



VLB JANAKIAMMAL COLLEGE OF ARTS AND SCIENCE
(AUTONOMOUS)
AFFILIATED TO BHARATHIAR UNIVERSITY
KOVAIPUDUR, COIMBATORE - 42

AQAR – 2023-2024

CRITERIA – 1

Metric-1.2.1 Number of New Courses

1. Highlighted Copy of Minutes of BoS Meeting
2. Highlighted Copy of Syllabus

B.Com (Computer Applications)



VLB JANAKIAMMAL COLLEGE OF ARTS AND SCIENCE

An Autonomous Institution, Affiliated to Bharathiar University and Approved by AICTE

Re-Accredited by NAAC with 'B++' Grade

KOVAIPUDUR, COIMBATORE – 6410 042

Phone: 0422-2605162 E-mail: principal@vlbjcas.ac.in Website: www.vlbjcas.ac.in

Board of studies meeting

Department of Commerce with Computer Applications

The minutes of the 19th meeting of board of studies held on 31.05.2023 at 10.30 am at the department.

Members present:

S.No	Name	Category
1	Dr.P.Maheswari	Chairman
2	Dr.J.Christoper	University Nominee
3	Dr.B.Arthi	Subject Expert
4	Dr.A. Dharmaraj	Subject Expert
5	CA.C.Suriya	Industrial Expert
6	Ms.J.Aswini	Alumni Member
7	Dr.R.Sindhuja	Member
8	Mr.J.Balakrishnan	
9	Mr.S.Praveen Kumar	
10	Mr.A.Subash	
11	Dr.M.Shaithabanu	
12	Dr.A.Askar Ali Jinna	
13	Mr.M.Manimekalai	

The Chairman of the board of commerce with Computer Applications welcomed and introduced all the members and appreciated them for their continuous support, contribution for the development of academic standard and enrichment of the syllabus.

The items of the agenda were taken one by one for discussion and the following resolutions were passed.

Item 19.1 (a): To consider and approve the changes, if any, in the syllabi for I semester for the students admitted during the academic year 2023 – 2024.

The Chairman presented the detailed syllabus for the I semester for the students admitted from the academic year 2023 – 2024 onwards. The details of changes made also presented as follows.

Changes Made:

Course	Code	Reason
Financial Accounting I	23BCC101	Members decided to split up consignment and joint venture in to separate units (unit 4 and unit). Single entry system excluded from unit 5.
Computer Fundamentals and office automation	23BCC102	As per alumni expert opinion it was resolved to include topic outlook on unit 5.
Office automation and internet	23BCCP01	As per alumni expert opinion it was resolved to include programme resume creation through online.

New Courses Introduced:

Course	Code	Reason
NIL	-	NIL

Courses Removed

Course	Code	Reason
NIL	-	NIL

After discussion the following resolution was passed with the above changes and modifications.

Resolution:

Resolved to approve the syllabus for the I semester for the students admitted from the academic year 2023 – 24 onwards,

Item 19.1 (b): To consider and approve the syllabi for III semester for the students admitted during the academic year 2022-2023.

The chairman presented the detailed scheme and syllabus for the III semester for the students admitted from the academic year 2022-2023 onwards. The details of changes made also presented as follows.

Changes Made:

Course	Code	Reason
Financial Accounting III	22BCC301	Members decided to include death of partnership in unit 4 and insolvency of partners in unit 5.
Executive Business Communication	22BCCSB1	Subject expert suggest to adopt self study in unit 1 due to time constrains
Human Resource Management	22BCCOE1	Members decided to include case study in unit 5 and exclude organization of personnel department from unit 1.
Cyber Law	22BCCSB2	Subject expert suggest to exclude Amendment to Reserve Bank of India Act from unit 1.

New Courses Introduced:

Course	Code	Reason
NIL	-	NIL

Courses Removed

Course	Code	Reason
NIL	-	NIL

After discussion the following resolution was passed with the above changes and modifications.

Resolution:

Resolved to approve the syllabus for the III semester for the students admitted from the academic year 2022 – 23 onwards.

Item 19.1 (c): To consider and approve the changes, if any, in the syllabi for V semester for the students admitted during the academic year 2021 – 2022.

The Chairman presented the detailed syllabus for the V semester for the students admitted from the academic year 2021 – 2022 onwards. The details of changes made also presented as follows.

Changes Made:

Course	Code	Reason
Cost Accounting	21BCC501	Subject expert suggest to include cost accounting Vs management accounting and exclude types and methods in unit 1
Income Tax Law and Practice	21BCC502	Subject expert decided to exclude Authorities from unit 1 ,add capital gain and exemption from unit 3,include clubbing of income and interchange income from other source from unit 3 to

		unit 4.set off and carry forward of losses included in unit 5.
Banking and Insurance Law	21BCCE01	Subject expert suggest to exclude composition of authority and powers from unit 5.

New Courses Introduced:

Course	Code	Reason
Supply Chain Management	21BCCE02	To gain in depth knowledge on activities taken in order to deliver the goods.
Business Finance	21BCC503	To gain in depth finance knowledge related to Business.

Courses Removed

Course	Code	Reason
NIL	-	NIL

After discussion the following resolution was passed with the above changes and modifications.

Resolution:

Resolved to approve the syllabus for the V semester for the students admitted from the academic year 2021 – 22 onwards,

Item 19.2: To approve the panel of examiners for question paper setting and evaluation of answer scripts for the odd semester of the academic year 2023 – 2024.

The Chairman presented the panel of examiners for question paper setting and evaluation of answer scripts for the odd semester of the academic year 2023 – 2024. After discussion the resolution was passed.

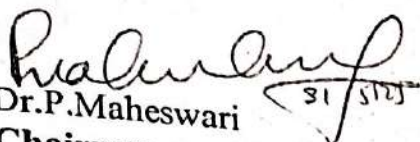
Resolution:


Resolved to approve the panel of examiners for question paper setting and evaluation of answer scripts for the odd semester of the academic year 2023 – 2024.

Item 19.3: To consider and approve any other item brought forward by the Chairman and the members of the board.

No other item was brought forward.

Finally the Chairman thanked all the members for their cooperation and contribution in enriching the syllabus with active participation in the meeting and sought the same spirit in the future also. The meeting was closed with formal vote of thanks proposed by chairman Dr.P.Maheswari.


Dr. P. Maheswari
Chairman

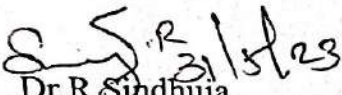

Dr. J. Christopher
University Nominee


Dr. B. Arthi
Subject Expert

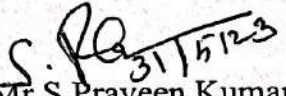

Dr. A. Dharmaraj
Subject Expert

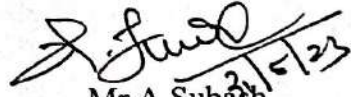
CA. C. Suriya
Industrial Expert

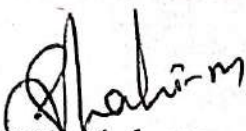

Ms. J. Aswini
Alumni Member

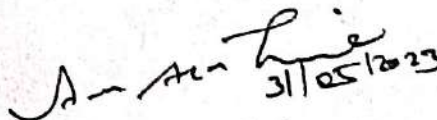

Dr. R. Sindhuja
Member



Mr. J. Balakrishnan
Member



Mr. S. Praveen Kumar
Member


Mr. A. Subash
Member


Dr. M. Shalithabanu
Member


Dr. A. Askar Ali Jinna
Member


Mr. M. Manimekalai
Member


Signature of the Principal



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Board of Studies Meeting

Department of Commerce with Computer Applications

The minutes of the 20th meeting of Board of Studies held on 18.11.2023 at 10.30 am at the department.

Members Present:

S.No	Name	Category
1.	Dr.P.Maheswari	Chairman
2.	Dr. J.Christopher	University Nominee
3.	Dr.B.Arthi	Subject Expert
4.	Dr.A.Dharmaraj	Subject Expert
5.	CA.C.Suriya	Industrial Expert
6.	Ms.J.Ashwini	Alumni member
7.	Dr.R.Sindhuja	Member
8.	Ms.K.Umamaheswari	
9.	Mr.J.Balakrishnan	
10.	Mr.S.Praveen Kumar	
11.	Mr.A.Subash	
12.	Dr.M.Shahithabanu	
13.	Dr.A.Askar Ali Jinna	
14.	Mrs.S.Muthukannu	

The Chairman of the Board of Commerce with Computer Applications welcomed and introduced all the members and appreciated them for their continuous support, contribution for the development of academic standard and enrichment of the syllabus.

The items of the agenda were taken one by one for discussion and the following resolutions were passed.

Item: 20.1(a) To consider and approve the Changes, if any, in the syllabi of II semester for the students to be admitted during the academic year 2023-2024.

The Chairman presented the detailed scheme and syllabi for the II semester for the students to be admitted during the Academic Year 2023-2024 onwards. The details of changes made also presented as follows.

New Courses Introduced:

Courses	Code	Reason
Nil	-	Nil

Courses Removed:

Courses	Code	Reason
Nil	-	Nil

After discussion the following resolution was passed .

Resolution:

Resolved to approve the Scheme and syllabi for the II semester for the students to be admitted during the Academic Year 2023-24 onwards.

Item 20.1 (b): To consider and approve the Changes, if any, in the syllabi for IV semester for the students admitted during the academic year 2022-2023.

The Chairman presented the detailed syllabi for the IV semester for the students admitted from the academic year 2022-2023 onwards.

Changes Made:

Course and Changes	Code	Reason
Corporate Accounting	22BCC401	As per the Subject Expert's opinion, it was resolved to include valuation on goodwill and external reconstruction accounting treatment on unit 4.

Commercial Law	22BCC402	<p>As per the Subject Expert's opinion, Indian contract act 1872 and recent amendments, Formation of Contract, Consideration have been added to unit 1.</p> <p>lien, finder of goods, duties and rights of finder of goods have been removed from unit 3.</p> <p>Rights of unpaid seller, Performance of Contract of sales from have been Removed from unit 5.</p> <p>Recent Amendments have been added in unit 5.</p>
Tally ERP 9 with GST	22BCCSB3	<p>As per industrial expert's opinion it is to combine program one and two.</p> <p>To add three practical program:</p> <ol style="list-style-type: none"> 1. Stock Summary 2. Godown Creation and alteration 3. BRS Statement.

New Courses Introduced:

Courses	Code	Reason
RDBMS & ORACLE	22BCC403	Alumni suggested to introduce new course titled "RDBMS & ORACLE "as a core paper and it was incorporated.
RDBMS & ORACLE Practical	22BCCP04	Subject expert suggested to introduce new Practical course titled "RDBMS & ORACLE "as a core paper and it was incorporated.

Non Lab practical Entrepreneurial Skills	21BCCSB4	Industrial expert suggested to introduce Non Lab Practical Entrepreneurial Skills
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Courses Removed:

Courses	Code	Reason
DBMS	22BCC403	It gives only basic knowledge related to database.
Practical 4 DBMS	22BCCP04	The proficiency of the practical paper is not suitable.
Company law	21BCCSB4	Practical oriented subject has been introduced Instead of this paper.

After discussion the following resolution was passed with the above changes and modifications.

Resolution:

Resolved to approve the Scheme and syllabi for the IV semester for the students to be admitted during the Academic Year 2022-23 onwards.

Item 20.1 (c) : To consider and approve the changes, if any, in the syllabi for VI semester for the students admitted during the academic year 2021-2022 onwards.

The Chairman presented the detailed syllabi for the VI semester for the students admitted from the academic year 2021-2022 onwards.

Changes Made:

Course and Changes	Code	Reason
Management Accounting	21BCC601	As per the University Nominee Suggestion Qualification, duties, liabilities have been excluded from unit 1. Construction of balance sheet has been

		<p>excluded and proprietary ratio has been included in unit 2.</p> <p>Working capital management and comparison b/w fund flow and cash flow has been excluded from unit 3.</p> <p>Standard costing has been included in unit 4.</p>
Investment Management	21BCCE06	As per the Subject Expert opinion, portfolio analysis has been removed instead basic concepts have been added in unit 3.

New Courses Introduced:

Courses	Code	Reason
Introduction to Python	21BCCE04	Students get additional computer knowledge.
Organizational behavior	21BCCE05	To know the depth knowledge in organizational structure
Indirect taxation	21BCCE07	Students gain knowledge about GST and Customs Duty
Cyber security	21BCCE08	To know the depth knowledge in cyber crimes
Software Engineering and software project management	21BCCE09	To frame the software modules and applications

Courses Removed:

Courses	Code	Reason
E -Commerce	21BCCE04	There is no Updation in subject
Principles of international trade	21BCCE05	There is no scope in international trading
Advertising and sales promotion	21BCCE08	The concept studied in previous semester principles of marketing
Brand management	21BCCE09	Concepts are repeated

After discussion the following resolution was passed with the above changes and modifications.

Resolution:

Resolved to approve the Scheme and syllabi for the VI semester for the students admitted during the Academic Year 2021-22 onwards.

Item: 20.2 To approve the Panel of Examiners for question paper setting and evaluation of answer scripts for the even semester of the Academic Year 2023-2024.

