.
CO 5: Demonstrate proficiency in applying scientific method to models of machine learning

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M					H		
CO2				M			M	
CO3					H			H
CO4			M			L		
CO5		M					L	

Text Book:
1. Stuart Russell, Peter Norvig, Artificial Intelligence: A Modern Approach, 3rd Edition, Pearson, Reprint 2017.
   Unit 1: Chapter 1, 2
   Unit 2: Chapter 7,8,9
   Unit 3: Chapter 10, 11
   Unit 4: Chapter 13
   Unit 5: Chapter 14

Reference Books:
1. David Poole, Alan Mackworth, Randy Goebel, Computational Intelligence: a logical approach, Oxford University Press, 2017.
2. G. Luger, Artificial Intelligence: Structures and Strategies for complex problem solving, Fourth Edition, Pearson Education, Reprint 2018.

M.Sc (Computer Science) Degree Examination Syllabus for Candidates admitted from the Academic Year 2019-2020 and onwards.

FOURTH SEMESTER
ELECTIVE III: SOFTWARE TESTING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
To provide general understanding of testing and its importance.

Unit -I   (12 Hours)
Psychology and Economics of Program Testing: Psychology of Testing - Economics of Testing - Software Testing Principles. Program Inspections, Walkthroughs, and Reviews: Inspections and Walkthroughs - Code Inspections - Error Checklist for Inspections - Walkthroughs - Desk Checking - Peer Ratings.

Unit -II   (12 Hours)
Test-Case Design: White-Box Testing - Black-Box Testing - Error Guessing - Strategy.

Unit -III   (12 Hours)
Module Testing: Test Case Design - Incremental Testing - Top-down versus Bottom-up Testing - Performing the Test.

Unit -IV   (12 Hours)
Higher-Order Testing: Function Testing - System Testing - Acceptance Testing - Installation Testing - Test Planning and Control - Test Completion Criteria - Independent Test Agency.

Unit -V   (12 Hours)
Testing in the Agile Environment: Agile Development - Agile Testing - Extreme Programming and Testing.

Course Outcomes:
CO 1: Apply modern software testing processes in relation to software development and project management.
CO 2: Create test strategies and plans, design test cases, prioritize and execute them.
CO 3: Manage incidents and risks within a project.
CO 4: Contribute to efficient delivery of software solutions and implement improvements in the software development processes.
CO 5: To gain expertise in designing, implementation and development of computer based systems and IT processes.

CO / PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1			L				H	
CO 2	H					L		
CO 3		M						M
CO 4				L			H	
CO 5					M		L	

Text Book:
1. Glenford J. Myers, Tom Badgett, Corey Sandler, The Art of Software Testing, Third Edition, John Wiley & Sons, Inc, 2019.
   Unit 1: Chapter 2, 3
   Unit 2: Chapter 4
   Unit 3: Chapter 5
   Unit 4: Chapter 6
   Unit 5: Chapter 8

Reference Books:
1. Sandeep Desai, Abhishek Srivastava, Software Testing: A Practical Approach, PHI Learning Private Limited, 2018.
2. Bernard Homes, Fundamentals of Software Testing, John Wiley & Sons, 2017.

M.Sc (Computer Science) Degree Examination Syllabus for Candidates admitted from the Academic Year 2019-2020 and onwards.
THIRD SEMESTER
PART III - ALC III – PARALLEL COMPUTING

Maximum CE: 100

Course Objective:
On successful completion of the paper the students should have acquired knowledge in parallel processing

UNIT I
Computer Architecture: Classification of Computer Architectures - Parallel Architectures - Data Flow Architectures. Components of Parallel Computers: Memory - Interconnection Network - Goodness Measures for Interconnection Networks - Compilers - Operating Systems - Input and Output Constraints.

UNIT II
Principles of Parallel Programming: Programming Languages for Parallel Processing - Precedence Graph of a Process - Data Parallelism Versus Control Parallelism - Message Passing Versus Shared Address Space - Mapping - Granularity.

UNIT III
Parallel Programming Approaches: UNIX - PCN - PVM - C-Linda - EPT - CHARM. Principles of Parallel Algorithm Design: Design Approaches - Design Issues - Performance Measures and Analysis - Complexities - Anomalies in Parallel Algorithms.

UNIT IV
Parallel Graph Algorithms: Connected Components - Paths and All-Pairs Shortest Paths - Minimum Spanning Trees and Forests - Traveling Salesman Problem - Cycles in a Graph - Coloring of Graphs.

UNIT V
Parallel Computational Algorithms: Prefix Computation - Transitive Closure - Matrix Computation - System of Linear Equations - Computing Determinants - Expression Evaluation.

Course Outcomes:
C01: To develop an understanding of various basic concepts associated with parallel computing environments.
C02: To understand the effects that issues of synchronization, latency and bandwidth have on the efficiency and effectiveness of parallel computing applications.
C03: To gain experience in a number of different parallel computing paradigms including memory passing, memory sharing, data-parallel and other approaches.
C04: To earn experience in designing and testing parallel computing solutions to programming problems.
C05: To develop improved communication and collaborative skills.

Text Book:
1. Seyed Ph. Roosta, "Parallel Processing and Parallel Algorithms Theory and Computation", Springer, Reprint 2018.

Unit I: Chapter 1, Chapter 2
Unit II: Chapter 3
Unit III: Chapter 4, Chapter 5
Unit IV: Chapter 6, Chapter 7
Unit V: Chapter 8, Chapter 9

Reference Books:

 1. Behrooz Parhami, "Introduction to Parallel Processing: Algorithms and Architectures", Springer, Reprint 2019.
2. M. Sasikumar, Dinesh Shikhare, Ravi P. Prakash,"Introduction To Parallel Processing", PHI, Reprint 2018.

VLB JANAKIAMMAL COLLEGE OF ARTS AND SCIENCE
DEPARTMENT OF ELECTRONICS AND COMMUNICATION SYSTEMS
Regulations for M.Sc Electronics and Communication Systems
(Effective from the academic year 2019-2020 onwards)

Introduction:

The department of Electronics and Communication Systems started the UG Programme in 1996 and PG Programme in 2003.

The UG Programme is B.Sc Electronics and Communication Systems. PG Programme is M.Sc Electronics and Communication Systems.

Objective:

To impart knowledge in the field of Electronics and Communications and to mould the students to meet the current and impending challenges and encourage their aspirations to become innovators and entrepreneurs, that benefits the society and nation.

Eligibility: PG Programme

A pass in UG Degree (B.Sc., Electronics/ Electronic Science/ Industrial Electronics/ Electronics and Communication Systems/ Physics/ Computer Science/ Computer Technology/ Information Technology/ BCA) with minimum 55 % marks Examination conducted by any University or an equivalent examinations.

Duration of PG Programme

The course shall extend over a period of two years comprising of four semesters, with two semesters per year. There shall not be less than ninety instructional days during each semester. Examination shall be conducted at the end of each semester for the respective subjects.

Vision:

To train the students in various technical aspects in Electronics and Communication along with necessary Computer Skills in order to make the students to get placed in reputed organizations and to become a successful entrepreneur along with human, cultural, ethical and social values.

Mission:

To offer quality technical and value education and services to the students which are accessible, society centered and flexible.

Programme Outcomes:
After the completion of the Post graduate programme in Master of Science (M.Sc Degree), the graduates will be able to

PO1: Have the ability to pursue inter-departmental research.

PO2: Understand the importance of critical thinking, social interaction, effective citizenship, ethics and environment and sustainability.

PO3: Acquire a holistic professional carrier.

PO4: To build the necessary competencies and creativity and prepare them to undertake entrepreneurship as a desirable and feasible career option.

PO5: Able to work effectively as a team member and leader in an ever changing professional environment.

Programme Specific Outcomes:
After the completion of the Post graduate programme in Master of Science in Electronics and Communication Systems the graduates will be able to

PSO1: Apply the knowledge of technical fundamentals to solve problems in the domain of Electronics and communication field.

PSO2: Analyze and interpret the experimental results and consolidate the information to provide valid outcomes.

PSO3: Design and develop innovative electronics products in such a way to meet out the societal needs.

VLB JANAKIAMMAL COLLEGE OF ARTS AND SCIENCE (AUTONOMOUS)
M.Sc., ELECTRONICS AND COMMUNICATION SYSTEMS
Scheme of Examination (CBCS and OBE Pattern)
For the candidates admitted from the Academic Year 2019 – 2020 and onwards

Subject Code	Subject Title	Instruction Hrs / week	Exam Dur.Hrss	CIA Marks	CE Marks	Total Marks	Credits
			Examination				
SEMESTER-I							
19MES101	Paper I : MEMS and Power Drives	5	3	30	70	100	4
19MES102	Paper II : Embedded and Real Time Operating Systems	5	3	30	70	100	4
19MES103	Paper III: Control System Engineering	5	3	30	70	100	4
19MES104	Paper IV : Electronic and Fiber Optic Communications	5	3	30	70	100	4
19MESP01	Practical I: Power Electronics Practical	5	3	40	60	100	4
19MESP02	Practical II : Electronic Communication Practical	5	3	40	60	100	4
	Total	**30**				**600**	**24**
SEMESTER-II							
19MES201	Paper V: PIC Microcontroller	5	3	30	70	100	4
19MES202	Paper VI: VLSI Design	5	3	30	70	100	4
19MESP03	Practical III: Embedded Systems Practical	6	3	40	60	100	4
19MESP04	Practical IV: VLSI Design Practical	6	3	40	60	100	4

19MESE01/ 19MESE02/ 19MESE03	Elective I : (Signals and Systems / Adhoc and Wireless Sensor Networks / Transmission Lines and RF Systems)	5	3	30	70	100	4
19MESID1	IDC1: Cryptography and Network Security	3	3	30	70	100	4
	Total	**30**				**600**	**24**
SEMESTER-III							
19MES301	Paper VII: Discrete Time Systems and Signal Processing	5	3	30	70	100	4
19MES302	Paper VIII : ARM Processor and Its Applications	5	3	30	70	100	4
19MES303	Paper XIII : Industrial Data Communication	5	3	30	70	100	4
19MESP05	Practical V : DSP Programming using MATLAB Practical	5	3	40	60	100	4
19MESP06	Practical VI : ARM Processor Programming Practical	5	3	40	60	100	4
19MESE04/ 19MESE05/ 19MESE06	Elective II: MATLAB Programming / Cognitive Radio / Advanced Digital Image Processing	3	3	30	70	100	4
19MESED1	EDC1: IoT and Its Applications	2	3	-	50	50	2
	Total	**30**				**650**	**26**

	SEMESTER-IV						
19MES401	Paper X : PLC and Distributed Control System	5	3	30	70	100	4
19MESE07/ 19MESE08/ 19MESE09	Elective III: Nano Technology and Applications/ Opto Electronic Devices / CMOS Analog IC Design	5	3	30	70	100	4
19MESPR1	Project: Project and Viva-Voce	5	3	100	150	250	8
	Total	**15**				**450**	**16**
					Grand Total	2300	90

For candidates admitted from the Academic year 2019-2020 onwards.

EDC- Extra Disciplinary Course.

IDC- Inter Disciplinary Course.

List of Elective Papers:

Sem	Code	Subject Title	Credits
		Elective: I	
II	19MESE01	Signals and Systems	4
II	19BESE02	Adhoc and Wireless Sensor Networks	4
II	19BESE03	Transmission Lines and RF Systems	4
		Elective: II	
III	19MESE04	MATLAB Programming	4
III	19MESE05	Cognitive Radio	4
III	19MESE06	Advanced Digital Image Processing	4
		Elective: III	
IV	19MESE07	Nano Technology and Applications	4
IV	19MESE08	Opto Electronic Devices	4
IV	19MESE09	CMOS Analog IC Design	4

List of Extra Disciplinary Courses:

Sem	Code	Subject Title	Credits
IV	19MESED1	IOT and Its Applications	2

List of Inter Disciplinary Courses:

Sem	Code	Subject Title	Credits
II	19MESID1	Cryptography and Network Security	2

List of Additional Credit Papers:

Sem	Code	Subject Title	Credits
II	19MESAC1	Electronic Test Instruments	2
III	19MESAC2	Research Methodology	2
IV	19MESAC3	Aptitude for NET	2

Summary of the Programme

Part	No. of Papers	Total Credit	Total Marks
Papers, Elective and Project	20	84	2150
IDC- Inter Disciplinary Course	1	4	100
EDC- Extra Disciplinary Course	1	2	50
Total	**22**	**90**	**2300**

Regulations for M.Sc., Electronics and Communication Systems

(Effective from the Academic Year 2019-2020 onwards)

1. Submission of Record Note Books for practical examinations

  Candidates appearing for practical examinations should submit Bonafide Record Note Books prescribed for practical examinations, Otherwise the candidate shall not be permitted to appear for the Practical Examinations.

  2. Ratio of Comprehensive Examination, Pre- Model and Model Examinations Marks for UG and PG Courses

Part	Internal Assessment	External Assessment	Total Marks
I (Languages)	30	70	100
II (English)	30	70	100
III(Core, IDC)	30	70	100
IV (AOC)	-	75	75
IV (EDC/Foundation Course)	-	50	50
V (NCC/NSS/Sports/Ext. Activity)	50	-	50

3. Project Work Mark Distribution

Particulars	IA	CE	Total
Project Work (UG)	50	50	100
Project Work (PG)	100	100	200
Project Work(M.Sc(CS)/M.Sc(ECS)	150	100	250
Project Work (M.Com/MIB)	50	100	150

4. Practical Mark Distribution for all UG and PG Courses

Internal -40 External-60 Total Marks -100

5. Break up for Internal Marks

S. No	Internal Marks	Distribution of Marks
1	Pre Model Examination	70
2	Model Examination	70
3	Seminar	30
4	Attendance	10
Total		**180/6=30**

6. Seminar Split up

S.No	Seminar split up	Marks
1	Content	10
2	Flow of the presentation	10
3	Stage management and Body language	10
	Total	**30**

7. Attendance Break up

S.No	Attendance split up	Marks
1	65% to 74%	4
2	75% - 80%	6
3	81% - 90%	8
4	91% - 100%	10

8. Internal Marks for Practical (Maximum 40)

Maximum Marks : 40		
S No	Internal Marks	Distribution of Marks
1	For Completion of the Practical List	20
2	Test –I	10
3	Test –II	10
Total		**40**

9. Internal Marks for Practical (Maximum 25)

Maximum Marks : 25		
S No	Internal Marks	Distribution of Marks
1	For Completion of the Practical List	15
2	Test –I	5
3	Test –II	5
Total		**25**

10. External Marks for Practical (Maximum 60)

Maximum Marks : 60		
S. No	Comprehensive Examination	Distribution of Marks
1	Record	10
2	Program – I Algorithm Coding Execution	5 10 10 TOTAL (25)
3	Program – II Algorithm Coding Execution	5 10 10 TOTAL (25)
Total		**60**

11. External Marks for Practical (Maximum 50)

Maximum Marks : 50		
S. No	Comprehensive Examination	Distribution of Marks
1	Construction	10
2	Designing	20
3	Record	20
Total		50

12. Internal and External Marks for Project Work

S.No	Internal Marks	Distribution of Marks
1	**INTERNAL** Review –I Review –II Documentation & Final Review	 10 10 30 **Total (50)**
2	**EXTERNAL** Presentation Viva	 30 20 **Total (50)**
	Total	**100**

13. Internal and External Marks for Project Work (Maximum 150)

S.No	Internal Marks	Distribution of Marks
1	**INTERNAL** Three Project Reviews Report	 25 25 **Total (50)**
2	**EXTERNAL** Presentation Viva	 50 50 **Total (100)**
	Total	**150**

14. Internal and External Marks for Project Work (Maximum 200)

S.No	Internal Marks	Distribution of Marks
1	**INTERNAL** Two Project Reviews Report	50 50 **Total (100)**
2	**EXTERNAL** Presentation Viva	50 50 **Total (100)**
	Total	**200**

15. Internal and External Marks for Project Work (Maximum 250) (M.Sc., ECS)

S.No	Internal Marks	Distribution of Marks
1	**INTERNAL** Three Project Reviews Report	60 40 **Total (100)**
2	**EXTERNAL** Presentation Viva	100 50 **Total (150)**
	Total	**250**

The distribution of Marks among the various components for IA and CE for Theory, Practical and Project Work is given in detail in the respective Schemes of Examination and Regulation of the different UG and PG Courses, duly passed in their respective Board of Study.

16. Pattern of Question Paper

For Pre model Test, Model and Comprehensive Examination under – Graduate and Post-Graduate Courses.

Maximum Marks : 70 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×4=20)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 75 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×5=25)	Each question carries four marks	Internal Choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 50 / Time 2 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×3=15)	Each question carries four marks	Internal Choice
Section – C	(5×5=25)	Each question carries eight marks	Internal Choice

Note:

1. The questions should be numbered sequentially, running through the Sections A, B and C.

2. The maximum marks are 70/75

Note:

1. The questions should be numbered continuously running through the Sections A, B and C.

2. Questions should be evenly distributed among the unit in the syllabus in all the sections of the Question paper

3. While framing questions with internal choice the questions must be identified as (a) or (b). (e.g 11. a or b). Further, the internal choice must be from the same unit.

4. The Controller of the Examinations shall arrange for the setting of question papers on the basis the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies

The following are the distribution of marks for Comprehensive Examinations and CIA for Theory, Practical and Project.

M.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards
FIRST SEMESTER
PAPER I- MEMS AND POWER DRIVES

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective: Enable the students to gain knowledge on Working principles, Fabrication of MEMS and Power devices in terms of design and applications.

UNIT- I   (12 Hours)

MATERIALS FOR MEMS and MICROSYSTEMS: Introduction to MEMS and Microsystems and its materials-Substrates and Wafers – Active Substrate Materials – Silicon as a Substrate material – Silicon Compounds – Silicon Piezo resistors – Gallium Arsenide – Quartz – Piezoelectric Crystals – Polymers – Packaging materials.

UNIT- II   (12 Hours)

MICROSYSTEMS FABRICATION PROCESSES: Introduction- Photolithography – Ion Implantation – Diffusion – Oxidation – Chemical Vapor Deposition – Physical Vapor Deposition– Deposition by Epitaxy– Etching – Bulk Micro Manufacturing – Surface Micro Machining – The LIGA Process .

UNIT- III   (12 Hours)

MICROSYSTEMS DESIGN AND PACKAGING:

Introduction –Design Considerations – Process Design – Design of Silicon Die for a Micro Pressure Sensor – Capillary Electrophoresis Network Systems for the design of Microfluidic – Computer Aided Design (CAD) – Micro System Packaging – Interfaces in Micro System Packaging –Assembly of Microsystems –   Selection of packaging materials.

UNIT- IV   (12 Hours)

DC DRIVES: Introduction – operating modes –single phase drives – three phase drives –phase locked loop control– Microcomputer control of dc drives – Switched mode regulators : Introduction – Buck and Boost regulator –Cuk regulator.

UNIT- V   (12 Hours)

AC DRIVES: Introduction – Induction motor drives – Stator voltage control – Rotor voltage control – Closed loop control of Induction motor – synchronous motor drives –Permanent magnet motor – Switched Reluctance motors – closed loop control of synchronous motor – Brushless DC and AC motor drives .

Course outcomes:

- Understand the material properties for micro fabrication.
- Understand and analyze the fabrication techniques.
- Able to design and analyze the micro system products.
- Design, apply and analyze the DC Drives.
- Design, apply and analyze the AC Drives.

TEXT BOOKS:

1. Tai-Ran-Hsu, "Mems & Micro Systems Design and Manufacture", Tata MC- Graw Hill , 2002 Edition.
2. Muhammed Rashid, "Power Electronics, Circuits, Devices and Applications", 3rd Edition, Prentice Hall Edition, 1999.

REFERENCE BOOKS:

1. Dr.P.S. Bimbhra, Power Electronics, 4th Edition, Anna University.
2. M.D.Singh, Power Electronics.

M.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards
FIRST SEMESTER
PAPER II: EMBEDDED AND REAL TIME OPERATING SYSTEMS

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective: Enable the students to learn the concepts of Embedded systems, Real time operating systems and its applications.

UNIT- I   (12 Hours)

INTRODUCTION TO EMBEDDED SYSTEMS:

Embedded systems –Processor embedded into a system- Embedded Hardware Units and Devices in system- Embedded software in a system – Embedded System on Chip (SoC) and use of VLSI circuit technology – Design process in Embedded system –Classification of Embedded System- Examples of embedded system.

UNIT- II   (12 Hours)

DEVICE AND COMMUNICATION BUSES FOR DEVICES NETWORK:

IO types and examples- Serial communication Devices- Parallel device ports – Sophisticated interfacing Features in Device ports – Wireless devices – Timer and Counting Devices – Watchdog Timer – Real Time Clock – Networked Embedded Systems – Serial Bus Communication Protocols – Parallel Bus Device Protocols.

UNIT- III   (12 Hours)

INTERPROCESS COMMUNICATION AND SYNCHRONIZATION:

Multiple Process in an application – Multiple Threads in an application – Tasks – Task states – Task and data – Concept of Semaphores – Inter Process Communication : Signal Function – Semaphore Functions – Message Queue Functions – Mailbox Functions – Pipe Functions – Socket Functions – RPC Functions.

UNIT -IV   (12 Hours)

REAL – TIME OPERATING SYSTEMS:

OS Services – Process Management – Timer Functions – Event Functions – Memory Management – Device, File and IO Subsystems Management – RTOS Task Scheduling Models- OS Security Issues.

UNIT- V   (12 Hours)

REAL – TIME OPERATING SYSTEM PROGRAMMING : MICROC/ OS – II

Basic Functions and Types of RTOSes – RTOS µCos- II : System Level Functions – Task Service and Time Functions – Time delay Functions – Memory Allocation Related Functions – Semaphore Related Functions - Mailbox Related Functions – Queue Related Functions .

Course outcomes:

- Understand and recognize the embedded systems and its classifications.

- Able to aware of the communication devices and network devices related to the embedded systems.
- Understand and apply the concept of inter process communications and synchronization techniques.
- Able to design a real time embedded systems using the concepts of RTOS.

- Analyze the types of RTOS and its functions.

TEXT BOOK:

1. Raj Kamal "Embedded Systems Architecture, Programming and Design ", 2nd Edition, Tata McGraw Hill Education Private Ltd, 2011.

REFERENCE BOOK:

1. Introduction to Embedded Systems by K.V. Shibu, 2nd Edition, Tata McGraw Hill Education Private Ltd, 2009.

M.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards
FIRST SEMESTER
PAPER III: CONTROL SYSTEM ENGINEERING

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective: Enable the students to learn the concepts of Control systems, analysis of control systems and its applications.

UNIT -I   (12 Hours)

Introduction: Concept of control systems; Classifications- open loop and closed loop systems- Linear and Non-linear systems- Continuous and Discrete time systems- SISO and MIMO systems- Time-invariant and Time varying systems- Servo systems and Automatic regulating systems- Adaptive control systems.

UNIT -II   (12 Hours)

Mathematical modeling of physical systems: Differential equations and transfer function form of models- Mathematical model of electrical-Mechanical and Electro-mechanical systems- Analogous systems. Control system components: Potentiometer-Synchros- DC and AC Servomotors-Rotating Amplifier- Stepper Motor-Tacho generators.

UNIT- III   (12 Hours)

Block diagram and signal flow graphs: Block diagram (BD) representation of physical systems- BD reduction techniques- Signal Flow Graph (SFG): Definition, terminology, SFG representation of Electrical systems- Mason's Gain formula- BD reduction using SFG techniques.

UNIT- IV   (12 Hours)

Transient response analysis: Type and order of systems- standard test signal- Steady state error and error constants- Generalized error series- Sensitivity- Characteristic equation- Transient response of 1st, 2nd and higher order systems- Transient response specifications- Definition of absolute and relative stability- Routh-Hurwitz stability criterion.

UNIT- V   (12 Hours)

Root locus method: Introduction- Angle and Magnitude conditions- Construction of complete root locus- Stability analysis- Effect of addition of poles and zeroes- Bode Plot and Polar plot methods.

Course outcomes:

- Understand the open loop and closed loop Control system components.
- Analyze characteristics of physical systems with Mathematical model.
- Understand the behavior of closed loop systems both in time domain and frequency domain.
- Analyze the performance of systems with tools such as Root Locus, Routh Hurwitz.
- Apply the logic of Control System based on Root Locus method.

TEXT BOOK:

1. I J Nagrath and M Gopal," Control System Engineering"New Age International Publishers 5th Edition, 2009.

REFERENCE BOOK:

1. Modern Control Engineering by K Ogata, Pearson Education ,2015

M.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards
FIRST SEMESTER
PAPER IV: ELECTRONIC AND FIBER OPTIC COMMUNICATIONS

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective: To make students understand the applications in electronic communication and Fiber optics communication domains.

UNIT –I : MICROWAVE TUBES AND CIRCUITS   (12 Hours)

Multicavity Klystron: Operation- Practical considerations - Reflex Klystron : Fundamentals - Practical considerations- Magnetron : Introduction -Operation - Practical considerations -Types, performance and applications - Traveling-Wave Tube (TWT) :TWT fundamentals - Practical considerations -Types, performance and applications.

UNIT –II : PULSE COMMUNICATIONS   (12 Hours)

Information Theory :Information in a communications system -Coding - Noise in an information-carrying channel - Pulse Modulation - Introduction-Types - Pulse-width modulation (PWM) - Pulse-position modulation (PPM)- Pulse-code modulation (PCM)- Pulse System: Telegraphy -Telemetry.

UNIT –III: OPTICAL FIBERS AND CONNECTIONS   (12 Hours)

Optical fibers: Multi mode step index fiber- Multimode graded index fibers- single mode fibers-Plastic clad fibers- plastic optical fibers- Optical fiber cables: fiber strength and durability- stability of fiber transmission characteristics : Micro bending – Hydrogen absorption- Nuclear radiation exposure- Fiber alignment and joint loss- Fiber splices- Fiber connectors.

UNIT-IV: OPTICAL SOURCES   (12 Hours)

LASER : Basic concepts- Optical emission from semi conductor- The semiconductor injection lasers- some injection laser structures- Light Emitting Diode (LED): LED power Efficiency- LED Structures- LED Characteristics.

UNIT- V : OPTICAL NETWORKS   (12 Hours)

Optical network concepts- optical network transmission modes ,layers and protocols- wavelength routing networks – Optical switching networks –Optical network deployment - Optical Ethernet.

Course Outcomes:

- Able to understand the performance of Microwave tubes.
- Design and analyze the pulse communication systems.
- Understand the concepts of optical fibers and connections.
- Apply the concept of optical sources in fiber optics communication..
- Design and analyze the optical networks.

TEXT BOOKS:

1. George Kennedy, Bernard Davis "Electronic Communication Systems" Tata Mc-Graw Hill Edition, 4th Edition, 1999. (UNIT I,II)

2. John M. Senior , "Optical Fiber Communication", Second Edition, Pearson Education, 2007.(UNIT III,IV, V)

REFERENCE BOOK:

1.Keiser G, "Optical Fiber Communication Systems", 5th Edition, 6th Reprint, McGraw Hill Education (India), 2015.

M.Sc. (Electronics and Communication Systems)Degree Examination – Syllabus for candidates admitted from the Academic year 2019-2020 onwards

FIRST SEMESTER

PRACTICAL I – POWER ELECTRONICS PRACTICAL

Maximum CIA: 40
Maximum CE: 60
Total Hours: 60

Objective: Imparting circuit designing skills with   Power electronics circuits.

[ANY 12EXPERIMENTS]

1. Thyristor commutation techniques.

2. Rectifier circuit using SCR.

3. R, R-C and UJT triggering circuits.

4. Fan Regulator / Light Dimmer using TRIAC.

5. Single Phase half controlled Bridge rectifier.

6. Single Phase fully controlled converter.

7. Single phase AC voltage control using TRIAC.

8. Single Phase Parallel Inverter.

9. Single Phase cyclo converter.

10. Series Inverter.

11. DC Jones chopper.

12. Voltage commutated Chopper.

13. Speed control of Induction motor.

14. Speed control of DC motor using SCR.

15. Speed control of universal motor.

M.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the Academic year 2019 – 2020 onwards
FIRST SEMESTER

PRACTICAL II- ELECTRONIC COMMUNICATION PRACTICAL

Maximum CIA: 40
Maximum CE: 60
Total Hours: 60

Objective: Enable the students to impart circuit designing skills in Electronic communications.

[ANY 12EXPERIMENTS]

1. AM Modulation and detection.

2. FM Modulation and detection.

3. ASK Modulation.

4. FSK Modulation.

5. PAM Modulation.

6. PWM Modulation.

7. PPM Modulation.

8. PCM Modulation.

9. Study of Fiber optics communications.

10. Alignment of Satellite Receiver.

11. Audio Amplifier using TBA 810.

12. Study the functioning of Set of box.

13. Study of AM & FM Radio Receiver.

14. Study of DTH Receiver.

15. IR Transmitter & Receiver.

M.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards
SECOND SEMESTER
PAPER V: PIC MICROCONTROLLER

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Objective: Enable the students to learn the concepts of PIC Microcontroller and its applications.

UNIT- I: ARCHITECTURE AND PORTS   (12 Hours)
        Device overview – Architecture – Memory organization – Data EEPROM- Status register – Option register — PCON register – I/O ports.

UNIT- II: INSTRUCTION SET, TIMERS AND CCP MODULES   (12 Hours)

        Instruction set: Byte oriented operations – Bit oriented operations – Literal and Control operations - TIMER0 Module – TIMER1 Module – TIMER2 Module – Watch Dog Timer (WDT)- Capture/Compare/PWM(CCP) Modules.

UNIT- III: SERIAL TRANSMISSION ADC AND COMPARATOR MODULE   (12 Hours)

        MSSP module: Master-slave-I2C transmission and Reception – USART – ADC Module – comparator module .

UNIT- IV: INTERRUPTS AND SPECIAL FEATURES OF CPU   (12 Hours)

        Interrupts – INTCON register – PIE,-PIR-Special features of the CPU : oscillator selection – Power On Reset (POR)– Power up Timer – Oscillator start up timer – Brown Out Reset(BOR) – SLEEP.

UNIT- V: REAL WORLD APPICATIONS   (12 Hours)
        Stepper motor interface -Relay interface - Seven segment display interface- ADC Interface –DAC Interface- DC motor –PWM.

Course outcomes:

- Understand the PIC microcontroller architecture.
- Understand and apply the instructions in PIC microcontroller, Timer and CCP modules.
- Understand the concept of serial communication techniques with PIC microcontroller.
- Analyze the interrupts and functions in PIC microcontroller.
- Able to design and apply the PIC microcontroller applications.

TEXT BOOK :

1. PIC 16F87X data book, Microchip Technology Inc., 2001

REFERENCE BOOK:

1. Ajay V Deshmukh "Microcontrollers Theory And Applications", McGraw Hill Education India Pvt Ltd ,2011.

M.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards
SECOND SEMESTER
PAPER VI: VLSI DESIGN

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective:

Enable the students to understand the C MOS circuits concepts, system design ASIC constructions and Applications.

UNIT- I : MOS TRANSISTOR THEORY   (12 Hours)

The MOS transistor-Current Voltage Relations-Threshold Voltage-Second order effects-Capacitances in MOSFET - Scaling of MOS circuits -Review of CMOS - DC characteristics - Dynamic behavior- Power consumption .

UNIT- II : COMBINATIONAL LOGIC DESIGN   (12 Hours)

nMOS depletion load and Static CMOS design - Determination of Pull-up and Pull-down ratio-Design of Logic gates- Sizing of transistors -Stick diagrams-Lay out diagram for static CMOS - Pass transistor logic - Dynamic CMOS design - Noise considerations - Domino logic, np CMOS logic - Power consumption in CMOS gates - Multiplexers - Transmission gates design.

UNIT -III: SEQUENTIAL LOGIC DESIGN   (12 Hours)

Introduction - Static sequential circuits- CMOS static flip-flop - Dynamic sequential circuits -Pseudo static latch-Dynamic two phase flip-flop - clocked CMOS logic - Pipelining - NORA CMOS logic -True single phase clocked logic - Realization of D-FF in TSPC logic-Mod 'n' counter design.

