DHANRAJ BAID JAIN COLLEGE

(Autonomous)

(Owned & Managed Tamil Nadu Educational and Medical Foundation)

Rajiv Gandhi Salai, Jyothi Nagar, IT Corridor, Thoraipakkam, Chennai – 600097
Approved by the Government of Tamilnadu
Affiliated to the University of Madras
Co-Education
Re-Accredited with 'B+' Grade by NAAC

DEPARTMENT OF COMMERCE

B.COM
INFORMATION SYSTEMS AND MANAGEMENT

B.COM –ISM

SYLLABUS

(WITH EFFECT FROM 2023-2024)

Choice Based Credit System

Total No. of Semesters : 6
Total No. of Credits : 140

Contents

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B.COM., INFORMATION SYSTEMS AND MANAGEMENT

PROGRAMME OBJECTIVE:

The B.Com. Degree Programme provides ample exposure to courses from the fields of Commerce, Accountancy and Management. The course equips the students for entry level jobs in industry, promotes the growth of their professional career, entrepreneurship and a key contributor to the economic development of the country. The curriculum represents the course response to evolve accountancy and computer techniques. Three years UG degree program which lay stress on subjects like accounting, Banking, Statistics, Business Laws, Entrepreneurial Development , Economics, HRM, Marketing and Income Tax.

After successful completion of B.com (ISM) Degree the students can get job opportunities in the following sectors ¬ CORPORATE SECTOR ¬ BANKING SECTOR ¬ INSURANCE SECTOR ¬ TEACHING FIELD ¬ IT SECTOR

TANSCHE REGULATIONS ON LEARNING OUTCOMES-BASED CURRICULUM FRAMEWORK GUIDELINES BASED REGULATIONS FOR UNDER GRADUATE PROGRAMME	
Programme:	**B.COM INFORMATION SYSTEMS AND MANAGEMENT**
Programme Code:	
Duration:	**UG - 3 years**
Programme Outcomes:	**PO1: Disciplinary knowledge:** Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate Programme of study **PO2: Communication Skills:** Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.

	PO3: Critical thinking: Capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development. **PO4: Problem solving: Capacity** to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations. **PO5: Analytical reasoning**: Ability to evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyze and synthesize data from a variety of sources; draw valid conclusions and support them with evidence and examples, and addressing opposing viewpoints. **PO6: Research-related skills**: A sense of inquiry and capability for asking relevant/appropriate questions, problem arising, synthesising and articulating; Ability to recognise cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyse, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation **PO7: Cooperation/Team work:** Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team **PO8: Scientific reasoning**: Ability to analyse, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence and experiences from an open-minded and reasoned perspective. **PO9: Reflective thinking**: Critical sensibility to lived experiences, with

	self awareness and reflexivity of both self and society. **PO10 Information/digital literacy:** Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data. **PO 11 Self-directed learning**: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion. **PO 12 Multicultural competence:** Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups. **PO 13: Moral and ethical awareness/reasoning**: Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one‟s work, avoid unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work. **PO 14: Leadership readiness/qualities:** Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way. **PO 15: Lifelong learning:** Ability to acquire knowledge and skills, including „learning how to learn‟, that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and

	cultural objectives, and adapting to changing trades and demands of work place through knowledge/skill development/ reskilling.

Programme Specific Outcomes:	**PSO1 – Placement:** To prepare the students who will demonstrate respectful engagement with others' ideas, behaviors, and beliefs and apply diverse frames of reference to decisions and actions. **PSO 2 - Entrepreneur:** To create effective entrepreneurs by enhancing their critical thinking, problem solving, decision making and leadership skill that will facilitate startups and high potential organizations **PSO3 – Research and Development:** Design and implement HR systems and practices grounded in research that comply with employment laws, leading the organization towards growth and development. **PSO4 – Contribution to Business World:** To produce employable, ethical and innovative professionals to sustain in the dynamic business world. **PSO 5 – Contribution to the Society:** To contribute to the development of the society by collaborating with stakeholders for mutual benefit

Choice Based Credit System (CBCS), Learning Outcomes Based Curriculum Framework (LOCF) Guideline Based Credit and Hours Distribution System for all UG courses including Lab Hours

First Year – Semester-I

Part	List of Courses	Credit	No. of Hours
Part-1	Language – Tamil	3	6
Part-2	English	3	6
Part-3	Core Courses & Elective Courses [in Total]	13	14
Part-4	Skill Enhancement Course SEC-1	2	2
	Foundation Course	2	2
		23	**30**