The Chairman presented the Panel of Examiners for question paper setting and evaluation of answer scripts for the even Semester of the Academic Year 2023-2024 for approval. After discussion the resolution was passed.

Resolution:

Resolved to approve the Panel of Examiners for question paper setting and evaluation of answer scripts for the even semester of the Academic Year 2023-2024.

Item:20.3 To consider and approve any other item brought forward by the Chairman and the members of the board.

No other item was brought forward

Finally the chairman thanked all the members for their cooperation and contribution in enriching the syllabus with active participation in the meeting and sought the same spirit in the future also. The meeting was closed with formal vote of thanks proposed by chairman
Dr.P.Maheswari

P.Maheswari
Dr.P.Maheswari
Chairman

J.Christopher
Dr.J Christopher
University Nominee

B.Arthi
Dr.B.Arthi
Subject Expert

A.Dharmaraj
Dr.A.Dharmaraj
Subject Expert

C.Suriya
CA. C.Suriya
Industrial Expert

J.Aswini
Ms.J.Aswini
Alumni Member

R.Sindhuja
Dr.R.Sindhuja
Member

K.Umamaheswari
Mrs.K.Umamaheswari
Member

J.Balakrishnan
Mrr.J.Balakrishnan
Member

S.Praveen Kumar
Mr.S.Praveen Kumar
Member

A.Subash
Mr.A.Subash
Member

S.Shahithabanu
Dr.S.Shahithabanu
Member

A.Ali Jinna
Dr.A.Askar Ali Jinna
Member

S.Muthukannu
Mrs.S. Muthukannu
Member



S.Muthukannu
18/11/2023
Signature of the Principal
PRINCIPAL
V.L.B. JAHAKIAMMAL COLLEGE OF ARTS AND SCIENCE
(AUTONOMOUS)
KOVAIPUDUR, COIMBATORE-641 042

B.Com Computer Applications Board
Scheme of Examination (CBCS with OBE Pattern)
For the Candidates admitted during the Academic Year 2022-2023 onwards

Part	Sub Code	Subject Title	Ins.Hrs/Week	Examination				
				Dur. Hrs.	CIA	CE	Total	Credit
SEMESTER I								
I	22LATA01/ 22LAHI01/ 22LAFR01 22LAMY01	Language – I Tamil I/Hindi I//French I/ Malayalam I	5	3	50	50	100	3
II	22ENG001	English – I	5	3	50	50	100	3
III	22BCC101	Core 1- Financial Accounting –I	5	3	50	50	100	4
III	22BCC102	Core 2- Computer Fundamentals and Office Automation	4	3	-	50	50	3
III	22BCCP01	Core Practical 1- Office Automation and Internet	4	3	-	50	50	3
III	22BCCA01	Allied:1 - Managerial Economics	5	3	50	50	100	3
IV	22UFCA01	Foundation Course I : EVS	2	2	-	50	50	2
		Total	30				550	21
SEMESTER II								
I	22LATA02/ 22LAHI02/ 22LAFR02/ 22LAMY02	Language –II Tamil II/Hindi II/ French II/ Malayalam II	5	3	50	50	100	3
II	22ENG002	English – II	5	3	50	50	100	3
III	22BCC201	Core 3 - Financial Accounting –II	5	3	50	50	100	4
III	22BCC202	Core 4 - C Programming	4	3	-	50	50	3
III	22BCCP02	Core Practical -2 C Programming	4	3	-	50	50	3
III	22BCCA02	Allied: 2- Principles of Management	5	3	50	50	100	3
IV	22UFCA02	Foundation Course II: Value Education	2	2	-	50	50	2
		Total	30				550	21
SEMESTER III								
I	22 LATA03/ 22LAHI03/ 22LAFR03/ 22LAMY03	Language –III Tamil III/Hindi III/ French III/ Malayalam III	3	3	50	50	100	2

II	2 2ENG003	English – III	3	3	50	50	100	2
III	22BCC301	Core 5- Financial Accounting -III	5	3	50	50	100	4
III	22BCC302	Core 6 - Principles of Marketing	5	3	50	50	100	4
III	22BCC303	Core 7- Programming in C++	3	3	50	50	100	4
III	22BCCP03	Core Practical - 3 : Programming in C++	4	3	50	50	100	4
III	22BCCA03	Allied :3- Business Mathematics	4	3	50	50	100	4
III	22BCCSB1/ 22BCCSB2	SBC -1 :Executive Business Communication/ Cyber law	2	3	30	45	75	3
IV	22BTA001/ 22ATA001/ 22BCCOE1	OEC-1:B T- 1 /AT - 1 / Human Resource Management	2	2	-	50	50	2
Total			31				825	29
SEMESTER IV								
I	22LATA04/ 22LAHI04/ 22LAFR04/ 22LAMY04	Language –IV Tamil IV/Hindi IV/ French IV/ Malayalam IV	3	3	50	50	100	2
II	2 2ENG004	English – IV	3	3	50	50	100	2
III	22BCC401	Core 8- Corporate Accounting	5	3	50	50	100	4
III	22BCC402	Core 9 - Commercial Law	5	3	50	50	100	4
III	22BCC403	Core 10- RDBMS & ORACLE	3	3	50	50	100	4
III	22BCCP04	Core Practical-4: RDBMS & ORACLE	4	3	50	50	100	4
III	22BCCA04	Allied 4- Business Statistics	4	3	50	50	100	4
III	22BCCSB3 /22BCCSB4	SBC- 2 : Tally ERP 9 with GST/ Non Lab Practical Entrepreneurial Skills	2	3	30	45	75	3
IV	22BTA002/ 22ATA002/ 22OEC002	OEC-2:BT-II/AT-II/ Communicative English #	2	2	-	50	50	2
Total			31				825	29
SEMESTER V								
III	22BCC501	Core 11- Cost Accounting	5	3	50	50	100	4
III	22BCC502	Core 12- Income Tax Law and Practice	5	3	50	50	100	4
III	22BCC503	Core 13- Business Finance	5	3	50	50	100	4
III	22BCC504	Core 14 – Visual Basic.Net	5	3	50	50	100	4
III	22BCCP05	Core Practical-5: Visual Basic.Net	5	3	50	50	100	4
III	22BCCE0 1/02/03	Elective - 1: Banking and Insurance Law/ Retail Management System/ Investment Management.	5	3	50	50	100	3

III	22BCCPR1	Institutional Training	-	-	-	-	-	-
Total			30				600	23
SEMESTER VI								
III	22BCC601	Core 15: Management Accounting	5	3	50	50	100	4
III	22BCC602	Core 16: Web Designing and Networking	5	3	50	50	100	4
III	22BCCP06	Core Practical- 6: Web Designing and Networking	5	3	50	50	100	4
III	22BCCE04/ E05/06	Elective - 2 : E-Commerce / Principles of International Trade /Investment Management	5	3	50	50	100	3
III	22BCCE07/ 08/09	Elective - 3 : Indirect Taxes/ Advertising and Sales Promotion/ Brand Management	5	3	50	50	100	4
III	22BCCPR2	Project and Viva Voce	5	3	50	50	100	4
V	22NSS001/ 22NCC001 22SPT001/ 22EXT001	SOC-1: NSS/ NCC Sports /Extension Activities			50		50	2
Total			30				650	25
Total							4000	148

List of Skill Based Courses

S.No	Sem.	Subject Code	Subject Name	Credits
1	III	22BCCSB1	Executive Business Communication	3
2	III	22BCCSB2	Cyber law	3
3	IV	22BCCSB3	Tally ERP 9 with GST	3
4	IV	22BCCSB4	Non Lab Practical :Entrepreneurial Skills	3

List of Elective Courses

S.No	Sem.	Subject Code	Subject Name	Credits
Elective I				
1	V	22BCCE01	Banking and Insurance Law	3
2	V	22BCCE02	Retail Management System	3
3	V	22BCCE03	Management Information System	3
Elective II				
4	VI	22BCCE04	E-Commerce	3

5	VI	22BCCE05	Principles of International Trade	3
6	VI	22BCCE06	Investment Management.	3
Elective III				
7	VI	22BCCE07	Indirect Taxation	4
8	VI	22BCCE08	Advertising and Sales Promotion	4
9	VI	22BCCE09	Brand Management	4

List of Open Elective Courses

S.No	Sem.	Subject Code	Subject Name	Credits
1	III	22BTA001	Basic Tamil-I	2
2	III	22ATA001	Advanced Tamil-I	2
3	III/IV	22OEC002	Communicative English	2
4	III	22BCAOE1	PC Software	2
5	III	22BBAOE1	Multimedia and its Applications	2
6	III	22BACOE1	Multimedia and its Applications	2
7	III	22LATOE1	Principles of Healthy Living	2
8	III	22BCCOE1	Human Resource Management	2
9	III	22BCAOE2	Multi Media	2
10	III	22BCAOE3	E Business	2
11	III	22BSCOE1	Web Designing	2
12	IV	22BTA002	Basic Tamil-II	2
13	IV	22ATA002	Advanced Tamil-II	2
14	IV	22BCAOE4	Introduction to Information Security	2
15	IV	22BCSOE1	Banking Theory	2
16	IV	22BESOE1	Microprocessor and its Applications	2
17	IV	22BMAOE1	Mathematical Aptitude	2
18	IV	22BCTOE1	Office Automation Practical	2
19	IV	22BITOE1	Python Programming	2
20	IV	22BCDOE1	Introduction to Research	2
21	IV	22BVCOE2	Professional Communication	2
22	IV	22BCMOE1	Management Information System	2

List of Extra Credit Courses

S.No	Sem.	Subject Code	Subject Name	Credits
1	III	22BCCEC1	Principles of Auditing	2
2	IV	22BCCEC2	Mobile Computing	2
3	V	22BCCEC3	NPTEL/SWAYAM/MOOC(any one course)	2

SEMESTER III

SBC 2 –CYBER LAW

Course code	Course name	Category	Lecture(L)	Tutorial(T)	Practical(P)	Credits
22BCCSB2	Cyber law	SBC -2	20	4	0	2

Preamble: To Enable Learner To Understand, Explore, And Acquire A Critical Understanding Cyber Law

Prerequisite: Cyber Laws

Course outcomes (COs):

On successful completion of this course the students will be able to:

CO Number	Course Outcome (Co) Statement	Blooms Taxonomy knowledge level
CO1	Make Learner Conversant With The Social And Intellectual Property Issues Emerging From ‘Cyberspace.	K1
CO2	Explore The Legal And Policy Developments In Various Countries To Regulate Cyberspace	K2
CO3	Develop The Understanding Of Relationship Between Commerce And Cyberspace	K2
CO4	Give Learners In Depth Knowledge Of Information Technology Act And Legal Frame Work Of Right To Privacy, Data Security And Data Protection.	K3
CO5	Make Study On Various Case Studies On Real Time Crimes.	K4

Mapping with Program Outcomes:

COs/ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	L	S	M	M	S	M	S	L
CO2	S	S	M	L	M	S	M	S	M	M
CO3	M	M	S	M	L	M	M	L	S	L
CO4	M	S	M	S	M	S	S	L	M	S
CO5	S	L	S	M	S	L	M	S	S	L

S – Strong; **L** – Low; **M** – Medium

Syllabus:

Unit	Course content	Hours	E-Contents/ E-Resources
I	Evolution of the IT Act, Genesis and Necessity-Salient features of the IT Act, 2000, various authorities under IT Act and their powers; Penalties & Offences, amendments. 3. Impact on other related Acts (Amendments) :(a) Amendments to Indian Penal Code.(b) Amendments to Indian Evidence Act.(c) Amendments to Bankers Book Evidence Act	5	https://www.youtube.com/watch?v=czDzUP1HclQ
II	Cyber Space Jurisdiction-(a) Jurisdiction issues under IT Act, 2000. (b) Traditional principles of Jurisdiction-(c) Extra-terrestrial Jurisdiction-(d) Case Laws on Cyber Space Jurisdiction	5	https://www.legalservicesindia.com/articles/defcy.htm
III	E – Commerce and Laws in India (a) Digital / Electronic Signature in Indian Laws-(b) E – Commerce; Issues and provisions in Indian Law -(c) E – Governance; concept and practicality in India-(d) E – Taxation issues in Cyberspace -(e) E – Contracts and its validity in India - (f) Cyber Tribunal & Appellate Tribunal - (g) Cyber Regulations	5	https://www.youtube.com/watch?v=cMf-myZcYm0
IV	Intellectual Property Rights, Domain Names and Trademark Disputes (a) Concept of Trademarks / in Internet Era (b) Cyber Squatting (c) Reverse Hijacking (d) Jurisdiction in Trademark Disputes (e) Copyright in the Digital Medium (f) Copyright in Computer Programmes (g) Copyright and WIPO Treaties (h) Concept of Patent Right (i) Relevant Provisions of Patent Act 1970 Sensitive Personal Data or Information (SPDI) in Cyber Law (a) SPDI Definition and Reasonable Security Practices in India (b) Reasonable Security Practices – International perspective	5	https://www.newmediarights.org/business-models/artist/domain_names_subject_copyright_law
V	Cloud Computing & Law Cyber Law: International Perspective (a) EDI: Concept and legal Issues. (b) UNCITRAL Model Law. (c) Electronic Signature Law's of Major Countries (d) Cryptography Laws (e) Cyber Law's of Major Countries (f) EU Convention on Cyber Crime	4	https://www.youtube.com/watch?v=bmZx9xaQH0U
	Total	24	
Text Book: 1.Cyber Law in India, Talat Fatima, Wolters Kluwer-2017			
Reference Books: 1.Cyber Crimes And Law,Dr,Amit Verma, Central Law Publications, Edition: 1, 2012			
Websites: 1. http://www.ignouhelp.in/ignou-pgccl-study-material/ 2. http://rcdelhi3.ignou.ac.in/programmes/detail/417/2			
Learning Methods (*): Assignment/Seminar/Case-Study/Industrial Visit			

SEMESTER – IV

PART III -CORE 10 - RDBMS & ORACLE

Course code	Course name	Category	Lecture(L)	Tutorial(T)	Practical(P)	Credits
22BCC403	RDBMS & ORACLE	Core-10	30	6	0	4

Preamble: Database Management Systems course is intended to deliver students the elementary concepts of a database management system and equips them to design and implement a database application built over those concepts. It also introduces advanced level areas like transaction processing, concurrency control and recovery management.