UNIT- IV : SUBSYSTEM DESIGN   (12 Hours)

Introduction-Designing Static and Dynamic Adder circuits - The Array Multiplier - Multiplier structures-Baugh-Wooly - Booth Multiplier - Barrel shifter - Memory structures - SRAM and DRAM design - Design approach of Programmable logic devices - PLA,PAL and FPGA.

UNIT- V: ASIC CONSTRUCTION   (12 Hours)

Physical design - Goals and Objectives - Partitioning methods - Kernighan Lin algorithm - Hierarchical Floor planning - Floor planning tools -input, output and power planning -Min-cut placement, Force directed placement algorithm -Placement using simulated annealing - Greedy channel routing.

Course Outcomes:

- Understand the basic CMOS circuits and technology.
- Understand and apply the techniques for chip design using programmable devices.
- Understand and apply the sequential logic design.
- Analyze the sub systems design.
- Apply and analyze the digital system using Hardware Description Language.

TEXT BOOK:

1. E.Fabricious, "Introduction to VLSI design", Mc Graw Hill Limited, 1990.

REFERENCE BOOK:

1. Wayne Wolf,"Modern VLSI design '2nd Edition, Pearson education. 2003

M.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the Academic year 2019-2020 onwards

SECOND SEMESTER

PRACTICAL III – EMBEDDED SYSTEMS PRACTICAL

Maximum CIA: 40
Maximum CE: 60
Total Hours: 60

Objective: Imparting programming skills in Embedded Systems Using PIC Microcontroller.

[ANY 12EXPERIMENTS]

1. Arithmetic and Logical Operations.
2. Timer/Counter Operation.
3. Real Time Clock.
4. Serial Port Interfacing Using RS232C.
5. PIC To PIC Communication Using I2 C Bus.
6. Traffic Light Control System.
7. DC Motor Driving Via H Bridge.
8. Temperature Measurement.
9. ADC Interface.
10. DAC Interface.
11. Stepper Motor Interface.
12. Interfacing of Solid State Relay.
13. Interfacing of a Single Seven Segment Display.
14. PWM Generation.
15. LCD Interfacing.

M.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the Academic year 2019 – 2020 onwards
SECOND SEMESTER

PRACTICAL IV- VLSI DESIGN PRACTICAL

Maximum CIA: 40
Maximum CE: 60
Total Hours: 60

Objective: Imparting programming skills in VHDL Language.

[ANY 12 EXPERIMENTS]

1. Implementation of Sample Programs in CPLD or FPGA Kit.

2. Simulation of Simple Logic Gates .

3. Simulation of Half Adder and Full Adder.

4. Simulation of Half Subtractor and Full Subtractor.

5. Simulation of Encoder and Decoder.

6. Simulation of Multiplexer and Demultiplexer.

7. Develop a VHDL Program to Solve the Boolean Equations.

8. Simulation of Flip – Flops.

9. Simulation of Mod "n" Counters.

10. Simulation of Shift Registers and Ring Counter.

11. Simulation of 4 Bit and 8- Bit Multiplier.

12. Simulation of Arithmetic and Logic Unit.

13. Simulation of Up-Down Counters.

14. Simulation of Programmable Logic Array.

15. Simulation of State Machine Moore Model.

M.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards
SECOND SEMESTER
ELECTIVE I : SIGNALS AND SYSTEMS

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective: To understand the basic properties of signal & systems and the various methods of classifications.

UNIT- I : CLASSIFICATION OF SIGNALS AND SYSTEMS   (12 HOURS)

Continuous time signals (CT signals) - Discrete time signals (DT signals) - Step, Ramp, Pulse, Impulse, Sinusoidal, Exponential, Classification of CT and DT signals - Periodic & Aperiodic signals, Deterministic & Random signals, Energy & Power signals - CT systems and DT systemsClassification of systems – Static & Dynamic, Linear & Nonlinear, Time-variant & Time-invariant, Causal & Noncausal, Stable & Unstable.

UNIT- II: ANALYSIS OF CONTINUOUS TIME SIGNALS   (12 HOURS)

Fourier series analysis-spectrum of Continuous Time (CT) signals- Fourier and Laplace Transforms in CT Signal Analysis - Properties.

UNIT- III :LINEAR TIME INVARIANT- CONTINUOUS TIME SYSTEMS   (12 HOURS)

Differential Equation-Block diagram representation-impulse response, convolution integrals-Fourier and Laplace transforms in Analysis of CT systems

UNIT -IV: ANALYSIS OF DISCRETE TIME SIGNALS   (12 HOURS)

 Baseband Sampling - DTFT – Properties of DTFT - Z Transform – Properties of Z Transform

UNIT -V: LINEAR TIME INVARIANT-DISCRETE TIME SYSTEMS   (12 HOURS)

Difference Equations-Block diagram representation-Impulse response - Convolution sum- Discrete Fourier and Z Transform Analysis of Recursive & Non-Recursive systems .

Course Outcomes:

- Analyze the properties of signals and systems.
- Apply Laplace transform, Fourier transform, Z transform and DTFT in signal analysis.
- Apply and analyze continuous time LTI systems using Fourier and Laplace Transforms.
- Apply and analyze discrete time LTI systems using Z transform and DTFT.
- Analyze the LTI systems in the Time domain and various Transform domains.

TEXT BOOK:

1. Allen V.Oppenheim, S. Wilsky and S.H.Nawab, "Signals and Systems ",Pearson edition, 2007.

REFERENCE BOOKS:

1.B. P. Lathi, "Principles of Linear Systems and Signals", Second Edition, Oxford, 2009.

2. R.E.Zeimer, W.H.Tranter and R.D.Fannin, "Signals & Systems – Continuous and Discrete", Pearson, 2007.

M.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards
SECOND SEMESTER
ELECTIVE I: AD HOC AND WIRELESS SENSOR NETWORKS

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective:

Enable the students to   learn the Ad hoc network and Sensor Network fundamentals.

UNIT- I   (12 Hours)

AD HOC NETWORKS – INTRODUCTION AND ROUTING PROTOCOLS

Elements of Ad hoc Wireless Networks, Issues in Ad hoc wireless networks, Example commercial applications of Ad hoc networking, Ad hoc wireless Internet, Issues in Designing a Routing Protocol for Ad Hoc Wireless Networks, Classifications of Routing Protocols, Table Driven Routing Protocols - Destination Sequenced Distance Vector (DSDV), On–Demand Routing protocols –Ad hoc On–Demand Distance Vector Routing (AODV).

UNIT- II   (12 Hours)

SENSOR NETWORKS – INTRODUCTION & ARCHITECTURES

Challenges for Wireless Sensor Networks, Enabling Technologies for Wireless Sensor Networks, WSN application examples, Single-Node Architecture - Hardware Components, Energy Consumption of Sensor Nodes, Network Architecture - Sensor Network Scenarios, Transceiver Design Considerations, Optimization Goals and Figures of Merit.

UNIT- III   (12 Hours)

WSN NETWORKING CONCEPTS AND PROTOCOLS

MAC Protocols for Wireless Sensor Networks, Low Duty Cycle Protocols And Wakeup Concepts - S-MAC, The Mediation Device Protocol, Contention based protocols - PAMAS, Schedule based protocols – LEACH, IEEE 802.15.4 MAC protocol, Routing Protocols Energy Efficient Routing, Challenges and Issues in Transport layer protocol.

UNIT- IV   (12 Hours)

SENSOR NETWORK SECURITY

Network Security Requirements, Issues and Challenges in Security Provisioning, Network Security Attacks, Layer wise attacks in wireless sensor networks, possible solutions for jamming, tampering, black hole attack, flooding attack. Key Distribution and Management, Secure Routing – SPINS, reliability requirements in sensor networks.

UNIT- V   (12 Hours)

SENSOR NETWORK PLATFORMS AND TOOLS

Sensor Node Hardware – Berkeley Motes, Programming Challenges, Node-level software platforms – TinyOS, nesC, CONTIKIOS, Node-level Simulators – NS2 and its extension to sensor networks, COOJA, TOSSIM, Programming beyond individual nodes – State centric programming.

Course Outcomes:

- Understand the basics of Ad hoc networks and Wireless Sensor Networks.
- Apply and identify the suitable routing algorithm based on the network and user requirements.
- Apply the knowledge to identify appropriate physical and MAC layer protocols.
- Understand the transport layer and security issues possible in Ad hoc and sensor networks.
- Understand and apply the OS used in Wireless Sensor Networks and build basic modules.

TEXT BOOK:

1. C. Siva Ram Murthy, and B. S. Manoj, "Ad Hoc Wireless Networks: Architectures and Protocols ", Prentice Hall Professional Technical Reference, 2008.

REFERENCE BOOKS :

1. Carlos De Morais Cordeiro, Dharma Prakash Agrawal "Ad Hoc & Sensor Networks: Theory and Applications", World Scientific Publishing Company, 2006.

2. Feng Zhao and Leonides Guibas, "Wireless Sensor Networks", Elsevier Publication - 2002.

M.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards
SECOND SEMESTER
ELECTIVE I : TRANSMISSION LINES AND RF SYSTEMS

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective: Enable the students to learn the various types of transmission lines and its characteristics.

UNIT- I : TRANSMISSION LINE THEORY   (12 Hours)

General theory of Transmission lines - the transmission line - general solution - The infinite line - Wavelength, velocity of propagation - Waveform distortion - the distortion-less line - Loading and different methods of loading - Line not terminated in Z0 - Reflection coefficient - calculation of current, voltage, power delivered and efficiency of transmission - Input and transfer impedance - Open and short circuited lines - reflection factor and reflection loss.

UNIT- II: HIGH FREQUENCY TRANSMISSION LINES   (12 Hours)

Transmission line equations at radio frequencies - Line of Zero dissipation - Voltage and current on the dissipation-less line, Standing Waves, Nodes, Standing Wave Ratio - Input impedance of the dissipation-less line - Open and short circuited lines - Power and impedance measurement on lines - Reflection losses - Measurement of VSWR and wavelength.

UNIT -III: IMPEDANCE MATCHING IN HIGH FREQUENCY LINES   (12 Hours)

Impedance matching: Quarter wave transformer - Impedance matching by stubs - Single stub and double stub matching - Smith chart - Solutions of problems using Smith chart - Single and double stub matching using Smith chart.

UNIT- IV :WAVEGUIDES   (12 Hours)

General Wave behavior along uniform guiding structures – Transverse Electromagnetic Waves, Transverse Magnetic Waves, Transverse Electric Waves – TM and TE Waves between parallel plates. Field Equations in rectangular waveguides, TM and TE waves in rectangular waveguides, Bessel Functions, TM and TE waves in Circular waveguides.

UNIT- V: RF SYSTEM DESIGN CONCEPTS   (12 Hours)

Active RF components: Semiconductor basics in RF, bipolar junction transistors, RF field effect transistors, High electron mobility transistors Basic concepts of RF design, Mixers, Low noise amplifiers, voltage control oscillators, Power amplifiers, transducer power gain and stability considerations.

Course Outcomes:

- Understand the characteristics of transmission lines and its losses.
- Understand and Apply the standing wave ratio and input impedance in high frequency transmission lines.
- Analyze impedance matching by stubs using smith charts.
- Analyze the characteristics of TE and TM waves.
- Able to design and evaluate a RF transceiver system for wireless communication.

TEXT BOOKS:

1. John D Ryder, ―Networks, lines and fields, 2nd Edition, Prentice Hall India, 2015. (UNIT II- IV)

2. Mathew M. Radmanesh, ―Radio Frequency &Microwave Electronics, Pearson Education Asia, Second Edition,2002. (UNIT I, V)

REFERENCE BOOKS:

1. Reinhold Ludwig and Powel Bretchko, RF Circuit Design – Theory and Applications, Pearson Education Asia, First Edition,2001.

2. D. K. Misra, ―Radio Frequency and Microwave Communication Circuits- Analysis and Design, John Wiley & Sons, 2004.

M.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards
SECOND SEMESTER
IDC1 : CRYPTOGRAPHY AND NETWORK SECURITY

Maximum CIA:30
Maximum CE:70
Total Hours: 36

Course Objective: Enable the students to learn the various types of transmission lines and its characteristics.

UNIT-I   (7 Hours)

 CONVENTIONAL AND MODERN ENCRYPTION & BLOCK CIPHERS

        Security Services Mechanisms and Attacks- Network Security Model, Classical Encryption Techniques, Steganography - Data Encryption Standard (DES), Overview of Advanced Encryption Standard (AES) - Block cipher modes operation - Characteristics of advanced symmetric Block ciphers, Key Distribution.

UNIT – II   (8 Hours)

PUBLIC KEY ENCRYPTION AND HASH & MAC ALGORITHMS

        Number Theory, Modular arithmetic, Multiplicative Inverse, Extended Euclidean algorithm, Fermet's and Euler's theorem -Principle of Public key Cryptosystems - RSA algorithm - Hellmen Key Exchange -Message Authentication and Hash Functions, Hash and MAC Algorithms.

UNIT-III   (7Hours)

AUTHENTICATION PROTOCOLS AND EMAIL SECURITY

        Kerberos version 4 and 5 – X .509 Directory Service- X.509 Public Key Certificate format - Pretty Good Privacy - Secure Multipurpose Internet Mail extension.

UNIT-IV   (7 Hours)

IP SECURITY AND WEB SECURITY

      IP Security Overview- IP Security Architecture- Authentication Header- Encapsulating Security Payload- Security Associations -IP security Key Management- Web Security Requirements- Secure Sockets Layer- Transport Layer Security - Secure Electronic Transaction.

UNIT-V   (7 Hours)

SYSTEM SECURITY

      Intruders- Intrusion Detection- Password management - Malicious software - Viruses and counter measures- Firewall Types and Configurations -Trusted System .

Course Outcomes:

- Understand the various methods of Encryption and Authentication.
- Understand and apply the concepts of Number theory, Key generation standards and Digital Signature algorithm.
- Understand and develop Authentication Protocols for Email Security.
- Evaluate the performance of internet security and application specific security Protocols and standards.
- Analyze the concepts of Intrusion and filtering analysis.

TEXT BOOKS:

1. William Stallings, "Cryptography and Network Security", Pearson Education, 6th Edition, New Delhi, 2014.

2. Forouzan.B.A. and Mukhopadhyay.D, "Cryptography and Network Security", Tata McGraw Hill, 2nd Edition, 2012.

 3. William Stallings, "Cryptography and Network Security", PHI, New Delhi, 2nd Edition, 1999.

REFERENCE BOOK:

1.Atul kahate, "Cryptography & network security" ,Tata Mc-Graw hill, 3rd Edition, 2003.

M.Sc (Computer Science) Degree Examination- Syllabus for the candidates admitted from the academic year 2018- 2019 onwards

SECOND SEMESTER

IDC1 : 8085 MICROPROCESSOR AND ITS INTERFACING

Maximum CIA : 30
Maximum CE: 70
Total Hours : 36

Course Objective:

Enable the students to acquire the knowledge in basics of Microprocessor based system design and to develop the programming skills in 8085 microprocessor.

UNIT -I   (8 Hours)

INTRODUCTION TO 8085 MICROPROCESSOR   AND ITS ARCHITECUTRE
        Introduction - 8085 Microprocessor Architecture: Functional Block diagram of 8085 Microprocessor- Buses- Registers- Flags. Fetch, Decode and Execute operations- Op-code fetch cycle- Execute cycle- T State- Machine Cycle.

UNIT -II   (8Hours)

8085 INSTRUCTION SET AND ADDRESSING MODES
         Instruction and Data Formats - Addressing Modes: Direct – Register – Register Indirect – Immediate – Implicit Addressing – 8085 Instruction Set: Data transfer Instructions – Arithmetic Instructions – Logical Instructions – Branch Instructions - Stack - I/O and Machine control Instructions – Simple Illustrative Programs.

UNIT- III   (6 Hours)

8085 PROGRAMMING AND INTERRUPTS
        Looping, Counting and Indexing – Rotate and Compare Instructions – Counters and Time delay –Stack and Subroutines - Interrupts: Hardware and Software Interrupts .

UNIT- IV   (7 Hours)

8085 INTERFACING CONCEPTS AND PERIPHERAL DEVICES
        Device Selection data transfer : I/O mapped I/O – Memory mapped I/O – Input Interfacing – Interfacing I/P using Decoders - Interfacing O/P display : LED display – 7 segment LED display- Interfacing Memory – 8255 A Programmable Peripheral Interface(PPI) .

UNIT -V   (7 Hours)

8085 REAL WORLD APPLICATIONS

Temperature monitoring system - Seven segment LED display - ADC interface – DAC Interface - Stepper motor control Interface- Keyboard Interface .

Course Outcomes:

- Understand the Architecture of 8085 Microprocessor.
- Understand and apply the instructions concept of 8085 microprocessor.
- Understand and develop 8085 programming.
- Evaluate the performance of interfacing concepts in the microprocessor.
- Apply the microprocessor concepts in real world applications.

TEXT BOOK:

1. Ramesh.S. Gaonkar "Microprocessor Architecture Programming and Applications with the 8085 / 8080A" 6th Edition, New Age International (P) Ltd, 2013.

REFERENCE BOOKS:

1. Aditya P Mathur "Introduction to Microprocessors " 3rd Edition, Tata Mc Graw hill, 2002.

2. S. Malarvizhi " Microprocessor and Its Applications " 2nd Edition, Anuradha Agencies and Publications, 2006.

M.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the Academic year 2019-2020 onwards

THIRD SEMESTER
PAPER VII- DISCRETE TIME SYSTEMS AND SIGNAL PROCESSING

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:

Enable the students to acquire the knowledge on discrete time signals and systems.

Unit- I

REVIEW OF DISCRETE TIME SIGNALS AND SYSTEMS   (12 Hours)

Overview of signals and systems – DFT–FFT using DIT and DIF algorithms – Inverse DFT-FFT using DIT and DIF algorithms – Applications – Circular convolution – MATLAB programs for DFT and FFT.

Unit- II

DESIGN AND IMPLEMENTATION OF IIR FILTERS   (12 Hours)

Design of analog filters using Butterworth and Chebyshev approximations – IIR digital filter design from analog filter using impulse invariance technique and bilinear transformations – MATLAB programs for IIR filters.

 Unit- III

DESIGN AND IMPLEMENTATION OF FIR FILTERS   (12 Hours)

Linear phase response – Design techniques for FIR filters – Fourier series method of designing FIR Filters – Design of Linear phase FIR filters using windows: Rectangular, Hanning and Hamming windows – Matlab programs for FIR filters.

Unit- IV

FINITE WORD LENGTH EFFECTS IN DIGITAL FILTERS   (12 Hours)

Introduction - Fixed point representation – effect of quantization of the input data due to Finite word length – Product quantization error – Product round off– Zero input limit cycle oscillations - Overflow Limit cycle oscillations – Signal scaling.

Unit -V

PROCESSOR FUNDAMENTALS   (12 Hours)

Overview of DSP's –Memory architecture of a DSP processor : Von Neumann architecture – Harvard architecture – VLIW architecture – MAC– pipelining – Architecture of TMS320 family of DSPs (architecture of C5x) - Addressing modes.

Course Outcomes:

CO1: Understand the discrete time signals and systems.

CO2: Analyze and designing the IIR filters.

CO3: Analyze and designing the FIR filters.

CO4:Analysing and applying the finite word length effects on digital filters.

CO5:Analysing the DSP processor architecture.

CO/PO PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H					M		
CO2			M				M	
CO3		H					H	
CO4					M		M	
CO5				M				M

Text Books :

1. P .Ramesh Babu, "Digital Signal Processing" ,Scitech Publications (India) Pvt. Ltd, Sixth Edition, 2011.

2. John G. Proakis and Dimitris C. Manolakis, "Digital Signal Processing Principles, Algorithms and Applications", Pearson Education, Fourth edition, 2007.

Reference Books:

1. Venkataramani.B, Bhaskar.M, "Digital Signal Processors, Architecture, Programming and Application", Tata McGraw Hill, New Delhi, 2003.

2. Sanjit Mitra, "Digital Signal Processing – A Computer based approach", Tata McGraw Hill, New Delhi, 2011.

M.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the Academic year 2019-2020onwards
THIRD SEMESTER
PAPER VIII – ARM PROCESSOR AND ITS APPLICATIONS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: Enable the students to acquire the knowledge on ARM processor techniques and its peripherals.

Unit-I   (12 Hours)
S3C2440A ARM9 : Introduction - Features – Block Diagram –   Signal Descriptions – Programmers Model: Processor Operation States - Memory Format –operating modes-Registers - Thumb state register set –Arm state register set –Relationship between ARM and THUMB state registers-Program status registers- Exceptions .

Unit- II   (12 Hours)
INSTRUCTION SET AND MEMORY CONTROLLER: Introduction– ARM instruction set: Branch and Exchange-Branch and Branch with link-Data processing– Thumb instruction set: Move shifted register- add/Subtract-Immediate instructions- Nand Flash Controllers: Features – Boot Loader Function – Pin Configuration – Nand Flash Configuration Table –Nand flash memory timing–Data Register configuration-ECC module .

Unit- III   (12 Hours)
TIMERS AND PERIPHERALS : Introduction – Features – PWM Timer Operation – Watchdog Timer- Functional Description Of Clock And Power Management - I/O Port Control Description -DMA Operation – LCD Controller – STN LCK Controller Operation – ADC And Touch Screen Interface Operation.

Unit- IV   (12 Hours)
SERIAL DATA TRANSFER : Introduction To UART – Features – Block Diagram And Operation – MMC / SD/ SDIO Controller: Features – Block Diagram And SD Operation – IIC Bus Interface – Overview And Operation – SPI – Features, Block Diagram And Operation.

Unit- V   (12 Hours)
INTERFACING: Introduction To Camera Interface – Features – Block Diagram – Camera Interface Operation – AC97 Controller: – overview-AC97 controller Operation- operation –AC link digital interface protocol-AC97 power down- Overview of Embedded Linux and Microsoft WIN CE.

Course Outcomes:

CO1: Remember the architecture of processors and understand the architecture and features of ofARM9 processor.
CO2: Understand instructions set of ARM processor and also understand the functionalities of NAND flash controllers.
CO3:Analysing the operations of timers and peripherals such as LCD ADC and touch screen.

CO4:Analysing and applying the concept of serial data transfer using various modules present in ARM processor.
CO5:Analysing camera interface audio interface and applying their usage in real world .

CO/PO PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M					M		
CO2			M				M	
CO3		M					M	
CO4					M		M	
CO5				M				M

Text Book:
1. S3C2440A 32 Bit CMOS Microcontroller User Manual from Samsung

Reference Books:
1. Steve Furber, "ARM System-on-chip Architecture", Pearson Education, Second Edition, 2005.
2. B.Kanta Rao, "Embedded systems", PHI publishers, Eastern Economy Edition, 2011.

M.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards
THIRD SEMESTER
PAPER XIII - INDUSTRIAL DATA COMMUNICATION

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective: Enable the students to acquire the knowledge on Industrial data communication and its applications.

Unit- I   (12 Hours)
DATA NETWORK FUNDAMENTALS : Networks hierarchy and switching – Open System Interconnection model of ISO – Data link control protocol – Media access protocol – Command / response – Token passing – CSMA/CD, TCP/IP.

Unit -II   (12 Hours)
Internet Working and Rs 232, Rs485:Bridges – Routers – Gateways – Standard ETHERNET and ARCNET configuration special requirement for networks used for control – RS 232, RS 485 configuration Actuator Sensor (AS) -interface, Device net.

Unit- III   (12 Hours)
Hart and Field Bus: Introduction – Evolution of signal standard – HART communication protocol – HART networks -HART commands – HART applications-Field bus-Introduction-General Field bus architecture – Basic requirements of Field bus standard – Field bus topology – Interoperability -Interchangeability – Introduction to OLE for process control (OPC).

Unit- IV   (12 hours)
 MODBUS AND PROFIBUS PA/DP/FMS AND FF: MODBUS protocol structure – function codes – troubleshooting Profibus: Introduction – profi bus protocol stack – profi bus communication model – communication objects – system operation – troubleshooting – review of foundation field bus.

Unit- V   (12 Hours)
Industrial Ethernet and Wireless Communication: Industrial Ethernet, Introduction, 10 Mbps Ethernet, 100 Mbps Ethernet – Radio and wireless communication, Introduction, components of radio link – radio spectrum and frequency allocation – radio MODEMs-Introduction to wireless HART and ISA100.

Course Outcomes:

CO1: Understand the data network fundamentals.

CO2: Analysing the serial communication to the data network.

CO3:Analysing the HART protocol and its communication.

CO4:Analysing and applying the MOD bus and Profi bus protocol structures on communication.

CO5:Analysing the industrial Ethernet and wireless communication on industries.

CO/PO PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H					M		
CO2				M			M	
CO3		M					H	
CO4					M			M
CO5				M				M

Text Book:
    1. Steve Mackay, Edwin Wrijut, Deon Reynders, John Park, 'Practical Industrial Data networks Design, Installation and Troubleshooting', Newnes publication, Elsevier First edition, 2004.

Reference Book:
1. Theodore S. Rappaport, 'Wireless communication: Principles & Practice', 2nd Edition, 2001 Prentice Hall of India

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THIRD SEMESTER

PRACTICAL V: DSP PROGRAMMING USING MATLAB PRACTICAL

Maximum CIA: 40
Maximum CE: 60
Total Hours: 60

Course Objective: Imparting programming skills in signal processing and designing of discrete filters and its concepts.

[ANY 12 EXPERIMENTS]

1. Study of addressing Modes of DSP using simple examples

2. Performing Arithmetic operations.

3. DFT computations.

4. FFT Computations

5. Convolution of two discrete signals

6. Correlation of two discrete signals

7. Quantization noise

8. Waveform generation

9. Performing& Solving differential equations

10. Performing& Solving z-transform

11. Voice storing & Retrieval

12. FIR Filter design

13. IIR filter design

14. Generation of signals

15. Amplitude Modulation, FFT response and FFT Computations

Course Outcomes:

CO1: Understand the addressing modes of DSP.

CO2: Analysing the arithmetic operations of DSP.

CO3:Analysing the DFT and FFT computations.

CO4:Analysing the convolution and Correlations of discrete signals.

CO5:Analysing and designing of IIR and FIR filters.

CO/PO PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M					M		
CO2				M			M	
CO3		M					M	
CO4					M			H
CO5				M				M

M.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the Academic year 2019 – 2020 onwards
THIRD SEMESTER
PRACTICAL VI - ARM PROCESSOR PROGRAMMING PRACTICAL

Maximum CIA: 40
Maximum CE: 60
Total Hours: 60

Course Objective: Enable the students to impart programming skills in Arm processor.

[ANY 12EXPERIMENTS]

1. Interfacing Relay

2. Interfacing seven segment display

3. LED interfacing

4. Keyboard interface

5. DAC Interface

6. ADC Interface

7. LCD Interface

8. Stepper motor interface

9. Serial interface

10. Generation of PWM

11. Interfacing Real time clock

12. LCM Interfacing

13. Finger print interfacing

14. I2C interface

15. Study and Implementation of priority scheduling

Course Outcomes:

CO1: Remembering the concepts of LED ,Relay and keyboard and writing programs using Arm processor to interface these devices.

CO2:Understanding the concept of DAC and ADC used in ARM processor

CO3: Analysing serial communication and stepper motor interface through ARM processor.

CO4: Analysing CCP modules and configuring the module to generate PWM output .

CO5:Understanding and analysing the concepts of multitasking and priority scheduling .

CO/PO PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	L					H		
CO2			M			M		
CO3		M					M	
CO4			M				L	
CO5					M			M

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THIRD SEMESTER
ELECTIVE II- MATLAB PROGRAMMING

Maximum CIA: 30
Maximum CE:70
Total Hours: 60

Course Objective: Enable the students to learn the concepts of MATLAB for numerical computations, MATLAB programming and its applications.

Unit – I

INTRODUCTION   (12 Hours)

MATLAB environment – Help feature – Types of files – Platform – Search path – MATLAB commands – Constants, Variables and Expressions: Character set – Data types – Constants and Variables – Operators – Hierarchy of operations – Built-in functions – Assignment statement.

Unit – II

I/O STATEMENTS AND MATLAB GRAPHICS   (12 Hours)

Data input – Interactive inputs – Reading/Storing file data – Output commands – Low level input-output functions - MATLAB Graphics: Two dimensional plots – Multiple plots – Style options – Sub plots – Specialized two dimensional plots – Three dimensional plots.

Unit – III

CONTROL STRUCTURES AND MAT LAB PROGRAMMING   (12 Hours)

Loops – Branches control structures – MATLAB Programming: MATLAB Editor – MATLAB Programming – Function Subprograms – Types of functions – Function handling – Errors and warnings – MATLAB debugger.

Unit – IV

SIMULINK   (12 Hours)

Introduction – Starting Simulink – Simulink modeling – Solvers – Simulating a model – Using variables from MATLAB – Data import/export – State space modeling and simulation – Simulation of non-linear systems – obtaining state space model – Creating subsystems – Masked subsystems.

Unit – V

MATLAB APPLICATIONS IN DIGITAL SIGNAL PROCESSING   (12 Hours)

Introduction – Signals and Systems Classification – Operations on Discrete Time Signals – Multirate Signal processing functions –Convolution – Z- Transform –Discrete Time Fourier Transform –Discrete Fourier Transform - Fast Fourier Transform – Digital Filter Design.

Course Outcomes:

CO1: Remember the concepts of MATLAB with Matrix commands, variables and functions for computations.
CO2: To understand the concepts of I/O Statements and MATLAB graphics.

CO3: Analyze the various control structures for MATLAB programming.

CO4: Analyze the Simulink software model for MATLAB computations.

CO5: Apply the MATLAB concepts for Digital Signal Processing Applications.

CO/PO PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M					M		
CO2			L				M	
CO3		M						M
CO4		M					H	
CO5					H			M

Text Book :

1. Rajkumar Bansal, Ashok Kumar Goel, Manoj Kumar Sharma, "MATLAB and its Applications in Engineering", Pearson Education, 1st Edition, 2009.

Reference Book:
1. Matlab Manual from Mathworks.

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THIRD SEMESTER
ELECTIVE II- COGNITIVE RADIO

Maximum CIA: 30
Maximum CE:70
Total Hours: 60

Course Objective:
Enable the students to know the concepts of Cognitive radio architecture and its functions.

Unit- I   INTRODUCTION TO SOFTWARE DEFINED RADIO   (12 Hours)
Definitions and potential benefits- Software radio architecture evolution-Technology tradeoffs and architecture implications.

Unit –II   SDR ARCHITECTURE   (12 Hours)
Essential functions of the software radio- Basic SDR- Hardware architecture- Computational processing resources- Software architecture- Top level component interfaces- Interface topologies among plug and play modules.

Unit- III   INTRODUCTION TO COGNITIVE RADIOS   (12 Hours)
Marking radio self-aware- Cognitive techniques – Position awareness -Environment awareness in cognitive radio - Optimization of radio resources- Artificial Intelligence Techniques.

Unit- IV   COGNITIVE RADIO ARCHITECTURE   (12 Hours)
Cognitive Radio - functions, components and design rules- Cognition cycle - orient, plan, decide and act phases -Inference Hierarchy- Architecture maps -Building the Cognitive Radio Architecture on Software defined Radio Architecture.

Unit- V   NEXT GENERATION WIRELESS NETWORKS   (12 Hours)
The XG Network architecture-Spectrum sensing- Spectrum management- Spectrum mobility- Spectrum sharing- Upper layer issues- Cross – layer design.

Course Outcomes:

CO1: Understand the architecture of software defined radios.

CO2: To understand the functions of software defined radio functions.

CO3: Analyze the various techniques on Cognitive radio.

CO4: Analyze the architecture of Cognitive radio.

CO5: Analyze the next generation wireless networks.

CO/PO PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M					M		
CO2			M				M	
CO3		M						L
CO4		H					H	
CO5					H			M

Text Books:
1. Joseph Mitola III,"Software Radio Architecture: Object-Oriented Approaches to Wireless System Engineering", John Wiley & Sons Ltd. 2000.

2. Thomas W.Rondeau, Charles W. Bostain, "Artificial Intelligence in Wireless communication", ARTECH HOUSE .2009.

Reference Books:
1. Simon Haykin, "Cognitive Radio: Brain –Empowered Wireless Communications", IEEE Journal on selected areas in communications, Feb 2005.
2. Hasari Celebi, Huseyin Arslan, "Enabling Location and Environment Awareness in Cognitive Radios", Elsevier Computer Communications , Jan 2008.