Semester-II

Part	List of Courses	Credit	No. of Hours
Part-1	Language – Tamil	3	6
Part-2	English	3	6
Part-3	Core Courses & Elective Courses including laboratory [in Total]	13	14
Part-4	Skill Enhancement Course -SEC-2	2	2
	Skill Enhancement Course -SEC-3 (Discipline / Subject Specific)	2	2
		23	**30**

Second Year – Semester-III

Part	List of Courses	Credit	No. of Hours
Part-1	Language - Tamil	3	6
Part-2	English	3	6
Part-3	Core Courses & Elective Courses including laboratory [in Total]	13	14
Part-4	Skill Enhancement Course -SEC-4 (Entrepreneurial Based)	1	1
	Skill Enhancement Course -SEC-5 (Discipline / Subject Specific)	2	2
	E.V.S	-	1
		22	**30**

Semester-IV

Part	List of Courses	Credit	No. of Hours
Part-1	Language - Tamil	3	6
Part-2	English	3	6
Part-3	Core Courses & Elective Courses including laboratory [in Total]	13	13
Part-4	Skill Enhancement Course -SEC-6 (Discipline / Subject Specific)	2	2
	Skill Enhancement Course -SEC-7 (Discipline / Subject Specific)	2	2
	E.V.S	2	1
		25	**30**

Third Year

Semester-V

Part	List of Courses	Credit	No. of Hours
Part-3	Core Courses including Project / Elective Based	22	26
Part-4	Value Education	2	2
	Internship / Industrial Visit / Field Visit	2	2
		26	**30**

Semester-VI

Part	List of Courses	Credit	No. of Hours
Part-3	Core Courses including Project / Elective Based & LAB	18	28
Part-4	Extension Activity	1	-
	Professional Competency Skill	2	2
		21	**30**

Consolidated Semester wise and Component wise Credit distribution

Parts	Sem I	Sem II	Sem III	Sem IV	Sem V	Sem VI	Total Credits
Part I	3	3	3	3	-	-	12
Part II	3	3	3	3	-	-	12
Part III	13	13	13	13	22	18	92
Part IV	4	4	3	6	4	1	22
Part V	-	-	-	-	-	2	2
Total	23	23	22	25	26	21	**140**

***Part I. II, and Part III components will be separately taken into account for CGPA calculation and classification for the under graduate programme and the other components. IV, V have to be completed during the duration of the programme as per the norms, to be eligible for obtaining the UG degree.**

METHODS OF EVALUATION		
Internal Evaluation	Continuous Internal Assessment Test	**25 Marks**
	Assignments / Snap Test / Quiz	
	Seminars	
	Attendance and Class Participation	
External Evaluation	End Semester Examination	**75 Marks**
Total		**100 Marks**

METHODS OF ASSESSMENT	
Remembering (K1)	• The lowest level of questions require students to recall information from the course content • Knowledge questions usually require students to identify information in the text book.
Understanding (K2)	• Understanding of facts and ideas by comprehending organizing, comparing, translating, interpolating and interpreting in their own words. • The questions go beyond simple recall and require students to combine data together
Application (K3)	• Students have to solve problems by using / applying a concept learned in the classroom. • Students must use their knowledge to determine a exact response.
Analyze (K4)	• Analyzing the question is one that asks the students to break down something into its component parts. • Analyzing requires students to identify reasons causes or motives and reach conclusions or generalizations.
Evaluate (K5)	• Evaluation requires an individual to make judgment on something. • Questions to be asked to judge the value of an idea, a character, a work of art, or a solution to a problem. • Students are engaged in decision-making and problem – solving. • Evaluation questions do not have single right answers.
Create (K6)	• The questions of this category challenge students to get engaged in creative and original thinking. • Developing original ideas and problem solving skills

Highlights of the Revamped Curriculum:

- Student-centric, meeting the demands of industry & society, incorporating industrial components, hands-on training, skill enhancement modules, industrial project, project with viva-voce, exposure to entrepreneurial skills, training for competitive examinations, sustaining the quality of the core components and incorporating application oriented content wherever required.
- The Core subjects include latest developments in the education and scientific front, advanced programming packages allied with the discipline topics, practical training, devising statistical models and algorithms for providing solutions to industry / real life situations. The curriculum also facilitates peer learning with advanced statistical topics in the final semester, catering to the needs of stakeholders with research aptitude.
- The General Studies and Statistics based problem solving skills are included as mandatory components in the 'Training for Competitive Examinations' course at the final semester, a first of its kind.
- The curriculum is designed so as to strengthen the Industry-Academia interface and provide more job opportunities for the students.
- The Statistical Quality Control course is included to expose the students to real life problems and train the students on designing a mathematical model to provide solutions to the industrial problems.
- The Internship during the second year vacation will help the students gain valuable work experience, that connects classroom knowledge to real world experience and to narrow down and focus on the career path.
- Project with viva-voce component in the fifth semester enables the student, application of conceptual knowledge to practical situations. The state of art technologies in conducting a Explain in a scientific and systematic way and arriving at a precise solution is ensured. Such innovative provisions of the industrial training, project and internships will give students an edge over the counterparts in the job market.
- State-of Art techniques from the streams of multi-disciplinary, cross disciplinary and inter disciplinary nature are incorporated as Elective courses, covering conventional topics to the latest DBMS and Computer software for Analytics.