Prerequisite: Basic knowledge in Database Management Systems.

Course outcomes (COs):

On successful completion of this course the students will be able to:

CO Number	Course Outcome (Co) Statement	Blooms Taxonomy knowledge level
CO1	Understand the fundamentals of relational database systems including: data models, database architectures and ER features.	K1
CO2	Identify, analyze and define database objects, enforce integrity constraints on a database using RDBMS.	K2
CO3	Use Structured Query Language (SQL) for database manipulation.	K3
CO4	Design and build simple database systems	K3
CO5	Develop application to interact with databases.	K4

Mapping with Program Outcomes:

COs/ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	M	S	M	S	M	S	L	S
CO2	M	L	S	M	S	M	L	M	S	M
CO3	S	M	S	M	S	S	M	S	L	S
CO4	S	S	M	L	M	S	M	L	M	S
CO5	M	L	S	M	S	L	M	S	M	L

S – Strong; L – Low; M – Medium

Syllabus:

Unit	Course content	Hours	E-Contents/ E-Resources
I	Overview of database systems: Managing data- A historical perspective – File systems versus a DBMS - Advantages of a DBMS- Describing and storing Data in a DBMS - Queries in a DBMS - Transaction management – Structure of a DBMS. Database design & ER diagrams – Entities, Attributes, and Entity Sets – Relationships and Relationship Sets- Additional feature of the ER model- conceptual Database design with the ER model.	8	https://www.youtube.com/watch?v=T7AxM7Vqvaw
II	Relational Model: Integrity constraints over relations – Enforcing integrity constraints – Querying relational data – Logical database design : ER to Relational –Introduction to Views – Destroying / Altering Tables & Views. Relational Algebra and Calculus: Relational Algebra – Relational Calculus	8	https://www.youtube.com/watch?v=Q45sr5p_NmQ
III	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.	7	https://www.youtube.com/watch?v=47HiTh4jq0Q
IV	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: Joins and Set operations: Join–Set operations.	7	https://www.youtube.com/watch?v=WlJkx3AY_PY
V	Schema Refinement and Normal forms: Introduction to Schema refinement – Functional dependencies – Reasoning about functional dependencies – Normal forms –Properties of Decompositions – Normalization – Schema Refinement in data base design – other kinds of dependencies.	6	https://www.youtube.com/watch?v=GFQaEYEc8_8
	Total	36	

Text Book:

1. N Vikraman, Relational Database Management System , 2020, [Independently Published](#).

Reference Books:

1. Silberschatz Korth and Sudharshan, Database System Concepts, 6th Edition, 2013,Mc-GrawHill,.
2. Coronel, Morris, and Rob, Database Principles Fundamentals of Design,Implementation and Management, 2012, Cengage Learning.

Websites:

- https://www.tutorialspoint.com/dbms/dbms_quick_guide.htm
<https://www.techtarget.com/searchdatamanagement/definition/database-management-system>
<https://www.mygreatlearning.com/blog/dbms-tutorial/>

Learning Methods (*):

Assignment/Seminar/Case-Study/Industrial Visit

SEMESTER – IV

CORE PRACTICAL - 4- RDBMS & ORACLE

Course Code	Course Name	Category	Lecture(L)	Tutorial(T)	Practical(P)	Credits
22BCCP04	RDBMS & ORACLE	Core Practical -4	-	8	40	4
<p>Preamble: The ability to understand, analyze and develop computer programs in the areas related to algorithms, system software, multimedia, web design, big data analytics, and networking for efficient design of computer-based systems of varying complexity.</p>						
<p>Prerequisite: Knowledge to understand, analyze and develop computer programs in the areas database management systems</p>						
<p>Course outcomes (COs):</p>						
<p>On successful completion of this course the students will be able to:</p>						
CO Number	Course Outcome (Co) Statement					Blooms Taxonomy knowledge level
CO1	Implement the basic knowledge of SQL queries and relational algebra.					K1
CO2	Implement the basic knowledge of SQL queries and relational basic concepts of relational data model, entity-relationship model, and relational database design					K2
CO3	Practice various triggers, procedures, and cursors using SQL					K3
CO4	Apply normalization techniques for refining of databases..					K4
CO5	Construct database models for different database applications.					K4

Mapping with Program Outcomes:

CO/ PO & PSO	PO 1	PO 2	PO 3	PO 4	PO5	PO 6	PO 7	PO 8	PO9	PO10
CO 1	S	M	S	M	L	S	M	S	M	L
CO 2	M	S	M	L	S	M	S	M	S	M
CO 3	S	M	S	M	L	M	M	S	M	L
CO 4	M	S	M	S	M	L	S	M	S	M
CO 5	S	M	S	M	S	M	M	L	S	M

S – Strong; L – Low; M – Medium

Syllabus

S,No	Program	Hours	E-Contents/ E-Resources																					
1	Data Definition Table(DDT) <table border="0"> <thead> <tr> <th>Field name</th> <th>Field type</th> <th>Size</th> </tr> </thead> <tbody> <tr> <td>Student Regno</td> <td>number</td> <td>10</td> </tr> <tr> <td>Student Name</td> <td>varchar</td> <td>15</td> </tr> <tr> <td>Gender</td> <td>varchar</td> <td>20</td> </tr> <tr> <td>Department</td> <td>varchar</td> <td>20</td> </tr> <tr> <td>Address</td> <td>varchar</td> <td>10</td> </tr> <tr> <td>Percentage</td> <td>Number</td> <td>6, 2</td> </tr> </tbody> </table> a) To Create a table . b) To Describe a table. c) To Alter a table d) To Drop a table. e) To Truncate a table	Field name	Field type	Size	Student Regno	number	10	Student Name	varchar	15	Gender	varchar	20	Department	varchar	20	Address	varchar	10	Percentage	Number	6, 2	4	https://www.youtube.com/watch?v=_RP-SbDV0oM
Field name	Field type	Size																						
Student Regno	number	10																						
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Percentage	Number	6, 2																						
2	Data Manipulation Language(DML) <table border="0"> <thead> <tr> <th>Field name</th> <th>Field type</th> <th>Size</th> </tr> </thead> <tbody> <tr> <td>Regno</td> <td>number</td> <td>10</td> </tr> <tr> <td>Student Name</td> <td>varchar</td> <td>15</td> </tr> <tr> <td>Gender</td> <td>varchar</td> <td>20</td> </tr> <tr> <td>Department</td> <td>varchar</td> <td>20</td> </tr> <tr> <td>Address</td> <td>varchar</td> <td>10</td> </tr> <tr> <td>Percentage</td> <td>Number</td> <td>6, 2</td> </tr> </tbody> </table> a) To Insert Value. b) To Retrieve Records. c) To Update Records d) To Delete Records.	Field name	Field type	Size	Regno	number	10	Student Name	varchar	15	Gender	varchar	20	Department	varchar	20	Address	varchar	10	Percentage	Number	6, 2	4	https://www.youtube.com/watch?v=z7VAE0hjaSo
Field name	Field type	Size																						
Regno	number	10																						
Student Name	varchar	15																						
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Department	varchar	20																						
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Percentage	Number	6, 2																						
3	Create an Employee table with the following fields and performing queries. <table border="0"> <thead> <tr> <th>Field name</th> <th>Field type</th> <th>Size</th> </tr> </thead> <tbody> <tr> <td>Emp no</td> <td>number</td> <td>20</td> </tr> <tr> <td>Emp Name</td> <td>varchar</td> <td>15</td> </tr> <tr> <td>Department Number</td> <td>varchar</td> <td>20</td> </tr> <tr> <td>Designation</td> <td>character</td> <td>10</td> </tr> <tr> <td>Address</td> <td>varchar</td> <td>5</td> </tr> <tr> <td>Salary</td> <td>number</td> <td>10</td> </tr> </tbody> </table> a) Insert the value and Display the records. b) Display the maximum amount of Salary. c) Display all the details of the Salary whose Salary greater than 10000. d) Display the details of the Address who are from Chennai List the names of Employee whose designation are Analyst, Salesman and developer .	Field name	Field type	Size	Emp no	number	20	Emp Name	varchar	15	Department Number	varchar	20	Designation	character	10	Address	varchar	5	Salary	number	10	4	https://www.youtube.com/watch?v=oReH2vO8Izc
Field name	Field type	Size																						
Emp no	number	20																						
Emp Name	varchar	15																						
Department Number	varchar	20																						
Designation	character	10																						
Address	varchar	5																						
Salary	number	10																						

4	<p>Create a company database with the following fields and performing queries.</p> <table border="1"> <thead> <tr> <th>Field name</th> <th>Field type</th> <th>Size</th> </tr> </thead> <tbody> <tr> <td>Company name</td> <td>varchar</td> <td>20</td> </tr> <tr> <td>Proprietor</td> <td>varchar</td> <td>15</td> </tr> <tr> <td>Address</td> <td>varchar</td> <td>20</td> </tr> <tr> <td>Supplier name</td> <td>character</td> <td>10</td> </tr> <tr> <td>No of employees</td> <td>number</td> <td>5</td> </tr> <tr> <td>GP percent</td> <td>Number</td> <td>6, 2</td> </tr> </tbody> </table> <p>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.</p>	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	4	https://www.youtube.com/watch?v=LzeVPZtJgIE									
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																															
5	<p>Create a payroll database the following fields and performing queries.</p> <table border="1"> <thead> <tr> <th>Field name</th> <th>Field type</th> <th>Size</th> </tr> </thead> <tbody> <tr> <td>Emp_no</td> <td>varchar</td> <td>5</td> </tr> <tr> <td>EMP name</td> <td>character</td> <td>15</td> </tr> <tr> <td>Department</td> <td>varchar</td> <td>10</td> </tr> <tr> <td>Date of join</td> <td>date</td> <td></td> </tr> <tr> <td>Basic pay</td> <td>number</td> <td>6,2</td> </tr> <tr> <td>DA</td> <td>number</td> <td>6,2</td> </tr> <tr> <td>HRA</td> <td>number</td> <td>6,2</td> </tr> <tr> <td>PF</td> <td>number</td> <td>6,2</td> </tr> <tr> <td>Net pay</td> <td>number</td> <td>6,2</td> </tr> </tbody> </table> <p>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.</p>	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	4	https://www.youtube.com/watch?v=YWb-wTNoiyo
Field name	Field type	Size																															
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Net pay	number	6,2																															