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THIRD SEMESTER
ELECTIVE II- ADVANCED DIGITAL IMAGE PROCESSING

Maximum CIA: 30
Maximum CE:70
Total Hours: 60

Course Objective:
Enable the students to know the concepts of Digital image processing techniques and image visualization.

Unit- I   FUNDAMENTALS OF DIGITAL IMAGE PROCESSING   (12 Hours)
Elements of visual perception- Brightness- Contrast-hue- Saturation- Mach band effect- 2D image transforms- Image enhancement in spatial and frequency domain- Review of morphological image processing.

Unit- II   SEGMENTATION   (12 Hours)
Edge detection- Thresholding- Region growing- Fuzzy clustering- Watershed algorithm- Active contour methods- Texture feature based segmentation-Model based segmentation- Atlas based segmentation.

Unit- III   FEATURE EXTRACTION   (12 Hours)
First and second order edge detection operators- Phase congruency- Localized feature extraction- Detecting image curvature- Shape features Hough transform- Shape skeletonization- Boundary descriptors- Moments- Texture descriptors- Autocorrelation-Co-occurrence features.

Unit- IV   REGISTRATION AND IMAGE FUSION   (12 Hours)
Registration- Preprocessing-Feature selection-points- Lines- Regions and Templates Feature correspondence-Point pattern matching- Line matching- Region matching- Template matching Resampling-Nearest Neighbour and Cubic Splines Image Fusion-Overview of image fusion-Pixel fusion.

Unit- V   3D IMAGE VISUALIZATION   (12 Hours)
Sources of 3D Data sets- Slicing the Data set- Arbitrary section planes- The use of color-Volumetric display- Stereo Viewing- Ray tracing, Reflection- Surfaces- Multiply connected Surfaces- Image processing in 3D.

Course Outcomes:

CO1: To understand the image fundamentals and mathematical transforms necessary for image Processing.

CO2: To understand the image segmentation and representation techniques.

CO3: Analyze the feature extraction techniques on images.

CO4: Analyze the image fusion techniques.

CO5: To analyze the constraints in image processing when dealing with 3D data.

CO/PO PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H					M		
CO2			M				M	
CO3		M				L		
CO4		L					M	
CO5					H			M

Text Books:
1. John C.Russ, "The Image Processing Handbook", CRC Press,2007.
2. Mark Nixon, Alberto Aguado, "Feature Extraction and Image Processing", Academic Press, 2008.
3. Ardeshir Goshtasby, " 2D and 3D Image registration for Medical, Remote Sensing and Industrial Applications",John Wiley and Sons,2005.

Reference Books:
1. Rafael C. Gonzalez, Richard E. Woods, , Digital Image Processing', Pearson,Education, Inc., Second Edition, 2004.
2. Anil K. Jain, , Fundamentals of Digital Image Processing', Pearson Education,Inc., 2002.
3. Rick S.Blum,Zheng Liu," Multisensor image fusion and its Applications",Taylor& Francis,2006.

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THIRD SEMESTER
EDC 1 - IoT AND ITS APPLICATIONS

Maximum CE:50
Total Hours: 24

Course Objective:
　　To gain the basic knowledge about IoT and understanding of IoT applications areas and technologies involved.

Unit -I:　　　　　　　　　　　　　　　　　　　　　　　　　　　　(4 Hours)
Introduction to Internet of Things: Introduction - Definition - Characteristics of IoT - Physical Design of IoT - Logical Design of IoT - IoT Enabling Technologies.

Unit -II:　　　　　　　　　　　　　　　　　　　　　　　　　　　　(4 Hours)
Domain Specific IoTs: Home Automation - Cities - Environment - Energy - Retail - Logistics - Agriculture – Industry- Health & Lifestyle- SDN and NFV for IoT.

Unit- III:　　　　　　　　　　　　　　　　　　　　　　　　　　　　(5 Hours)
IoT System Management with NETCONF-YANG: Need for IoT Systems Management - Simple Network Management Protocol (SNMP) - Network Operator Requirements - NETCONF - YANG - IoT Systems Management with NETCONF-YANG.

Unit- IV:　　　　　　　　　　　　　　　　　　　　　　　　　　　　(6 Hours)
IoT Physical Devices & Endpoints: What is an IoT Device - Exemplary Device: Raspberry Pi - About the Board - Raspberry Pi Interfaces - Other IoT Devices?
IoT Physical Servers & Cloud Offerings: Introduction to Cloud Storage Models & Communication APIs - WAMP - AutoBahn for IoT - Xively Cloud for IoT.

Unit –V:　　　　　　　　　　　　　　　　　　　　　　　　　　　　(5 Hours)
Tools for IoT: Introduction - Chef - Chef Case Studies - Puppet - Puppet Case Study - Multi-tier Deployment - NETCONF-YANG- BOSCH Tools – Amazon – Google tools.

Course Outcomes:

CO1: To Remember the basic concepts of IoT.
CO2: To Understand the IoT Domain Specifics.
CO3: Understand the concepts of IoT Devices Management.
CO4: Analyze the embedded and cloud usages in IoT.
CO5: Apply the IoT tools in various applications.

Course Outcome	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	L					L		
CO2		M	M				M	
CO3	M							L
CO4								
CO5		M			M			M

Text Book:
1. Vijay Madisetti and ArshdeepBahga, "Internet of Things (A Hands-on-Approach)", 1st Edition, VPT, 2014.

Reference Books:

1. Jan Holler, Vlasios Tsiatsis, Catherine Mulligan, Stefan Avesand, Stamatis Karnouskos, David Boyle, "From Machine-to-Machine to the Internet of Things: Introduction to a New Age of Intelligence", 1st Edition, Academic Press, 2014.
2. Francis daCosta, "Rethinking the Internet of Things: A Scalable Approach to Connecting Everything", 1st Edition, Apress Publications, 2013.
3. Peter Waher, "Learning Internet of Things", PACKT publishing, BIRMINGHAM – MUMBAI.
4. Bernd Scholz-Reiter, Florian Michahelles, "Architecting the Internet of Things", ISBN 978-3-642-19156-5 e-ISBN 978-3-642-19157-2, Springer.
5. Daniel Minoli, "Building the Internet of Things with IPv6 and MIPv6: The Evolving World of M2M Communications", ISBN: 978-1-118-47347-4, Willy Publications.
6. http://www.cse.wustl.edu/~jain/cse570-15/ftp/iot_prot/index.html.

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FOURTH SEMESTER
PAPER X – PLC AND DISTRIBUTED CONTROL SYSTEM

Maximum CIA:30
Maximum CE:70
Total Hours: 60

Course Objective:

Enable the students to know the automation technologies such as PLCs, SCADA and DCS used in industries.

Unit- I   (12 Hours)
PLC & SCADA
PLC: Evolutions of PLCs – Programmable Controllers – Architecture, I/O modules – Comparative study of Industrial PLCs. SCADA: Remote terminal units- Master station – Communication architectures.

Unit- II   (12 Hours)
BASICS OF PLC PROGRAMMING(LADDER)
Basics of PLC programming – Ladder Logic – Relay type instructions – Timer/Counter instructions – Program control instructions – Data manipulation and math instructions – Programming Examples.

Unit- III   (12 Hours)
PLC PROGRAMMING (OTHER LANGUAGES): Functional block programming – Sequential function chart – Instruction list – Structured text programming – PLC controlled sequential Process Examples.

Unit-IV   (12 Hours)
 DISTRIBUTED CONTROL SYSTEM
DCS: Evolution & types – Hardware architecture – Field control station – Interfacing of conventional and smart field devices (HART and FF enabled) with DCS Controller – Communication modules – Operator and Engineering Human interface stations – Study of any one DCS available in market.

Unit- V   (12 Hours)
ADVANCED TOPICS IN AUTOMATION
Introduction to Networked Control systems – Plant wide control – Internet of things – Cloud based Automation – OLE for Process Control – Safety PLC – Case studies: PLC – SCADA – DCS.

Course Outcomes:

CO1: To understand the PLC and SCADA architecture.
CO2: To understand the PLC Programming.
CO3: Analyze the PLC Programming Languages.
CO4: Analyze the architecture of distributed control system.
CO5: To analyze and apply the advancement techniques in automation.

CO/PO PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H			H			M	
CO2			M				M	
CO3		M				L		
CO4		M					H	
CO5					H			M

Text Book:

1.F.D. Petruzella, Programmable Logic Controllers, Tata Mc-Graw Hill, Third edition, 2010

Reference Book:

1.Hughes, T.A., "Programmable Logic Controllers: Resources for Measurements and Control Series", 3rd Edition, ISA Press, 2004.

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FOURTH SEMESTER

ELECTIVE III - NANO TECHNOLOGY AND APPLICATIONS

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: Enable the students to acquire the knowledge on Nanostructures, Nano materials, Nano Electronics and Generic Methodologies for Nano Technology.

Unit- I   (12 Hours)
INTRODUCTION AND CLASSIFICATION : Classification of Nanostructures– Effects of The Nanometer Length Scale – Changes to the System Total Energy- Changes To The System Structures- Vacancies in Nano crystals- Dislocations in Nano crystals – Effect of Nano scale Dimensions on Various Properties – Structural, Thermal, Chemical, Mechanical, Magnetic, Optical and Electronic Properties.

Unit -II   (12 Hours)
NANO MATERIALS AND CHARACTERIZATION : Fabrication Methods – Top Down Processes – Milling, Litho graphics, Machining Process – Bottom-Up Process – Vapor Phase Deposition Methods, Plasma-Assisted Deposition Process- MBE And MOVPE- Liquid Phase Methods-Colloidal and Sol-gel Methods.

Unit- III   (12 Hours)
GENERIC METHODOLOGIES FOR NANOTECHNOLOGY: Characterization: General Classification of Characterization Methods – Analytical and Imaging Techniques – Microscopy Techniques - Electron Microscopy, Scanning Electron Microscopy, Transmission Electron Microscopy- STM- Field Ion Microscopy- Scanning Tunneling Microscopy- Atomic Force Microscopy.

Unit- IV   (12 Hours)
NANO ELECTRONICS AND INTEGRATED SYSTEMS: Basics of Nano electronics – Single Electron Transistor – Quantum Computation – Tools of Micro nanofabrication – Nanolithography – Quantum Electronic Devices – MEMS And NEMS – Dynamics of NEMS.

Unit- V   (12 Hours)
NANO DEVICES AND APPLICATIONS : Nano magnetic Materials – Particulate Nano magnets and Geometrical Nano magnets – Magneto Resistance – Probing Nano magnetic Materials – Nano magnetism in Technology – Carbon Nano tubes – Fabrication- Applications – Organic FET, Organic LED's – Injection Lasers, Quantum Cascade Lasers- Colulomb Blockade Devices.

Course Outcomes:

CO1: To understand the classification of nano structures.
CO2: To analyze the nano materials and its characterization.
CO3: Analyze the various microscopy techniques for nano technology.
CO4: Analyze the nano electronics.
CO5:Analyze the nano devices and applications.

CO/PO PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M			M				M
CO2			L				M	
CO3		M				M		
CO4		M					L	
CO5					H			M

Text Books:
1. Kelsall Robert W, Ian Hamley, Mark Geoghegan, Nanoscale Science and Technology, 2nd Edition,Wiley Eastern, 2004.
2. Michael Kohler, Wolfgang, Fritzsche, Nanotechnology: Introduction to Nanostructuring Techniques, 2004.
3. William Goddard, Donald W Brenner, Handbook of Nano Science Engineering and Technology, CRC Press, 2004.

Reference Books:
1. Bharat Bhushan, Springer Handbook of Nanotechnology, 2004.
2. Charles P Poole, Frank J Owens, Introduction to Nanotechnology, John Wiley and Sons, 2003.
3. Mark Ratner, Danial Ratner, Nanotechnology: A Gentle Introduction To The Next Big Idea, Pearson, 2003.
4. Gregory Timp, Nanotechnology, Springer-Verlag, 1999.

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FOURTH SEMESTER

ELECTIVE III - OPTO ELECTRONIC DEVICES

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: Enable the students to acquire the knowledge on Opto electronic devices.

Unit- I
ELEMENTS OF LIGHT AND SOLID STATE PHYSICS   (12 Hours)
Wave Nature of Light- Polarization- Interference- Diffraction- Light Source- Review of Quantum Mechanical Concept- Review Of Solid State Physics-Review of Semiconductor Physics and Semiconductor Junction Device.

Unit- II
DISPLAY DEVICES AND LASERS   (12 Hours)
Introduction- Photo Luminescence- Cathode Luminescence- Electro Luminescence- Injection Luminescence- Injection Luminescence- LED- Plasma Display- Liquid Crystal Displays- Numeric Displays- Laser Emission- Absorption- Radiation- Population Inversion- Optical Feedback- Threshold Condition- Laser Modes- Classes of Lasers- Mode Locking- Laser Applications.

Unit- III
OPTICAL DETECTION DEVICES   (12 Hours)
Photo Detector- Thermal Detector- Photo Devices- Photo Conductors- Photo Diodes- Detector Performance.

Unit -IV   OPTOELECTRONIC MODULATOR   (12 Hours)
Introduction- Analog and Digital Modulation- Electro-Optic Modulators- Magneto Optic Devices- Acoustoptic Devices- Optical, Switching and Logic Devices.

Unit- V   OPTOELECTRONIC INTEGRATED CIRCUITS   (12 Hours)
Introduction-Hybrid and Monolithic Integration- Applications of Opto Electronic Integrated Circuits- Integrated Transmitters and Receivers- Guided Wave Devices.

Course Outcomes:

CO1: Remember the concepts of Light waves and Solid state physics for Optical devices.
CO2: To understand the concepts display devices and LASER's and its applications.
CO3: Analyze the Photo devices performance for Opto electronics.
CO4: Analyze the various Opto electronic modulators.
CO5: Apply the Opto electronic integrated circuits for various applications.

CO/PO PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M					M		
CO2		M					M	
CO3			L					M
CO4				M			L	
CO5					M			M

Text Books:

1. Pallab Bhattacharya "Semiconductor Opto Electronic Devices", Prentice Hall Of India Pvt., Ltd., New Delhi, 2006.
2. Jasprit Singh, "Opto Electronics – As Introduction to Materials and Devices", Mc Graw-Hill International Edition, 1998

Reference Books:

1. S C Gupta, Opto Electronic Devices And Systems, Prentice Hal Of India, 2005.

2. J. Wilson And J.Haukes, "Opto Electronics – An Introduction", Prentice Hall, 1995

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FOURTH SEMESTER

ELECTIVE III – CMOS ANALOG IC DESIGN

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective: Enable the students to acquire the knowledge on CMOS analog IC design.

Unit- I   SAMPLE AND HOLD   (12 Hours)
Properties of MOS Switches-Multiplexed input architectures- Recycling architecture- open and closed loop sampling architectures- Switched capacitor and current mode architectures.
.
Unit- II   BUILDING BLOCK OF DATA CONVERSION CIRCUITS   (12 Hours)
Amplifiers- open loop and closed loop amplifiers- Gain boosting- Common mode feedback bipolar- CMOS and BiCMOS comparators.

Unit-III   PRECISION TECHNIQUES   (12 Hours)
Comparator cancellation-Input and output offset storage principles- Comparators using offset cancelled latches- Opamp offset cancellation- ADC and DAC calibration techniques.

Unit- IV   ADC/DAC ARCHITECTURES   (12 Hours)
DAC Performance metrics- Reference multiplication and division- Switching and logical functions of DACs- Current steering architectures- DAC Performance metrics- Flash ADC architecture- Gray encoding- Thermometer encoding and meta stability.

Unit- V   OVER SAMPLING CONVERTERS   (12 Hours)
Delta sigma modulators- Alternative modulator architectures- Quantization and noise shaping- Decimation filtering- Implementation of Delta sigma modulators- Delta sigma DACs.

Course Outcomes:

CO1: Understand the properties of MOS switches.

CO2: To understand the concepts data conversion circuits.

CO3: Analyze the Precision techniques on analog IC Design.

CO4: Analyze the various ADC/DAC architectures.

CO5: Analyze the sampling converters on analog IC design.

CO/PO PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	H					M		
CO2		M					M	
CO3				H				M
CO4			L				L	
CO5					M			M

Text Book:
1. B.Razavi "Data Conversion System Design" IEEE Press and John Wiley, 1995.

Reference Book:
1. Phillip Allen and Douglas Holmberg "CMOS Analog Circuit Design" Second Edition,100 Oxford University Press, 2004.

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SECOND SEMESTER

ALC- I: ELECTRONIC TEST INSTRUMENTS

Maximum CE: 100

Course Objective: Enable the students to acquire the knowledge on Electronic Test Instruments.

Unit- I   INTRODUCTION
Test process and automatic test equipment- Test economics and product quality- Fault modeling.

Unit- II   DIGITAL TESTING
Logic and fault simulation- Testability measures- Combinational and sequential circuit test generation.

Unit- III   ANALOG TESTING
Memory Test- DSP Based Analog and Mixed Signal Test- Model based analog and mixed signal test- Delay test- IIDQ test.

Unit-IV   DESIGN FOR TESTABILITY
Built-in self-test- Scan chain design- Random Logic BIST- Memory BIST- Boundary scan test standard- Analog test bus- Functional Microprocessor Test- Fault Dictionary- Diagnostic Tree- Testable System Design- Core Based Design and Test Wrapper Design- Test design for SOCs.

Unit- V   LOADED BOARD TESTING
Unpowered short circuit tests- Unpowered analog tests- Powered in-circuit analog-Digital and mixed signal tests- Optical and X-ray inspection procedures-Functional block level design of in-circuit test equipment.

Text Book**:**
1. Michael L. Bushnell and Vishwani D. Agarwal, "Essentials of Electronic Testing for Digital, Memory & Mixed-Signal VLSI Circuits", Springer, 2006.

Reference Book:
1. Dimitris Gizopouilos , "Advances in Electronic Testing" , Springer 2006.

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THIRD SEMESTER

ALC- II: RESEARCH METHODOLOGY

Maximum CE: 100

Course Objective: Enable the students to acquire the knowledge on Research Methodology.

Unit- I
Research Problem - Research problem Identification - Review of Literature - Research process - Research design –Experimental and non experimental designs- Exploratory – Diagnostic.

Unit- II
Sampling - Population –Census - Sample – Types – Probability – Non Probability sampling – Sampling size – Sampling process – Hypothesis and its formulation.

Unit- III
Data Collection Tools -Case studies - Interview – Questionnaire -Schedule - observation- Scaling techniques – Scale Construction – Rating scales.

Unit-IV
Hypothesis testing – Parametric and non parametric tests - Coding – Editing – Tabulation –Analysis – Interpretation.

Unit- V
Report Writing - Layout– Contents of Report-Style of the report - Steps in Report writing – Forms of Reports.

Reference Books:

1. B. Somekh & C. Lewin, (2005), Research methods in the social sciences, Vistaar Publications, New Delhi.

2. S. N. Hesse – Biber, (2007), Handbook of Feminist Research, Sage Publications, London

3. Crotty, M. (1998), The Foundation of Social Research: Meaning and Perspective in the Research Process, Sage Publications, London.

4. Blaikie, N. (2000), Beginning Social Research, Polity Press, Cambridge.

5. V. Desai & R. B. Potter, (2006), Doing Development Research, Sage Publications, New Delhi.

M.Sc. (Electronics and Communication Systems) Degree Examination – Syllabus for candidates admitted from the Academic year 2019-2020 onwards

FOURTH SEMESTER

ALC- III: APTITUDE FOR NET

Maximum CE: 100

Course Objective: Enable the students to acquire the knowledge on aptitude for NET.

Unit-I TEACHING APTITUDE

- Teaching: Concept, Objectives, Levels of teaching (Memory, Understanding, and Reflective), Characteristics, and basic requirements.
- Learner's characteristics: Characteristics of adolescent and adult learners (Academic, Social, Emotional and Cognitive), Individual differences.
- Factors affecting teaching related to Teacher, Learner, Support material, Instructional facilities, Learning environment, and Institution.
- Methods of teaching in Institutions of higher learning: Teacher centered vs. Learner-centered methods; Off-line vs. On-line methods (Swayam, Swayamprabha, MOOCs, etc.).
- Teaching Support System: Traditional, Modern, and ICT based.
- Evaluation Systems: Elements and Types of evaluation, Evaluation in Choice Based Credit System in Higher education, Computer-based testing, Innovations in evaluation systems.

Unit-II   RESEARCH APTITUDE

- Research: Meaning, Types, and Characteristics, Positivism, and Postpositivistic approach to research.
- Methods of Research: Experimental, Descriptive, Historical, Qualitative, and Quantitative Methods, Steps of Research.
- Thesis and Article writing: Format and styles of referencing, Application of ICT in research, Research ethics.

Unit-III   COMPREHENSION

- A passage of text is given. Questions are asked from the passage to be answered.

Unit-IV   COMMUNICATION

- Communication: Meaning, types, and characteristics of communication.
- Effective communication: Verbal and Non-verbal, Inter-Cultural and group communications, Classroom communication, Barriers to effective communication, Mass-Media, and Society.

Unit-V MATHEMATICAL REASONING AND APTITUDE

- Types of reasoning: Number series, Letter series, Codes, and Relationships.
- Mathematical Aptitude: Fraction, Time & Distance, Ratio, Proportion and Percentage, Profit and Loss, Interest and Discounting, Averages, etc.

Unit-VI LOGICAL REASONING

- Understanding the structure of arguments: argument forms, the structure of categorical propositions, Mood and Figure, Formal and Informal fallacies, Uses of language, Connotations, and denotations of terms, Classical square of opposition, Evaluating and distinguishing deductive and inductive reasoning, Analogies.

- Venn diagram: Simple and multiple uses for establishing the validity of arguments.

- Structure and kinds of Anumana (inference), Vyapti (invariable relation), Hetvabhasas (fallacies of inference).•Indian Logic: Means of knowledge, Pramanas- Pratyaksha (Perception), Anumana (Inference), Upamana (Comparison), Shabda (Verbal testimony), Arthapatti (Implication) and Anupalabddhi (Non-apprehension).

Unit-VII DATA INTERPRETATION

- Sources, acquisition, and classification of Data.
- Quantitative and Qualitative Data.
- Graphical representation (Bar-chart, Histograms, Pie-chart, Table-chart, and Line-chart)
- Mapping of Data, Data Interpretation. Data and Governance.

Unit-VIII INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

- ICT: General abbreviations and terminology, Basics of the Internet, Intranet, E-mail, Audio and Video-conferencing, Digital initiatives in higher education. ICT and Governance.

Unit-IX PEOPLE, DEVELOPMENT AND ENVIRONMENT

- Development and Environment: Millennium Development and Sustainable Development Goals.
- Human and environment interaction: Anthropogenic activities and their impacts on the environment.
- Environmental issues: Local, Regional and Global; Air pollution, Water pollution, Soil pollution, Noise pollution, Waste (solid, liquid, biomedical, hazardous, electronic), Climate change, and its Socio-Economic and Political dimensions. Impacts of pollutants on human health.
- Natural and energy resources: Solar, Wind, Soil, Hydro, Geothermal, Biomass, Nuclear, and Forests.

- Natural hazards and disasters: Mitigation strategies, Environmental Protection Act (1986), National Action Plan on Climate Change, International agreements/efforts - Montreal Protocol, Rio Summit, Convention on Biodiversity, Kyoto Protocol, Paris Agreement, International Solar Alliance.

Unit-X HIGHER EDUCATION SYSTEM

- Institutions of higher learning and education in ancient India.
- Evolution of higher learning and research in Post Independence India.
- Oriental, Conventional, and Non-conventional learning programmes in India.
- Professional, Technical, and Skill-Based education.
- Value education and environmental education.
- Policies, Governance, and Administration.

Reference Books:

1. M. Gagan (Author), Sajit Kumar, Trueman's UGC NET/ SLET General Paper I, Danika Publishing Company.

2. Arihant Express, UGC NET/ JRF/ SLET General Paper-1 Teaching & Research Aptitude, Arihant Publication.

3.KVS Madaan, CBSE UGC NET/SET/JRF – Paper 1: Teaching and Research Aptitude, Pearson Education

Department of Mathematics
M.Sc Mathematics
Regulations for M.Sc Mathematics
(Effective from the academic year 2019-2020 onwards)

Introduction:

The department of Mathematics started the PG Programme in 2016.PG Programme is M.Sc Mathematics.

Objective:

With the knowledgeinMathematics the students are trained so as to farewell in SLET/NET and competitive examinations.

Eligibility: PG Programme

A pass in under graduate examination in Mathematics from any recognized Universities/Colleges.

Duration of PG Programme

The course shall extend over a period of two years comprising of four semesters, with two semesters per year. There shall not be less than ninety instructional days during each semester. Examination shall be conducted at the end of each semester for the respective subject.

Vision:

The Vision of our department is to develop and offer programmes in the mathematical sciences to enter new fields of specializations and also to make our students highly competitive in the job market. To create an environment that supports outstanding research. To gain overall development in academic and teaching domains.

Mission:

The mission of our department is to provide teaching and learning opportunities to improve analytical skills. Further to make them work in jobs that require a high degree of mathematical skills and to develop mathematical thinking.

Program Outcomes

PO1: Have the ability to pursue inter-departmental research.

PO2: Understand the importance of critical thinking, social interaction, effective citizenship, ethics, environment and sustainability.

PO3: Acquire a holistic professional carrier

PO4:To build the necessary competencies and creativity and prepare them to undertake entrepreneurship as a desirable and feasible career option.

PO5: Able to work effectively as a team member and leader in an ever changing professional environment.

Program Specification Outcomes

PSO1: Identify and analyze the real life problems using the principles of Mathematics and apply the Mathematical concepts in all the fields of learning including higher research.

PSO2: Able to crack competitive exam, lectureship and fellowship exams approved by UGC like CSIR-NET and SET.

PSO3: Develop the thinking capability that meets the specified needs with appropriate consideration to meet the needs of the society, work and communicate effectively in teams.

MATHEMATICS BOARD
SCHEME OF EXAMINATIONS (CBCS and OBE PATTERN)
Programme: M.Sc MATHEMATICS
For Candidates admitted during the Academic Year 2019-2020

Sub Code	Paper	Subject Title	Ins.Hrs/Week	Dur. Hrs.	CIA	CE	Total	Credit
					Examination			
SEMESTER I								
19MMA101	Paper 1	Algebra	6	3	30	70	100	4
19MMA102	Paper 2	Real Analysis	6	3	30	70	100	4
19MMA103	Paper 3	Ordinary Differential Equations	6	3	30	70	100	4
19MMA104	Paper 4	Numerical Methods	6	3	30	70	100	4
19MMA105	Paper 5	Number Theory	6	3	30	70	100	4
		Total	30				500	20
SEMESTER II								
19MMA201	Paper 6	Complex Analysis	6	3	30	70	100	4
19MMA202	Paper 7	Partial Differential Equations	6	3	30	70	100	4
19MMA203	Paper 8	Mechanics	5	3	30	70	100	4
19MMASB1/ 19MMASB2	SBC1	Operations Research/ Graph Theoretic Algorithms and applications	5	3	30	70	100	4
20MMAE01/ 19MMAE02/ 19MMAE03/	Elective I	R- Programming(Theory) / Magneto hydro Dynamics / Neural Networks	5	3	30	70	100	4
20MMAID1	IDC 1	R- Programming Lab	3	3	40	60	100	4
		Total	30				600	24
SEMESTER III								
19MMA301	Paper 8	Topology	6	3	30	70	100	4
19MMA302	Paper 9	Fluid Dynamics	6	3	30	70	100	4
19MMA303	Paper 10	Graph Theory	5	3	30	70	100	4
19MMA304	Paper 11	Mathematical Statistics	5	3	30	70	100	4
19MMAE04 / 19MMAE05/ 19MMAE06	Elective II	Differential Geometry/ Cryptography/ Automata Theory	6	3	30	70	100	4
19MMAED1	EDC 1	Web Designing#	2	3	-	50	50	2
		Total	30				550	22

		SEMESTER IV						
19MMA401	Paper 13	Mathematical Methods	6	3	30	70	100	4
19MMA402	Paper 14	Functional Analysis	6	3	30	70	100	4
19MMASB3/ 19MMASB4	SBC II	Latex(Theory)/ C++ Programming(Theory)	6	3	30	70	100	4
19MMAE07/ 19MMAE08/ 19MMAE09	Elective III	Fuzzy sets and Fuzzy logic/ Stochastic Differential Equation/ Non Linear Differential Equation	6	3	30	70	100	4
19MMAPR1	Project		6	3	100	150	250	8
		Total	30				650	24

# No continuous internal Assessment (CIA) only comprehensive
Examination(CE For Candidates)

List of Skill Based Courses

Sem	Code	Subject Title	Credits
SBC: I		
II	19MMASB1/ 19MMASB2	Operations Research / Graph Theoretic Algorithms and applications	4
SBC: II		
IV	19MMASB3/ 19MMASB4	Latex (Theory)/ C++ Programming (Theory)	4

List of Elective Courses

Sem	Code	Subject Title	Credits
Elective I		
II	19MMAE01	R- Programming(Theory)	4
II	19MMAE02	Magneto hydro Dynamics	4
II	19MMAE03	Neural Networks	4
Elective II		
III	19MMAE04	Differential Geometry	4
III	19MMAE05	Cryptography	4
III	19MMAE06	Automata Theory	4
Elective III		
IV	19MMAE07	Fuzzy sets and Fuzzy Logic	4
IV	19MMAE08	Stochastic Differential Equation	4
IV	19MAME09	Non Linear Differential Equation	4

List of Extra Disciplinary Courses

Sem	Code	Subject Title	Credits
II	19MMAED1	Web Designing	2

List of Additional Credit Courses

Sem	Code	Subject Title	Credits
II	19MMAAC1	Mathematical Modeling	2
III	19MMAAC2	Distribution Theory	2
IV	19MMAAC3	Probability Theory	2

Summary of the Programme

Part	No of Papers	Total Credits	Total Marks
III –Core	14	56	1400
III – IDC	1	4	100
III – Elective	3	12	300
III – EDC	1	2	50
III- Project	1	8	250
III-SBC	2	8	200
Total	29	90	2300

REGULATIONS FOR BOARD OF MATHEMATICS (FOR PG COURSES ONLY)

(Effective from the academic year 2019-2020 onwards)

1. Project and Viva Voce:

Each student in the PG final year shall compulsorily undergo Project Work in the 4th semester. Projects shall be done individually. Project Reviews shall be conducted thrice in which the progress of project work shall be strictly evaluated by respective Project Guides. Viva-Voce shall be conducted only in the presence of Industrialists or academicians. Out of the Total of 250 marks, 150 marks shall be allocated for CIA and 100 for CE VIVA VOCE.

2. Submission of Record Note Books for practical examinations

Candidates appearing for practical examinations shall submit bonafide Record Work for the concerned Practical Examinations. If not the candidate has to submit a bonafide certificate issued by the concerned subject in-charge duly signed by the Head of the Department in order to be permitted to take up the Practical Examination. The Candidate so permitted will not be eligible for the Record Work mark.

3.Distribution of Marks:

The following are the distribution of marks for Comprehensive Examinations and CIA for Theory, Practical and Project.

Part	Internal Assessment	External Assessment	Total Marks
III –Core	30	70	100
III – IDC	30	70	100
III – Elective	30	70	100
III – EDC	-	50	50
III- Project	150	100	250
III-SBC	30	70	100

4. Distribution of Internal Mark for Theory:

(No Passing Minimum for CIA)

S. No	CIA	Distribution of Marks
1.	Pre Model Examination	70
2.	Model Examination	70
3.	Seminar	30
4.	Attendance	10
Total		**180/6(Months)=30**

5.Breakup for Attendance:

S.NO	Attendance split up	Marks
1	65% to 74%	4
2	75% - 80%	6
3	81% - 90%	8
4	91% - 100%	10

6.Seminar Mark Split up:

S.NO	Seminar split up	Marks
1	Content	10
2	Flow of the presentation	10
3	Stage management and Body language	10
	Total	**30**

7. Internal Marks for Practical (Maximum 40)

MAXIMUM MARKS : 40		
S No	Internal Marks	Distribution of Marks
1	For Completion of the Practical List	20
1	Test –I	10
2	Test –II	10
Total		**40**

8. External Marks for Practical (Maximum 60)

MAXIMUM MARKS : 60		
S. No	Comprehensive Examination	Distribution of Marks
1	Record	10
2	Program – I 　　　Algorithm 　　　Coding 　　　Execution 　　　　　　　　TOTAL (25)	 5 10 10
3	Program – II 　　　Algorithm 　　　Coding 　　　Execution 　　　　　　　　TOTAL (25)	 5 10 10
	Total	60

9. Distribution of Mark for Project VIVA-VOCE:

S.No	CIA	Distribution of Marks
1	INTERNAL Review –I Review –II Documentation & Final Review	 40 40 70　Total (150)
2	EXTERNAL * Presentation Viva	 60 40　Total (100)
	Total	250

Marks to be awarded by both External and Internal Examiners.