6	<p>Create a student database with the following fields and the performing queries.</p> <table border="1"> <thead> <tr> <th>Field name</th> <th>Field type</th> <th>Size</th> </tr> </thead> <tbody> <tr> <td>Stu name</td> <td>character</td> <td>15</td> </tr> <tr> <td>Roll no</td> <td>varchar</td> <td>10</td> </tr> <tr> <td>Dept</td> <td>character</td> <td>10</td> </tr> <tr> <td>Gender</td> <td>character</td> <td>6</td> </tr> <tr> <td>Date of birth</td> <td>date</td> <td></td> </tr> <tr> <td>Marks %</td> <td>number</td> <td>5, 2</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Display the student details those are fails (below 40). Display the student names and roll number except 14BCC030. Update mark value 75 to roll number 14BCC13 Find the number of 'Female' students. Order the student details based on marks 	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	4	https://www.youtube.com/watch?v=WxlsJqx3OcY			
Field name	Field type	Size																									
Stu name	character	15																									
Roll no	varchar	10																									
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7	<p>Create a employee table with the given fields and perform the following queries.</p> <table border="1"> <thead> <tr> <th>Field name</th> <th>Field type</th> <th>Size</th> </tr> </thead> <tbody> <tr> <td>EMP code</td> <td>varchar</td> <td>10</td> </tr> <tr> <td>EMP name</td> <td>varchar</td> <td>15</td> </tr> <tr> <td>Address</td> <td>character</td> <td>15</td> </tr> <tr> <td>Designation</td> <td>varchar</td> <td>10</td> </tr> <tr> <td>Date of joining.</td> <td>Date</td> <td></td> </tr> <tr> <td>Grade</td> <td>character</td> <td>10</td> </tr> <tr> <td>Salary</td> <td>number</td> <td>8, 2</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Arrange the employees as per their grade level. Display the detail of the employees whose earning lowest salary. Find the no of employees who's joined before 2010. Display the employee details whose grade under 'A' with designation as manager Find the employees total salary value. 	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	4	https://www.youtube.com/watch?v=Bt8fegGN7F4
Field name	Field type	Size																									
EMP code	varchar	10																									
EMP name	varchar	15																									
Address	character	15																									
Designation	varchar	10																									
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Grade	character	10																									
Salary	number	8, 2																									
8	<p>Create a table product with the given fields fields and performsthe following queries.</p> <table border="1"> <thead> <tr> <th>Field name</th> <th>Field type</th> <th>Size</th> </tr> </thead> <tbody> <tr> <td>Product no</td> <td>number</td> <td>8</td> </tr> <tr> <td>Product name</td> <td>character</td> <td>15</td> </tr> <tr> <td>Unit of measure</td> <td>character</td> <td>10</td> </tr> <tr> <td>Quantity</td> <td>number</td> <td>6, 2</td> </tr> <tr> <td>Total amount.</td> <td>Number</td> <td>8, 2</td> </tr> </tbody> </table> <ol style="list-style-type: none"> Calculate the average quantity of product. Display records whose quantity greater than or equal 20. Select the records whose unit of measure is "kg". Display the details those getting either quantity above 200 total amount below 2000 Find the number of products those are 'meter' unit. 	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	4	https://www.youtube.com/watch?v=Bt8fegGN7F4						
Field name	Field type	Size																									
Product no	number	8																									
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Unit of measure	character	10																									
Quantity	number	6, 2																									
Total amount.	Number	8, 2																									

9	<p>Create a college database with relevant fields</p> <table border="1"> <thead> <tr> <th>Field name</th> <th>Field type</th> <th>Size</th> </tr> </thead> <tbody> <tr> <td>College name</td> <td>character</td> <td>15</td> </tr> <tr> <td>Course</td> <td>character</td> <td>10</td> </tr> <tr> <td>No of students</td> <td>number</td> <td>6</td> </tr> <tr> <td>No of students passed</td> <td>number</td> <td>6</td> </tr> <tr> <td>Pass percentage</td> <td>Number</td> <td>6, 2</td> </tr> <tr> <td>Organization</td> <td>varchar</td> <td>10</td> </tr> <tr> <td>Placed students</td> <td>number</td> <td>6</td> </tr> </tbody> </table> <p>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.</p>	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	4	https://www.youtube.com/watch?v=hw263WpYMGU												
Field name	Field type	Size																																					
College name	character	15																																					
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No of students passed	number	6																																					
Pass percentage	Number	6, 2																																					
Organization	varchar	10																																					
Placed students	number	6																																					
10	<p>Create a table 'publisher' and 'book' with relevant fields</p> <p>Publisher table:</p> <table border="1"> <thead> <tr> <th>Field name</th> <th>Field type</th> <th>Size</th> </tr> </thead> <tbody> <tr> <td>Publisher code</td> <td>varchar</td> <td>8</td> </tr> <tr> <td>Publisher name</td> <td>varchar</td> <td>10</td> </tr> <tr> <td>Publisher city</td> <td>character</td> <td>12</td> </tr> <tr> <td>Publisher state</td> <td>character</td> <td>10</td> </tr> <tr> <td>ISBN</td> <td>varchar</td> <td>8</td> </tr> </tbody> </table> <p>Book table:</p> <table border="1"> <thead> <tr> <th>Field name</th> <th>Field type</th> <th>Size</th> </tr> </thead> <tbody> <tr> <td>Title</td> <td>varchar</td> <td>15</td> </tr> <tr> <td>Author</td> <td>character</td> <td>10</td> </tr> <tr> <td>Publisher name</td> <td>varchar</td> <td>10</td> </tr> <tr> <td>Book code</td> <td>varchar</td> <td>6</td> </tr> <tr> <td>Prize</td> <td>number</td> <td>4, 2</td> </tr> </tbody> </table> <p>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'</p>	Field name	Field type	Size	Publisher code	varchar	8	Publisher name	varchar	10	Publisher city	character	12	Publisher state	character	10	ISBN	varchar	8	Field name	Field type	Size	Title	varchar	15	Author	character	10	Publisher name	varchar	10	Book code	varchar	6	Prize	number	4, 2	4	https://www.youtube.com/watch?v=uHgVOn8hJdE
Field name	Field type	Size																																					
Publisher code	varchar	8																																					
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Publisher city	character	12																																					
Publisher state	character	10																																					
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Title	varchar	15																																					
Author	character	10																																					
Publisher name	varchar	10																																					
Book code	varchar	6																																					
Prize	number	4, 2																																					

11	<p>Create a table Deposit and Loan with relevant fields.</p> <p>Deposit table:</p> <table border="1"> <thead> <tr> <th>Field name</th> <th>Field type</th> <th>Size</th> </tr> </thead> <tbody> <tr> <td>Account no</td> <td>varchar</td> <td>16</td> </tr> <tr> <td>Customer name</td> <td>character</td> <td>12</td> </tr> <tr> <td>Bank name</td> <td>character</td> <td>10</td> </tr> <tr> <td>Branch name</td> <td>varchar</td> <td>10</td> </tr> <tr> <td>Balance amount</td> <td>number</td> <td>8, 2</td> </tr> </tbody> </table> <p>Loan table:</p> <table border="1"> <tbody> <tr> <td>Account no</td> <td>varchar</td> <td>16</td> </tr> <tr> <td>Loan number</td> <td>varchar</td> <td>16</td> </tr> <tr> <td>Loan amount</td> <td>number</td> <td>8, 2</td> </tr> <tr> <td>Bank name</td> <td>character</td> <td>10</td> </tr> <tr> <td>Branch name</td> <td>character</td> <td>10</td> </tr> </tbody> </table> <p>a) List the customer name whose getting loan from 'city union bank'.</p> <p>b) Find the customer name to having minimum balance amount</p> <p>c) Update deposits to add interest at 5% to the balance.</p> <p>d) Display the details whose having loan above 2lakhs and balance below 2lakhs.</p> <p>e) Find the number of customer whose getting loan above 5lakhs.</p>	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	Account no	varchar	16	Loan number	varchar	16	Loan amount	number	8, 2	Bank name	character	10	Branch name	character	10	4	https://www.youtube.com/watch?v=_RP-SbDV0oM
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																																		
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Loan amount	number	8, 2																																		
Bank name	character	10																																		
Branch name	character	10																																		
12	<p>Create a table supplier part table with relevant fields</p> <p>Supplier table:</p> <table border="1"> <thead> <tr> <th>Field name</th> <th>Field type</th> <th>Size</th> </tr> </thead> <tbody> <tr> <td>Supplier number</td> <td>varchar</td> <td>16</td> </tr> <tr> <td>Supplier name</td> <td>character</td> <td>12</td> </tr> <tr> <td>Part number</td> <td>number</td> <td>14</td> </tr> <tr> <td>Address</td> <td>varchar</td> <td>12</td> </tr> <tr> <td>Supplier city</td> <td>character</td> <td>10</td> </tr> </tbody> </table> <p>Part table:</p> <table border="1"> <tbody> <tr> <td>Part number</td> <td>varchar</td> <td>14</td> </tr> <tr> <td>Part name</td> <td>character</td> <td>16</td> </tr> <tr> <td>Quantity</td> <td>number</td> <td>6, 2</td> </tr> <tr> <td>Price</td> <td>number</td> <td>6, 2</td> </tr> <tr> <td>Total</td> <td>number</td> <td>8, 2</td> </tr> </tbody> </table> <p>a) Display the part name and supplier name from supplier city 'erode 'or 'Chennai'.</p> <p>b) Display the part number and part name those prize not less than 400.</p> <p>c) Find the average prize.</p> <p>d) Change prize whose supplier city 'pune'.</p> <p>e) Delete the details whose prize is greater than average prize.</p>	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 number	varchar	14	Part name	character	16	Quantity	number	6, 2	Price	number	6, 2	Total	number	8, 2	4	https://www.youtube.com/watch?v=z7VAE0hjaSo
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Quantity	number	6, 2																																		
Price	number	6, 2																																		
Total	number	8, 2																																		
	Total	48																																		

Text Book:

1. RamezElmasri and Shamkant B. Navathe ,Fundamentals of Database Systems, 7th Edition, 2021, Pearson.

Reference Books:

1. Ramez Elmasri, Shamkant, B. Navathe, ,Database Systems, 6th Edition,2013.,Pearson Education.
2. Peter Rob, Carles Coronel, Database System Concepts,7th Edition,2008 ,Cengage Learning.
3. M L Gillenson, Introduction to Database Management, 2012.Wiley Student Edition.

Websites:

https://www.tutorialspoint.com/dbms/dbms_quick_guide.htm

<https://www.techtarget.com/searchdatamanagement/definition/database-management-system>

<https://www.mygreatlearning.com/blog/dbms-tutorial/>

<https://www.studytonight.com/dbms/>

Learning Methods (*):

Assignment/Seminar/Case-Study/Industrial Visit

SEMESTER – IV

PART III-SBC 2: NON LAB PRACTICAL :ENTREPRENEURIAL SKILLS

Course code	Course name	Category	Lecture(L)	Tutorial(T)	Practical(P)	Credits
22BCCSB4	Entrepreneurial Skills	SBC-2	-	4	20	2

Preamble: To make the students to understand the Entrepreneurial skills

Prerequisite: Basic concepts about the business and Entrepreneur.

Course outcomes (COs):

On successful completion of this course the students will be able to:

CO Number	Course Outcome (Co) Statement	Blooms Taxonomy knowledge level
CO1	Describe Nature and scope of Entrepreneurial skills	K1
CO2	Extract the Planning and decision making process.	K2
CO3	Discover the various schemes by TN state government	K3
CO4	Demonstration about successful entrepreneur stories.	K4
CO5	Know the about Company patent registration process.	K4

Mapping with Program Outcomes:

COs/ Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	L	M	S	M	S	S	M	S
CO2	S	M	S	M	L	S	S	L	M	M
CO3	M	S	M	S	M	M	L	S	L	S
CO4	S	M	S	M	L	M	S	L	M	M
CO5	M	S	M	S	M	S	S	M	M	S

S – Strong; **L** – Low; **M** – Medium

Unit	Course content	Hours	E-Contents/ E-Resources
1	From your interview list out various problems faced by entrepreneurs.	2	https://www.indeed.com/career-advice/career-development/challenges-facing-entrepreneurship
2	Create Vision, Mission and values for your company.	2	https://youtu.be/Xjj31uz8MXA?si=-eGDYX0ttJTS4d4
3	Discuss the various schemes by union government for entrepreneurial development.	2	https://youtu.be/Mf3jKoWKoRo?si=lmEF0G09AgeGBJ2V
4	Chart the various schemes by TN state government for entrepreneurial development.	2	https://youtu.be/FQRThB_EFSw?si=vr1mydZqqCCUfYUZ
5	Discussion on women entrepreneur problems in startups.	2	https://youtu.be/TKcfvVFOQjg?si=5Yep2jGDyYIMYe5l
6	Entrepreneurship support initiatives by NSDC.	2	https://youtu.be/TKcfwVFOQjg?si=5Yep2jGDyYIMYe5l
7	Role of National Institute for Entrepreneurship and Small Business Development.	2	https://youtu.be/9jgG87O6vq0?si=7loCvvXIFBR8_Hg1
8	Prepare and present your startup ideas.	2	https://youtu.be/6MsM6S53ILQ?si=MVIjH6xoJWwmmzZS
9	List out various funding institutes supporting entrepreneur development.	2	https://youtu.be/w5AnvwgF3pI?si=A95ZZgumt1fNSguF
10	Company patent registration process.	2	https://youtu.be/edtLEwbKL7E?si=C2YdJBWR1ULbsWzR
11	Demonstration about successful entrepreneur stories	2	https://youtu.be/ptD0TZcF2M?si=kCrbX8rWh_BXVSeT

12	Presentation of interview video about successful entrepreneur	2	https://youtu.be/YC6sr5QWG04?si=nrJK8MLkqQKouDIR
	Total	24	
Text Book			
1. Dr. P. Kowsalya Dr. Bhanu M. V. V, Dr. R. V. Suresh Dr. Veldandi Ramchander Rao, Entrepreneurship Development, 1 April 2022; Flying Hands Publications, ISBN-10 : 8195499910, India.			
Reference Books:			
1. B. Jankiraman , P.V. Raveendra , V.K. Srirama , Role and Challenges of Entrepreneurship Development, Excel Books (1 December 2010), ISBN-10 : 8174468684			
2. Charantimath Poornima M , Entrepreneurship Development and Small Business Enterprises, Third edition (31 January 2018), Pearson Education , ISBN-10 : 9353066263			
Websites			
1. www.openj.edu/openlearn			
2. MIT Open Course Ware – http://ocw.mit.edu			
3. Oxford University Press - http://www.oup.co.in			
Learning Methods (*):			
Case-Study/Industrial Visit.			