10. Question Paper Pattern

Maximum Marks : 70 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×4=20)	Each question carries four marks	Internal choice
Section – C	(5×8=40)	Each question carries eight marks	Internal Choice
Maximum Marks : 50 / Time 2 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×3=15)	Each question carries three marks	Internal Choice
Section – C	(5×5=25)	Each question carries five marks	Internal Choice
Maximum Marks : 100 / Time 3 Hrs			
Section – A	(10×1=10)	Each question carries one mark	Ten Multiple Choice Questions
Section – B	(5×8=40)	Each question carries eight marks	Internal Choice
Section – C	(5×10=50)	Each question carries ten marks	Internal Choice

NOTE:

1.The questions should be numbered continuously running through the Sections A, B and C.
2.Questions should be evenly distributed among the unit in the syllabus in all the sections of the question paper.
3.While framing questions with internal choice the questions must be identified as (a) or (b).(e.g. 11. a or b). Further, the internal choice must be from the same unit.
4.The Controller of the Examinations shall arrange for the setting of question papers on the basis the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies.

11. Conduct of Practical Examinations:

Practical examinations shall be conducted with one internal examiner and one external examiner and the question paper for practical examination shall be set by both Internal and External examiners.

M.Sc. (Mathematics) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards

FIRST SEMESTER
PART – III : Paper 1 - ALGEBRA

Maximum CIA : 30
Maximum CE : 70
Total Hours : 72

Course Objective

This course enable the students to learn several advanced concepts in algebra such as study of Sylow's theorems, Euclidean rings, extension and finite fields , Galois theory and Linear Transformations

Unit-I   (14 Hours)
Group Theory: Another counting principle – Sylow's theorem – Direct product

Unit-II   (14 Hours)
Ring Theory: Euclidean rings – A particular Euclidean ring – Polynomial rings – Polynomials over the rational field.

Unit-III   (15 Hours)
Fields: Extension Fields – Roots of polynomials – More about roots.

Unit-IV   (14 Hours)
Fields: Elements of Galois theory – Finite Fields.

Unit-V   (15 Hours)
Linear Transformations: Canonical forms: Triangular form – Trace and Transpose – Hermitian, unitary and normal Transformations.

Course Outcome:
- Remember the groups, ring, homomorphism and automorphism of fields.
- Understand the concept of Euclidean ring, polynomial rings, factorization and ideal theory
- Apply Gauss lemma, Einstein criterion for irreducibility of polynomials over rational
- Analyze different fields, finite fields, extension of fields, Galois theory
- Evaluate Trace, Transpose and understand Hermitian, unitary and normal Transformations

Text Book
1. N.Herstein ,Topics in Algebra,John Wiley and Sons India(P),Ltd.., (II Edition), Reprint 2013, New Delhi.
   UNIT I: Chapter 2 - Sections 2.11 to 2.13.
   UNIT II   : Chapter 3 - Sections 3.7 to 3.10.
   UNIT III: Chapter 5 - Sections 5.1, 5.3 and 5.5.
   UNIT IV: Chapter 5 - Section 5.6.
   UNIT V: Chapter 6 - Sections: 6.4, 6.8 and 6.10. Chapter 7 - Section 7.1.

Reference Books
1. J.B.Fraleigh, A First Course in Abstract Algebra, 7th July 2002, NarosaPublishing House, New Delhi.
2. T.W.Hungerford, Algebra, 1990 ,Springer, New York.

M.Sc. (Mathematics) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards

FIRST SEMESTER
PART – III : Paper 2 - REAL ANALYSIS

Maximum CIA : 30
Maximum CE : 70
Total Hours : 72

Course Objective:

To enable students gain fundamental knowledge about the Riemann Stieltjes Integral , Lebesgue Measure, Lebesgue Integral and their applications

Unit I (15 Hours)

Riemann Stieltjes Integral: Definition and Existence of the Integral – properties of the integral – Integration and differentiation – Integration of vector valued function – rectifiable curves.

Unit II (14 Hours)

Uniform convergence and continuity – uniform convergence and integration - uniform convergence and differentiation – equicontinuous families of functions – The Stone Weirstrass theorem

Unit III (14 Hours)

Functions Of Several Variables: Linear transformation – contraction principle – Inverse function theorem – Implicit function theorem – determinants – derivatives of higher order – differentiation of integrals

Unit IV (14 Hours)

Lebesgue Measure: Outer measure – Measurable sets and Lebesgue measure – Measurable functions – Littlewood's Theorem

Unit V (15 Hours)

Lebesgue Integral: The Lebesgue integral of bounded functions over a set of finite measure – integral of a non – negative function – General Lebesgue Integral – convergence in measure.

Course Outcome

- Remember the techniques of the basic stepping stones to contemporary research.
- Understanding the sequences of functions which are point wise convergent and uniform convergent
- Apply the basic results to classical theorems in advanced real analysis.
- Analyze the concept of Lebesgue measure which is later used in developing the theory of Lebesgue integration
- Apply Lebesgue measure to get the theory of Riemann integration

Text Books:

1. W. Rudin, Principles of Mathematical Analysis, Third Edition 1976, TataMcGrawHill,New York.
   Unit I &II : Chapter 6 & 7.
   Unit III : Chapter 9 (Pages 204 to 227)

2. H.L. Roydon, Real Analysis, Macmillan, Fourth Edition, 2016, New York.
    Unit IV : Chapter 2 – 2.1-2.3.
             Chapter 3– 3.1 & 3.3.
    Unit V : Chapters 4 : 4.1-4.4

Reference Books:
    1. R.G. Bartle, Elements of Real Analysis, 2nd Edition 1976, John Wily and Sons, New York.
    2. W. Rudin, Real and Complex Analysis, 3rd Edition 1986,McGrawHill, New York

M.Sc. (Mathematics) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards

FIRST SEMESTER
PART – III : PAPER 3 - ORDINARY DIFFERENTIAL EQUATIONS

Maximum CIA : 30
Maximum CE : 70
Total Hours: 60

Course Objective:

To enable students gain fundamental knowledge about the second order linear equation with ordinary points, existence and uniqueness theorem, non homogeneous linear system, successive approximation, fundamental results and their applications.

Unit I (12 Hours)

Second order linear equations with ordinary points: Legendre equation and Legendre polynomials – Second order equations with regular singular points – Bessel equation.

Unit II (12 Hours)

Systems of first order equations: existence and uniqueness theorem – Fundamental matrix.

Unit III (12 Hours)

Non-homogeneous linear systems: linear systems with constant coefficients – linear systems with periodic co-efficient.

Unit IV (12 Hours)

Successive approximation: Picard's theorem - Non-uniqueness of solution – Continuation and dependence on initial conditions, Existence of solutions in the large – Existence and uniqueness of solutions of systems.

Unit V (12 Hours)

Fundamental results: Sturm's comparison theorem – Elementary linear oscillations.
Comparison theorem of Hille-Winter – oscillations of x $a(t)$ $x= 0$ - Elementary non-linear oscillation.

Course Outcome
- Remember the second order linear equations with ordinary points
- Understand the concept of Systems of first order equations
- Analyze Mathematical modeling in medical field
- Apply Successive approximation.
- Evaluate Elementary linear and non linear oscillations

Text Book:
1. S.G.Deo and V.Raghavendra ,Ordinary Differential Equations and Stability Theory , Third Edition 2015. Tata McGraw Hill, New York.

      Unit I-Chapter – 3 -Section 3.2 – 3.5
      Unit II-Chapter – 4-Section 4.2 – 4.4
      Unit III-Chapter – 4-Section 4.5 – 4.7
      Unit IV-Chapter – 5-Section 5.3 – 5.8
      Unit V-Chapter – 8-Section 6.1 – 6.6

Reference Books:
1. E.A. Coddington and N.Levinson , Theory of Ordinary Differential Equations, 9th Edition, Reprint 1987,Tata McGraw Hill, New York.
2. D.A. Sanchez, Ordinary Differential Equations and Stability Theory, W.H.Freeman & Co., San Francisco, 1968.

M.Sc. (Mathematics) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards

FIRST SEMESTER
PART – III : PAPER 4 - NUMERICAL METHODS

Maximum CIA : 30
Maximum CE : 70
Total Hours : 60

Course Objective:

To enable students gain fundamental knowledge about the Numerical algebraic Functions and their applications.

Unit I   (12 Hours)
Solution of nonlinear equations: Bairstow"s Method for quadratic factors Numerical Differentiation And Integration: Derivatives from Differences tables – Higher order derivatives – Divided difference, Central-Difference formulas– Composite formula of Trapezoidal rule – Romberg integration – Simpson's rules.

Unit II   (12 Hours)
Solution of system of equations: LU Decomposition method – Matrix inversion by Gauss-Jordan method – Methods of Iteration – Relaxation method – Systems of Nonlinear equations.

Unit III   (12 Hours)
Solution of ordinary differential equations: Euler and Modified Euler methods – Multistep methods – Milne's method – Adams Moulton method.

Unit IV   (12 Hours)
Boundary value problems and characteristic value problems: Solution through a set of equations – Derivative boundary conditions – Characteristic value problems – Eigen values of a matrix by Iteration – The power method.

Unit V   (12 Hours)
Numerical solution of partial differential equations: Solutions of Elliptic, Parabolic and Hyperbolic partial differential equations) Representation as a difference equation – Laplace's equation on a rectangular region – Iterative methods for Laplace equation – The Poisson equation – Derivative boundary conditions – Solving the equation for time-dependent heat flow (i) The Explicit method (ii) The Crank Nicolson method – solving the wave equation by Finite Differences.

Course Outcome
- Remember Numerical differentiation and integration
- Apply some methods for solving system of linear and non- linear equations
- Understand the Solution of ordinary differential equations
- Analyze Boundary value problems , characteristic value problems and Engineering problems
- Evaluate partial differential equations

Text Book:
1. C.F. Gerald and P.O.Wheatley, APPLIED NUMERICAL ANALYSIS, Seventh Edition 2008 Addison Wesley.
    Unit I : Chapter 5 : 5.1& 5.2
    Unit II : Chapter 2 : 2.2[LU method only] ,2.3& 2.5

Unit III : Chapter 6 : 6.1& 6.4
Unit IV : Chapter 6 : 6.7
Unit V : Chapter 8 : 8.1- 8.2

Reference books:
1. S.C. Chapra and P.C. Raymond: Numerical Methods for Engineers, Sixth Edition 2014, Tata McGraw Hill, New Delhi.
2. S.S. Sastry: Introductory methods of Numerical Analysis, Third Edition 2004 ,Prentice Hall of India, New Delhi.
3. P. Kandasamy, K. Thilagavathi and K.Gunavathi, Numerical Methods , Reprint 2013, S.Chand and Company Ltd., New Delhi..

M.Sc. (Mathematics) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards

FIRST SEMESTER
PART – III : PAPER 5 - NUMBER THEORY

Maximum CIA : 30
Maximum CE : 70
Total Hours : 60

Course Objective:

    To enable students gain fundamental knowledge about the number theory applications.

Unit I   (15 Hours)
Introduction, Divisibility, Primes.

Unit II   (14 Hours)
Congruence: Solutions of congruence, Congruence of Degree 1. The functions $\square(n)$, Congruence of higher degree, Prime power moduli, Prime modulus.

Unit III   (14 Hours)
Congruence degree 2, prime modulus, POWER Residues, Number theory from an Algebraic view point, Multiplicative groups, Rings and fields, quadratic residues.

Unit IV   (14 Hours)
Quadratic reciprocity: The Jacobi Symbol – Greatest integer function.

Unit V   (15 Hours)
Arithmetic functions – The Moebius Inversion formula – The multiplication of arithmetic functions – Recurrence functions.

Course Outcome
- Remember divisibility and about primes
- Apply the concept of congruence
- Understand number theory from an Algebraic view point
- Analyze Quadratic reciprocity
- Evaluate Arithmetic functions

Text Book:
1. An Introduction to Theory of Numbers by Ivan Nivan and Herberts Zucherman.
    Unit-I: Chapter I: Sections 1.1 – 1.3
    Unit-II: Chapter II: Sections: 2.1 – 2.7
    Unit-III: Chapter II: Sections: 2.8 – 2.11
              Chapter III: Section: 3.1
    Unit-IV: Chapter III: Sections: 3.2, 3.3, Chapter IV: Section: 4.1
    Unit-V: Chapter IV: Sections: 4.2 – 4.5

Reference Book:
1. T.M. Apostol, Introduction to Analytic Number Theory, Springer Verlag, 1976.
2. Kennath and Rosan, Elementary Number Theory and its Applications, Addison Wesley Pulishing Company, 1968.
3. George E. Andrews, Number Theory, Hindustan Publishing, New Delhi, 1989.

M.Sc. (Mathematics) Degree Examination Syllabus for candidates admitted from the Academic Year 2019-2020 onwards

SECOND SEMESTER
PART – III : PAPER 6 - COMPLEX ANALYSIS

Maximum CIA   : 30
Maximum CE   : 70
Total Hours: 60

Course Objective:

To enable students gain fundamental knowledge about the Complex integration, calculus of residues, the Reimann mapping and their applications.

Unit I   (12 Hours)
Introduction to the concept of analytic function: Limits and continuity – Analytic functions – Polynomials – Rational functions – Conformality: Arcs and closed curves – Analytic functions in regions – Conformal Mapping – Length and Area – Linear Transformations: The Linear group – The Cross ratio – Elementary Riemann Surfaces.

Unit II   (12 Hours)
Complex Integration: Line Integrals Rectifiable Arcs – Line Integrals as Functions of Arcs – Cauchy's theorem for a rectangle - Cauchy's theorem in a disk, Cauchy's Integral formula: The Index of a point with respect to a closed curve – The Integral formula – Higher derivatives Removable singularities, Taylor's Theorem – Zeros and Poles – The Local Mapping
– The Maximum principle – chains and cycles.

Unit III   (12 Hours)
The Calculus of Residues: The Residue theorem – The Argument principle – Evaluation of definite integrals. Harmonic functions: The Definitions and basic Properties – Mean value property – Poisson's Formula.

Unit IV   (12 Hours)
Series and Product Developments: Weierstrass Theorem – The Taylor Series – The Laurent Series – Partial fractions and Factorization: Partial Fractions – Infinite Products – Canonical Products.

Unit V   (12 Hours)
The Riemann Mapping Theorem – Statement and Proof – Boundary Behaviour – Use of the reflection principle – Analytic arcs – Conformal mapping of Polygons: The Behaviour at an angle – The Schwarz – Christoffel Formula – Mapping on a rectangle.

Course Outcome
- Remember Limits and continuity
- Understand Complex Integration
- Evaluate definite integrals using residuals
- Apply the concept of Partial fractions and Factorization
- Analyze Riemann Mapping on Polygons and rectangle

Text Book :
1.L.V. Ahlfors ,Complex Analysis, Third Edition 2015, Tata Mc Graw Hill, New York.
     Unit I: Chapter – 2Sections 1.1 – 1.4
             Chapter – 3Sections 2.1 – 2.4, 3.1, 3.2 and 3.4
     Unit II: Chapter – 4Sections 1.1– 1.5, 2.1 – 2.3, 3.1 - 3.4 and 4.1

Unit III: Chapter – 4Sections 5.1– 5.3, 6.1 – 6.3
Unit IV: Chapter – 5Sections 1.1– 1.3, 2.1 – 2.3
Unit V: Chapter – 6Sections 1.1– 1.4, 2.1 – 2.3

Reference Book:
1. Herb Silvermann (1975), Complex Analysis, Houghton Mifflin Company.
2. Serge Lang (2005), Complex Analysis, Springer International Edition.
3. Shanti Narayan & Dr. P. K. Mittal, (2014), Theory of Functions of a Complex Variable,
S. Chand & Company Pvt. Ltd.

M.Sc. (Mathematics) Degree Examination- Syllabus for candidates admitted from the Academic Year 2019-2020 onwards

SECOND SEMESTER
PART – III : PAPER 7 - PARTIAL DIFFERENTIAL EQUATIONS

Maximum CIA : 30
Maximum CE : 70
Total Hours : 60

Course Objective:

To enable students gain fundamental knowledge about Mathematical models, Boundary value problems, Green's function and their applications.

Unit I   (12 Hours)
Mathematical Models: The Classical equation – The vibrating string – The vibrating membrane – Conduction of Heat in solids. Classification of second order equations: Second order equations in two independent variables – Cannonical forms – equations with constant coefficients – general solution.

Unit II   (12 Hours)
The Cauchy problem: The Cauchy problem – Cauchy – Kowlalewsky theorem – Homogeneous wave equation – Initial – Boundary value problems – Non-homogeneous boundary conditions – Non-homogeneous wave equation, Riemann Method.

Unit III   (12 Hours)
Methods of separation of variables: Separation of variables – The vibrating string problem – Existence and Uniqueness of solution of the vibrating string problem. The heat conduction problem – existence and uniqueness of solution of the heat conduction problem – The laplace and beam equations.

Unit IV   (12 Hours)
Boundary value problems: Boundary value problems – Maximum and minimum principles – Uniqueness and continuity theorems – Dirichlet problems for a circle – Dirichlet problems for a circular annulus – Neumann problem for a circle Drirchlet problem for a rectangle – Neumann problem for a rectangle.

Unit V   (12 Hours)
Green's function: The delta function – Green's function – method of Green's function – Dirichlet problem for the Laplace operator – method of images – method of Eigen functions.

Course Outcome
  * Remember Second order equations in two independent variables
  * Understand Cauchy problem, Homogeneous wave equation and Non-homogeneous wave equation
  * Evaluate Mathematical models involving P.D.E
  * Apply the concept of Maximum and minimum principles
  * Analyze the delta function and Green's function

Text Book:
  1. Tyn Myint. U with Lokenath Debnath, Partial Differential Equations for Scientists and Engineers, Third Edition 2012,American Elsevier Publishing Company, NEW YORK.

Unit I:Chapter 2:Sections 2.2 – 2.5 (omit 2.4)
    Chapter 3:Sections 3.1– 3.4
Unit-II:Chapter 4:Sections 4.1– 4.8 (omit 4.6)
Unit-III:Chapter 6Sections 6.2– 6.6
Unit-IV:Chapter 8:Sections 8.1– 8.9 (omit 8.8)
Unit-V:Chapter 10-Sections 10.1 – 10.7 (omit 10.5)
Reference Books:

1. I.N.Sneddon, Elements of Partial Differential Equations, Reprint 2006, Tata McGraw Hill, London, 1957.
2. L.C.Evans, Partial Differential Equations, Reprint 2003, AMS, Providence.

M.Sc. (Mathematics) Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards

SECOND SEMESTER
PART – III : PAPER 8 - MECHANICS

Maximum CIA : 30
Maximum CE : 70
Total Hours : 60

Course Objective:

     To enable students gain fundamental knowledge about the Lagrange's equations, Hamilton's equations, Canonical transformations and their applications.

Unit-I: (12 Hours)
Introductory concepts: Mechanical system – Generalized Coordinates – Constraints – Virtual Work – Energy and Momentum.

Unit-II: (12 Hours)
Lagrange's equations: Derivations of Lagrange's Equations: Derivations of Lagrange's Equations – Examples – Integrals of Motion.

Unit-III: (12 Hours)
Hamiton's equations: Hamilton's Principle – Hamilton's Equations.

Unit-IV: (12 Hours)
Hamilton – Jacobi theory: Hamilton's Principle function – Hamilton – Jacobi Equation – Separability.

Unit-V   (12 Hours)
Canonical transformations: Differential forms and Generating Functions – Lagrange and Poisson Brackets.

Course Outcome
- Remember energy and momentum
- Understand calculus of variation
- Evaluate the examples of Lagrange's equations of motion
- Apply the concept in physical phenomena
- Analyze the transformations

Text Book:
1.D.T.Greenwood: Classical Dynamics, Dover Publication, New York, 1997.
        Unit-I:Chapter 1:Sections 1.1 – 1.5
        Unit-II:Chapter 2:Sections 2.1 – 2.3
        Unit-III:Chapter 4:Sections 4.1 – 4.2
        Unit-IV:Chapter 5:Sections 5.1 – 5.3
        Unit-V:Chapter 6:Sections 6.1, 6.3

Reference Books:
1. F. Gantmacher, Lectures in Analytic Mechanics, First Edition 1975,MIR Publishers, Moscow.
2. I.M. Gelfand and S.V. Fomin, Calculus of Variations, Prentice Hall.
3. S.L. Loney, An Elementary Treatise on Statics, 1979, Kalyani Publishers, New Delhi.

M.Sc. (Mathematics) Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards

SECOND SEMESTER
PART – III : SBC I - OPERATIONS RESEARCH

Maximum CIA : 30
Maximum CE : 70
Total Hours : 60

Course Objective:

To enable students gain fundamental knowledge about the duality, network models, advanced linear programming, simulation modeling and their applications.

Unit-I: (12 Hours)
What is operation research? – Modeling with Linear Programming – Simplex method – Artificial starting solution – Special cases in the Simplex method.

Unit-II: (12 Hours)
Duality: Definition – Primal –Dual relationship – Dual simplex method – Transportation model – Assignment model.

Unit-III: (12 Hours)
Network models – Minimal spanning tree algorithm – Shortest path algorithm (Dijkstra's algorithm only) – CPM pert.

Unit-IV: (12 Hours)
Advanced linear programming – Simplex method – Fundamentals – Revised simplex method.

Unit-V: (12 Hours)
Simulation modeling – Monte Carlo simulation – Types of simulation – Elements of Discrete event simulation – Generation of random numbers.

Course Outcomes
- Remember operations research
- Understand duality and Dual simplex method
- Evaluate shortest path using Dijkstra's algorithm
- Apply the concept of simplex method
- Analyze simulation modeling and Generation of random numbers.

Text Book:
1.Operations Research: An Introduction, by H.A. Taha, Eighth Edition, Prentice Hall of India Private Limited, New Delhi (2006).

Unit I: Chapter 1: 1Chapter 2: 2.1, 2.2.1, 2.2.2
        Chapter 3: 3.1.1, 3.1.2, 3.3.1, 3.3.2, 3.4.1, 4.2, 3.5.1 – 3.5.4
Unit-II: Chapter 4: 4.1, 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.4.1
         Chapter 5: 5.1, 5.2, 5.3.1, 5.3.2, 5.4.1, 5.4.2
Unit-III: Chapter 6: 6.1, 6.2, 6.3.1, 6.3.3, 6.5.1 – 6.5.5
Unit-IV: Chapter 7: 7.1.1, 7.1.2, 7.2.1, 7.2.2
Unit-V: Chapter 16: 16.1, 16.2, 16.3.1, 16.3.2, 16.4

References Book:

1.G.Dantzig, Linear Programming and Extension, Princeton University Press, Princeton , 1963.

2.S.Ross, A Course in Simulation, Mac million, New York, 1990

M.Sc. (Mathematics) Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards

SECOND SEMESTER
PART – III :SBC I- GRAPH THEORETIC ALGORITHMS AND APPLICATIONS

Maximum CIA : 30
Maximum CE : 70
Total Hours : 60

Course Objective

This course enables a practical knowledge for finding the Graph Algorithms and its applications

Unit I   (12 Hours)
Computer Theoretic algorithms and Computer programs: Algorithms- Input: Computer representation of a graph- The Output- some basic Algorithms – Algorithm1: connectedness and components- Algorithm 2: A spanning tree- Algorithm 3: A set of fundamental circuits – Algorithm 4: cut vertices and separability – Algorithm 5: Directed circuits.

Unit II   (13 Hours)
Shortest Path Algorithms: Algorithm 6: Shortest Path from a specified vertex to another specified vertex – Algorithm 7: Shortest path between all pairs of vertices- Depth- First search on a graph- Algorithm 8: Planarity testing – Algorithm 9: Isomorphism – Other graphs – Theoretic Algorithms – Performance of graph theoretic Algorithms.

Unit III   (12 Hours)
Graphs in Switching and coding theory: Contact Networks- Analysis of Contact Networks – Synthesis of Contact Networks- Sequential Switching networks – Unit cube and its graph – Graphs in coding theory.

Unit IV   (12 Hours)
Graph theory in Operations Research: Transport Networks – Transport Networks – Extension of Max – flow Min – cut theorem – Minimal cost flows – Further applications – more on Flow Problems – Activity networks in Project Planning – Analysis of an Activity network

Unit V   (11 Hours)
Survey of other applications: Single flow graphs – Graphs in Markov process– Graphs in Computer Programming – Graphs in Chemistry

Course Outcome

- Remember connectedness, spanning tree and cut vertices
- Analyze Isomorphism and Planarity
- Understand Switching and coding theory
- Apply the operations research
- Evaluate Graphs in Markov process

Text Book:

1. Graph Theory with applications to Engineering & Computer Science by Narsingh Deo, Eastern Economy Edition

Unit I : Sec 11.1 to 11.4

Unit II : Sec 11.5 to 11.9

Unit III: Sec 12.1 to 12.6

Unit IV: Sec 14.1 to 14.8

Unit V: Sec 15.1 to 15.4

Reference Book:
1. Graph theory Modeling, Applications and algorithm by Geir Agnarsson, Raymond Greenlaw, Pearson publications

M.Sc. (Mathematics) Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards

SECOND SEMESTER
PART – III : ELECTIVE I - R PROGRAMMING(THEORY)

Maximum CIA : 30
Maximum CE : 70
Total Hours :36

Course Objective:

    To enable students gain fundamental knowledge about the basics of R and the confidence to start writing their own R scripts.

Unit I   (9Hours)
R basics-Math, Variables, and Strings-Vectors and Factors-Vector operations

Unit II   (7Hours)
Data structures in R-Arrays & Matrices-Lists-Dataframes

Unit III   (7Hours)
R programming fundamentals-Conditions and loops-Functions in R-Objects and Classes-Debugging

Unit IV   (6Hours)
Working with data in R-Reading CSV and Excel Files-Reading text files-Writing and saving data objects to file in R

Unit V   (7Hours)
Strings and Dates in R-String operations in R-Regular Expressions-Dates in R

Course Outcome
- Remember vector operation
- Understand arrays and matrices
- Apply the Conditions and loops
- Analyze Writing and saving data objects to file in R
- Evaluate the String operations in R and Regular Expressions

Text Book:
1.An Introduction to R Notes on R: A Programming Environment for Data Analysis and Graphics Version 3.4.3 (2017-11-30)By W. N. Venables, D. M. Smith and the R Core Team

References Books:
1.Statistical Programming in R by K.G. Srinivasa (Author), G.M. Siddesh (Author), Chetan Shetty (Author), Sowmya B.J. (Author)
2.R Programming for Beginners by Sandip Rakshit (Author)

M.Sc. (Mathematics) Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards

SECOND SEMESTER
PART – III : ELECTIVE PAPER I - MAGNETO HYDRO DYNAMICS

Maximum CIA : 30
Maximum CE : 70
Total Hours : 60

Course Objective:

To enable students gain fundamental knowledge about the Magneto Hydro Dynamics and their applications.

Unit-I: (12 Hours)
Electromagnetism – Fundamental Laws – Electrostatic Energy – Electrodynamics – Ampere's Law – Lorentz force on a moving charge – Magnetostatic Energy – Faraday's Law of Induction – Poynting stresses – Electromagnetic Equations with respect to moving axes – boundary conditions of electric and magnetic fields

Unit-II: (13 Hours)
Kinematics of fluid motion – equation of continuity – Stress tensor – Navier-stokes equations – boundary condition – Velocity Magneto fluid dynamic equations – MHD approximation – equation of Magnetic diffusion in a moving conducting medium – Magnetic Reynolds number.

Unit-III: (11Hours)
Alfven's theorem Law of isorotation - Magneto hydrostatics – Force-free field – Alfven waves in incompressible MHD.

Unit-IV: (12 Hours)
Incompressible viscous flows in the presence of magnetic field – Hartmann Flow – unsteady Hartmann flow – Magnetofluid dynamic pipe flow.

Unit-V: (12 Hours)
Stability – Instability of linear pinch – Sausage and flute types – Method of small oscillations – gravitational instability.
Course Outcome
 • Remember Electromagnetism – Fundamental Laws
 • Understand the Stress tensor – Navier-stokes equations
 • Evaluate Alfven waves in incompressible MHD.
 • Analyze incompressible viscous flows in the presence of magnetic field
 • Apply the concept of Stability and gravitational instability.

Text Books:
1. Crammer K.R. and Pai S.I, Magneto Fluid Dynamics for Engineers and Applied Physicists, McGraw Hill, 1973.
2. Ferraro, VCA and Plumpton: Introduction to Magneto Fluid Dynamics, Oxford, 1966.

M.Sc. (Mathematics) Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards

SECOND SEMESTER
PART – III : ELECTIVE I - NEURAL NETWORKS

Maximum CIA : 30
Maximum CE : 70
Total Hours :72

Course Objective:

To enable students gain fundamental knowledge about the Neural networks and their applications.

Unit-I   (14 Hours)
Mathematical Neuron Model: Network Architectures- Perceptron-Hamming Network-Hopfield Network-Learning Rules.

Unit-II   (15 Hours)
Perceptron Architectures and Learning Rule with Proof of Convergence Supervised Hebbian Learning-Linear Associator.

Unit-III   (14Hours)
The Hebb Rule:Pseudo inverse Rule-Variations of Hebbian Learning-Back Propagation-Multilayer Perceptrons.

Unit-IV   (15 Hours)
Back propagation Algorithm:Convergence and Generalization - Performances Surfaces and Optimum Points-Taylor series.

Unit-V   (14 Hours)
Directional Derivatives - Minima-Necessary Conditions for Optimality-Quadratic Functions-Performance Optimizations-Steepest Descent-Newton's Method-Conjugate Gradient.

Course Outcome
  • Remember Mathematical Neuron Model
  • Analyze Perceptron Architectures
  • Understand Hebb Rule, Pseudo inverse Rule and Variations of Hebbian Learning
  • Apply the concept of Taylor series
  • Evluate Directional Derivatives

Text Book:

1.Martin T.Hagan, Howard B. Demuth and Mark Beale, Neural Network Design, Vikas Publishing House, New Delhi,2002.

Reference Books:

1.James A. Freeman, David M. Skapura, Neural Networks Algorithms, Applications and Programming Techniques, Pearson Education, 2003.
2. Robert J. Schalkoff, Artificial Neural Network, McGraw-Hill International Edition, 1997.

M.Sc. (Mathematics) Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards

FIRST SEMESTER
PART – III : IDC 1- R & Latex Programming Lab

Maximum CIA : 30
Maximum CE :
70
Total Hours : 36

Course Objective
This course enables the students to learn several advanced concepts in Programming in Latex. To enable students gain fundamental knowledge about the basics of R and the confidence to start writing their own R scripts.

1.Type the following paragraph, to including the 9.5in text height, 6.30in text width, 0.10in left margin, 0.120in right margin, -0.6in top margin, 1.5in line space and foot notes
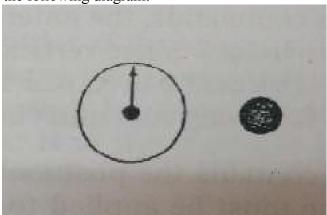
2. Create the following table using LaTex:

S.No.	Register Number	Name of the Student	Percentage of Marks	Rank
1	xxxxxx	xxxxxx	xxxxx	xxxx
2	xxxxxx	xxxxxxx	xxxx	xxxx
3	xxxxxx	xxxxxx	xxxx	xxxxx

3. Write a program $\sum_{i=1}^{\left[\frac{n}{2}\right]} \left(\frac{x_{i,i+1}^{i^2}}{\left[\frac{i+3}{3}\right]}\right) \frac{\sqrt{\mu(i)^{\frac{3}{2}}(i^2-1)}}{\sqrt[3]{p(i)-2+\sqrt[3]{p(i)-1}}}$

4. Creating Greek Characters, Binary Relations, AMS binary relations by using latex.

5. Draw the following diagram:

1.Write a R program to create an array of two 3x3 matrices each with 3 rows and 3 columns from two given two vectors.

2. Write a R program to create a matrix taking a given vector of numbers as input and define the column and row names. Display the matrix.

3. Write a R program to create two 2x3 matrix and add, subtract, multiply and divide the matrixes.

4. Write a R program to extract the sub matrix from a given matrix.

5. Write a R program to extract the sub matrix whose rows have column value > 7 from a given matrix.

Course Outcome

- Learn the commands to draw picture and table
- Apply the commands to write mathematical formulae
- Remember vector operation
- Understand arrays and matrices
- Analyze Writing and saving data objects to file in R
- Evaluate the String operations in R and Regular Expressions

Text Books:

1. H.Kopka and P.W Daly, " A Guide to Latex 2ε " , Third edition, Addison- Wesley,1999 London
2. An Introduction to R Notes on R: A Programming Environment for Data Analysis and Graphics Version 3.4.3 (2017-11-30)By W. N. Venables, D. M. Smith and the R Core Team

References Books:
1. V.Kavitha and Dr.M.Mallikaarjunan , " Fundamental to Latex" Lambert Academic publishing corporation, Germany 2013
2. Statistical Programming in R by K.G. rinivasa (Author), G.M.Siddesh (Author), Chetan Shetty (Author), Sowmya B.J. (Author)

M.Com Degree Programme (IDC) - Syllabus for candidates admitted from the academic year 2019-2020 onwards
SECOND SEMESTER
PART-III: IDC1 -QUANTITATIVE TECHNIQUES FOR BUSINESS DECISION

Maximum CIA:30
Maximum CE: 70
Total Hours: 60

Course Objective:

The Objective of the courses is to acquaint the students with the use of quantitative techniques in decision making.

Unit I   (12 Hours)
Introduction-to OR-objective-scientific method-application-LPP-Mathematical Formulation-Graphical method-simplex method-Duality.

Unit II   (12 Hours)
 Transportation problem-NWCR-LCM-VAM-MODI method-Assignment problem-The traveling salesman problem-special cases in Assignment problem.

Unit III   (12 Hours)
Inventory control-types of Inventories- Inventory costs-Deterministic Inventory models-purchasing problem with no shortages- purchasing problem with shortages-Manufacturing problem with shortages**.**

Unit IV   (12 Hours)
Network scheduling by PERT/CPM-Network and basic components-Rules of Network construction-Time Calculation in networks-CPM.PERT-PERT calculation.

Unit V   (12 Hours)
Queuing Theory-Instruction-Elements of Queuing system-Operating Characteristics of Queuing system-symbols and Notation-classifications of queues problems in(M/M/1):(∞/FIFO);   (M/M/1):(N/FIFO); (M/M/C):(∞/FIFO); (M/M/C):(N/FIFO)

Note**:** The proportion of marks between theory and problems shall be 20% and 80% respectively**.**

Course Outcomes
- Remember the objective and applications of OR
- Understand the concept of Transportation and Assignment problem
- Analyze Inventory control
- Apply rules of Network construction
- Evaluate Queuing problems

Text Book

1. Kantiswarup, P. K. Gupta, Man Mohan, Operations Research, S. Chand & Sons Education Publications, 16th edition , Reprint 2013, New Delhi.

Unit I   : Chapter 1 : 1.1 – 1.10
         Chapter 2 : 2.1-2.3
         Chapter 3,4 ,5: 3.1,3.2 & 4.1 & 5.1-5.3
Unit II: Chapter 10: 10.1-10.3, 10.1
         Chapter 11: 11.1-11.3, 11.7
Unit III: Chapter 19: 19.1-19.7
Unit IV: Chapter 25: 25.1-25-8
Unit V: Chapter 21: 21.1- 21.6

Reference Book

1 .J. K. Sharma, "Operations Research: Theory and Applications", 4th Edition, Macmillan, 2012

MBA Degree Examination-Syllabus for candidates admitted from the academic year 2019-2020 onwards

FIRST SEMESTER
PART-III: IDC 1- QUANTITATIVE METHODS FOR MANAGEMENT

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:

To enable students to acquire the knowledge of Mathematics and Statistics and their use in Business Decision Making.

Unit I   (12 Hours)
Simple and Compound Interest (Simple Problem) – Application of Differentiation and Integration – Maxima, minima – Average Cost – Marginal Revenue – Total Revenue – Problems on Case Studies.

Unit II   (12 Hours)
Measures of central tendency : Mean - Median - Mode -Geometric mean and Harmonic mean. Measures of Dispersion: Range – Standard deviation. – Variance,   coefficient of Variation - Problems on Case Studies.

Unit III   (12 Hours)
Correlation – Karl Pearson's Coefficient of Correlation – Rank Correlation –Regression- Regression equations – Relationship between Correlation & Regression - Problems on Case Studies .

Unit IV   (12 Hours)
Time Series Analysis – Components of Time Series, Measurement of Trend-Index Numbers – Simple and Weighted Index numbers – Consumer Price index Numbers – Whole Sale Price Index Numbers - Problems on Case Studies.

Unit V   (12 Hours)
Test of Hypothesis- Type I and II error- Test of significance- Standard Error- Small Sample Test with respect to student t, F and Chi-square test- Large Sample Tests with respect to Mean -Difference Means – Proportion- One Way ANOVA - Problems on Case Studies.

Note: 80% of Question shall be on Problem Based,20% of Question shall be on Theory Based.

Course Outcomes
- enable students will acquire the knowledge of Mathematics of finance and Mathematical concepts of Differentiation and integration
- Analyze real world scenarios and determine the appropriate type of analytical problem solving techniques to utilize.

- Gain knowledge on statistical concepts of correlation and regression equations for business
- Make the students to understand the concepts of Time series , Trend analysis and Index numbers for Business analysis
- Develop the knowledge of statistical analysis for research in order to write the interpretation and solving the hypothesis

Text Books

1. P.A.Navnitham, Business Mathematics and Statistics, Jai Publications 2014, Trichy.

Unit I   : Chapter -2: Page43-64

Chapter-6: Page 247- 266

Chapter-8: Page 303- 318

Chapter-7: Page 288- 293

Unit II: Chapter-7: Page 159- 269

Chapter-8: Page 301- 367

Unit III: Chapter -12: Page 503 – 522

Chapter- 13: Page 542- 569

Unit IV: Chapter- 14: Page 579- 612

Chapter-10: Page 444- 459

2. S.P.Gupta, Statistical Methods, 17th revised edition, 2013 print, Sultan Chand & Sons, New Delhi.

Unit V: Chapter- 3: Page 882- 922

Chapter 4: Page 954- 972

Chapter 5: Page 1006- 1018

Reference Books:

1. Richard L. Levin & David S. Rubin, Statistics for Management, 7th edition PHI.
2. Amir D. Aczel&Jayavel Soundarapandian, Complete Business Statistics,6th edition, McGraw- Hill Publishing Company Ltd.

MBA Degree Examination- Syllabus for candidates admitted from the academic year 2019-2020 onwards

SECOND SEMESTER
PART-III: IDC 2- QUANTITATIVE TECHNIQUES

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:

To enable students to learn the Techniques of Operations Research and Resources Management and their Application in Business Management.

Unit I   (12 Hours)
Introduction to Operations Research- Scope of Operations Research- General linear Programming Problem- Mathematical Formulation of Linear Programming Problem- Solution to Linear Programming Problem by Graphical Method- Simplex Method – Problems on Case Studies .

Unit II   (12 Hours)
Transportation Problem- Initial Basic Feasible Solutions- Optimum Solution for non-degeneracy Model- Assignment Problem- Travelling Salesman Problem - Problems on Case Studies.

Unit III   (12 Hours)
Game theory – Concept of Pure and Mixed Strategies- Solving 2×2 matrix with and without saddle point- Graphical method of n×2 and 2×m games-Dominance Property - Problems on Case Studies.

Unit IV   (12 Hours)
Inventory Models - Deterministic- EOQ- EOQ with Price Breaks- Probability Inventory Models- Probabilistic EOQ Model - Problems on Case Studies.

Unit V   (12 Hours)
Simulation- Introduction – Simulation Models – Event- Types of simulation- Generation of Random Numbers- Monte-Carlo Simulation. Queuing Theory – Introduction – Elements of Queuing System – Characteristics of Queuing System – Symbols and Notation – Classifications of queues – Problems in (M/M/1) : (∞/FIFO); (M/M/1) : (N/FIFO) - Excluding derivatives - Problems on Case Studies.

Note: The Proportion of marks between theory and problems shall be 20% and 80%.

Course Outcomes
- Enable students will acquire the knowledge of Operations research and Resource Management

- Analyze real world problems and decision making for Transportation Problems and Assignment Problems
- Gain knowledge on Game theory and Dominance Property for business management
- Make the students to understand the concepts of Inventory Models Probability Inventory Models concept.
- Develop the knowledge of Simulation and Queuing Theory for decision making.

Text Book

1. Kantiswarup, P.K. Gupta and Man Mohan, Operations Research, (16th edition). S.Chand & Sons Education Publications, Reprint 2013, New Delhi.
   Unit I : Chapter 1 : 1.1 – 1.10
             Chapter 2 : 2.1-2.3
             Chapter 3,4: 3.1,3.2 & 4.1
   Unit II: Chapter 10: 10.1-10.3, 10.13
             Chapter 11: 11.1-11.3, 11.7
   Unit III: Chapter 17: 17.1-17.7
   Unit IV: Chapter 19: 19.1-19.12
   Unit V: Chapter 21,22: 21.1- 21.6 & 22.1-22.8

Reference Books

1. Prof.V. Sundaresan, K.S.Ganapathy Subramanian and K.Ganesan, Resource Management Techniques, A.R.PublicationsArpakkam (PO), 8th Edition 2014, TamilNadu.
2. J. K. Sharma, "Operations Research: Theory and Applications", 4thEdition, 2012, Macmillan.

M.Sc. (Mathematics) Degree Examination- Syllabus- For Candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PAPER 9: TOPOLOGY

Maximum CIA   : 30
Maximum CE   : 70
Total Hours :72

Course Objective: To enable students gain fundamental knowledge about the Topological Spaces and their applications.

Unit I: (15 Hours)
Topological Spaces: Topological spaces – Basis for a Topology – The order topology – The product topology on – The subspace topology – Closed sets and limit points.

Unit II: (14Hours)
Continuous Functions: Continuous functions – The product topology – The metric topology and its continuation.

Unit III: (14Hours)
Connectedness and Compactness: Connected spaces – Connected subspace of the real line – Compact spaces – Compact subspace of real line and limit point compactness.

Unit IV: (14 Hours)
Countability and Separation Axioms: The countability axioms – The separation axioms – Normal spaces –The Urysohn lemma – The Urysohnmetrization theorem.

Unit V: (15 Hours)
The Tychonoff theorem, Complete Metric Spaces and Function Spaces: The Tychonoff theorem – The Stone-Cechcompactification

Course Outcome
CO1: Apply the concept of Continuous functions.
CO2: Understand about the Topological spaces.
CO3: Remember closed sets and limit points.
CO4: Analyze Connectedness and Compactness.
CO5: Know the concept of countability and separation Axioms.

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L							H
CO 2		L						H
CO 3	L							M
CO 4	L					L		H
CO 5			M					M

Text Book:

1.James R. Munkres , "Topology" , Second Edition, Prentice Hall of India Private Limited, 2016, New Delhi.

Unit I: chapter 2 –section 12 to 17

Unit II:chapter 2 –section 18 to 21

Unit III:chapter 3-section 23,24,26 to 28

Unit IV:chapter 4-section 30 to 34

Unit V: chapter 5 –section 37,38 sec 43

Reference Book:

1.G.F.Simmons, "Introduction to topology and modern analysis", Second Reprint, 2011, McGraw Hill International Edition.

M.Sc. (Mathematics) Degree Examination- Syllabus- For Candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PAPER 10: FLUID DYNAMICS

Maximum CIA : 30
Maximum CE   : 70
Total Hours : 72

Course Objective: To enable students gain fundamental knowledge about the Fluid Dynamics and their applications.

Unit I: INVISCID THEORY   (15 Hours)
Introductory Notions- velocity-streamlines and paths of particles- stream tubes and filaments-fluidbody- density- pressure- Bernoulli's theorem-equation of continuity- boundary conditions - kinematical and physical- rate of change of linear momentum- equation of motion of an inviscid fluid.

Unit II: (14 Hours)
Euler's momentum theorem- conservative forces-Lagrangian form of the equation of motion-steady motion- energy equation- rate of change of circulation- vortex motion- permanence ofvorticity.

Unit III: TWO DIMENTIONSAL MOTION   (14 Hours)
Two dimensional functions – stream function, velocity potential, complex potential, indirectapproach, inverse function; basic singularities – source, doublet, vortex, mixed flow; method ofimages – circle theorem, flow past circular cylinder with circulation.

Unit IV: VISCOUS THEORY   (14 Hours)
Equations of motion – Stress tensor, Navier-Stokes equations, vorticity and circulation in aviscous fluid, flow between parallel flat plates - Couette flow, Plane Poiseuille flow; steadyflow in pipes.

Unit V: BOUNDARY LAYER THEORY   (15 Hours)
Boundary layer concept; boundary layer equations in two dimensional flow; boundary layeralong a flat plate - Blasius solution-shearing stress and boundary layer thickness, Momentumintegral theorem for the boundary layer - von Karman Integral relation, von Karman Integralrelation by momentum law.

Course Outcome
CO1:Apply the concept of boundary conditions
CO2:Understand about the Two dimensional functions
CO3:Remember energy equation, rate of change of circulation.
CO4:AnalyzeCouette flow, Plane Poiseuille flow
CO5:Know the Boundary layer concept

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L							M

CO 2			L					M	H
CO 3	L								H
CO 4	L					L			H
CO 5			M					L	

Text Books:

1.L.M.Milne Thomson ,"Theoretical Hydrodynamics", dover publications, 1996,new yark.
Unit-I : Chapter 1:Sections: 1.0-1.4,Chapter 3: Sections: 3.10-3.31, 3.40, 3.41.
Unit-II: Chapter 3:Sections: 3.42-3.45, 3.50-3.53.

2.N.Curle and H.J.Davies, "Modern Fluid Dynamics Vol-I", D' Van Nostrand Company Ltd., 1968,London.
Unit-III: Chapter 3: Sections: 3.2, 3.3, 3.5 -3.5.1, 3.5.2, 3.7.4, 3.7.5.
Unit-IV: Chapter 5: Sections: 5.2.1-5.2.3

3.S.W.Yuan ,"Foundations of Fluid Mechanics", Prentice- Hall of India, 1988, New Delhi.
Unit-IV: Chapter 8: Sections: 8.3 -a,b, 8.4 –a.
Unit-V : Chapter 9: Sections: 9.1, 9.2, 9.3 –a,b, 9.5 –a,b.

Reference Books:
1. Crammer K.R. and Pai S.I, Magneto Fluid Dynamics for Engineers and Applied Physicists, McGraw Hill, 1973.

M.Sc. (Mathematics) Degree Examination- Syllabus- For Candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PAPER 11: GRAPH THEORY

Maximum CIA : 30
Maximum CE : 70
Total Hours : 60

Course Objective: To enable students gain fundamental knowledge about the graph theory and their applications.

Unit I: (12Hours)
Graphs, Subgraphs and Trees
Graphs and Subgraphs: Graphs and Simple Graphs– Graph Isomorphism – The Incidence and Adjacency matrices, Subgraphs – Vertex Degrees – paths and Connection – Cycles.
Trees: Trees – Cut edges and Bonds – cut vertices – Cayley's formula

Unit II : (12Hours)
Connectivity, Euler tours and Hamilton Cycles:
Connectivity : Connectivity – Blocks.
Euler tours and Hamilton Cycles : Euler tours - Hamilton Cycles

Unit III: (12Hours)
Matchings and Edge colourings:
Matchings :Matchings coverings in Bipartite Graphs – Perfect Matchings.
Edge colourings : Edge chromatic number – Vizing's theorem.

Unit IV : (12Hours)
Independent sets, Cliques and Vertex Colourings:
Independent sets, Cliques : Independent sets – Ramsey's theorem.
Vertex Colourings : Chromatic Number – Brook's Theorem – Hajo's Conjecture – Chromatic Polynomials – Girth and Chromatic number.

Unit V: (12Hours)
Planar Graphs and Directed Graphs:
Planar Graphs : Plane and planar Graphs – Dual Graphs – Euler's formula – Brides – Kuratowski's theorem (Proof omitted) – The Five Colour Theorem and the Four Colour Conjecture.

Course Outcome
CO1: Apply the concept of Subgraphs and Trees
CO2: Understand about the Connectivity and Hamilton cycles
CO3: Remember Matchings and Edge colourings
CO4: Analyze Independent sets, Cliques and Vertex Colourings
CO5:Know the types of Planar Graphs and Directed Graphs

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L							H
CO 2	L					M		H
CO 3				M				H
CO 4	L					M		M
CO 5	L			M		H		M

Text Book:

J.A.Bondy and U.S.R.Murty, Graph Theory with Applications, American Elsevier Publishing
Company Inc., New York, 1976.

Unit-I   : Sections: 1.1– 1.7 and 2.1 – 2.4.
Unit-II : Sections: 3.1– 3.2 and 4.1 – 4.2
Unit-III : Sections: 5.1– 5.3 and 6.1 – 6.2
Unit-IV : Sections: 7.1-7.2 and 8.1 – 8.5
Unit-V : Sections: 9.1– 9.6

Reference Book:

1.NarsinghDeo,GraphTheory with Applications to Engineering and Computer Science, Eastern Economy Edition

M.Sc. (Mathematics) Degree Examination- Syllabus- For Candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
PAPER12: MATHEMATICAL STATISTICS

Maximum CIA : 30
Maximum CE   : 70
Total Hours : 60

Course Objective: To enable students gain fundamental knowledge about the Mathematical Statistics and their applications.

Unit I: (12 Hours)
Parameters of the Distribution of a Random Variable: Expected values – Moments –The Chebyshev inequality – Absolute moments- order of parameters- Moments of random vectors.

Unit II: (12Hours)
Characteristic Functions: Properties of Characteristic functions and moments – Semi invariants – The Characteristic function of the sum of independent random variables – Determination of distribution functions by the characteristic functions- Probability generating functions.

Unit III: (12Hours)
Some Probability Distribution: One point and two point Distributions –The Binomial distribution – The Poisson distribution – Normal Distribution – Uniform Distribution – Gamma Distribution – Beta Distribution.

Unit IV: (12Hours)
Limit Theorems: Stochastic Convergence – Bernoulli's Law of large numbers – Levy Cramer theorem – De Moivre- Laplace theorem – The Lindeberg-Levy theorem.

Unit V: (12Hours)
The Notion of a Sample: The notion of a statistic – The distribution of the arithmetic mean of independent normally distributed random variables – The Chi- square distribution- Distribution of the statistic (X , S)- Student's t-distributions.

Course Outcome
CO1 :Apply the concept of Moments.
CO2 :Understand   about the Characteristic Functions.
CO3 :Remember distribution functions.
CO4 :Analyze Limit Theorems.
CO5 :Evaluate the different types of tests.

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L							M
CO 2		L					M	
CO 3	M						M	
CO 4	L					L		H
CO 5	M		M				L	H

Text Book:

1. Probability Theory and Mathematical Statistics, MarekFisz, John Wiley, Third Edition, New York, 1963.

Unit I- Chapter 3: Sections 3.1 -3.6
Unit II- Chapter: 4: Sections 4.1 -4.5, 4.7.
Unit III- Chapter: 5 Sections 5.1, 5.2, 5.5 - 5.9.
Unit IV- Chapter: 6 Sections 6.2, 6.3, 6.6, 6.7, 6.8.
Unit V- Chapter: 9 Sections 9.1 - 9.6

Reference Book:

1. An Introduction to Probability Theory and its Applications, W. Feller, Vol. I, John Wiley, Third Edition, 1968.

M.Sc. (Mathematics) Degree Examination- Syllabus- For Candidates admitted from the academic year 2019-2020 onwards
THIRD SEMESTER
ELECTIVE II :DIFFERENTIAL GEOMETRY

Maximum CIA   : 30

Maximum CE   : 70

Total Hours   : 72

Course Objective: To enable students gain fundamental knowledge about the differential geometry and their applications.

Unit I: (14Hours)
Curves: Analytic representation -Arc Length–Tangent -Osculation plane –Curvature torsion –Formulas of Frenet.

Unit II: (14Hours)
Contact:Natural equations–Helices–General solutions of Natural equations – Evolutes and Involutes.

Unit III: (15Hours)
Elementary theory of surface: Analytic representation –First fundamental form –
Normal, Tangent plane –Developable surfaces.

Unit IV: (15Hours)
Second fundamental form :Meusnier's theorem–Euler's Theorem–Dupin'sindicatrix–Some surfaces–The fundamental equations–The equations of Gauss-Weingarten.

Unit V: (14Hours)
The theorem of Gauss and the equations of Codazzi –Some applications of the Gauss and Codazzi equations. The fundamental theorem of surface theory –Geodesic curvature – Geodesics.

Course Outcome
CO1:Apply the concept of Arc Length, Tangent, Osculation plane
CO2:Understand about the Evolutes and Involutes
CO3:RememberElementary theory of surface
CO4:AnalyzeSecond fundamental form
CO5:Evaluate the Geodesic curvature and Geodesics.

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L							M
CO 2			L			M		
CO 3		M					M	
CO 4	L					L		
CO 5	L						L	H

Text Book:
1.D. Struik, Lectures on Classical Differential Geometry, Addison Wesley Publishing Company, 1961.

Uni1-Chapter-I-Sec1.1-1.6
UnitII-Chapter-I-Sec1.7-1.11
UnitIII-Chapter-II-Sec2.1-2.4
UnitIV-Chapter-II-Sec2.5-2.8,ChapterIII-3.1&3.2
Unit V-Chapter-III-Sec 3.3-3.6, Chapter-IV-Sec 4.1&4.2

Reference Book:
1.U.C.De and A.A Shaiks " Differential Geometry of Manifolds" Edition 2007

M.Sc. (Mathematics) Degree Examination- Syllabus- For Candidates admitted from academic year 2019-2020 onwards
THIRD SEMESTER
ELECTIVE II-CRYPTOGRAPHY

Maximum CIA : 30
Maximum CE : 70

Total Hours : 72

Course Objective: To enable students gain fundamental knowledge about the encryption and secrecy, symmetric key encryption, public key cryptography, protocols and mechanisms and their applications.

Unit I: (16Hours)
Introduction – Encryption and Secrecy – The objective of Cryptography – Cryptographic protocols. Mathematical background – Number Theory – Introduction – Modular Arithmetic – Integer factorization problem – Pollard's rho factoring – Elliptic curve factoring – Discrete logarithm problem

Unit II: (14Hours)
Finite fields – Basic properties – Arithmetic of polynomials –Factoring polynomials over finite fields – Square free factorization

UnitIII: (13Hours)
Symmetric key encryption – Stream ciphers – Block Ciphers – DES

Unit IV: (14Hours)
Public key cryptography – Concepts of public key cryptography – Modular arithmetic – RSA – Discrete logarithm – Elliptic curve cryptography

UnitV: (15Hours)
Protocols and mechanisms - Key establishment, management and certification – Pseudorandom numbers and sequences – classes of attacks and security models

Course Outcome
CO1: Apply the concept of Encryption and Secrecy
CO2: Understand about the Square free factorization
CO3: Remember Modular arithmetic
CO4: Analyze Pseudo random numbers and sequences
CO5: Evaluate Public key cryptography

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L					L		
CO 2	L						M	
CO 3		M					L	
CO 4			L			L		M
CO 5	L					M		

Text Book:
1.HansDelfs, Helmut Knebl, Introduction to Cryptography, , 2002 ,Springer Verlag

Reference Books:

1.Alfred J. Menezes, Paul C. Van Oorschot, Scott A. Vanstone, Handbook of Applied Cryptography, 2000, CRC Press.
2.William Stallings, Cryptography and Network Security, 2000, Prentice Hall of India.

M.Sc. (Mathematics) Degree Examination- Syllabus- For Candidates admitted from academic year 2019-2020 onwards
THIRD SEMESTER
ELECTIVE II- AUTOMATA THEORY

Maximum CIA : 30
Maximum CE   : 70
Total Hours   : 72

Course Objective: To enable students gain Fundamental Knowledge about the Automata Theory and to explain the extent of their application.

Unit I: (14Hours)
Introduction to finite Automata - Machine- Basic machine - Finite state Machine - Finite - Automation - Transition Matrix.

UnitII: (14Hours)
Closure or Star Operation - Regular Set - Regular Expressions - Regular languages - Kleene Closure.

Unit III: (15Hours)
Procedure for converting NFA to DFA - Equivalent Regular Expressions - Transition Diagram- Pumping Lemma for Regular Expressions.

Unit IV:(15Hours)
Grammar - Formalization - Construction of Reduced Grammar for a given grammar - Ambiguous context free language - Derivation Tree- Context free grammar.

Unit V: (14Hours)
Push down Automation - Ambiguous context free language – Push down Automata - Moves of Push down Automata.

Course Outcome
CO1: Apply the concept of Automation
CO2 :Understand about the Regular Set
CO3: Remember converting NFA to DFA
CO4: Analyze Ambiguous context free language
CO5: Know the Ambiguous context free language

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L						L	
CO 2			L					L
CO 3			M				M	
CO 4	L							M
CO 5	L					M		

Text Book:

1. Anand Sharma, Theory of Automata and Formal Languages, Lakhsmi Publications P.Ltd, Reprint 2008, New Delhi.

Uni1-Chapter-II-Sec2.1,2.2,2.4,2.5
UnitII-Chapter-III-Sec1.3.1-3.5
UnitIII-Chapter-III-Sec3.8-3.11
UnitIV-Chapter-IV-Sec4.1,4.2,4.6,4.7,4.9
 Unit V-Chapter-V-Sec 5.1-5.4

Reference Book:

1. John E,Hopcroft, Rajeev Motwani, Jeffrey D. Ullman, Automata Theory, Pearson

M.Sc (Mathematics) Degree Examination – Syllabus for Candidates admitted   from the academic year 2019– 2020 onwards
THIRD SEMESTER
EDC I: WEB DESIGNING

Maximum CE: 50
Total Hours   :24

Course Objective :To inculcate the students to learn the concept of PHP.

Unit I: (5Hours)
The Building Blocks of PHP Variables - Data Types - Operators and Expressions - Constants Flow Control Functions in PHP Switching Flow - Loops - Code Blocks and Browser Output - Working with Functions What Is a Function? - Calling Functions - Defining a Function - Returning Values from User-Defined Functions - Variable Scope - Saving State between Function Calls with the static Statement.

Unit II: (5Hours)
Working with Arrays What Are Arrays? - Creating Arrays - Some Array-Related Functions - Working with Objects Creating an Object - Object Inheritance.

Unit III: (5Hours)
Working with Strings, Dates, and Time Formatting Strings with PHP - Investigating Strings in PHP - Manipulating Strings with PHP - Using Date and Time Functions in PHP - Other String- Date and Time Functions.

Unit IV: (5Hours)
Working with Forms Creating a Simple Input Form - Accessing Form Input with User-Defined Arrays - Combining HTML and PHP Code on a Single Page - Using Hidden Fields to Save State - Redirecting the User - Sending Mail on Form Submission .

Unit V: (4Hours)
Working with Cookies and User Sessions Introducing Cookies - Setting a Cookie with PHP - Deleting a Cookie with PHP - Session Function Overview - Starting a Session - Working with Session - Passing Session IDs in the Query String - Destroying Sessions and Unsetting Variables.

Course Outcome
CO1: Apply the concept of combining HTML and PHP Code on a Single Page
CO2: Understand about the Arrays
CO3 : Remember Operators and Expressions
CO4: Analyze with Strings, Dates, and Time Formatting Strings with PHP
CO5: Know Working with Cookies

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L						M	
CO 2			M				M	
CO 3					L			L
CO 4	L		M		M	M		
CO 5	L		H			L	H	

Text Book:
1.Julie C. Meloni," PHP MYSQL and APACHE, Pearson Education,", 2009, India.

Uni1-Part-II-5,6,7
UnitII-Part-II-8
UnitIII-Part-III-10
UnitIV-Part-III-11
Unit V- Part-III - 12

Reference Book:
1. Luke Welling, Laura Thomson, "PHP and MYSQL", Pearson Education,2010, India.
2.KevinTatroe, Peter Macintyre, RasmusLerdorf" Programming PHP", O'Reilley Media Inc.2013.

M.Sc (Mathematics) Degree Examination-Syllabus-For Candidates admitted from the academic year 2019-2020 onwards

THIRD SEMESTER
ALC II - DISTRIBUTION THEORY

Maximum CE:100

Course Objective: To enable students gain fundamental knowledge about the DISTRIBUTION THEORY and their applications.

Unit I:
TEST FUNCTIONS AND DISTRIBUTIONS: Test functions-Distributions-Localization and regularization-Convergence of distributions-Tempered distributions.

Unit II:
DERIVATIVES AND INTEGRALS: Basic Definitions-Examples-Primitives and ordinary differential equations.

Unit III:
CONVOLUTIONS AND FUNDAMENTAL SOLUTIONS: The direct product of distributions- Convolution of distributions-Fundamental solutions.

Unit IV:
THE FOURIER TRANSFORM: Fourier transforms of test functions-Fourier transforms of tempered distributions-The fundamental solution for the wave equation- Fourier transform of convolutions-Laplace transforms.

Unit V:
GREEN'S FUNCTIONS: Boundary value problems and their adjoints-Green's functions for boundary value problems-Boundary integral methods.

Course Outcome
CO1:Remember test functions and distributions
CO2:Understand derivatives and integrals
CO3:Apply Fourier Transforms
CO4:Analyse convolutions of distributions
CO5:Evaluate boundary value problems

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L					M	H	
CO 2	L					M	H	
CO 3	L					M	H	
CO 4	M					M	H	
CO 5	L					M	H	

Text Book:

1."An Introduction to Partial Differential Equations" by M.Renardy and R.C.Rogers, Second Edition, Springer Verlag, New York,2008.

Reference Book:

1."The Analysis of Linear Partial Differential Operators I-Distribution Theory and Fourier analysis" by L.Hormander, second Edition, Springer Verlag, Berlin,2003.

M.Sc. (Mathematics) Degree Examination- Syllabus- For Candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
PAPER 13: MATHEMATICAL METHODS

Maximum CIA : 30
Maximum CE   : 70
Total Hours   : 72

Course Objective: To enable students gain fundamental knowledge about the Mathematical methods and their applications.

Unit I : Fourier transforms   (15Hours)
Fourier sine and cosine Transform - Fourier Transform of Derivatives -Fourier Transform of simple functions - The convolution integral – convolution theorem – Parseval's relation for Fourier transforms – Solution of PDE by Fourier transform.- Laplace equation in half plane, in infinite strips, in semi infinite strip. The linear diffusion equation on semi infinite line.

Unit II :Hankel transforms   (14Hours)
Hankeltransforms : Properties of Hankel transforms - Hankel inversion theorem of derivatives of function (excluding proof). The parsevals relation – Relation between Fourier and Hankel transforms.

UNIT III : Integral equations   (14 Hours)
Integral equation : Types of Integral equations – Integral Fredholm Alternative theorem (proof omitted) – Approximation method –equation with separable kernel -Volterra integral equations

Unit IV : Applications of integral equation   (14Hours)
Applications of integral equation to Ordinary differential equations – Initial value problem – Boundary value problem – Abel's equation

Unit V: Calculus of Variations   (15 Hours)
 Maxima and Minima-The simplest case-Illustrative Examples-Natural boundary conditions and transition conditions-The variational Notations-The more general case.