B.Com Computer Applications Board
Scheme of Examination (CBCS with OBE Pattern)
For the Candidates admitted during the Academic Year 2021-2022 onwards

Part	Sub Code	Subject Title	Ins.Hrs/Week	Examination				
				Dur. Hrs.	CIA	CE	Total	Credit
SEMESTER I								
I	21LATA01/ 21LAHI01/ 21LAFR01 21LAMY01	Language – I Tamil I/Hindi I/ French I /Malayalam I	5	3	50	50	100	3
II	21ENG001	English –I	5	3	50	50	100	3
III	21BCC101	Core 1- Financial Accounting –I	6	3	50	50	100	4
III	21BCC102	Core 2- Office Automation and C Programming	6	3	50	50	100	4
III	21BCCA01	Allied:1 - Managerial Economics	6	3	50	50	100	4
IV	21UFCA01	Foundation Course I : EVS	2	2	-	50	50	2
		Total	30				550	20
SEMESTER II								
I	21LATA02/ 21LAHI02/ 21LAFR02/ 21LAMY02	Language –II Tamil II/Hindi II/French II/ Malayalam II	5	3	50	50	100	3
II	21ENG002	English – II	5	3	50	50	100	3
III	21BCC201	Core 3 - Financial Accounting –II	6	3	50	50	100	4
III	21BCCP01	Core Practical -1 Office Automation and C Programming	6	3	50	50	100	4
III	21BCCA02	Allied: 2- Principles of Management	6	3	50	50	100	4
IV	21UFCA02	Foundation Course II: Value Education	2	2	-	50	50	2
		Total	30				550	20
SEMESTER III								
III	21BCC301	Core 4- Financial Accounting -III	5	3	50	50	100	4
III	21BCC302	Core 5 - Principles of Marketing	5	3	50	50	100	4
III	21BCC303	Core 6- Programming in C++	5	3	50	50	100	4
III	21BCCP02	Core Practical - 2 : Programming in C++	5	3	50	50	100	4
III	21BCCA03	Allied :3- Business Mathematics	5	3	50	50	100	4
III	21BCCSB1/ 21BCCSB2	SBC -1 : Executive Business Communication/ Cyber law	3	3	30	45	75	3
IV	21BTA001/ 21ATA001/ 21BCCOE1	OEC-1:B T- 1 /AT - 1 / Human Resource Management	2	2	-	50	50	2
		Total	30				625	25
SEMESTER IV								
III	21BCC401	Core 7- Corporate Accounting	5	3	50	50	100	4
III	21BCC402	Core 8 - Commercial Law	5	3	50	50	100	4

III	21BCC403	Core 9- DBMS	5	3	50	50	100	4
III	21BCCP03	Core Practical-3: DBMS	5	3	50	50	100	4
III	21BCCA04	Allied 4- Business Statistics	5	3	50	50	100	4
III	21BCCSB3/ 21BCCSB4	SBC- 2 : Tally ERP 9 with GST/ Company Law	3	3	30	45	75	3
IV	21BTA002/ 21ATA002/ 21OEC002	OEC-2:BT-II/AT-II/ Communicative English #	2	2	-	50	50	2
		Total	30				625	25
SEMESTER V								
III	21BCC501	Core 10- Cost Accounting	5	3	50	50	100	4
III	21BCC502	Core 11- Income Tax Law and Practice	5	3	50	50	100	4
III	21BCC503	Core 12- Business Finance	5	3	50	50	100	4
III	21BCC504	Core 13 – Visual Basic.Net	5	3	50	50	100	4
III	21BCCP04	Core Practical-4: Visual Basic.Net	5	3	50	50	100	4
III	21BCCE01 /02/03	Elective - 1: Banking and Insurance Law/ Supply Chain Management/ Management Information System	5	3	50	50	100	4
III	21BCCPR1	Institutional Training	-	-	-	-	-	-
		Total	30				600	24
SEMESTER VI								
III	21BCC601	Core 14: Management Accounting	5	3	50	50	100	4
III	21BCC602	Core 15: Web Designing and Networking	5	3	50	50	100	4
III	21BCCP05	Core Practical-5: Web Designing and Networking	5	3	50	50	100	4
III	21BCCE04/ E05/06	Elective - II : Introduction to Python / Organizational Behaviour / Investment Management	5	3	50	50	100	4
III	21BCCE07/ 08/09	Elective - III : Indirect Taxation/ Cyber Security / Soft ware Engineering and Software Project Management	5	3	50	50	100	4
III	21BCCPR2	Project and Viva Voce	5	3	50	50	100	4
V	21NSS001/ 21NCC001 21SPT001/ 21EXT001	SOC-1: NSS /NCC//Sports//Extension Activities			50		50	2
		Total	30				650	26
Total							3600	140

List of Skill Based Courses

S.No	Sem.	Subject Code	Subject Name	Credits
1	III	21BCCSB1	Executive Business Communication	3
2	III	21BCCSB2	Cyber law	3
3	IV	21BCCSB3	Tally ERP 9 with GST	3
4	IV	21BCCSB4	Company Law	3

List of Elective Courses

S.No	Sem.	Subject Code	Subject Name	Credits
Elective I				
1	V	21BCCE01	Banking and Insurance Law	4
2	V	21BCCE02	Supply Chain Management	4
3	V	21BCCE03	Management Information System	4
Elective II				
4	VI	21BCCE04	Introduction to Python	4
5	VI	21BCCE05	Organizational Behavior	4
6	VI	21BCCE06	Investment Management.	4
Elective III				
7	VI	21BCCE07	Indirect Taxation	4
8	VI	21BCCE08	Cyber Security	4
9	VI	21BCCE09	Soft ware Engineering and Software Project Management	4

List of Open Elective Courses

S.No	Sem.	Subject Code	Subject Name	Credits
1	III	21BTA001	Basic Tamil-I	2
2	III	21ATA001	Advanced Tamil-I	2
3	III/IV	21OCE002	Communicative English	2
4	III	21BAEOE1	PC Software	2
5	III	21BBAOE1	Multimedia and its Applications	2
6	III	21BAC0E1	Multimedia and its Applications	2
7	III	21BCM0E1	Aptitude and Logical Reasoning	2
8	III	21BCCOE1	Human Resource Management	2
9	III	21BCSOE1	Multi Media	2

10	III	21BCIOE1	E- Business	2
11	III	21BCPOE1	Web Designing	2
12	III	21BHMOE1	Communicative Hindi – I	2
13	III	21BVCOE1	E-Commerce	2
14	IV	21BTA002	Basic Tamil-II	2
15	IV	21ATA002	Advanced Tamil-II	2
16	IV	21BAEOE2	Introduction to Information Security	2
17	IV	21BCAOE1	Banking Theory	2
18	IV	21BSCOE1	Management Information System	2
19	IV	21BITOE1	Microprocessor and its Applications	2
20	IV	21BCTOE1	Mathematical Aptitude	2
21	IV	21BMAOE1	Basics of internet	2
22	IV	21BESOE1	Web Designing	2
23	IV	21BHMOE2	Communicative Hindi – II	2
24	IV	21BCDOE1	Introduction to Research	2
25	IV	21BVCOE2	Basics of Sound and Acoustics	2

List of Extra Credit Courses

S.No	Sem.	Subject Code	Subject Name	Credits
1	III	21BCCEC1	Principles of Auditing	2
2	IV	21BCCEC2	Mobile Computing	2
3	V	21BCCEC3	NPTEL/SWAYAM/MOOC Course (any one)	2

SEMESTER – V
PART III-CORE 12: BUSINESS FINANCE

Course code	Course Name	Category	Lecture(L)	Tutorial(T)	Practical(P)	Credits
21BCC503	Business Finance	Core-12	50	10	0	4

Preamble: Basic knowledge in Business Finance

Prerequisite: Basic knowledge in Business Finance.

Course outcomes (COs):

On successful completion of this course the students will be able to:

CO Number	Course Outcome (Co) Statement	Blooms Taxonomy knowledge level
CO1	To know the basic concepts of business finance.	K1
CO2	To gain knowledge on Financial plan	K2
CO3	Understand Concept of Capital structure and Cost of Capital	K3
CO4	To gain knowledge on Capitalization	K4
CO5	To study about the different source and forms of finance	K4

Mapping with Program Outcomes:

COs/ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	M	S	L	M	L	L	M
CO2	L	L	L	S	M	L	S	M	S	M
CO3	S	M	S	L	M	S	M	S	S	S
CO4	L	S	M	S	L	M	M	S	S	L
CO5	L	S	M	M	S	L	M	M	S	M

S – Strong; **L** – Low; **M** – Medium

Syllabus:

Unit	Course content	Hours	E-Contents/ E-Resources
I	Business Finance: Introduction – Meaning – Concepts - Scope – Function of Finance - Traditional and Modern Concepts– Contents of Modern Finance.	12	https://www.youtube.com/watch?v=pLuNpzvrDw8
II	Financial Planning: Meaning – Concept – Objectives – Types – Steps – Significance – Fundamentals.	12	https://www.youtube.com/watch?v=liU0jbFeJjg
III	Capital Structure – Theories of Capital structure– Cost of Capital – Types-Concept – Importance	12	https://www.youtube.com/watch?v=QsqmOCcvUpU
IV	Capitalization – Bases of Capitalization – Cost Theory – Earning Theory – Over Capitalization – Under Capitalization – Symptoms – Causes – Remedies – Watered Stock – Watered Stock Vs. Over Capitalization.	12	https://www.youtube.com/watch?v=kLumVVPcTzM
V	Sources and Forms of Finance: Equity Shares – Preference Shares - Bonds – Debentures - Fixed Deposits – Lease Financing	12	https://www.youtube.com/watch?v=Jj0LJQlee14
	Total	60	

Text Book:

1. Business Finance , K.Shshi & Sharma Gupta, Kalyani Publishers

Reference Books:

1. Financial Management, Pandey I.M –1st Edition, Vikas Publication,2015.
2. Business Finance, Dr. S.P. Gupta, Sahitya Bhawan Publications, Revised, 2020
3. Problems of Financial Management Text, Problems and Cases, Khan M.Y and Jain P.K, Tata Mc Grawhill ,7th Edition 2014.

Websites:

1. <https://www.studocu.com/row/document/kampala-international-university/business-administration/business-finance-lecturer-notes/7663590>
2. <https://www.studocu.com/en-gb/document/university-of-surrey/business-finance/business-finance-lecture-notes/1615813>

Learning Methods (*):

Assignment/Seminar/Case-Study/Industrial Visit

SEMESTER – V

PART III - ELECTIVE 1 - SUPPLY CHAIN MANAGEMENT

Course Code	Course Name	Category	Lecture(L)	Tutorial(T)	Practical(P)	Credits
21BCCE02	Supply Chain Management	Elective-1	50	10	-	4

Preamble: To create awareness about the supply chain activities taken in order to deliver the goods

Prerequisite: Basic knowledge about delivering goods supply

Course outcomes (COs):

On successful completion of this course the students will be able to:

CO Number	Course Outcome (Co) Statement	Blooms Taxonomy knowledge level
CO1	Understand fundamental supply chain management concepts.	K1
CO2	Apply knowledge to evaluate and manage an effective supply chain	K2
CO3	Understand the foundational role on strategic alliances.	K3
CO4	To learn about Procurement and Outsourcing	K4
CO5	To create awareness on Dimension of customer Value	K4

Mapping with Program Outcomes:

CO/ PO & PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	M	M	S	L	L	S	L	M	S	L
CO 2	L	S	M	M	S	L	L	M	L	M
CO 3	M	S	M	M	L	M	M	S	L	S
CO 4	M	M	M	M	M	M	L	S	M	M
CO 5	M	L	L	S	M	L	M	L	S	S

S – Strong; L – Low; M – Medium

Syllabus:

Unit	Course content	Hours	E-Contents/ E-Resources
I	Supply Chain Management – Global Optimization – importance – key issues – Inventory management – economic lot size model. Supply contracts – centralized vs. decentralized system.	12	https://slideplayer.com/slide/6010414/
II	Supply chain Integrates- Push, Pull strategies – Demand driven strategies – Impact on grocery industry – retail industry – distribution strategies.	12	https://slideplayer.com/slide/4203306/
III	Strategic Alliances: Frame work for strategic alliances – 3PL – merits and demerits – retailer – supplier partnership – advantages and disadvantages of RSP – distributor Integration.	12	https://slideplayer.com/slide/7239564/
IV	Procurement and Outsourcing: Outsourcing – benefits and risks – framework for make/buy decision – e-procurement – frame work of e-procurement.	12	https://quandarycg.com/top-procurement-software-for-your-business/
V	Dimension of customer Value – conformance of requirement – product selection – price and brand – value added services – strategic pricing – smart pricing – customer value measures	12	https://slideplayer.com/slide/5769585/
	Total	60	

Text Book:

- 1.Logistics and Supply Chain Management Paperback by Saikumari V., Purushothaman S - 1 January 2022, Publisher : Sultan Chand and Sons

Reference Books:

- 1.Logistics Paperback by Martin Christopher FT Publishing International; 5th edition (26 February 2016)
- 2.Essentials of Supply Chain Management (Essentials Series) Hugos, Michael H. - 02/23/2018 Wiley (Publisher)

Websites:

- 1.https://www.tutorialspoint.com/supply_chain_management/index.htm
- 2.<https://www.vskills.in/certification/tutorial/logistics-and-supply-chain-management-professional/>
- 3.<https://www.javatpoint.com/scm>

Learning Methods (*):

Assignment/Seminar/Case-Study

SEMESTER – VI

PART III-ELECTIVE-II: – INTRODUCTION TO PYTHON

Course code	Course name	Category	Lecture(L)	Tutorial(T)	Practical(P)	Credits
21BCCE04	Introduction to Python	Elective-II	50	10	0	4

Preamble: To furnish the students with knowledge of python.