Course Outcome
CO1: Apply the concept of Fourier sine and cosine Transform
CO2: Understand about theHankel transforms
CO3: Analyze Integral equation
CO4: Know the Applications of integral equation
CO5:Remember Calculus of Variation

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L						H	
CO 2				L		M	M	
CO 3			M				M	
CO 4	L					L	M	H
CO 5				M		H	H	M

Text Book:

1."The Use of Integral Transforms"byI.N.Sneddon, Tata McGraw Hill, New Delhi, 1974.
 (Unit I Unit II)
2."Linear Integral Equations Theory and Technique"byR.P.Kanwal, Academic Press, New York, 1971. (Unit III)
3."Differential Equations and Calculus of Variations" by L.Elsgolts, Mir Publishers, Moscow, 1970.(Unit IV)
4."Method of Applied Mathematics" by Francis B.Hilderbrand, Second Edition.(Unit V) Chapter 2: Section 2.1-2.6

Reference Book:

1.K.Vairamanickam, Nirmala, P.Ratchagar, S.Tamilselvam, "Transforms and Partial differential equations", Second Edition, scitech publications india pvt.ltd,2013.

M.Sc (Mathematics) Degree Examination – Syllabus for Candidates admitted   from the academic year 2019– 2020 onwards
FOURTH SEMESTER
PAPER 14: FUNCTIONAL ANALYSIS

Maximum CIA   : 30
Maximum CE   : 70
Total Hours   : 72

Course Objective : To enable students gain fundamental knowledge about the Functional Analysisand their applications.

Unit I: (15Hours)

Banach spaces – The definition and some examples – Continuous linear transformations – The Hahn-Banach theorem – The natural imbedding of N in N** - The open mapping problem.

Unit II: (14Hours)

The conjugate of an operator – Hilbert spaces – The definition and some simple properties – Orthogonal complements – Orthonormal sets.

Unit III: (14Hours)

The Conjugate space H* - The adjoint of an operator – Self- adjoint operators – Normal and unitary operators.

Unit IV: (14Hours)

Matrices – Determinants and the spectrum of an operator – The spectral theorem.

Unit V: (15Hours)

The definition and some examples of Banach algebra – Regular and singular elements – Topological divisors of zero – The spectrum – The formula for the spectral radius.

Course Outcome
CO1:Apply the concept of linear transformations.
CO2:Understand   about Hilbert spaces.
CO3:Rememberoperators.
CO4:Analyze determinants and the spectrum of an operator.
CO5:Know the Regular and singular elements.

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L							M
CO 2		L					M	H
CO 3			M				M	
CO 4	M						L	H
CO 5	L		M					H

Text Book:

1. G.F. Simmons, Introduction to Topology and Modern Analysis, McGraw –Hill Book Company, London, 1963.
.

Unit1- Section 46 to50

UnitII- Section -51 to 54

UnitIII- Section -55 to 59

UnitIV- Section -60 to 63

Unit V- Section -64 to 68

Reference Book:

1. C. Goffman and G. Pedrick, A First Course in Functional Analysis, Prentice Hall of India, New Deli, 1987.

M.Sc. (Mathematics) Degree Examination- Syllabus- For Candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
SBC II : LATEX (Theory)

Maximum CIA : 30

Maximum CE : 70

Total Hours : 72

Course Objective: To enable students gain fundamental knowledge about the Latex and their applications.

Unit I: (14 Hours)
Text formatting- TEX and its offspring- What's different in LATEX 2ϵ- Distinguishing LATEX 2ϵ - Basics of a LATEX file.

Unit II: (14 Hours)
Commands and Environments–Command names and arguments- Environments- Declarations-Lengths- Special Characters-Fragile Commands- Exercises.

Unit III: (15 Hours)
Document Layout and Organization – Document class, Page style, Parts of the document, Table of contents, Fine – Tuning text, Word division. Displayed Text - Changing font, Centering and indenting, Lists, Generalized lists, Theorem–like declarations, Tabulator stops, Boxes.

Unit IV: (14 Hours)
Tables, Printing literal text, Footnotes and marginal notes. Drawing pictures with LATEX.

Unit V: (15 Hours)
Mathematical Formulas – Mathematical environments, Main elements of math mode, Mathematical symbols, Additional elements, Fine–tuning mathematics.

Course Outcome
CO1: Apply the concept of TEX and its offspring
CO2:Understand about Command names and arguments
CO3: Remember Document Layout and Organization
CO4:AnalyzePrinting literal text
CO5:Know the main elements of math mode

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L					L		
CO 2			M			M		
CO 3			M				H	
CO 4	L		M					
CO 5					M	M		

Text Book:

1.H.Kopka and P.W. Daly, "A Guide to LATEX", Third Edition, Addison – Wesley, 1999, London.

Unit I- Chapter 1-Sec 1.6-1.8
Unit II- Chapter 2-Sec 2.1-2.6
Unit III- Chapter 3-Sec 3.1-3.6 , Chapter 4-Sec- 4.1-4.7
Unit IV- Chapter 4-Sec 4.8-4.10, Chapter 5-Sec 5.1
Unit V- Chapter 6-Sec 6.1-6.5

Reference Book:

1. V.Kavitha and Dr.M.Mallikaarjunan, "Fundamental to Latex" Lambert Academic publishing corporation ,Germany 2013.

M.Sc. (Mathematics) Degree Examination- Syllabus- For Candidates admitted from the academic year 2019-2020 onwards

FOURTH SEMESTER

SBC II: C++ PROGRAMMING (Theory)

Maximum CIA	: 30
Maximum CE	: 70
Total Hours	: 72

Course Objective:To enable students gain fundamental knowledge about the Computer programming and their applications.

Unit I: (14 Hours)
Principles of object-Oriented Programming: Software crisis – Software evolution – A look at procedure-oriented Programming – Object-oriented Programming Paradigm – Basic Concept of Object-Oriented Programming – Benefits of OOP – Object-Oriented languages –Applications of OOP.

Unit II: (15 Hours)
Tokens, Expressions and Control structure: Introduction – Tokens – Keywords – Identifiers and constants – basic data types – User defined data types - Derived data types – Symbolic constants – type compactability – Declaration of variables – Dynamic insulation of variables – Reference variables – operations in C++ - Scope resolution operator – member Dereferencing operators – memory management operators – Manipulators – type cast operator –expressions and their types – Special assignment expressions .

Unit III: (14 Hours)
Functions in C++: Introduction – The main function – Function prototyping – call by reference – return by reference inline functions – default arguments – constant arguments –function over loading – Math library functions –Managing Console I/O operations: – Unformatted I/O operations - Formatted I/O operations – Managing output with manipulators.

Unit IV: (15 Hours)
Classes and Objects: Defining Member Functions – A C++ Program with class – Making an outside Function Inline –Nesting of Member Functions – Private Member Functions – Arrays within a class – Memory Allocation for Objects .Objects as Function Arguments.. Constructors and Destructors: Introduction – Constructors – Parameterized Constructors – Multiple Constructors in a class – Constructors with Default Arguments – Dynamic Initializations of Objects – Constructing Two dimensional arrays – Constant Objects – Destructors.

Unit V: (14 Hours)
Operators Overloading : Introduction – Defining Operator Overloading – Overloading Unary Operators – Overloading Binary Operators – manipulating of strings Using Operators – Rules of Overloading Operators. Inheritance: Introduction – Defining Derived Classes – Single inheritance – Multilevel Inheritance – Hierachial Inheritance – Hybrid Inheritance.

Course Outcome

CO1: Apply the concept of Software evolution and Oriented Programming

CO2: Understand about the Tokens, Expressions and Control structure

CO3:Remember the functions in C++

CO4:Analyze Classes and Objects

CO5:Know the Operators Overloading

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L				M			
CO 2			M				M	
CO 3	L					M		
CO 4	L		M			M		
CO 5					H	H		

Text Book:

1. E. Balaguruswamy, "Object – Oriented Programming with C++", Tata McGrawHill Publishing Company Limited, Reprint 2012.

Unit1-Chapter-I-Sec1.1-1.8

UnitII-Chapter-III-Sec3.1-3.20

UnitIII-Chapter-IV-Sec4.1-4.9,4.11

UnitIV-Chapter-V-Sec5.4-5.10,5.14,Chapter-VI-Sec6.1-6.6,6.9-6.11

Unit V-Chapter-VII-Sec 7.1-7.7, Chapter VIII-Sec 8.1-8.3,8.5-8.8

Reference Book:

1.D. Ravichandran, Programming with C++, Tata McGraw Hill, 1996, New Delhi.

M.Sc. (Mathematics) Degree Examination- Syllabus- For Candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
ELECTIVE- III :FUZZY SETS AND FUZZY LOGIC

Maximum CIA : 30
Maximum CE : 70
Total Hours : 72

Course Objective: To enable students gain fundamental knowledge about the fuzzy sets and fuzzy logic and their applications.

Unit I: (15Hours)
CRISP SETS AND FUZZY SETS: The notion of Fuzzy sets – Basic concepts. Operations On Fuzzy sets: Fuzzy Complement – Fuzzy Union – Fuzzy Intersection – Combination of operations – General aggregation operations.

Unit II: (14 Hours)
FUZZY RELATIONS: Crisp and Fuzzy relations – Binary relations on a single set – quivalence and similarity relation – Compatibility or tolerance relations –Orderings, Morphisms, Fuzzy relation equations.

Unit III: (15Hours)
FUZZY MEASURES: General discussion – Belief and Plausibility measures – Probability measures – Possibility and Necessity measures – Relationship among classes of fuzzy measures.

Unit IV: (14 Hours)
UNCERTAINTY AND INFORMATION: Types of uncertainty – Measures of fuzziness, Classical measures of uncertainty- Measures of dissonance – Measures of Confusion-Measures of non specificity.

Unit V: (14 Hours)
Applications: General discussion – Natural life and Social Sciences –Engineering-Medicine Management and Decision making – Computer Science-System Science-Other Applications.

Course Outcome
CO1: Apply the concept of Fuzzy Union and Fuzzy Intersection
CO2: Understand   about fuzzy relations
CO3: Remember fuzzy measures
CO4: Analyze types of uncertainty
CO5: Know the Applications of fuzzy logic in different fields.

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L						M	
CO 2	L					M		M
CO 3			M				M	
CO 4				L				H
CO 5	L		M			H		H

Text Book:

1. Fuzzy Sets, Uncertainty And Information – GEORGE J.KLIR and TINA A.FOLGER, Prentice Hall of India, New Delhi, 2007.
Department of Mathematics, Government Arts College (Autonomous), Coimbatore-18

Unit I   - Chapter 1 - Sections: 1.3 and 1.4; Chapter 2 - Sections: 2.2 to 2.6
Unit II   - Chapter 3 - Sections: 3.1 to 3.8
Unit III   - Chapter 4 - Sections: 4.1 to 4.5
Unit IV   - Chapter 5 – Sections: 5.1 to 5.6
Unit V   - Chapter 6 - Sections: 6.1 to 6.8

Reference Books:

1. Fuzzy Sets And Fuzzy Logic Theory And Applications – GEORGE J.KLIR AND BO YUAN, Prentice Hall of India, New Delhi, 2006.
2. Fuzzy Logic With Engineering Applications - Timothy
J. ROSS WILLEY, India Pvt. Ltd., New Delhi, Second Edition Reprint,2009.

M.Sc. (Mathematics) Degree Examination- Syllabus- For Candidates admitted from the academic year 2019-2020 onwards

FOURTH SEMESTER

ELECTIVE III : STOCHASTIC DIFFERENTIAL EQUATIONS

Maximum CIA : 30
Maximum CE : 70
Total Hours: 72

Course Objective: To enable students gain fundamental knowledge about the Stochastic differential equations and their applications.

Unit I: (15 Hours)
Some notions-Specification of Stochastic process-Stationary Processes-Markov chains-Definitions and examples-Higher Transition Probabilities-Generalisation of Independent Bernoulli trials-Sequences of chain-Dependent trials.

Unit II: (14 Hours)
Classification of states and chains-Determination of Higher TP-Stability of a Markov system-Reducible chains, Markov chains with continuous state space.

Unit III : (14 Hours)
Poisson processes and their Extensions-Poisson process and related distribution-Generalization of Poisson process-Birth and death process.

Unit IV: (14 Hours)
Renewal process-Renewal process in continuous time- Renewal Equation-Stopping time-Wolds equation-Renewal Theorem.

Unit V: (15 Hours)
Queueing system-General Concepts- The Queueing model M/M/1- Steady state behavious-Transient behavious of M/M/1 model 1- Birth and death processes in Queueing Theorem- Multichannel models.

Course Outcome
CO1: Apply the concept of Stochastic Approach.
CO2: Understand about States and chains.
CO3: Remember Poisson processes and their Extensions.
CO4: Analyze Renewal process
CO5: Know the Queueing system

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L						M	
CO 2			L				L	
CO 3	L					M		M
CO 4	L						M	
CO 5	L					M		H

Text Book:
1."Stochastic Process" by J.Medhi, 2nd Edition, Wiley Eastern Ltd.

Unit I   - Chapter 2 – Sec 2.1-2.3 , Chapter 3-Sec3.1-3.3
Unit II - Chapter 3-Sec 3.4-3.6,3.8,3.9 and 3.11
Unit III - Chapter 4-Sec 4.1-4.4
Unit IV - Chapter 6-Sec 6.1-6.5
Unit V   - Chapter 10-Sec 10.1-10.4 (Except 10.2.3&10.2.3.1(

Reference Book:
1. Rong situ "Theory of differential stochastic Equations with Jumps and Appilication" 2011, New Delhi.

M.Sc. (Mathematics) Degree Examination- Syllabus- For Candidates admitted from the academic year 2019-2020 onwards
FOURTH SEMESTER
ELECTIVE III : NON LINEAR DIFFERENTIAL EQUATIONS

Maximum CIA   : 30
Maximum CE   : 70
Total Hours   : 72

Course Objective: To enable students gain fundamental knowledge about the non linear differential equations and their applications.

Unit I: (15Hours)
First order systems in two variables and linearization: The general phase plane - Some population models – Linear approximation at equilibrium points – Linear systems in matrix form.

Unit II: (14 Hours)
Averaging Methods: An energy balance method for limit cycles – Amplitude and frequency estimates – Slowly varying amplitudes ; Nearly periodic solutions - Periodic solutions: Harmonic balance – Equivalent linear equation by harmonic balance .

Unit III: (15Hours)
Perturbation Methods: Outline of the direct method – Forced oscillations far from resonanceForced oscillations near resonance with weak excitation – Amplitude equation for undamped pendulum – Amplitude perturbation for the pendulum equation – Lindstedt's method – Forced oscillation of a self – excited equation.

Unit IV: (14 Hours)
 Linear systems: Structure of solutions of the general linear system – Constant coefficient system – Periodic coefficients –Floquet theory – Wronskian.

Unit V: (14 Hours)
Stability: Poincare stability – Solutions- paths and norms – Liapunov stability- Stability of linear systems – Comparison theorem for the zero solutions of nearly-linear systems.

Course Outcome
CO1: Apply the concept of linearization
CO2: Understand about Amplitude and frequency estimates
CO3: Remember Perturbation Methods
CO4: Analyze general linear system and Floquet theory
CO5: Know the Stability of linear systems

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L						L	
CO 2			L			M		
CO 3	L						M	
CO 4	L							H
CO 5	L						M	

Text Book:

1. D.W.Jordan and P.Smith "Nonlinear Ordinary Differential Equations", Clarendon Press, 1977, Oxford.

Unit-I : Chapter 2

Unit-II : Chapter 4

Unit-III: Chapter 5: Sections: 5.1 - 5.4, 5.7 -5.10

Unit-IV: Chapter 8: Sections: 8.1 - 8.4

Unit-V : Chapter 9: Sections: 9.1 - 9.4, 9.6

Reference Book:

1.G.F.Simmon, "Differential Equations", Tata Mc Graw-Hill,2011,New Delhi

M.Sc (Mathematics) Degree Examination-Syllabus-For Candidates admitted from the academic year 2019-2020 onwards

FOURTH SEMESTER
ALC III - PROBABILITY THEORY

Maximum CE:100

Course Objective: To enable students gain fundamental knowledge about the Concept of Probability Theory

Unit I:
What is Probability? Random Variables and Measurability Results, Expectations and the Lebesgue Theory, Image Measure and the Fundamental Theorem of Probability.

Unit II:
Independence and Strong Convergence- Independence- Convergence Concepts, Series and Inequalities

Unit III:
Law of Large Numbers, Applications to Empiric Distributions, Densities, Queuing and Random walk.

Unit IV:
Conditional Expectation, Conditional Probabilities. Probability Distributions and Characteristic Functions- Distribution Functions and Selection Principle-Characteristic Functions,Inversion.

Unit V:
Weak limit Laws-Classical Central Limit Theorems.

Course Outcome
CO1:Remember probability
CO2:Understand Convergence concept
CO3:Apply Law of large numbers
CO4:Analyse Central limit theorems
CO5:Evaluate empiric distributions, densities, queueing random walk

CO/PO &PSO	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3
CO 1	L					M	H	
CO 2	L					M	H	
CO 3	L					M	H	
CO 4	L					M	H	
CO 5	L					M	H	

Text Book:

1.M.M.Rao. ' Probability Theory with Applications', Academic Press, 1984.

Reference Book:

1.William Feller, ' An Introduction to Probability theory and its Application', Second Edition, Wiley Publisher(2008)

வி.எல்.பி.ஜானகியம்மாள் கலை அறிவியல் கல்லூரி
தன்னாட்சி
தேசியத் தர நிர்ணய மறு மதிப்பீட்டுக் குழுவினரால்
(NAAC) 'A' கிரேடு மற்றும் சர்வதேசத் தரச்சான்றிதழ் (ISO)பெற்றக் கல்லூரி
கோவைப்புதூர், கோயமுத்தூர் -641 042.
தெரிவு அடிப்படை மதிப்பீடு அமைப்பு (CBCS)
இளங்கலைப் பட்டவகுப்புகள்
பி.ஏ, பி.எஸ்.சி,பி.காம்,பி.சி.ஏ,பி.பிஏ......
தமிழ்த்துறை

2019-2020 கல்வியாண்டு முதல் பயிலுபவர்களுக்குப் பாடத்திட்டத்தின் நோக்கம் : பகுதி-I தமிழ்ப் பயிலும் மாணவ மாணவியர்கள் தமிழ் இலக்கிய வரலாற்றினை அறிந்து கொள்ளவும், சிறப்புடைய இலக்கியங்களிலிருந்து சில பகுதிகளைக் கற்றுக் கொள்ளவும், அறக்கருத்துக்களைப் பின்பற்றி நல்ல சான்றோர்களாகத் திகழவும், பிழையின்றித் தமிழ்ச் சொற்களைப் பேசவும், எழுதவும் இப்பகுதி உதவும்.

பருவம் ஒன்று

பகுதி – I தமிழ்ப்பாடத்திட்டம்
தாள் - I -இக்கால இலக்கியமும் உரைநடையும்

மொத்தப் பாடவேளைகள் : 60 மணிநேரம்

அலகு – I கவிதை (12 மணிநேரம்)

1.	நடிப்பு சுதேசிகள்	-	மகாகவி பாரதியார்
2.	எந்நாளோ?	-	பாவேந்தர் பாரதிதாசன்
3.	அவனும் அவளும்	-	நாமக்கல் கவிஞர்
4.	தீக்குச்சிகள்	-	கவிக்கோ அப்துல் ரகுமான்
5.	கடலுக்கு ஒரு கடிதம்	-	கவிஞர் மு.மேத்தா
6.	ஒரு கதவும் கொஞ்சம் கள்ளிப்பாலும்	-	கவிஞர் தாமரை

அலகு – II உரைநடை (18 மணிநேரம்)

1.	தமிழர் கண்ட நல்லறம்	-	தமிழறிஞர் சாமி சிதம்பரனார்
2.	உலகமொழிகளும் தமிழும்	-	முனைவர் ச.அகத்தியலிங்கம்
3.	பெரியாரும் சமதர்மமும்	-	முனைவர் வே.ஆனைமுத்து
4.	சமூக மதிப்பீடுகளை உயர்த்தும் கல்வி	-	முனைவர் கா.மீனாட்சிசுந்தரம்
5.	சிற்பக்கலை	-	முனைவர் மா.இராசமாணிக்கனார்

அலகு – III உரைநடை (18 மணிநேரம்)

6.	சிறுதெய்வ நெறிகள்	-	முனைவர் தொ.பரமசிவம்
7.	பழந்தமிழரின் போர்வெறியும் அச்சமும்	-	முனைவர் மா.தமிழ்வாணன்

8. சித்தர்கள் காட்டும் வாழ்வியல் சிந்தனைகள் - முனைவர் கோ.சுரே

9. மேற்குத்தொடர்ச்சிமலையும்
   சுற்றுச்சூழல் பாதிப்பும்   - திரு. பசுமைக் குமார்

10. இணைய உலகில் தமிழ் நூல்களும்
    குழுக்களும்   - முனைவர் மு.இளங்கோவன்

அலகு – IV -பொதுத்தமிழ்   (6 மணிநேரம்)

1. பஜகர் டிபற்ற நூல் நூலாசிரியர்கள் 2. டிதாடரால் குறிக்கப்படுபரும் சான்றொர் 3. அடைடிமாரியால் குறிக்கப்படுபரும் நூல் 4. பிளர் திருத்தம் 5. பிறடிமாரிச் டிசாற்களை நீக்குதல்   6. ஆங்கிலச் டிசால்லுக்கு நெரான தமிர்ச்டிசால்லறிதல் 7. பிழைத்திருத்தம் (ல-ள-ழ-ன-ண-ர-ற வேறுபாடுகள்) 8. ஓடிரபுத்து ஒருடிமாரி உரிய டிபாருளைக் கண்டறிதல் 9. வெர்ச்டிசால்லைத் தெர்வஜ டிசய்தல் 10. மரபஜப் பிளர்நீக்குதல்

அலகு – V இலக்கிய வரலாறு,விண்ணப்பம் மற்றும் பொதுக்கட்டுரை

(6 மணிநேரம்)

1. மரபுக்கவிதையின் தோற்றமும் வளர்ச்சியும்
2. புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும்
3. உரைநடையின் தோற்றமும் வளர்ச்சியும்
4. விண்ணப்பம் எழுதுதல் (வேலை வேண்டி, மாற்றுச்சான்றிதழ், அலுவலகப் பயன்பாடுகளுக்காக)
5. பொதுக்கட்டுரை-சமுதாயம், பொருளாதாரம்,அறிவியல்,இன்றைய நடப்புகள்

பாடநூல் வெளியீடு

1. செய்யுள்,இலக்கணம்,இலக்கிய வரலாறு பாடநூல் (அலகு –I,IV & V)
   தொகுப்பு :தமிழ்த்துறை, வி.எல்.பி.ஜானகியம்மாள் கலை அறிவியல் கல்லூரி

2. கட்டுரைத் தொகுப்பு (அலகு – II,III)
   தொகுப்பு   : தமிழ்த்துறை, வி.எல்.பி.ஜானகியம்மாள் கலை அறிவியல் கல்லூரி,

மேற்பார்வை நூல்கள்

1. வகைமை நோக்கில் தமிழ் இலக்கிய வரலாறு
   முனைவர் பாக்கியமேரி (அலகு – I,IV, V), நியூ செஞ்சுரி புக் ஹவுஸ் (பி) லிட்,
   41-பி,சிட்கோ இண்டஸ்ட்ரியல் எஸ்டேட், அம்பத்தூர், சென்னை – 600 098.
   பதிப்பு : சூன் 2010.

2. நற்றமிழ் இலக்கணம்   -   சொ. பரமசிவம் (அலகு – IV)
                                     பாட்டுப் பதிப்பகம், அண்ணா நகர்,
                                     சென்னை – 600 040.
                                     (ப.ஆ-ஏப்ரல் 1995)

வி.எல்.பி.ஜானகியம்மாள் கலை அறிவியல் கல்லூரி
தன்னாட்சி
தேசியத் தர நிர்ணய மறு மதிப்பீட்டுக் குழுவினரால்
(NAAC) 'A' கிரேடு மற்றும் சர்வதேசத் தரச்சான்றிதழ் (ISO)பெற்ற கல்லூரி
கோவைப்புதூர், கோயமுத்தூர் -641 042.
தெரிவு அடிப்படை மதிப்பீடு அமைப்பு (CBCS)
இளங்கலைப் பட்டவகுப்புகள்
பி.ஏ, பி.எஸ்.சி,பி.காம்,பி.சி.ஏ,பி.பிஏ......
தமிழ்த்துறை

2019-2020 கல்வியாண்டு முதல் பயிலுபவர்களுக்கு

பாடத்திட்டத்தின் நோக்கம் : பகுதி – I தமிழ்ப் பயிலும் மாணவ மாணவியர்கள் தமிழ் இலக்கிய வரலாற்றினை அறிந்து கொள்ளவும், சிறப்புடைய இலக்கியங்களிலிருந்து சில பகுதிகளைக் கற்றுக் கொள்ளவும், அறக்கருத்துக்களைப் பின்பற்றி நல்ல சான்றோர்களாகத் திகழவும், பிழையின்றித் தமிழ்ச் சொற்களைப் பேசவும், எழுதவும் இப்பகுதி உதவும்.

பருவம் இரண்டு

பகுதி – I தமிழ்ப்பாடத்திட்டம்

தாள் - I – சங்கம் மற்றும் நீதி இலக்கியமும் புதினமும்

மொத்தப் பாடவேளைகள் : 60

அலகு – I   (18 மணிநேரம்)

1. அகநானூறு   - பா.எண்(36,55,110,144,208)
                              5 பாடல்கள் மட்டும்
2. புறநானூறு   - பா.எண்(129,136,152,201,371)
                              5 பாடல்கள் மட்டும்
3. முல்லைப்பாட்டு   - முழுவதும்
4. கலித்தொகை   - பா.எண்(45,59,86,99,120)
                              5 பாடல்கள் மட்டும்

அலகு – II   (12 மணிநேரம்)
1. திருக்குறள்   - ஆள்வினையுடைமை, குறிப்பறிதல்
                              (காமத்துப்பால்), இரண்டு
                              அதிகாரங்கள் மட்டும்
2. நாலடியார்   - இளமை நிலையாமை, பெரியாரைப்
                              பிழையாமை இரண்டு
                              அதிகாரங்கள் மட்டும்
3. திரிகடுகம்   - 21,29,31,56,68 ஐந்து பாடல்கள்
4. பழமொழி நானூறு   - 3,14,37,75,77 ஐந்து பாடல்கள்

அலகு – **III** புதினம் (12 மணிநேரம்)

கோடுகளும் கோலங்களும் - திருமதி ராஜம் கிரு்்ணன்

அலகு – **IV** பொதுத்தமிழ் (12 மணிநேரம்)

1. வெர்ச்டிசால்லைக் டிகாடுத்து – வினைமுற்று.். வினைடியச்சம்/ வினையாலணையஜம் டிபயர்/ டிதாரிற் டிபயர் உருவாக்கல் 2. அகர வரிசைப்படி டிசாற்களைச் சீர் டிசய்தல் 3. இலக்கணக் குறிப்பறிதல் 4. விடைக்கெற்ற வினாவைத் தெர்ந்டிதடுத்தல் 5. தன்வினை/ பிறவினை/ டிசய்வினை/ டிசயப்பாட்டு வினை வாக்கிய்்களைக் கண்டிடபுதுதல் 6.டிபயர்ச்டிசால்லின் வகையறிதல் 7. எதுகை/ மொனை/ ,யைப[இவற்றுள் ஏதெனும் ஒன்றைத் தெர்ந்டிதடபுதுதல்.

அலகு – **V** இலக்கிய வரலாறும் பொதுக்கட்டுரையும் (6 மணிநேரம்)
  1. தமிழ் நாவலின் தோற்றமும் வளர்ச்சியும்
  2. பாட்டும் தொகையும்
  3. பதினெண் கீழ்க்கணக்கு நூல்கள்
  4. நாட்டுப்புறவியல் (நாட்டுப்புற மருத்துவம், நம்பிக்கைகள்)
பாடநூல் வெளியீடு
  1.செய்யுள் இலக்கணம் மற்றும் இலக்கிய வரலாறு - மருத்துவம், விளையாட்டு, நம்பிக்கை (அலகு – I,II,IV & V) தொகுப்பு : தமிழ்த்துறை வி.எல்.பி.ஜானகியம்மாள் கலை அறிவியல் கல்லூரி.

  2. நாவல் : கோடுகளும் கோலங்களும் (அலகு – III)
                   திருமதி. ராஜம் கிரு்்ணன்
                   நாம்தமிழர்ப் பதிப்பகம், சென்னை- 600004
மேற்பார்வை நூல்கள்

  1. **சங்க இலக்கியம்** - ச.வே.சுப்பிரமணியன் (அலகு-ஐ)
     (எட்டுத்தொகை) மணிவாசகர் பதிப்பகம்
                   31,சிங்கர் தெரு,பாரி முனை,
                   சென்னை – 600 018.(ப.ஆ -சூன் 2010)
  2. **பதினெண் கீழ்க்கணக்கு** – உரை: துரை ராசாராம், பாரி நிலையம்,
  சென்னை – 18 (ப.ஆ-ஆகஸ்டு 2007). (அலகு – V)
  3. **வகைமை நோக்கில் தமிழ் இலக்கிய வரலாறு** (அலகு –ஐஇஐஐஐ மற்றும்ஏ)இ நியூ செஞ்சுரி புக் ஹவுஸ் (பி) லிட், 41-பி,சிட்கோ இண்டஸ்ட்ரியல் எஸ்டேட்,
   அம்பத்தூர், சென்னை – 600 098 (ப.ஆ- சூன் 2010).
   4. **நன்னூல்** - பவணந்தி முனிவர் (அலகு – IV), (உரை) –
  இரா.வடிவேலனார், சாரதா பதிப்பகம், சென்னை –05 (ப.ஆ-ஆகஸ்டு 2006).

வி.எல்.பி.ஜானகியம்மாள் கலை அறிவியல் கல்லூரி
தன்னாட்சி
தெரிவு அடிப்படை மதிப்பீடு அமைப்பு (**CBCS**)
தமிழ்த்துறை
இளங்கலைப் பட்ட வகுப்புகள்
பி.ஏ, பி.எஸ்.சி,பி.காம்,பி.சி.ஏ,பி.பிஏ......
வினாத்தாள் அமைப்பு

பருவம் ஒன்று

பகுதி – **I** தமிழ் தாள் - **I** - இக்கால இலக்கியமும் உரைநடையும்

நேரம்: 3 மணி   மொத்த மதிப்பெண்கள் :70

(10X1 =10)

(பிரிவு – அ)
அனைத்து வினாக்களுக்கும் விடையளி
அலகு (4) – 10 வினாக்கள் கேட்கப்பட வேண்டும்

(5X4 =20)

(பிரிவு – ஆ)
இரண்டு பக்க அளவில் விடையளி
ஒவ்வொரு அலகிலிருந்தும் ஒரு வினா அமைதல் வேண்டும்.
அலகு (1) – 2 வினாக்கள்
அலகு (2) – 1 வினா
அலகு (3) – 1 வினா
அலகு (5) – 1 வினா

(5X8 =40)

(பிரிவு – இ)
கட்டுரை வடிவில் விடையளி
அலகு (1) – 1 வினா
அலகு (2,3) –மொத்தம் 3 வினாக்கள்
அலகு (5) – 1 வினா

குறிப்பு
1. பிரிவு "அ"
   அ) சரியான விடைகளைத் தேர்ந்தெடுத்தல் அடிப்படையில் அலகு 4 லிருந்து மட்டும் 10 வினாக்கள் கேட்கப்பட வேண்டும்.
   அலகு 1,2,3,5 ஆகிய அலகிலிருந்து ஒரு மதிப்பெண் வினாக்கள் கேட்கப்பட வேண்டாம்.
2. அலகு 4 லிருந்து 4 மற்றும் 8 மதிப்பெண் வினாக்கள் கேட்கப்பட கூடாது.
3. பிரிவு 'ஆ' மற்றும் 'இ' ஆகிய பகுதிகளில் வினாக்கள் 'இது' அல்லது 'அது' என்ற வகையில் அவற்றிற்கு உரிய அலகுகளில் இருந்து அமைதல் வேண்டும்.