Prerequisite: Basic Knowledge on logic of the programs and OOPS concepts

Course outcomes (COs):

On successful completion of this course the students will be able to:

CO Number	Course Outcome (Co) Statement	Blooms Taxonomy knowledge level
CO1	Learn about basic concepts of python	K1
CO2	Gain the knowledge of basics control statement in python	K2
CO3	Construct ideas to the students about python functions	K4
CO4	Give an exposure to the error handling mechanism	K3
CO5	Know the knowledge of OOPS concepts.	K3

Mapping with Program Outcomes:

COs/ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	L	L	L	L	S	M	L	L	M	M
CO2	L	L	L	L	M	L	M	L	M	M
CO3	L	L	L	L	M	L	L	L	M	M
CO4	L	L	L	L	M	M	L	M	M	L
CO5	L	L	L	L	M	M	L	M	M	M

S – Strong; L – Low; M – Medium

Syllabus:

Unit	Course content	Hours	E-Contents/ E-Resources
I	BASICS : Python - Variables - Executing Python from the Command Line - Editing Python Files - Python Reserved Words - Basic Syntax-Comments - Standard Data Types – Relational Operators - Logical Operators - Bit Wise Operators - Simple Input and Output	12	https://www.youtube.com/watch?v=kqtD5dpn9C8
II	CONTROL STATEMENTS: Control Flow and Syntax - Indenting - If Statement - Statements and Expressions- String Operations- Boolean Expressions -While Loop - Break and Continue - For Loop. LISTS: List-List Slices - List Methods - List Loop – Mutability – Aliasing - Cloning Lists - List Parameters. TUPLES: Tuple Assignment, Tuple as Return Value -Sets – Dictionaries	12	https://www.youtube.com/watch?v=wLie11bgbSI
III	FUNCTIONS: Definition - Passing Parameters To A Function - Built-In Functions- Variable Number of Arguments - Scope – Type Conversion-Type Coercion- Passing Functions To A Function - Mapping Functions In A Dictionary – Lambda - Modules - Standard Modules – Sys – Math – Time - Dir - Help Function.	12	https://www.youtube.com/watch?v=BVfCWuca9nw
IV	ERROR HANDLING: Run Time Errors - Exception Model - Exception Hierarchy - Handling Multiple Exceptions - Data Streams - Access Modes Writing - Data to a File Reading - Data From a File - Additional File Methods - Using Pipes as Data Streams - Handling IO Exceptions - Working with Directories	12	https://www.youtube.com/watch?v=6SPDvPK38tw
V	OBJECT ORIENTED FEATURES: Classes Principles of Object Orientation - Creating Classes - Instance Methods - File Organization - Special Methods - Class Variables – Inheritance – Polymorphism - Type Identification - Simple Character Matches - Special Characters - Character Classes – Quantifiers - Dot Character - Greedy Matches – Grouping - Matching at Beginning or End - Match Objects – Substituting - Splitting a String - Compiling Regular Expressions.	12	https://www.youtube.com/watch?v=qiSCMNBIP2g
	Total	60	

Text Book:

1.Fabrizio Romano, [heinrichkruger](https://www.heinrichkruger.com/), Learn Python Programming , 3rd Edition, January 2023 Packet Publishing Limited. .

Reference Books:

1. Monu Singh rakesh k. Yadav, srinivas arukonda , zero to mastery in python programming, best python book for beginners, 21 july 2021, vayu education of india.
2. Nageswara Rao r, Core python programming, 3rd Edition , 2021,dreamtech press.

Websites

- 2.<http://www.javatpoint.com>
- 3.<http://www.pythontutorials.com>

Learning Methods (*):

Assignment/Seminar/Case-Study/Industrial Visit

SEMESTER – VI

PART-III ELECTIVE-II ORGANISATIONAL BEHAVIOR

Course Code	Course Name	Category	Lecture(L)	Tutorial(T)	Practical(P)	Credits
21BCCE05	Organisational Behavior	Elective-II	50	10	0	4

Preamble: On the successful completion of this paper, the students would have acquired the preliminary knowledge in Organisational Behavior

Prerequisite: Basic knowledge about the organization.

Course outcomes (COs):

On successful completion of this course the students will be able to:

CO Number	Course Outcome (Co) Statement	Blooms Taxonomy knowledge level
CO1	Knowledge on concepts of behavior on organization and functions of stress management	K1
CO2	Organizational behavior has some specific roles to play in an organization and individual behavior.	K2
CO3	The goals of Organizational behavior is to gain experience on Group dynamics.	K4
CO4	Develop global talents enhancing critical thinking, innovative skills, collaborative team work and holistic skills	K4
CO5	Knowledge on Organizational conflicts and method to resolve.	K3

Mapping with Program Outcomes:

CO/ PO & PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	L	M	M	S	S	L	L	M	L	L
CO 2	L	S	L	M	L	S	S	L	M	M
CO 3	M	M	M	S	M	L	L	S	L	L
CO 4	S	L	M	M	L	M	S	M	M	S
CO 5	M	S	L	M	M	L	S	L	L	L

S– Strong; L – Low; M – Medium

Syllabus:

S.No	Program	Hours	E-Contents/ E-Resources
1	Organizational Behavior – Definition, Need for Studying Organizational Behavior, Disciplines Involved in The Study of Organizational Behavior, -Contributing Disciplines and Area Like Psychology, Social Psychology, Economics, Etc. Application of Organizational Behavior in Business. Stress Management	12	https://youtu.be/QJAv6674_Sw
2	Individual Behaviour – Personality, Perception, Learning, Attitudes Inter-Personal Behaviour– Group And Inter-Group Behaviour.	12	https://youtu.be/GDLLHBvliE8
3	Group Dynamics – Formal and Informal Group, Group Norms, Group Cohesiveness, Group Behaviour and Group Decision – Making.	12	https://youtu.be/1seH_GHxRtI
4	Motivation and Morale, Leadership-Nature, Styles and Approaches, Development Of leadership Including Laboratory Training. Power and Authority – Definition of Power –Types of Power.	12	https://youtu.be/xjA6DWO1PVA
5	Management of Change-Conflict Management- Organisation Health, Development and Effectiveness. Management of culture, Cross Cultural Management.	12	https://youtu.be/3fmFA6k_muk
	Total	60	

Text Book:

1. Aswathappa K, Organisational Behaviour, 12th Edition, 2016, Himalaya Publishing House, New Delhi.

Reference Books:

1. T.N. Chhabra, Essentials of Organisational Behaviour, 2019, Sun India Publications.
2. Robbins, Stephen P and Mary Coulter, Management of Organisational Behaviour, 2017, Prentice Hall, New Delhi.
3. Vikramপুরi, Organisational Behaviour., 2016, APH Publishing.

Websites:

1. <https://youtu.be/uSSHDCgq-4k?si=kfJcIVSKyMhhqWKt>
2. <https://youtu.be/LnN6JEUdJRg?si=kqGG9SWLdDK7gAwJ>

Learning Methods (*):

Assignment/Seminar/Case-Study/Industrial Visit

SEMESTER – VI
PART III-ELECTIVE III : INDIRECT TAXATION

Course code	Course name	Category	Lecture(L)	Tutorial(T)	Practical(P)	Credits
21BCCE07	Indirect Taxation	Elective-III	50	10	0	4

Preamble: To facilitate the students to gain knowledge of the principles of Indirect Taxation.

Prerequisite: Basic concepts of Indirect Taxes.

Course outcomes (COs):

On successful completion of this course the students will be able to:

CO Number	Course Outcome (Co) Statement	Blooms Taxonomy knowledge level
CO1	Know about the Nature and elements of Indirect Tax.	K1
CO2	Learn about Goods and Services Tax.	K3
CO3	Learn about Procedures under GST.	K4
CO4	Study on GST Audit Assessment.	K2
CO5	Learn about Customs Law.	K3

Mapping with Programme Outcomes:

COs/ Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	L	M	S	S	M	S
CO2	S	S	M	S	S	S	M	M	S	L
CO3	M	M	S	L	M	S	S	S	L	S
CO4	S	S	M	M	S	M	M	M	M	M
CO5	S	M	L	S	M	M	S	S	M	S

S – Strong; L – Low; M – Medium

Syllabus:

Unit	Course content	Hours	E-Contents/ E-Resources
I	Indirect Taxes – Introduction- Meaning – Definition -Concept-Importance - Characteristics -Objectives -Canons of Taxation -Impact Shifting and Incidence of Tax - Classification of Taxes- Advalorem and Specific Duties .	12	https://www.youtube.com/watch?v=gUYh6HyhEmU
II	GST in India. Basics of Goods and Services Tax: Introduction-GST Law–GST Levy-Features of GST- Taxes Subsumed under Goods and Services -Benefits of Goods and Services Tax -GST Rate Structure - Types of Supplies under GST in India	12	https://www.youtube.com/watch?v=DDuBpwPgueQ
III	Procedures under GST-Introduction - Registration under GST -Tax Invoice, Credit and Debit Notes-Accounting and Records-Filling of Returns. Integrated Goods and Services Tax Act 2017 – Introduction – Scope – Levy and Collection – Powers to Grant Exemption – Determination of Nature of Supply – Inter State Supply – Intra State Supply – Place of Supply – Zero Rated Supply-Exempted Supply-Non GST Supply.	12	https://www.youtube.com/watch?v=37XxKlfdnBM
IV	GST Audit Assessment and Audit under GST- Demands and Recovery-Appeals and revision- Advance ruling Offences and Penalties. National Anti-Profiteering Authority – GST Practitioners – eligibility and Practice and Career avenues-GST Council-E-Way Bill - E-Invoice.	12	https://www.youtube.com/watch?v=tdX7vVKtgaw
V	Customs Law-Introduction -Objectives - Scope-Customs Act 1962: Legal Structure – Definition - Prohibitions on Importation and Exportation of Goods - Levy and Collection of Customs Duty -Taxable Event -Types of Customs Duty -Computation of Customs Duty- Classification and Valuation of Goods –Duty and Drawbacks-Recent Amendments.	12	https://youtu.be/0ixUkHyfnYs
	Total	60	

Text Book.

1. Balachandran .V, Indirect Taxation Goods and Services Tax and Customs Law , 2023,Sultan Chand & Sons.

Reference Books:

1. CA(Dr.)Mahesh Gour, CA(Dr.) Bansal Indirect Tax laws, Goods and Service Taxes, FTP, Customs Law, Taxmann Publications ,2022
2. Dr. R. Parameswaran, Indirect Taxes GST and Customs Laws, Kavin Publications, 1 st Edition, 2018.
- 3.T Dr.Mehrotra,Prof.V.P,Agarwal Indirect Taxes with G.S., Edition 2022,Sahitya Bhawan Publication.

Websites

1. www.gst.gov.in
2. <https://tutorial.gst.gov.in/userguide/registration/#t=manual.html>

Learning Methods (*):

Assignment/Seminar/Case-Study

SEMESTER – VI

PART III –ELECTIVE-III: CYBER SECURITY

Course Code	Course Name	Category	Lecture(L)	Tutorial(T)	Practical(P)	Credits
21BCCE08	Cyber Security	Elective-III	50	10	-	4
Preamble: It provides an overview of the field of cyber security, cybercrime and information assurance.						
Prerequisite: Basic knowledge cyber security and how to implement a cyber security						
Course outcomes (COs):						
On successful completion of this course the students will be able to:						
CO Number	Course Outcome (Co) Statement					Blooms Taxonomy knowledge level
CO1	Learn about basic concepts cyber threads					K1
CO2	Categories of Cyber Criminals					K2
CO3	Construct ideas to the students about Cryptography authentication					K3
CO4	Give an exposure Security Policies and Security Handshake Pitfalls					K4
CO5	Known the concepts of E-commerce security .					K2

Mapping with Program Outcomes:

CO/ PO & PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	M	L	L	L	L	M	S	S	S	S
CO 2	M	L	M	L	L	M	S	S	S	S
CO 3	M	L	S	M	M	L	M	M	M	M
CO 4	L	L	M	L	L	M	M	M	M	S
CO 5	M	M	S	M	L	M	M	M	M	M

S – Strong; L – Low; M – Medium

Syllabus:

Unit	Course content	Hours	E-Contents/ E-Resources
I	Understanding Cyber Threat Intelligence: Defining Threats-Understanding Risk Cyber Threat Intelligence And Its Role-Expectation of Organizations and Analysts-Four Methods of Threat Detection	12	https://www.youtube.com/watch?v=P0Fe2viJ508
II	Introduction To Cyber Crime - Distinction Between Cyber Crimes And Conventional Crimes - Categories of Cyber Crimes - Causes For Growing Cyber Crimes - Categories of Cyber Criminals. Concepts and Terminology - Threats-Attacks-Services and Mechanisms Security Attacks-Security Services-Integrity Check-Digital Signature-Authentication-Spoofing Sniffing-Firewall	12	https://www.youtube.com/results?search_query=Introduction+to+Cyber+Crime
III	Authentication: Password Based-Address Based-Cryptographic Authentication. Passwords In Distributed Systems-On-Line Vs Offline Guessing-Storing. Cryptographic Authentication: Passwords As Keys-Protocol- KDC's Certification Revocation-Inter-Domain groups-Delegation. Authentication of People: Verification Techniques-Passwords-Length of Passwords-Password Distribution-Smart Cards-Biometrics.	12	https://www.youtube.com/watch?v=3wiFKt1O3-w
IV	Security Policies and Security Handshake Pitfalls: What Is Security Policy-High and Low Level Policy-User Issues? Protocol Problems-Assumptions-Shared Secret Protocols-Public Key Protocols-Mutual Authentication-Reflection Attacks-Use of Timestamps-Nonce and Sequence Numbers-Session Keys-One-and Two-Way Public Key Based Authentication.	12	https://www.youtube.com/watch?v=sEkw8ZcxtFk
V	Network Security: Electronic Mail Security-IP Security-Network Management Security. Security For Electronic Commerce: E-Commerce Security Analysis-Protocol-SSL-SET System Security: Intruders and Viruses-Firewalls-Intrusion Detection.	12	https://www.youtube.com/watch?v=JoiLuFNbc4&list=PLBlNk6fEyqRgJU3EsOYDTW7m6SUmW6kl
Total		60	

Text Book

1. William Stallings, Cryptography and Network Security: Principles and Practice, 8th edition, 2023, Pearson education.

Reference Books:

1. Atulkahate, cryptography and network security, fourth edition, 2019. McGraw hill education (India) private limited,
2. Sanil nadkarni, fundamentals of information security, first edition 2020, Bpb publications.
3. Mark stamp; ashutosh saxena, information security, 3rd edition, 2023, Wiley India Pvt Ltd.

Websites:

1. <https://www.crest-approved.org/wp-content/uploads/2022/04/CREST-Cyber-Threat-Intelligence.pdf>
2. <https://www.bu.edu/tech/about/security-resources/bestpractice/auth/>
3. <https://www.checkpoint.com/cyber-hub/network-security/what-is-network-security/>

Learning Methods (*):

Assignment/Seminar/Case-Study

SEMESTER – VI

PART III – ELECTIVE III - SOFTWARE ENGINEERING AND SOFTWARE PROJECT MANAGEMENT

Course Code	Course Name	Category	Lecture(L)	Tutorial(T)	Practical(P)	Credits
21BCCE09	Software Engineering and Software Project Management	Elective-III	50	10	-	4

Preamble: It provides an updated knowledge on software management.

Prerequisite: Basic knowledge on the Software Development Life Cycle.

Course outcomes (COs):

On successful completion of this course the students will be able to:

CO Number	Course Outcome (Co) Statement	Blooms Taxonomy knowledge level
CO1	Understand the basic concepts of software engineering	K1
CO2	Apply the software engineering models in developing software applications	K2
CO3	Implement the object oriented design in various projects	K3
CO4	Knowledge on how to do a software project with in-depth analysis.	K4
CO5	Inculcate knowledge on Software engineering concepts in turn gives a roadmap to design a new software project.	K4

Mapping with Program Outcomes:

CO/ PO & PSO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	M	M	S	L	L	S	L	M	S	L
CO 2	L	S	M	M	S	L	L	M	L	M
CO 3	M	S	M	M	L	M	M	S	L	S
CO 4	M	M	M	M	M	M	L	S	M	M
CO 5	M	L	L	S	M	L	M	L	S	S

S – Strong; L – Low; M – Medium

Syllabus:

Unit	Course content	Hours	E-Contents/ E-Resources
I	Software Engineering: A Layered Technology – Software Process – Software Process Models – The Prototyping. Requirement Engineering– Software Prototyping - Elements of Analysis Model – Datamodeling – Functional Modeling and Information Flow.	12	https://www.youtube.com/watch?v=WxkP5KR_Emk
II	Software Design and Software Engineering – The Design Process – Design Principles – Design Concepts – Effective Modular Design – Software Architecture	12	https://www.youtube.com/watch?v=dce60aUHdyM
III	Software Testing Fundamentals – Test Case Design - White Box Testing – Basis Path Testing –Control Structure Testing – Black Box Testing. Unit Testing – Validation Testing – System Testing	12	https://www.youtube.com/watch?v=xjd6jToC8kA
IV	Software Configuration Management: Definitions and Terminology – Processes and Activities. Software Quality Assurance: Definitions – Quality Control and Quality Assurance – Organization of Structures. Risk Management: Risk Identification – Quantification - Monitoring - Mitigation. Software Requirements Gathering: Steps To Be Followed – Outputs and Quality Records - Skill Sets Required – Challenges.	12	https://www.youtube.com/watch?v=AaHaLjuzUm8
V	Estimation: What Is Estimation? – When and Why? – Three Phases Of Estimation – Estimation Methodology – Formal Models of Size Estimation. Design and Development Phases: Reusability - Technology Choices – Standards – Portability -User Interface Issues – Testability - The Effect of Internet on Project Management.	12	https://www.youtube.com/watch?v=hdPlc3kiTk
	Total	60	

Text Book:

1. Mrs. Amita A. Jajoo ,Mrs. Prajakta S. Software Engineering and Project Management Kindle Edition , 2018, Nirali Prakashan Publisher.

Reference Books:

1. Patrick Naughton & Hebert Schildt ,The Complete Reference Java 2 , 3rd Edition, TMH
2. John R. Hubbard ,Programming with Java , 2nd Edition, TMH.

Websites:

1. https://www.tutorialspoint.com/dbms/dbms_quick_guide.htm
2. <https://www.techtarget.com/searchdatamanagement/definition/database-management-system>
3. <https://www.mygreatlearning.com/blog/dbms-tutorial/>
4. <https://www.studytonight.com/dbms/>

Learning Methods (*):

Assignment/Seminar/Case-Study

B.Sc (Computer Technology)



VLB JANAKIAMMAL COLLEGE OF ARTS AND SCIENCE

An Autonomous Institution, Affiliated to Bharathiar University and Approved by AICTE

Re-Accredited by NAAC with 'B++' Grade

KOVAIPUDUR, COIMBATORE – 641 042

Phone: 0422-2605162 E-mail: principal@vlbjcas.ac.in Website: www.vlbjcas.ac.in

Board of Studies Meeting

Department of IT & CT

The minutes of the 20th meeting of Board of Studies held on 18.11.2023 at 10.30 am in the department.

Members Present:

S.No	Name	Category
1	Mr.R.Kanagaraj	Chariman
2	Dr. R. Sudha	University Nominee
3	Dr.M.Krishnaveni	Subject Expert
4	Dr.S.Veni	Subject Expert
5	Mr.R.Mahesh Kumar	Member
6	Mrs.G.Deepalakshmi	Member
7	Ms.S.Geetha Priya	Member
8	Mr.P.DeepanBabu	Member
9	Dr. P. Preetha	Member
10	Mr.B.Ramesh	Member
11	Ms. G. Sangeetha	Member
12	Mr.A. Mansoor Ali	Industrial Expert
13	Mr.M.Sreedev	Alumni

The HoD and Chairman of the Department of IT & CT welcomed and introduced all the members and appreciated them for their continuous support, contribution for the development of academic standard and enrichment of the syllabus.

Further Chairman informed inability of the following member to attend the meeting and requested to grant leave of absence.

1. Dr. M. Krishnaveni, Subject Expert

The items of the agenda were taken one by one for discussion and the following resolutions were passed.

Item 20.1 (a): To consider and approve the new scheme and regulations for the students admitted during the academic year 2023 – 2024.

The Chairman presented the detailed scheme and regulations for the students admitted from the academic year 2023 – 2024 onwards. The details of changes made also presented as follows.

New Courses Introduced:

Course	Code	Reason
Nil		

Courses Removed

Course	Code	Reason
Nil		

After discussion the following resolution was passed with the above changes and modifications.

Resolution:

Resolved to approve the scheme and regulations for the students admitted from the academic year 2023 – 24 onwards,

Item 20.1 (b): To consider and approve the changes, if any, in the syllabi for I semester for the students admitted during the academic year 2023 – 2024.

The Chairman presented the detailed syllabus for the II semester for the students admitted from the academic year 2023 – 2024 onwards. The details of changes made also presented as follows.

Changes Made:

Course	Code	Reason
Nil		

New Courses Introduced:

Course	Code	Reason
Nil		

Courses Removed

Course	Code	Reason
NIL		

After discussion the following resolution was passed with the above changes and modifications.

Resolution:

Resolved to approve the syllabus for the II semester for the students admitted

from the academic year 2023 – 24 onwards,

Item 20.1 (c): To consider and approve the syllabi for IV semester for the students admitted during the academic year 2022-2023.

The chairman presented the detailed scheme and syllabus for the IV semester for the students admitted from the academic year 2022-2023 onwards. The details of changes made also presented as follows.

Changes Made:

Course	Code	Reason
RDBMS • Added Types of Oracle Database Users & Creating an Oracle database.	22BCT401	Experts suggested this topic to maintain the sequence in users and database creation
RDBMS Removed the followings topics 1. Unit-1:BCNF , 4NF & DFD 2. Unit-2: Personal database, Client/Server database, SQL & SQL*Plus commands. 3. Unit-3: Define command & Case Structure. 4. Unit-5: Data Dictionary view.	22BCT401	Experts suggested to remove this topic to based on lecturing hours

New Courses Introduced:

Course	Code	Reason
Office Automation Practical	22BCTOE1	Approved the syllabus framed for open elective course

Courses Removed

Course	Code	Reason
NIL		

After discussion the following resolution was passed with the above changes and modifications.

Resolution:

Resolved to approve the syllabus for the IV semester for the students admitted from the academic year 2022 – 23 onwards,

Item 20.1 (d): To consider and approve the changes, if any, in the syllabi for VI semester for the students admitted during the academic year 2021 – 2022.

The Chairman presented the detailed syllabus for the VI semester for the students admitted from the academic year 2021 – 2022 onwards. The details of changes made also presented as follows.

Changes Made:

Course	Code	Reason
Dynamic Web Development • Added PHP Regular Expression in Unit 2	21BCT601	Experts suggested to include the content so students learn about the text search and text replace operations
Cryptography and Network Security • Added Intrusion in unit 5	21BCTE06	Members suggested to include the cyber attacks detection
Bigdata Framework • Added Open Source Technology for Big Data Analytics in Unit1	21BCTE04	Members suggested to add this topic to create awareness about open source technologies used in Big data analytics
Enterprises Data Ware Housing and Mining • Added proximity based outlier Detection in Unit4	21BCTE05	Suggested this topic to detect the outlier in cluster analysis

New Courses Introduced:

Course	Code	Reason
Cryptography and Network Security	21BCTE06	Experts suggested to introduce cryptography techniques
Mobile Programming	21BCTE09	Experts suggested to include mobile application

Courses Removed

Course	Code	Reason
NIL		

After discussion the following resolution was passed with the above changes and modifications.

Resolution:

Resolved to approve the syllabus for the VI semester for the students admitted from the academic year 2021 – 22 onwards,

Item 20.2: To approve the panel of examiners for question paper setting and evaluation of answer scripts for the Even semester of the academic year 2023 – 2024.

The Chairman presented the panel of examiners for question paper setting and evaluation of answer scripts for the even semester of the academic year 2023 – 2024.

Resolution:

Resolved to approve the panel of examiners for question paper setting and evaluation of answer scripts for the even semester of the academic year 2023 – 2024.

Item 20.3: To consider and approve any other item brought forward by the Chairman and the

members of the board.

No other item was brought forward.

Finally the Chairman thanked all the members for their cooperation and contribution in enriching the syllabus with active participation in the meeting and sought the same spirit in the future also. The meeting was closed with formal vote of thanks proposed by Mr. P. Deepan Babu, Assistant Professor of IT & CT.