வி.எல்.பி.ஜானகியம்மாள் கலை அறிவியல் கல்லூரி
தன்னாட்சி
தெரிவு அடிப்படை மதிப்பீடு அமைப்பு **(CBCS)**
தமிழ்த்துறை
இளங்கலைப் பட்ட வகுப்புகள்
பி.ஏ, பி.எஸ்.சி,பி.காம்,பி.சி.ஏ,பி.பிஏ......
வினாத்தாள் அமைப்பு
பருவம் இரண்டு

பகுதி – **I** தமிழ் தாள் - **II** – சங்கம் மற்றும் நீதி இலக்கியமும் நாவலும்

நேரம்: 3 மணி   மொத்த மதிப்பெண்கள் :70

(10X1 =10)
(பிரிவு – அ)
அனைத்து வினாக்களுக்கும் விடையளி
அலகு (1) – 1 வினா
அலகு (2) – 1 வினா
அலகு (3) – 1 வினா
அலகு (4) – 6 வினாக்கள்
அலகு (5) – 1 வினா

(5X4 =20)
(பிரிவு – ஆ)
இரண்டு பக்க அளவில் விடையளி
ஒவ்வொரு அலகிலிருந்தும் ஒரு வினா அமைதல் வேண்டும்.
அலகு (1,)⎤
அலகு (2) ⎬ – இரு அலகுகளிலிருந்து மொத்தம் 3 வினாக்கள்
அலகு (3) – 1 வினா
அலகு (5) – 1 வினா

(5X8 =40)
(பிரிவு – இ)
கட்டுரை வடிவில் விடையளி
அலகு (1,)⎤
அலகு (2) ⎬ – இரு அலகுகளிலிருந்து மொத்தம் 3 வினாக்கள்
அலகு (3) – 1 வினா
அலகு (5) – 1 வினா

குறிப்பு

1. பிரிவு "அ"

   அ) சரியான விடைகளைத் தேர்ந்தெடுத்தல் - 4வினாக்கள்

   ஆ) கோடிட்ட இடங்களை நிரப்புதல் - 3 வினாக்கள்

   இ) ஓரிரு சொற்களில் விடையளித்தல் - 3 வினாக்கள்

   ஈ) அலகு (I) ,(II),(III), (V) ஆகியவற்றிலிருந்து தலா 1 கேள்வி மட்டுமே கேட்கப்பட வேண்டும். அலகு (ஐஏ) லிருந்து 6 வினாக்கள் கேட்கப்பட வேண்டும்.

2. பிரிவு 'ஆ' மற்றும் 'இ' ஆகிய பகுதிகளில் வினாக்கள் 'இது' அல்லது 'அது' என்ற வகையில் அவற்றிற்கு உரிய அலகுகளில் அமைதல் வேண்டும்.

3. பிரிவு 'ஆ' மற்றும் 'இ' ஆகியவற்றிலிருந்து 4 மற்றும் 8 மதிப்பெண்கள் வினாக்கள் இடம் பெறுதல் கூடாது.

4. பாடநூலில் கொடுக்கப்பட்டுள்ள பகுதியிலுருந்து மட்டுமே வினாக்கள் கேட்கப்பட வேண்டும்.

B.Sc/B.Com/BBA/BCA Degree Examination – Syllabus for Candidates admitted from the academic year 2019 – 2020 and onwards

FIRST SEMESTER
PART I: FRENCH I

Prescribed text: **LATITUDES I**   Total Hours: 60

Units   : 1 – 4
Authors   : Regine Merieux Yves Loiseau
Available at   : Goyal Publishers Pvt Ltd 86,

                                                   University Block

                                                   Jawahar Nagar (Kamla Nagar)

                                                   New Delhi – 110007

Tel   : 011 – 23852986 / 9650597000

Question Paper Pattern

Semester I

Maximum Marks: 70   Time: 3 Hours
(All questions to be set only from the prescribed text)

Section A
1. Choisissez la meilleure réponse: (10x1=10)

Section B
1. Dites vrai ou faux (5x1=5)
2. Traduisez les textes suivants en anglais:(4/5) (4x5=20)

Section C
1. Comprehension (5x1=5)
2. Exercices de grammaire :(5x4=20) **(either/or)**
3. Remplissez le dialogue :(5x1=5)
4. Associez :(5x1=5)

B.Sc/B.Com/BBA/BCA Degree Examination – Syllabus for Candidates admitted from the academic year 2019 – 2020 and onwards

<div align="center">

SECOND SEMESTER
PART I: FRENCH II

</div>

Prescribed text: **LATITUDES I**   Total Hours: 60

Units	:	5 – 8
Authors	:	Regine Merieux
		Yves Loiseau
Available at	:	Goyal Publishers Pvt Ltd
		86, University Block
		Jawahar Nagar (Kamla NagaNew Delhi – 110007
Tel	:	011 – 23852986 / 9650597000

<div align="center">

Question Paper Pattern
Semester II

</div>

Maximum Marks: 70   Time: 3 Hours
<div align="center">

(All questions to be set only from the prescribed text)

Section A

</div>

1. Choisissez la meilleure reponse: (10X1=10)

<div align="center">

Section B

</div>

2. Choisissez un des trois sujets et ecrivez un texte d'environ 60 mots : (5X1=5)
3. Traduisez les textes suivants en anglais:(4/5) (4X5=20)

<div align="center">

Section C

</div>

4. Compréhension (5x1=5)
5. Exercices de grammaire:(5X4=20)   **(either/or)**
6. Remplissez le dialogue:(5X1=5)
7. Associez :(5X1=5)

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B.Sc/B.Com/BBA/BCA Degree Examination – Syllabus for Candidates admitted from the academic year 2019 – 2020 and onwards

FIRST SEMESTER
PART I: MALAYALAM I

Total Hours: 60

Paper I
Prose, Composition &Translation
Unit I & II

Novel

Unit III & IV

Short story

Unit V

Composition & Translation

Text books prescribed:

Unit I & II

Pathummayude Aadu - Vaikam Muhammed Basheerr
(D.C.Books, Kottayam, Kerala)

Unit III & IV

Ente Priyappeta Kadhakal – Akbar Kakkattil)
(D.C. Books, Kottayam, Kerala)

Unit V

Expansion of ideas, General Eassay and Translation. (A simple passage from English about 100 works to Malayalam)

Reference Books:

1. Malayala Novel Sahithya Charitram-K.M.Tharakan (N.B.S.Kottayam)

2.Cherukatha Innale Innu-M.Achuyuthan (D.C Books, Kottayam)

3.Sahithya Charitram Prasthanangalilude- Dr.K.M George, (D.C.Books Kottayam)

4. Malayala Sahithya vimarsam-Sukumar Azhee kode (D.C.books)

B.Sc/B.Com/BBA/BCA Degree Examination – Syllabus for Candidates admitted from the academic year 2019 – 2020 and onwards

SECOND SEMESTER
PART I: MALAYALAM II

Total Hours: 60

Paper II - Prose: Non Fiction

This paper will have the following five units:

Unit I & II

Autobiography

Uinit III, IV & V

Travelogue

Text Books prescribed:

Unit I & II

Vazhithiruvukal-Dr.A.P.J.Abdulkalam (D.C.Books, Kottayam)

Unit III, IV & V

Alkoottathil Thaniyae - M.T Vasudhevan Nair (D.C.Books, Kottayam)

Reference books:

1.Athmakathasahithyam Malayalathil-Dr.Vijayalam Jayakumar (N.B.S.Kottayam)

2.Sancharasahithyam Malayalathil –Prof.Ramesh chandran. V,(Kerala Bhasha Institute, Trivandrum)

B.Sc (Catering Science and Hotel Management) Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards

FIRST SEMESTER
PART I: FRENCH I

Prescribed Text   : **EN CUISINE**

Units   : 1 – 3
Authors   : Jerome Cholvy
Available at   : Goyal Publishers Pvt Ltd
                            86, University Block
                            Jawahar Nagar (Kamla Nagar)
                            New Delhi – 110007
Tel   : 011 – 23852986 / 9650597000

OBJECTIFS:

En cuisine est un Manuel de Francois de la restauration et de la gastronomie, domaine dans lequel la connaissance du français est primordiale. Cette Methodsadresse a des debutants et se compose des unites construites autour de themes fondamentaux dans le secteur de la restauration. Chaque unite compte 3 lecons et une page

Dondo

Unite 1   : Bienvenue !

Unite 2   : Cuisine et restaurant

Unite 3   : Dans les regles

B.Sc (Catering Science and Hotel Management) Degree Examination – Syllabus for candidates admitted from the academic year 2019 – 2020 onwards

SECOND SEMESTER
PART I: FRENCH II

Prescribed Text:	**EN CUISINE**
Units	: 1 – 3
Authors	: Jerome Cholvy
Available at	: Goyal Publishers Pvt Ltd
	86, University Block
	Jawahar Nagar (Kamla Nagar)
	New Delhi – 110007
Tel	: 011 – 23852986 / 9650597000
Reference	: Dondo

Unite 4 : La main a la pate

Unite 5 : La mise en place

Unite 6 : Aux fourneaux !

QUESTION PAPER PATTERN
(2019-2020 Onwards)
SEMESTER I
FRENCH I
SECTION A
I. REPONDEZ ÀTOUTES LES QUESTIONS: (10 questions)

a. Choisissez la meilleure reponse :   **(5*1=5)**

b. Dites Vrai ou Faux :   **(5*1=5)**

SECTION B (20)

II. Exercices de grammaire : (a ou b)   **(5*4=20)**
SECTION C (40)

III. Faites des phrases   (5/8)   **(10)**
IV. Associez: (a &b) (5+5)   **(10)**
VI. Traduisez les textes suivants: (4/5)   **(4*5=20)**

QUESTION PAPER PATTERN
(2019-2020 Onwards)
SEMESTER II

FRENCH II

SECTION A (10)

I. REPONDEZ ÀTOUTES LES QUESTIONS: (10 questions)

வி.எல்.பி.ஜானகியம்மாள் கலை அறிவியல் கல்லூரி

கோவைப்புதூர், கோவை-641042

Value Education – Ethics and Human Excellence

அறவியலும் மனிதவள மேம்பாடும்

1) தனிமனித மேன்மை(Personal Excellence)

    அ) தன்னையறிதல் (Self-realization)　-　திருமதி சியாமளா - கணிதம்

    ஆ) உடல்நிலை மேம்பாடு(Physical Empowerment)

                         - திருமதி கோல்டா -உடற்கல்வி இயக்குநர்

    இ) அறிவு மேம்பாடு (Intellectual Enhancement)

                      - முனைவர் மு.சித்ரா -இளங்கலை இயக்குநர்

    ஈ)　மன மேம்பாடு(Mind Developments)

                      - முனைவர் சுலேகா -வணிகவியல்

2) சமூக மேன்மை(Social Relevance)

    அ) சமுதாயத்தின் அங்கம் மனிதன்(Man is the part of Society)

                  - திரு கார்த்திக் -முதுகலை கணினிபயன்பாடு

    ஆ) செம்மார்ந்த குடியுரிமை(Enlightened Citizenship) -

    இ) மனித உரிமைகள் (Human Rights)

               - முனைவர் லதா -நிறும செயலாண்மையியல்

    ஈ) சமூகச் சேவைகள்∴சமூகத்தொண்டு (Service to the Society)

               - முனைவர் கோ.சுரே' - தமிழ்

3) தேசிய ஒருமைப்பாடு (National Cohesiveness)

    அ) இந்தியாவில் விடுதலைப் போரட்ட வரலாறு(Patriotic Movement in India)

              - முனைவர் சி.தீபா – தமிழ்

    ஆ) இந்தியாவின் பெருமைகளும் இந்தியாவின் சிறப்பும்;(pride and Heritage of India)

              - முனைவர் ராதிகா - நவீன ஆடை வடிவமைப்புத் துறை

இ) வேற்றுமையில் ஒற்றுமை(Unity in diversity)

- திருமதி ரேவதி - ஆங்கிலம்

ஈ) உருவாகும் புதிய பாரதம்... வளமையான பாரதம்;(Wealth of India)

- திரு ஞ.கனகராஜ் கணிப்பொறி தொழில்நுட்பம்

4) உலகளாவிய ஒருமைப்பாடு(Global Adhesiveness)

அ) உலக போர்களின் விளைவுகள் (Global Coexistence)

- திரு ஏ.முருகே' - கணினித்துறை

ஆ) உலக அமைதியின் தேவை(Impact of World War)

- முனைவர் சித்ரா - ஆங்கிலம்

இ) உலக அமைதியின்மைக்கான காரணங்கள் (Threat of Global Unity)

- முனைவர் சிவக்குமார் - வணிகவியல் பயன்பாடு

ஈ) உலக ஒற்றுமைக்கான இந்தியாவின் பங்கு (Indian Message and Contribution
to Global Adhesiveness) - திரு சாந்துகோகுல் - கணினிபயன்பாடு

5) ஆன்மீக ஒருமைப்பாடு(ஸ்பிசைவைரயட ழுநெநெளள)

அ) அறிவியலும் ஆன்மீகமும;(Spirituality and Science)

- முனைவர் வாசுதேவன், மின்னணுவியல்

ஆ) கடவுள் கோட்பாடு (Concept of God)

- திரு சா.சரவணக்குமார், தமிழ்

இ) மதங்களின் மையக்கருத்து(Central Message of the Religions on Spiritual
Oneness) - முனைவர் ஜெயபிரகர்' நூலகர்

ஈ) ஆன்மீக ஒருமையை நோக்கி (Towards Spiritual Oneness)

- முனைவர் ந.ராஜகுமார், முதல்வர்.

வி.எல்.பி.ஜானகியம்மாள் கலை அறிவியல் கல்லூரி
கோவைப்புதூர், கோயம்புத்தூர் - 42.
(தன்னாட்சி)
தமிழ்த்துறை
மறு மதிப்பீட்டுக் குழுவினரால் (NACC) 'A' கிரேடு மற்றும் சர்வதேச தரச்சான்றிதழ்
(ISO) தேசிய தரக் கொள்கை பெற்றக் கல்லூரி
தெரிவு அடிப்படை மதிப்பீடு அமைப்பு (CBCS)
இளங்கலைப் இரண்டாமாண்டு பி.எஸ்.சி (கணிதவியல், காட்சி ஊடகவியல்) மற்றும் பி.ஏ ஆங்கிலம்
ஆகிய பட்டவகுப்புகளில் 2019 – 2020 – கல்வியாண்டு முதல் பயிலுபவர்களுக்கு

பாடத்திட்டத்தின் நோக்கம்: பகுதி – I தமிழ் பயிலும் மாணவர்கள் தமிழ் இலக்கிய
வரலாற்றினை அறிந்து கொள்ளவும், சிறப்புடைய இலக்கியங்களிலிருந்து சில பகுதிகளைக் கற்றுக்
கொள்ளவும், அறக் கருத்துக்களைப் பின்பற்றி நல்ல சான்றோனாகத் திகழவும், பிழையின்றித் தமிழ்ச்
சொற்களைப் பேசவும், எழுதவும், இப்பகுதி உதவும்

பருவம் மூன்று
பகுதி – I. தமிழ்ப் பாடத்திட்டம்
தாள் -III – தமிழ்க் காப்பியங்களும் நாடகமும்

மொத்த மதிப்பெண்கள் :70
மொத்தப் பாட வேளைகள்: 60

அலகு – I (15 மணி நேரம்)
1.	சிலப்பதிகாரம்	- இந்திர விழவூரெடுத்த காதை
2.	மணிமேகலை	- ஆபுத்திரனோடு மணிபல்லவம் அடைந்த காதை
3.	சீவக சிந்தாமணி	- விமலையார் இலம்பகம் (1,3,5,7-9,13,14, 20-29, 31-41, 44,46,47,49,50,51,55-57, 60, 63, 64, 67, 69, 71-77, 80, 82, 84-86, 88, 89, 93, 96, 104-106)

அலகு – II (15 மணி நேரம்)
1.	கம்பராமாயணம்	- இராவணன் சூழ்ச்சிப்படலம்
2.	வில்லிபாரதம்	- வாரணாவதச் சருக்கம் (298, 299, 300, 308, 9, 12, 14, 16, 17, 21, 24, 25, 29, 30, 34, 36, 39-42, 44-47, 55, 59, 60, 67, 69, 71, 73, 75, 76, 78, 79, 85, 87, 89, 91, 94-97, 400, 2, 3, 5, 6, 7, 9, 10, 11, 13, 15-17, 19-22, 25, 26, 28, 29, 32, 433)
3.	தேம்பாவணி	- ஈரறம் பொருத்து படலம்

அலகு – III நாடகம் (15 மணி நேரம்)
ராமானுஜர் நாடகம் - இந்திரா பார்த்த சாரதி

அலகு – IV இலக்கிய வரலாறு (10 மணி நேரம்)
1. காப்பியங்களின் தோற்றமும் வளர்ச்சியும்
2. கிறித்துவமும் தமிழும்
3. சமணமும் தமிழும்
4. பௌத்தமும் தமிழும்

5. நாடகத்தின் தோற்றமும் வளர்ச்சியும்

        அலகு – V   படைப்பும் திறனாய்வும் (தற்படிப்பு)   (5 மணி நேரம்)

❖ கவிதை உருவாக்கம்
❖ பேச்சுத்திறன் பயிற்சி(வரவேற்புரை, தலைமையுரை, வாழ்த்துரை, நன்றியுரை)
❖ நூல்,திரைப்படம் - மதிப்புரை

      பாடநூல்கள்:

1. செய்யுட்பகுதி பாடநூல்   (அலகு I,II மற்றும் IV)
   வெளியீடு : தமிழ்த்துறை,
   வி.எல்.பி. ஜானகியம்மாள் கலை அறிவியல் கல்லூரி

2. ராமானுஜர் நாடகம்   (அலகு III)
   இந்திரா பார்த்த சாரதி
   (வெளியீடு) தமிழ் புத்தகாலயம்,
   11 சிவப்பிரகாசம் தெரு, தி.நகர், பாண்டிபஜார்
   சென்னை – 600 017.

பார்வை நூல்கள்:

1. சிலப்பதிகாரம் -   சந்தியா பதிப்பகம்,
                          நீயுடெக் வைபவ்,
                          53-வது தெரு,
                          அசோக்நகர், சென்னை – 83.
2. மணிமேகலை -   சாரதா பதிப்பகம்
                          பு – 4 சாந்தி சருக்ககம்,
                          3,ஸ்ரீ கிருஷ்ணாபுரம் தெரு,
                          ராயப்பேட்டை, சென்னை – 14.
3. சீவகசிந்தாமணி -   முல்லை நிலையம்இ 9, பாரதி நகர்,
   தி.நகர், சென்னை – 600 018.
4. கம்பராமாயணம் -   கம்பன் அறநிலை
                          மணி மேல்நிலைப்பள்ளி வளாகம்,
                          பாப்ப நாயக்கம் பாளையம்,
                          கோவை.
5. **வில்லிபாரதம்**   -   பூம்புகார் பதிப்பகம், 127, பிரகாசம் சாலை,
   சென்னை – 600 108.

   தேம்பாவணி -   பாரி வெளியீடு, (முதல் பதிப்பு 2010), 184.·.88 பிராட்வே,
   சென்னை-14.

                              உ..ஆ. – சே.சுந்தரராசன்

பாடநெறி விளைவு (Course Outcome)

       CO 1: **காப்பியத் திறன்களை அறிதல்.**
       CO 2: **கற்பனைத் திறன்களை வளர்த்தல்.**
       CO 3: **எழுத்தாற்றலை ஊக்குவித்தல்.**
       CO 4: **நாடக ஆற்றலை அறிதல்.**
       CO 5: **பொதுநலன்களை அறிதல்.**

CO/ PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	M						M	
CO 2		H				L		
CO 3				M				H
CO 4			L			M		
CO 5					H			H

வி.எல்.பி. ஜானகியம்மாள் கலை அறிவியல் கல்லூரி
(தன்னாட்சி)
கோவைப்புதூர், கோவை – 641042
தெரிவு அடிப்படை மதிப்பீடு அமைப்பு (CBCS)
தமிழ்த் துறை
இளங்கலைப் இரண்டாமாண்டு பி.எஸ்.சி (கணிதவியல், காட்சி ஊடகவியல்) மற்றும் பி.ஏ ஆங்கிலம்
ஆகிய பிரிவுகளுக்குரியது

வினாத்தாள் அமைப்பு
பருவம் - மூன்று

பகுதி – I, தமிழ்த்தாள் - III – தமிழ்க் காப்பியங்களும் நாடகமும்

அகமதிப்பீட்டுத் தேர்வு - 30

புற மதிப்பீட்டுத் தேர்வு - 70

காலம் - 3 மணி

பிரிவு - அ

அனைத்து வினாக்களுக்கும் விடையளி   10X1=10
ஒவ்வொரு அலகிலிருந்தும் இரண்டு வினாக்கள் அமைதல் வேண்டும்.
அலகு (1) – 3 வினாக்கள்

அலகு (2) – 3 வினாக்கள்

அலகு (3) – 2 வினாக்கள்

அலகு (4) – 2 வினாக்கள்

பிரிவு ஆ

இரண்டு பக்க அளவில் விடை எழுதுக: 5X4=20

ஒவ்வொரு அலகிலிருந்தும் ஒரு வினா அமைதல் வேண்டும்.

அலகு (1) – 1 வினா

அலகு (2) – 1 வினா

அலகு (3) – 1 வினா

அலகு (4) – 1 வினா

அலகு (5) – 1 வினா

பிரிவு இ

கட்டுரை வடிவில் விரிவான விடை எழுதுக.   5X8=40

ஒவ்வொரு அலகிலிருந்தும் ஒரு வினா அமைதல் வேண்டும்.

அலகு- (1) – 1 வினா
அலகு- (2) – 1 வினா
அலகு- (3) – 1 வினா
அலகு- (4) – 1 வினா
அலகு- (5) – 1 வினா

குறிப்பு:

     1.பிரிவு 'ஆ' மற்றும் 'இ' ஆகிய பகுதிகளில் வினாக்கள் 'இது' அல்லது 'அது' என்ற வகையில் அவற்றிற்கு உரிய அலகுகளில் அமைதல் வேண்டும்.

     2.பிரிவு "அ"

     சரியான விடைகளைத்தேர்ந்தெடுத்தல் - 10 வினாக்கள்

வி.எல்.பி. ஜானகியம்மாள் கலை அறிவியல் கல்லூரி
கோவைப்புதூர், கோயம்புத்தூர் - 42.
(தன்னாட்சி)
தமிழ்த்துறை

மறு மதிப்பீட்டுக் குழுவினரால் (NACC) 'A' கிரேடு மற்றும் சர்வதேச தரச்சான்றிதழ் (ISO)
தேசிய தரக் கொள்கை பெற்றக் கல்லூரி
தெரிவு அடிப்படை மதிப்பீடு அமைப்பு (CBCS)

இளங்கலைப் இரண்டாமாண்டு பி.எஸ்.சி (கணிதவியல், காட்சி ஊடகவியல்) மற்றும் பி.ஏ ஆங்கிலம்
ஆகிய பட்டவகுப்புகளில் 2019 – 2020 – கல்வியாண்டு முதல் பயிலுபவர்களுக்கு

பாடத்திட்டத்தின் நோக்கம்: பகுதி – I தமிழ் பயிலும் மாணவர்கள் தமிழ் இலக்கிய
வரலாற்றினை அறிந்து கொள்ளவும், சிறப்புடைய இலக்கியங்களிலிருந்து சில பகுதிகளைக் கற்றுக்
கொள்ளவும், அறக் கருத்துக்களைப் பின்பற்றி நல்ல சான்றோனாகத் திகழவும, பிழையின்றித்தமிழ்ச்
சொற்களைப் பேசவும், எழுதவும், இப்பகுதி உதவும்

பருவம் நான்கு

பகுதி – I. பாடத்திட்டம்

தாள் - IV தமிழ்ச் சமய இலக்கியமும் சிறுகதையும்

மொத்த மதிப்பெண்கள் :70
மொத்தப் பாட வேளைகள்: 60

அலகு – I   (15 மணி நேரம்)

1.திருநாவுக்கரசர்(தேவாரம்)	-	மறுமாற்றுத் திருத்தாண்டகம் (20 பாடல்கள்)
2.சுந்தரர்(தேவாரம்)	-	திருவெண்ணைய் நல்லூர் பதிகம் (20 பாடல்கள்)
3.திருவாசகம்	-	குயில் பத்து (10பாடல்கள்)

அலகு – II   (15 மணி நேரம்)

1.	தொண்டரடிப்பொடியாழ்வார்	-	திருப்பள்ளி எழுச்சி
2.	திருமங்கை ஆழ்வார்	-	திருக்குறுந்தாண்டகம் (20 பாடல்கள்)
3.	குணங்குடி மஸ்தான் சாகிபு	-	பராபரக் கண்ணி
4.	எச்.ஏ.கிருட்டிணப்பிள்ளை	-	இரட்சணிய மனோகரம்
			(கையடைப் பதிகம் 13 பாடல்கள்)

அலகு – III   (15 மணி நேரம்)
சிறுகதை - சிறுகதைத் தொகுப்பு

அலகு – IV இலக்கணம் மற்றும் படைப்புத்திறன் (தற்படிப்பு)   (6 மணி நேரம்)
1.   நன்னூல் - உரியியல் முழுவதும் (சொல்லதிகாரம்)
2.   படைப்பாக்கம்
      சிறுகதை உருவாக்கம்
      பொதுக் கடிதம் எழுதுதல்.

அலகு – V இலக்கிய வரலாறு   (9 மணி நேரம்)

1. சிறுகதையின் தோற்றமும் வளர்ச்சியும்
2. சைவமும் தமிழும்
3. வைணவமும் தமிழும்
4. இஸ்லாமியமும் தமிழும்

பாடநூல்கள்:

1. செய்யுட்பகுதி பாடநூல்   (அலகு I,II; IV மற்றும் V), வெளியீடு: தமிழ்த்துறை, வி.எல்.பி. ஜானகியம்மாள் கலை அறிவியல் கல்லூரி

2. சிறுகதைத் தொகுப்பு (அலகு III), தொகுப்பு: தமிழ்த்துறை, வி.எல்.பி. ஜானகியம்மாள் கலை அறிவியல் கல்லூரி.

பார்வை நூல்கள்:

1.தேவாரம் - உமா பதிப்பகம், 18, பவளக்காரத்தெரு, மண்ணடி, சென்னை – 1

2.திருவாசகம் - உமா பதிப்பகம், 18, பவளக்காரத்தெரு, மண்ணடி, சென்னை – 1

3.பதினொன்றாம் திருமுறை   - உமா பதிப்பகம், 18, பவளக்காரத்தெரு, மண்ணடி, சென்னை – 1

4.நாலாயிரந் திவ்விய பிரபந்தம்– ஆழ்வார்கள் ஆய்வு மையம், நந்தம் பாக்கம், குன்றத்தூர் வழி, சென்னை – 69.

5.குணங்குடி மஸ்தான் சாகிபு- உமா பதிப்பகம், 18, பவளக்காரத்தெரு,மண்ணடி, சென்னை – 1
6.இரட்சணிய மனோகரம் - முல்லை நிலையம்இ 9இ பாரதி நகர்இ
 தி.நகர், சென்னை – 600 017.

பாடநெறி விளைவு (Course Outcome)

CO 1: **பக்தி இயக்கத்தின் சிறப்பினை அறிதல்**.

CO 2: **பிழையின்றியும் விரைவாகவும் வாசிக்ககும் திறன்களை வளர்த்தல்**.

CO 3: **இலக்கணத்தை அறிந்து கொள்ளுதல்**.

CO 4: **கலந்துரையாடல் திறன்களை வளர்த்தல்**.

CO 5: **கட்டுரை எழுதும் பயிற்சி பெறுதல்**.

CO/ PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	M						M	
CO 2		H				L		
CO 3				M				H
CO 4			L			M		
CO 5					H			H

வி.எல்.பி. ஜானகியம்மாள் கலை அறிவியல் கல்லூரி
(தன்னாட்சி)
கோவைப்புதூர், கோவை – 641042
தெரிவு அடிப்படை மதிப்பீடு அமைப்பு (CBCS)
தமிழ்த் துறை
இளங்கலைப் இரண்டாமாண்டு பி.எஸ்.சி (கணிதவியல், காட்சி ஊடகவியல்) மற்றும் பி.ஏ ஆங்கிலம்
ஆகிய   பிரிவுகளுக்குரியது
வினாத்தாள் அமைப்பு
பருவம் - நான்கு
பகுதி –I தமிழ்
தாள்-IV தமிழ்ச் சமய இலக்கியமும்,சிறுகதையும்

மொத்த மதிப்பெண்கள் - 70

காலம் - 3 மணி

பிரிவு - அ

அனைத்து வினாக்களுக்கும் விடையளி   10 ×1 =10

ஒவ்வொரு அலகிலிருந்தும் இரண்டு வினாக்கள் அமைதல் வேண்டும்.

அலகு (1) – 2 வினாக்கள்

அலகு (2) – 2 வினாக்கள்

அலகு (3) – 2 வினாக்கள்

அலகு (4) – 2 வினாக்கள்
அலகு (5) – 2 வினாக்கள்

பிரிவு ஆ

இரண்டு பக்க அளவில் விடை எழுதுக: 5×4 =20
ஒவ்வொரு அலகிலிருந்தும் ஒரு வினா அமைதல் வேண்டும்.
அலகு (1) – 1 வினா

அலகு (2) – 1 வினா

அலகு (3) – 1 வினா

அலகு (4) – 1 வினா

அலகு (5) – 1 வினா

பிரிவு இ

கட்டுரை வடிவில் விரிவான விடை எழுதுக.   5×8=40
ஒவ்வொரு அலகிலிருந்தும் ஒரு வினா அமைதல் வேண்டும்.
அலகு- (1) – 1 வினா
அலகு- (2) – 1 வினா
அலகு- (3) – 1 வினா
அலகு- (4) – 1 வினா
அலகு- (5) – 1 வினா

குறிப்பு:

    1.பிரிவு 'ஆ' மற்றும் 'இ' ஆகிய பகுதிகளில் வினாக்கள் 'இது' அல்லது 'அது' என்ற
வகையில் அவற்றிற்கு உரிய அலகுகளில் அமைதல் வேண்டும்.

    2.பிரிவு "அ"

    சரியான விடைகளைத் தேர்ந்தெடுத்தல் - 10 வினாக்கள்

B.Sc/BBM/B.Com/BCA Degree Examination – Syllabus - For Candidates admitted from the academic year 2019 – 2020 onwards

THIRD SEMESTER

PART I – FRENCH III

Total CIA:30
Total CE:70
Total Hours: 60

Prescribed text   : LATITUDES I

Units   : 9 – 12
Authors   : Régine Mérieux
                       Yves Loiseau
Available at   : Goyal Publishers Pvt Ltd
                       86, University Block
                       Jawahar Nagar (Kamla Nagar) New
                       Delhi – 110007
Tel : 011 – 23852986 / 9650597000

Question Paper Pattern Semester III

Maximum Marks: 70   Time: 3 hrs.
 (All questions to be set only from the prescribed text)

Section A (10)

1. Choisissez la meilleure réponse: (10X1=10)

Section B (20)

2. Dites vrai ou faux (5X1=5)
3. Traduisez les textes suivants en anglais:(3/5) (3X5=15)

Section C (40)

4. Compréhension (5x1=5)
5. Exercices de grammaire:(5X5=25) (either/or)
6. Remplissez le dialogue:(5X1=5)
7. Associez :(5X1=5)

Course Outcome:

CO 1:   Proficiency in Language and communication skills acquired
CO 2:   Better communication skill in the language by promoting discussions debates and stage
         programmes
CO 3:   Equip with professional, inter personal and Entrepreneurial skills
CO 4:   Evaluate environmental factors that influence business operation.
CO 5:   Course contents enables the students to be competent in job sector.

CO/ PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	M							M
CO 2			H			L		
CO 3				M			H	
CO 4	L					M		
CO 5			H					H

B.Sc/BBM/B.Com/BCA... Degree Examination – Syllabus - For Candidates admitted from the academic year 2019 – 2020 and onwards

FOURTH SEMESTER
PART I – FRENCH IV

Total CIA:30

Total CE:70

Total Hours: 60

Prescribed text   : LATITUDES II

Units   : 1 – 4

Authors   : Régine Mérieux

                   Yves Loiseau

Available at   : Goyal Publishers Pvt Ltd

                  86, University Block

                  Jawahar Nagar (Kamla Nagar) New

                  Delhi – 110007

Tel : 011 – 23852986 / 9650597000

Question Paper Pattern Semester IV

Maximum Marks: 70   Time: 3 hrs.

 (All questions to be set only from the prescribed text)

Section A (10)

1. Choisissez la meilleure réponse: (10X1=10)

Section B (20)

2. Ecrivez un dialogue sur un des sujets donnés : (5X1=5)

3. Traduisez les textes suivants en anglais:(3/5) (3X5=15)

Section C (40)

4. Compréhension (5x1=5)

5. Exercices de grammaire:(5X5=25) (either/or)

6. Remplissez le dialogue:(5X1=5)

7. Associez :(5X1=5)

Course Outcome:

CO 1: Proficiency in Language and communication skills acquired

CO 2: Better communication skill in the language by promoting discussions debates and stage programmes

CO 3: Equip with professional, inter personal and Entrepreneurial skills

CO 4: Evaluate environmental factors that influence business operation.

CO 5: Course contents enables the students to be competent in job sector.

CO/ PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1			M			M		
CO 2		H			L			
CO 3					M		H	
CO 4		L				M		
CO 5				H				H

B.Sc/BBM/B.Com/BCA… Degree Examination – Syllabus - For Candidates admitted from the academic year 2019 – 2020 onwards

THIRD SEMESTER
PART – 1 – MALAYALAM – III

Total CIA:30
Total CE:70
Total Hours: 60

Paper III – Poetry

This paper will have the following five units:

Unit I,II & III
O.N.V. Kavithakal

Unit IV & V
Collection of Poems

Text Books Prescribed:

Unit I, II & III
Bhoomikoru Charamageetham – ONV (D.C.
Books, Kottayam)
Unit IV & V
Kavyanchali – Group of Authors (D.C.
Books, Kottayam)

Reference Books:

1. Kavitha Sahithya Charitram-Dr.M.Leelavathi (Kerala Sahithya Academy,Trichur)

2. Kavitha Dwani-Dr.M.Leelavathi (D.C.Books, Kottayam)

3. Aadhunika Sahithyacharithram Prasthanangalilude-Dr.K.M.George
(D.C.Books, Kottayam)

4. Padya Sahithya Charithram – T.M.Chummar (Kerala Sahithya Academy,Trichur)

Course Outcome:

CO 1:   Equip with professional, inter personal and Entrepreneurial skills
CO 2:   Evaluate environmental factors that influence business operation.
CO 3:   Prepare for Post Graduate studies and to achieve success in the profession carriers
CO 4:   Has contents to promote writing and journals
CO 5:   To acquire communication skills in Languages

CO/ PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1			M			M		
CO 2		H			L			
CO 3					M		H	
CO 4		L				M		
CO 5				H				H

B.Sc/BBM/B.Com/BCA Degree Examination – Syllabus - For Candidates admitted from the academic year 2019 – 2020 onwards

FOURTH SEMESTER
PART – 1 – MALAYALAM – IV

Total CIA:30
Total CE:70
Total Hours: 60

Paper IV Drama & Screen play

  This paper comprises the following five units:

Unit I, II &III

A Drama Unit

IV & V

Screen play

Text Books Prescribed:

Unit I,II & III

Adukalayil Ninnu Arangathekku- V.T.Bhattathirippadu.
   (D.C.Books, Kottayam)

Unit IV & V

Peruvazhiyambalam – P.Padmarajan
   (D.C. Books, Kottayam)

Reference Books
1. Malayala Nataka Sahithya Charithram. G Sankara Pillai (Kerala Sahithya Akademi, Trissur)
2. Malayala Nataka Sahithya Charithram, Vayala Vasudevan Pillai (Kerala Sahithya Akademi Thrissur).
3. Natakam- Oru Patanam (C.J. Smaraka Prasanga Samithi, Koothattukulam)
4. Natakaroopacharcha, Kattumadam Narayanan (NBS, Kottayam)
5. Chalachithra sameeksha – Vijayakrishanan.
6. Cinemayude Paadangal- Visakalanavum Veekshanavum – Jose-K.Manual.

Course Outcome:
- CO 1: Equip with professional, inter personal and Entrepreneurial skills
- CO 2: Evaluate environmental factors that influence business operation.
- CO 3: Prepare for Post Graduate studies and to achieve success in the profession carriers
- CO 4: Has contents to promote writing and journals
- CO 5: To acquire communication skills in Languages

CO/ PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1		M					M	
CO 2			H		L			
CO 3					M		H	
CO 4		L					M	
CO 5				H				H

வி.எல்.பி.ஜானகியம்மாள் கலை அறிவியல் கல்லூரி
தன்னாட்சி
தேசியத் தர நிர்ணய மறு மதிப்பீட்டுக் குழுவினரால் (NAAC) 'A' கிரேடு மற்றும்
சர்வதேசத் தரச்சான்றிதழ் (ISO)பெற்றக் கல்லூரி
கோவைப்புதூர், கோயம்புத்தூர் -641 042.
தமிழ்த்துறை
தெரிவு அடிப்படை மதிப்பீடு அமைப்பு (CBCS)
இளங்கலை இரண்டாம் ஆண்டு பயிலும் அனைத்து பிரிவு மாணவர்களுக்குரியது
பி.ஏ,பி.எஸ்.சி,பி.காம்,பி.சி.ஏ,பி.பிஏ……
பகுதி-IV தமிழ்ப்பாடத்திட்டம்
அடிப்படைத் தமிழ்த்தாள் - I
மூன்றாம்பருவம்
12 ஆம் வகுப்பு வரை பிறமொழிப் பயின்று
2019-2020   கல்வியாண்டில் பகுதி-I தமிழ்மொழிப் பாடம் பயிலாதவர்களுக்கு

புறமதிப்பீட்டுத் தேர்வு மட்டும்

மொத்த மதிப்பெண்கள் : 50
மொத்தபாட வேளைகள் : 24

அலகு – I   (11 மணி நேரம்)

1. தமிழ் எழுத்துக்கள்(உயிர் எழுத்து, மெய் எழுத்து, உயிர் மெய் எழுத்துகள்)
2. குறில் எழுத்துக்கள், நெடில் எழுத்துக்கள்
3. வல்லினம், மெல்லினம், இடையினம்

அலகு – II   (3 மணிநேரம்)

1. உயிர் எழுத்துக்களில் துவங்கும் எழுத்துக்கள்
2. எண்ணுப் பெயர்கள், மாதப்பெயர்கள்,உறவுப் பெயர்கள்
3. பறவைகள், விலங்குகள், இருதிணை, மூவேந்தர், நான்குதிசைகள்
4. பஞ்சபூதம், அறுசுவை

அலகு – III   (4 மணிநேரம்)

1. ஒரெழுத்து ஒருமொழி
2. தொடர்களை உருவாக்குதல்
3. அலுவலகங்களின் பெயர்கள்

அலகு – IV   (3 மணிநேரம்)

1. ஒருமைப்பன்மை எழுதுதல், எழுத்துப்பிழை கண்டறிதல்
2. உயர்திணை, அஃறிணை கண்டறிதல்
3. எழுத்துப்பயிற்சி பாடலைப் பார்த்து எழுதுதல்

அலகு – V   (3 மணிநேரம்)

1. ஆங்கிலப் பழமொழிக்கு நிகரான தமிழ்ப் பழமொழிகளை எழுதுக
2. படங்களைக் கொடுத்து பெயர்களை எழுதுதல்
3. பேச்சுப்பயிற்சி

பாடநூல் - தமிழ்த்துறை வெளியீடு
வி.எல்.பி.ஜானகியம்மாள் கலை அறிவியல் கல்லூரி

பாடநெறி விளைவு (Course Outcome)

CO1. **பிறமொழி மாணவர்கள் தமிழ்மொழி அறிதல்**.

CO2. **கதைகளைப் படித்து அறத்தை கற்றுக் கொள்ளல்**.

CO3. **தமிழர்களின் மரபு வழி விழாக்களை அறிதல்**.

CO4. **படத்தைப் பார்த்து பொருளை அறிதல்**.

CO5. **கலந்துரையாடுதல்**.

CO/ PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	M					M		
CO 2			H				L	
CO 3		M				H		
CO 4								
CO 5	M					H		

வி.எல்.பி.ஜானகியம்மாள் கலை அறிவியல் கல்லூரி
தன்னாட்சி
தேசியத் தர நிர்ணய மறு மதிப்பீட்டுக் குழுவினரால்
(NAAC) 'A' கிரேடு மற்றும் சர்வதேசத் தரச்சான்றிதழ் (ISO)பெற்றக் கல்லூரி
கோவைப்புதூர், கோயம்புத்தூர் -641 042.
தமிழ்த்துறை
தெரிவு அடிப்படை மதிப்பீடு அமைப்பு (CBCS)
இளங்கலை இரண்டாம் ஆண்டு பயிலும் அனைத்து பிரிவு மாணவர்களுக்குரியது
பி.ஏ,பி.எஸ்.சி,பி.காம்,பி.சி.ஏ,பி.பிஏ
பகுதி-ஐஏ அடிப்படைத் தமிழ்த்தாள் - **II**
நான்காம் பருவம்
12 ஆம் வகுப்பு வரை பிறமொழிப் பயின்று
2019-2020 கல்வியாண்டில் பகுதி-**I** தமிழ்மொழிப் பாடம் பயிலாதவர்களுக்கு

புறமதிப்பீட்டுத் தேர்வு மட்டும்

மொத்த மதிப்பெண்கள் :50
மொத்தப்பாட வேளைகள்: 24

அலகு – I   (8 மணி நேரம்)

1. ஆத்திச்சூடி – "அறம்செயவிரும்பு" முதல் "ஒளவியம் பேசேல்" வரை
2. கொன்றை வேந்தன் - "அன்னையும் பிதாவும் முன்னறி தெய்வம்" முதல் "எண்ணும் எழுத்தும் கண்ணெனத் தகும்" வரை

அலகு – II   (5 மணி நேரம்)

1. திருக்குறள் 5குறள்கள் மட்டும்) –   அ) அகர முதல… (குறள், 1)
                                      ஆ) அன்பும் அறனும்... (குறள், 45)
                                      இ) இனிய உளவாக... (குறள், 100)
                                      ஈ) நன்றி மறப்பது…(குறள், 108)
                                      உ) கற்க கசடறக்…(குறள், 391)

அலகு – III   (5 மணி நேரம்)

1. ஜென் கதைகள் - (2 கதைகள்)
2. பீர்பால் கதைகள் - (2 கதைகள்)

அலகு – IV   (3 மணி நேரம்)

ஆங்கிலச் சொற்களுக்கு நிகரானத் தமிழ்ச் சொற்கள் அறிதல்
1. வாகனங்கள், காய்கறிகள், பழவகைகள்
2. பறவைகள், விலங்குகள், உடல் உறுப்புக்கள்

அலகு – V   (3 மணி நேரம்)

1. விழாக்கள் (பொங்கல், தீபாவளி, கிறிஸ்துமஸ்)
2. தலைவர்கள் (காந்தியடிகள்,காமராஜர்,அம்பேத்கார்,பாரதியார்,நேரு)

பாடநூல் - தமிழ்த்துறை வெளியீடு
        வி.எல்.பி.ஜானகியம்மாள் கலை அறிவியல் கல்லூரி.

பாடநெறி விளைவு (Course Outcome)

CO1. **தமிழ் அடிப்படை எழுத்துகளை அறிதல்**.

CO2. **தமிழில் வார்த்தைகளை உருவாக்குதல்**.

CO3. **தொடரமைப்பு உருவாக்கும் பயிற்சி**.

CO4. **எழுத்துப்பிழை கண்டறியும் பயிற்சி பெறுதல்**.

CO5. **மொழிபெயர்ப்பு பயிற்சி அறிதல்**.

CO/ PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	M					M		
CO 2			H				L	
CO 3		M				H		
CO 4								
CO 5	M					H		

அடிப்படைத்தமிழ்

தேர்வுத்திட்டம்

தாள் **I** மற்றும் **II**

புறமதிப்பீட்டுத்தேர்வு மட்டும்

காலம்:2 மணி   மொத்த மதிப்பெண்கள்:50

பிரிவு-அ

அனைத்து வினாக்களுக்கும் சரியான விடையை எடுத்தெழுதுதல்.   10x1 =10

பிரிவு-ஆ

8 வினாக்கள் கொடுக்கப்பட்டு 5 வினாக்களுக்கு விடையளிக்க வேண்டும்.

5x3 =15

பிரிவு-இ

8 வினாக்கள் கொடுக்கப்பட்டு 5 வினாக்களுக்கு விடையளிக்க வேண்டும்.   5x5 =25

வி.எல்.பி.ஜானகியம்மாள் கலை அறிவியல் கல்லூரி
(தன்னாட்சி)
தேசியத் தர நிர்ணய மறு மதிப்பீட்டுக் குழுவினரால்
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தமிழ்த்துறை
தெரிவு அடிப்படை மதிப்பீடு அமைப்பு (CBCS)
இளங்கலை இரண்டாம் ஆண்டு பயிலும் பிறமொழி பயின்ற மாணவர்களுக்குரியது
பி.ஏ,பி.எஸ்.சி,பி.காம்,பி.சி.ஏ,பி.பிஏ
பகுதி-ஐஏ தமிழ்ப்பாடத்திட்டம்
சிறப்புத் தமிழ்த்தாள் - I
மூன்றாம் பருவம்
(12 ஆம் வகுப்பு வரை தமிழ்மொழிப் பாடம் பயின்று, 2019-2020 ஆம் கல்வியாண்டு முதல்
பகுதி-I பிறமொழி பயின்ற மாணவர்களுக்குரியது)
புறமதிப்பீட்டுத் தேர்வு மட்டும்
மொத்த மதிப்பெண்கள் : 50
மொத்தபாட வேளைகள் : 24

அலகு – I   (8 மணி நேரம்)

கவிதை
1. நடிப்புச் சுதேசிகள்   - பாரதியார்
2. அவனும் அவளும்   - நாமக்கல் கவிஞர்

அலகு – II   (4 மணி நேரம்)

1. ல-ள-ழ, ர-ற, ன-ண-ந வேறுபாடு அறிதல்
2. பிறமொழிச் சொற்களை நீக்கித் தமிழ்ச் சொற்களைக் கண்டறிதல்
3. காப்பியங்கள் நூற்குறிப்பு (ஐம்பெரும்காப்பியங்கள் - ஐஞ்சிறுகாப்பியங்கள்)

அலகு – III   (6 மணி நேரம்)

சிறுகதை
1. இருவர் கண்ட ஒரே கனவு   - கு.அழகிரிசாமி
2. உறவுச் சிறகுகள்   - சூர்யகாந்தன்

அலகு – IV   (3 மணி நேரம்)

1. புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும்
2. சிறுகதையின் தோற்றமும் வளர்ச்சியும்

அலகு – V   (3 மணி நேரம்)

விண்ணப்பப் பயிற்சியும் மொழி பெயர்ப்பும்
1. கடிதம் எழுதுதல்
2. விண்ணப்பம் எழுதுதல்
3. மொழி பெயர்ப்பு (ஆங்கிலத்திலிருந்து தமிழில் மொழி பெயர்த்தல்)

பாடநூல் - தமிழ்த்துறை வெளியீடு
    வி.எல்.பி.ஜானகியம்மாள் கலை அறிவியல் கல்லூரி

பாடநெறி விளைவு (Course Outcome)

CO1. **கற்பனைத் திறன்களை வளர்த்தல்**.

CO2. **வாசிப்பு திறன்களை ஊக்குவித்தல்**.

CO3. **சங்க இலக்கியங்களைப் பற்றி அறிதல்**.

CO4. **வேலைவாய்ப்பு திறன்களைப் பற்றி அறிதல்**.

CO5. **கடிதம்இகட்டுரை எழுதும் ஆற்றலை வளர்த்தல்**.

CO/ PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1	M					M		
CO 2			H				L	
CO 3		M				H		
CO 4								
CO 5	M					H		

வி.எல்.பி.ஜானகியம்மாள் கலை அறிவியல் கல்லூரி
(தன்னாட்சி)
தேசியத் தர நிர்ணய மறு மதிப்பீட்டுக் குழுவினரால்
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தமிழ்த்துறை
தெரிவு அடிப்படை மதிப்பீடு அமைப்பு (CBCS)
இளங்கலை இரண்டாம் ஆண்டு பயிலும் அனைத்து பிரிவு மாணவர்களுக்குரியது
பி.ஏ,பி.எஸ்.சி,பி.காம்,பி.சி.ஏ,பி.பிஏ......
பகுதி-ஐஏ தமிழ்ப்பாடத்திட்டம்
சிறப்புத் தமிழ்த்தாள் - **II**
நான்காம் பருவம்
(2019-2020 கல்வியாண்டு முதல் 12 ஆம் வகுப்பு வரை தமிழ்மொழிப் பாடம் பயின்று
கல்லூரியில் பிறமொழிப் பயின்ற மாணவர்களுக்கு மட்டும்)
புறமதிப்பீட்டுத் தேர்வு மட்டும்

மொத்த மதிப்பெண்கள் : 50
மொத்தபாட வேளைகள் : 24

அலகு – I (8 மணி நேரம்)

1. திருக்குறள் : (2அதிகாரங்கள்) - குறிப்பு அறிதல்(களவியல்),
ஆள்வினை உடைமை,
2. நாலடியார் : (2அதிகாரங்கள்) - இளமை நிலையாமை
பெரியாரைப்பிழையாமை

அலகு–II (4 மணி நேரம்)

1. ஒற்று மிகும் இடங்கள்
2. ஒற்று மிகா இடங்கள்
3. 1.வேர்ச்சொல் – வினைமுற்று∴ வினையெச்சம்∴ வினையாலணையம் பெயர்∴
தொழிற்பெயர் உருவாக்கல்
2. விடைக்கெற்ற வினாவைத் தெர்ந்திடெடுத்தல்

அலகு–III (4 மணி நேரம்)

கட்டுரை
1. சிறுதெய்வ நெறிகள் - முனைவர் தொ.பரமசிவம்
2. சித்தர்கள் காட்டும் வாழ்வியல் சிந்தனைகள் - முனைவர் கோ.சுரே"

அலகு – IV (4 மணி நேரம்)

1. பாட்டும் தொகையும்
2. பதிணென் கீழ்க்கணக்கு நூல்கள்

அலகு – V (4 மணி நேரம்)

படிவம் நிரப்புதல், பொதுக் கட்டுரை மற்றும் நாட்டுப்புறவியல்
1. காசோலை, பணவிடை, தொடர்வண்டி முன்பதிவு
2. பொதுக் கட்டுரை (சமுதாயம்,பொருளாதாரம்இஅறிவியல் மற்றும் இன்றைய
நடப்புகள்)
3. நாட்டுப்புற நம்பிக்கைகள்,பழமொழிகள்

பாடநெறி விளைவு (Course Outcome)

CO1. **நீதிக்கருத்துக்களை பற்றி அறிதல்**.

CO2. **ஒற்று மிகும்இமிகா இடங்களை அறிதல்**.

CO3. **கற்பனை ஆற்றலை வளர்த்தல்**.

CO4. **கட்டுரை பயிற்சி**.

CO5. **விண்ணப்பப் பயிற்சி**.

CO/ PO & PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO 1		M						M
CO 2	H					L		
CO 3				M				H
CO 4					H			
CO 5	H							

சிறப்புத்தமிழ்
தேர்வுத்திட்டம்

தாள் I மற்றும் II

புறமதிப்பீட்டுத்தேர்வு மட்டும்

காலம்:2மணி   மொத்த மதிப்பெண்கள்:50

பிரிவு-அ

அனைத்து வினாக்களுக்கும் சரியான விடையை எடுத்தெழுதுதல்.   10x1 =10

பிரிவு-ஆ

8 வினாக்கள் கொடுக்கப்பட்டு 5 வினாக்களுக்கு விடையளிக்க வேண்டும்.

5x3 =15

பிரிவு-இ

8 வினாக்கள் கொடுக்கப்பட்டு 5 வினாக்களுக்கு விடையளிக்க வேண்டும்.   5x5 =25

B.Sc/B.Com/BBA/BCA Degree Examination – Syllabus for Candidates admitted from the academic year 2019 – 2020 and onwards

FIRST SEMESTER
PART I: HINDI I
Prose, Non Detailed, Grammar, Functional Hindi, Translation

Objective: On successful completion of the paper, students should have acquired proficiency in language and good communication skills.

Unit I-   Prose- Sansad men by Harshankar Parsai, Non Detailed- Dukhbhari duniya by Kamaleswar, Grammar- Sangya, Applied grammar- Change gender, Translation I&2,Technical words .   **11hrs**

Unit II   Prose- Kaphan by Premchand, Non Detailed- Gulelbaj ladka   by Bhishma Sahni, Grammar- Sarvanaam, Applied Grammar- Change Number, Translation -3&4 ,Comprehension
                                                                                                                        12hrs

Unit III   Prose- Gillu by Mahadevi Varma, Non Detailed- Phoolo ka kurtha byYashpal, Grammar- Kaarak, Applied Grammar- Prepositions,Translation 6&7, Technical Words-10 **.**

                                                                                                                        12hrs

Unit IV Prose- Devthavon ke anchal mein by Agney, Non Detailed - Mahuye ka ped by Markandey,   Grammar   -Verb,   Applied   Grammar   -   Different   forms   of verb,Translation8&9,Comprehension.   **13hrs**

Unit V Prose- Sipahi ki maa by Mohan Rakesh , Non Detailed - Nail cutter by Uday prakash ,Grammar-Tense,   Applied Grammar- Use of Tense,   Translation 11&12, Comprehension, Technical Words-10 .   **12 hrs**

Text Books

1. Prose & Non Detailed- College Edited Book

2. Translation (English –Hindi, 1-15) –Anuvad Abhyas III – Edited by Dakshin Hindi Prachar Sabha

Reference Books

1. Grammar - Hindi Vyakaran ,Dr.UmeshChandra Shukla- VaniPrakashan, New Delhi.

2. Functional Hindi - Vyavaharik Hindi -Ram Kishore Sharma - Lokbharathi Prakashan, Illahabad

B.Sc/B.Com/BBA/BCA Degree Examination – Syllabus for Candidates admitted from the academic year 2019 – 2020 and onwards

FIRST SEMESTER
PART I: HINDI I
Prose, Non Detailed, Grammar, Functional Hindi, Translation

Pattern of Question paper- End Semester Examination

Section A-1x10=10 Marks

Objective type (Answer all the questions)

5 Questions from Prose

5 Questions from non detailed

Section B-4x5=20 Marks (Answer all the questions)

1. Explain with reference & context   4x2(Either or)

2. Short note   4x 1(Either or)

3. Applied Grammar   1x 4 Sentences

(change gender, Number, Tense, use of verb and prepositions)

4. Technical words   1x4 (4 out of 6)

Section C-8x5= 40 marks

1. Essay from prose   8x1(Either or)

2. Essay from Non Detailed   8x1(Either or)

3. Short Notes   4x2(No choice)

4. Comprehension (4 Questions)   2x4(No choice)

5. Translation   8x1(No choice)

B.Sc/B.Com/BBA/BCA Degree Examination – Syllabus for Candidates admitted from the academic year 2019 – 2020 and onwards

SECOND SEMESTER
PART I: HINDI II
Poetry, Novel, Letter Drafting, Functional Hindi, Conversation, Translation

Objective: On successful completion of the paper, students should have acquired proficiency in language and good communication skills.

Unit I
Poetry-Kabir ke Dohe , Novel - Wohi bath by Kamaleswar , Letter – Leave Application-Translation I&2,Technical words-10- Conversation 1& 2.   **13hrs**

Unit II
Poetry- Bhishuk by Nirala, Surdas ke padh, Novel 20-35, Comprehension, Translation 3&4-Conversation 3&4**.**   **12hrs**

Unit III
Poetry – Tulsidas – Vishwamitra prasang, Tumne keha tha by Nagarjun , Novel 35-50, Translation 6&7,Technical Words-10- Conversation 5&6   **12hrs**

Unit IV
Poetry – Rahim ke Padh, Hamara Desh by Agney, Novel- 50-65, Translation 8&9, Comprehension – Conversation 7&8.   **12 hrs**

Unit V
Poetry - Pyasa kuan by Gyanendrapathi , Novel- 65-75 , Translation 11&12, Comprehension, Technical Words 10.   **11hrs**

Text Books
1.Poetry   - College edited Book
2.Novel   - Wohi Bath by Kamaleswar, Rajkamal prakashan, Edition-2011 3.Translation (Hindi – English ,1-15) – Anuvad Abhyas III – Edited by Dakshin Hindi Prachar Sabha

Reference Books
1.Functional Hindi -Vyavaharik Hindi - Shri.Ram Kishore Sharma, LokBharathi Prakashan, Ilahabad.

2.Conversation- Bolchal ki Hindi aur Sanchar -Dr. Madhu Dhavan,VaniPrakashan   New Delhi

B.Sc/B.Com/BBA/BCA Degree Examination – Syllabus for Candidates admitted from the academic year 2019 – 2020 and onwards

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SECOND SEMESTER
PART I: HINDI II
Poetry, Novel, Letter Drafting, Functional Hindi, Conversation, Translation

</div>

Pattern of Question paper- End Semester Examination

Section A-1x10 = 10 Marks

Objective type (Answer all the questions)

5Questions from poetry

5Questions from Novel

Section B- 4x5 = 20 Marks (Answer all the questions)

1. Explain with reference & context (Poetry)-4x2 (Either or)

2. Short notes (Novel)   -4x 1 (Either or)

3. Letter Drafting   -4x 1(Either or)

4. Technical words   -1x4 (4 out of 6)

Section C-8x5 = 40 marks

1. Essay from poetry   -8x1(Either or)

2. Essay from Novel   -8x1(Either or)

3. Conversation   -8x1(No choice)

4. Comprehension (4 Questions)   - 2x4(No choice)

5. Translation   - 8x1(No choice)

B.Sc/B.Com/BBA/BCA Degree Examination – Syllabus for Candidates admitted from the academic year 2019 – 2020 and onwards

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THIRD SEMESTER
PART I: HINDI III
Poetry, One Act play, Non Detailed, , Functional Hindi, Comprehension, Translation

</div>

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:
On successful completion of the paper, students should have acquired proficiency in language and good communication skills.

Unit I:

Poetry –Bharath mahima -Jayashankar prasad – Nondetailed: Mohandas by Udayaprakash- Techical sentences 5– Translation

Unit II:

One act play: Ande ke chilke by Mohan Rakesh- Nondetailed: Mohandas by Udayaprakash - - Comprehension – Translation

Unit III:

Poetry: Juhi ki kali by Nirala – Nondetailed: Mohandas by Udayaprakash – Technical sentences 5- Translation

Unit IV:

One act play: Cheenk by Dr. Ramkumar Varma- Nondetailed: Mohandas by Udayaprakash - Comprehension – Translation- Poem: Maun Nimantran by Pant

Unit V:

Poem Maun Nimantran by Pant- One act play – Reedh ki haddi-Non detailed: Mohandas by Udayaprakash - Technical sentences 5- Translation

Course Outcome:

CO1: The concept of patriotism and independence is introduced.
CO2: Contemporary social issues related to oppression, classism,. casteism are explained.
CO3: Ethics and values are introduced through different trends in literature.
CO4: Understand the value of modern thinking and ideology leading to better teaching skills and research.
CO5. Functional Hindi and general proficiency in language enhances employability

CO/PO &PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M							
CO2							L	
CO3			H					
CO4		M						M
CO5					M	L		

Text Book

Poetry: Compiled and edited by college
One act play: Compiled and edited by college
Non detailed: Mohandas -Udayaprakash   Rajkamal prakashan, New Delhi.
Translation   : Anuvad Abyas III   - Hindi Prachar Sabha
Functional Hindi: Vyaaharic Hindi Dr.Ramkishore Sharma - Lokbharathi Prakashan, Illahabad

B.Sc/B.Com/BBA/BCA Degree Examination – Syllabus for Candidates admitted from the academic year 2019 – 2020 and onwards

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THIRD SEMESTER
PART I: HINDI III
Poetry, One Act play, Non Detailed, Functional Hindi, Comprehension, Translation

Mark Distribution

Pattern of Question paper- End Semester Examination

Section A (10x1=10 Marks)

</div>

Objective type (Answer all the questions)

<div align="center">

4 Questions from Poetry
3 Questions from One act play
3Questions from Non detailed

Section B (4x5=20 Marks)

(Answer all the questions)

</div>

1. Explain with reference & context   4x2 Poetry (Either or)
2. Explain with reference & context   4x1One act play (Either or)
2. Short note   4x 1Nondetailed (Either or)
3. Technical sentences   1x 4Sentences (4 out of 6)

<div align="center">

Section C (8x5= 40 marks)

</div>

1. Essay from poetry   1x8(Either or)
2. Essay from One act play   1x8(Either or)
3. Essay from Non Detailed   1x8(Either or)
4. Comprehension   to 1/3   1x8 (No choice)
5. Translation   1x8 (No choice)

B.Sc/B.Com/BBA/BCA Degree Examination – Syllabus for Candidates admitted from the academic year 2019 – 2020 and onwards

FOURTH SEMESTER
PART I: HINDI IV
Poetry, Drama, Non Detailed, Functional Hindi, Translation, General Essay

Maximum CIA: 30
Maximum CE: 70
Total Hours: 60

Course Objective:

On successful completion of the paper, students should have acquired proficiency in language and good communication skills

Unit I-

Poetry- Preth ka bayaan Bby Nagarjun, Non Detailed- Saja   ,Letter – Karaylayi pathra, Translation I&2,General Essay.   11Hours

Unit II

Poem- Main vahan hoon by Angey Drama- Bakri by Sarveswar dayal Saxena,Letter-paripathra,Translation-3&4.   12 Hours

Unit III

Drama- Bakri by Sarveswar dayal Saxena, Non Detailed- Akeli Letter-Adhisoochna,Translation6&7,GeneralEssay.   12 Hours

Unit IV

Poetry- Akaal darshan by Dhoomil, Non Detailed – Trishanku ,Bakri by Sarveswardayal Saxena, Translation8&9,   13Hours

Unit V

Non Detailed – Ek kahani yeh bhi , Bakri by Sarveswar dayal Saxena, Letter- Anusmarak, Translation 11&12, General Essay   12 Hours

Course Outcome:

CO1: The concept of revolution and socialism is introduced.
CO2: Contemporary social evils like corruption, blackmail and oppression of poor are explained.
CO3: Ethics and values are introduced through different trends in literature.
CO4: Provides a better knowledge on Teaching and research.
CO5. Functional Hindi like Drafting and reporting and Communication skills in language enhance employability

CO/PO &PSO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3
CO1	M							
CO2							L	
CO3			H					
CO4		M						M
CO5					H	L		

Text Books

1. Poetry & Non Detailed- College Edited Book

2. Drama-Bakri   -Sarveswar dayal Saxena, Vani Prakashan , New Delhi
2.Translation (English –Hindi,16-30) –Anuvad Abhyas III – Edited by Dakshin Hindi Prachar Sabha

Reference Books

1. Functional Hindi - Vyavaharik Hindi -Ram Kishore Sharma - Lokbharathi Prakashan, Illahabad

B.Sc/B.Com/BBA/BCA Degree Examination – Syllabus for Candidates admitted from the academic year 2019 – 2020 and onwards

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FOURTH SEMESTER
PART I: HINDI IV
Poetry, Drama, Non Detailed, Functional Hindi, Translation, General Essay

Pattern of Question paper- End Semester Examination

Section A (10x1=10 Marks)
</div>

Objective type (Answer all the questions)

<div align="center">

4 Questions from Poetry
3 Questions from Drama
3Questions from Non detailed

Section B (4x5=20 Marks)
(Answer all the questions)
</div>

1. Explain with reference & context   Poetry 4x2(Either or)
2. Explain with reference & context   Drama   4x1(Either or)
2. Short note   4x 1(Either or)
3. Letter   4x 1(Either or)

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Section C (8x5= 40 marks)
</div>

1. Essay from poetry   1x8(Either or)
2. Essay from Drama   1x8 (Either or)
3. Essay from Non Detailed   1x8 (Either or)
4. Translation   1x8 (No choice)
5. General Essay   1x8(No choice)