(Mr.R.Kanagaraj)
Chairman



(Dr. R. Sudha)
University Nominee

(Dr.M.Krishnaveni)
Subject Expert



(Dr.S.Veni)
Subject Expert



(Mr.R.Mahesh Kumar)
Member



(Mrs.G.Deepalakshmi)
Member



(Ms.S.Geetha Priya)
Member



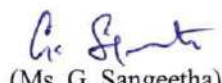
(Mr.P.Deepan Babu)
Member



(Dr. P. Preetha)
Member



(Mr.B.Ramesh)
Member



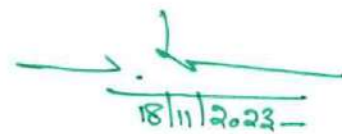
(Ms. G. Sangeetha)
Member



(Mr.Mansoor Ali)
Industrial Expert



(Mr.M.Sreedev)
Alumni



18/11/2023-

Signature of the Principal

PRINCIPAL
V.L.B. JANAKIAMMAL COLLEGE OF ARTS AND SCIENCE
(AUTONOMOUS)
KOVAIPUDUR, COIMBATORE-641 042

B.Sc Computer Technology Board
Scheme of Examination (CBCS with OBE Pattern)

For the Candidates admitted during the Academic Year 2021-2022 onwards

Part	Sub Code	Subject Title	Ins.Hrs/Week	Examination				
				Dur. Hrs.	CIA	CE	Total	Credit
SEMESTER I								
I	21LATA01/ 21LAHI01/ 21LAFR01 21LAMY01	Tamil - I/Hindi - I/Malayalam - I/French - I	5	3	50	50	100	3
II	21ENG001	English –I	5	3	50	50	100	3
III	21BCT101	Core 1 – Programming in C	6	3	50	50	100	4
III	21BCTP01	Core Practical 1 - Programming in C	6	3	50	50	100	4
III	21BCTA01	Allied 1 – Numerical Methods and Statistics	6	3	50	50	100	4
IV	21UFCA01	Foundation Course I : EVS	2	2	-	50	50	2
		Total	30				550	20
SEMESTER II								
I	21LATA02/ 21LAHI02/ 21LAFR02/ 21LAMY02	Tamil - II/Hindi - II /Malayalam - II /French - II	5	3	50	50	100	3
II	21ENG002	English – II	5	3	50	50	100	3
III	21BCT201	Core 2 - Object Oriented Programming with C++	6	3	50	50	100	4
III	21BCTP02	Core Practical 2 - C++	6	3	50	50	100	4
III	21BCTA02	Allied 2 – Discrete Mathematics	6	3	50	50	100	4
IV	21UFCA02	Foundation Course II: Value Education	2	2	-	50	50	2
		Total	30				550	20
SEMESTER III								
III	21BCT301	Core 3 – Java Programming	5	3	50	50	100	4
III	21BCT302	Core 4 - Data Structures	5	3	50	50	100	4
III	21BCT303	Core 5 - Computer Organization and Architecture	5	3	50	50	100	4
III	21BCTP03	Core Practical 3 – Java Programming	5	3	50	50	100	4
III	21BCTA03	Allied 3 – ERP	5	3	50	50	100	4
III	21BCTSB1/ 21BCTSB2	SBC 1 - Python Programming/ Office Automation	3	3	30	45	75	3
IV	21BTA001 21ATA001/ 21OEC002	OEC 1 :BT – 1/AT - 1 / Communicative English	2	2	-	50	50	2
		Total	30				625	25

SEMESTER IV								
III	21BCT401	Core 6 – RDBMS	5	3	50	50	100	4
III	21BCT402	Core 7 – Web Design and Scripts	5	3	50	50	100	4
III	21BCT403	Core 8 – Operating System	5	3	50	50	100	4
III	21BCTP04	Core Practical 4 - RDBMS	5	3	50	50	100	4
III	21BCTA04	Allied 4 – Operations Research	5	3	50	50	100	4
III	21BCTSB3/ 21BCTSB4	SBC 2 - Python Programming Practical / Office Automation Practical	3	3	30	45	75	3
IV	21BTA002/ 21ATA002/ 21BCTOE1	OEC 2 : BT - 2/AT -2/Mathematical Aptitude	2	2	-	50	50	2
		Total	30				625	25
SEMESTER V								
III	21BCT501	Core 9 - .Net Framework	5	3	50	50	100	4
III	21BCT502	Core 10 – Computer Networks	5	3	50	50	100	4
III	21BCT503	Core 11 – Software Engineering	5	3	50	50	100	4
III	21BCT504	Core 12 – PC Hardware	5	3	50	50	100	4
III	21BCTP05	Core Practical 5 - Net Framework	5	3	50	50	100	4
III	21BCTE01/ 21BCTE02/ 21BCTE03	Elective I :IOT/ Mobile Computing / Cloud Computing	5	3	50	50	100	4
		Total	30				600	24
SEMESTER VI								
III	21BCT601	Core 13 - Dynamic Web Development	5	3	50	50	100	4
III	21BCT602	Core 14 – Fundamentals of Embedded System	5	3	50	50	100	4
III	21BCTP06	Core Practical 6 - Dynamic Web Development	5	3	50	50	100	4
III	21BCTE04/ 21BCTE05/ 21BCTE06	Elective II : Bigdata Framework /Enterprises Data Warehousing and Mining/ Cryptography and Network Security	5	3	50	50	100	4
III	21BCTE07/ 21BCTE08/ 21BCTE09	Elective III : Software Testing/ Fundamentals of Graphics / Mobile Programming	5	3	50	50	100	4
III	21BCTPR1	Project and Viva Voce	5	3	50	50	100	4
V	21NSS001/ 21NCC001 21SPT001/ 21EXT001	NCC/NSS/Sports /Extension Activities			50		50	2
		Total	30				650	26
Total							3600	140

SEMESTER – VI**PART III: ELECTIVE II – CRYPTOGRAPHY AND NETWORK SECURITY**

Course code	Course name	Category	Lecture(L)	Tutorial(T)	Practical(P)	Credits
21BCTE06	Cryptography and Network Security	ELECTIVE II	50	10	0	4
Preamble: To gain knowledge on the basic concepts of cryptography and network security.						
Prerequisite: Students should have basic Computer Network Knowledge.						
Course outcomes (COs):						
On successful completion of this course the students will be able to:						
CO Number	Course Outcome (Co) Statement					Blooms Taxonomy knowledge level
CO1	Understanding various Cryptographic Techniques and Attacks					K1, K2, K3, K4
CO2	Apply various Symmetric key cryptography techniques.					K1, K2, K3, K4
CO3	Apply various Asymmetric key cryptography techniques and Implementing Digital Signature techniques.					K1, K2, K3, K4
CO4	Understand the various Internet Security Applications and Protocols.					K1, K2, K3, K4
CO5	Implement System level security applications.					K1, K2, K3, K4

Mapping with Program Outcomes:

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	L	H	L	H	L	H	L	S	L	S
CO2	L	L	M	H	M	S	H	L	M	M
CO3	M	M	S	M	H	S	H	M	L	M
CO4	M	S	L	M	M	H	S	H	S	M
CO5	L	S	H	L	H	S	L	H	S	L

S – Strong; L – Low; M – Medium

Syllabus:

Unit	Course content	Hours	E-Contents/ E-Resources
I	Introduction to the concept of Security: Introduction – Need for security– Security Approaches – Principles of Security – Types of attacks- Cryptography Techniques: Basic Terms - Plain text and Cipher text – Substitution & Transposition techniques – Encryption and Decryption – Symmetric and Asymmetric key Cryptography – Possible types of attacks.	12	https://www.youtube.com/watch?v=JoiLuFNbc4&list=PLBlnK6fEyqRgJU3EsOYDTW7m6SUmW6kII&index=1
II	Computer Based Symmetric Key Cryptographic Algorithms: Algorithm Types and modes – Algorithm modes-An Overview of Symmetric Key Cryptography – DES– Block Cipher Design Principles-IDEA– Blowfish – AES.	12	https://www.youtube.com/watch?v=WQf43AKWBbY&list=PLBlnK6fEyqRgJU3EsOYDTW7m6SUmW6kII&index=64
III	Computer Based Asymmetric Key Cryptographic Algorithms: Brief History of Asymmetric Key Cryptography – An Overview of Asymmetric Key Cryptography – The RSA algorithm –ElgamalCryptography -Symmetric and asymmetric key cryptography Together-Digital Signatures- Knapsack algorithm	12	https://www.youtube.com/watch?v=vf1z7GI6Qo
IV	Public Key Infrastructure:Digital Certificates-Private Key Management-Internet Security Protocols: Secure Socket Layer (SSL) – Transport Layer Security(TLS)-3D-Secure Protocol-Email Security.	12	https://www.youtube.com/watch?v=UvheBO2oYUI_S&index=71
V	User Authentication Mechanisms-Authentication Basics-Passwords-Authentication Tokens-Biometric Authentication-Kerberos-Network Security: Firewalls-IP Security-Virtual Private Network(VPN)-Intrusion	12	https://www.youtube.com/watch?v=9GZIVOafYTg
Total		60	
Text Book			
1. AtulKahate , “Cryptography and Network Security ”, 4th Edition, Tata McGraw-Hill Publishing Company Limited, 2019, India.			
Reference Books:			
1. Charles P. Pfleeger and Shari Lawrence Pfleeger, “Security in Computing” – Pearson Education , 5 th Edition, 2015.			
2. William Stallings_,”Cryptography and Network Security - Principles and Practice”- Pearson Education , 8 th Edition, 2023.			

SEMESTER – VI**PART III – ELECTIVE III - MOBILE PROGRAMMING**

Course code	Course name	Category	Lecture(L)	Tutorial(T)	Practical(P)	Credits
21BCTE09	Mobile Programming	Elective III	50	10	0	4
Preamble: To know how to develop mobile applications through the use of current mobile technology to solve real-world problems.						
Prerequisite: Students should possess basic programming and knowledge in Java, XML and internet-based mobile application languages.						
Course outcomes (COs):						
On successful completion of this course the students will be able to:						
CO Number	Course Outcome (Co) Statement					Blooms Taxonomy knowledge level
CO1	Recognize the significance of Kotlin programming in the creation of mobile applications.					K1,K2,K3,K4
CO2	Explore the basic concepts of material design and layout.					K1,K2,K3,K4
CO3	Acquire knowledge of fundamental concepts in Kotlin					K1,K2,K3,K4
CO4	Understand how OOPs are used in mobile programming.					K1,K2,K3,K4
CO5	Understand and gain the basic knowledge of iOS programming.					K1,K2,K3,K4

Mapping with Program Outcomes:

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	S	S	S	M	S	M	M	L
CO2	M	M	M	S	M	L	M	L	L	S
CO3	L	M	L	M	M	M	S	M	M	M
CO4	L	M	M	L	M	S	M	L	S	S
CO5	M	L	S	L	S	S	L	S	M	L

S – Strong; L – Low; M – Medium

Syllabus:

Unit	Course content	Hours	E-Contents/ E-Resources
I	Getting Started with Android and Kotlin: How Kotlin and Android work together - Setting up Android Studio-The structure of Android's code-Our first Android app-Deploying the app.Kotlin, XML, and the UI Designer:Examining the log output-Exploring the project's Kotlin code and the main layout's XML code-Adding buttons to the main layout file-Leaving comments in our Kotlin code - Coding messages to the user and the developer - Writing our first Kotlin code - Exploring Android Studio and the Project Structure.	12	https://www.youtube.com/watch?v=rKnx_zdPyzM
II	Getting Started with Layouts and Material Design: Material design -Exploring Android UI design - Layouts - Creating the Exploring Layouts project - Building a menu with LinearLayout - Adding layouts within layouts - Making the layout look pretty - Building a precise UI with ConstraintLayout- Laying out data with TableLayout - Beautiful Layouts with CardView and ScrollView	12	https://www.youtube.com/watch?v=2Y4rjBKWWMA
III	The Android Lifecycle -Kotlin Variables, Operators, and Expressions- Kotlin Decisions and Loops- Kotlin Functions - Comments in Kotlin Files – Exceptions.	12	https://www.youtube.com/watch?v=obN78NEd47g
IV	Object-Oriented Programming- Inheritance in Kotlin- Connecting Our Kotlin to the UI and Nullability- Bringing Android Widgets to Life.	12	https://www.youtube.com/watch?v=Zj2t_UGWQs4
V	Android Databases- Database 101- The SQL syntax primer- The Android SQLite API- Coding the database classCoding the Fragment classes to use the DataManager class Running the Age Database app.Introduction to iOS and iOS programming: A Simple iOS Application - Creating an Xcode project, Model-View-Controller- Interface Builder - Building the interface – Creating The Model Layer – Building the Finished Application – Application Icons – Launch Screen.	12	https://www.youtube.com/watch?v=nqTcAzPS3oc
Total		60	
Text Book			
<ol style="list-style-type: none"> 1. John Horton, “Android Programming with Kotlin for Beginners”, Packt Publishing Limited 2019 edition. (Unit I , II , III) 2. Peter Spatt , “ Learn Kotlin for Android Development : The Next Generation Language for Modern Android Apps Programming“, Apress, 2019 edition. (Unit IV) 3. Christian Keur and Aaron Hillegass,” iOS Programming: The Big Nerd Ranch Guide”, The Big Nerd Ranch, LLC, 2016 edition.(Unit V) 			
Reference Books:			
<ol style="list-style-type: none"> 1. Christian Keur and Aaron Hillegass,” <i>iOS Programming: The Big Nerd Ranch Guide</i>”, 2015 edition. 2. Bill Phillips, Chris Stewart, Brian Hardy, and Kristin Marsicano, “<i>Android Programming: The Big Nerd Ranch Guide</i>”, Big Nerd Ranch LLC, 2015 edition. 			