Value additions in the Revamped Curriculum:

Semester	Newly introduced Components	Outcome / Benefits
I	**Foundation Course** To ease the transition of learning from higher secondary to higher education, providing an overview of the pedagogy of learning abstract Statistics and simulating mathematical concepts to real world.	• Instil confidence among students • Create interest for the subject
I, II, III, IV	**Skill Enhancement papers** (Discipline centric / Generic / Entrepreneurial)	• Industry ready graduates • Skilled human resource • Students are equipped with essential skills to make them employable
		• Training on Computing / Computational skills enable the students gain knowledge and exposure on latest computational aspects
		• Data analytical skills will enable students gain internships, apprenticeships, field work involving data collection, compilation, analysis etc.
		• Entrepreneurial skill training will provide an opportunity for independent livelihood • Generates self – employment • Create small scale entrepreneurs • Training to girls leads to women empowerment
		• Discipline centric skill will improve the Technical knowhow of solving real life problems using ICT tools
III, IV, V & VI	Elective papers- An open choice of topics categorized under Generic and Discipline Centric	• Strengthening the domain knowledge • Introducing the stakeholders to the State-of Art techniques from the streams of multi-disciplinary, cross disciplinary and inter disciplinary nature • Students are exposed to Latest topics on Computer Science / IT, that require strong statistical background

		• Emerging topics in higher education / industry / communication network / health sector etc. are introduced with hands-on-training, facilitates designing of statistical models in the respective sectors
IV	DBMS and Programming skill, Biostatistics, Statistical Quality Control, Official Statistics, Operations Research	• Exposure to industry moulds students into solution providers • Generates Industry ready graduates • Employment opportunities enhanced
II year Vacation activity	Internship / Industrial Training	• Practical training at the Industry/ Banking Sector / Private/ Public sector organizations / Educational institutions, enable the students gain professional experience and also become responsible citizens.
V Semester	Project with Viva – voce	• Self-learning is enhanced • Application of the concept to real situation is conceived resulting in tangible outcome
VI Semester	Introduction of Professional Competency component	• Curriculum design accommodates all category of learners; 'Statistics for Advanced Explain' component will comprise of advanced topics in Statistics and allied fields, for those in the peer group / aspiring researchers; • 'Training for Competitive Examinations' –caters to the needs of the aspirants towards most sought - after services of the nation viz, UPSC, ISS, CDS, NDA, Banking Services, CAT, TNPSC group services, etc.
Extra Credits: **For Advanced Learners / Honors degree**		• To cater to the needs of peer learners / research aspirants

Skills acquired from the Courses	Knowledge, Problem Solving, Analytical ability, Professional Competency, Professional Communication and Transferrable Skill

B.COM INFORMATION SYSTEMS AND MANAGEMENT

FIRST YEAR - FIRST SEMESTER				
Part	**Course Code**	**Title of the Course**	**Credits**	**Hours**
Part I	23L11AA	Language – Tamil	**3**	**6**
Part II	23E11AA	English	**3**	**6**
Part III	23C441A	Core Paper I –**Financial Accounting I**	**5**	**5**
Part III	23C441B	Core Paper II - **Principles of Management**	**5**	**5**
Part III	23E441B	Elective I - Programming in C and Lab	**3**	**4**
		Elective I - Python Programming and Lab		
Part IV	23BL1AA	Basic Tamil-I/NME -HTML	**2**	**2**
	23441F1	Foundation Course FC Office Automation Lab	**2**	**2**
TOTAL			**23**	**30**

FIRST YEAR - SECOND SEMESTER				
Part	**Course Code**	**Title of the Course**	**Credits**	**Hours**
Part I	23L12AB	Language – Tamil	**3**	**6**
Part II	23E12AB	English	**3**	**6**
Part III	23C442A	Core Paper III –**Financial Accounting II**	**5**	**5**
Part III	23C442B	Core Paper IV-**Business Law**	**5**	**5**
Part III		Elective II - Office Automation and Lab	**3**	**4**
	23E442B	Elective II - Programming in C++ and Lab		
Part IV	23L12AB	Basic Tamil-II/NME –HTML Lab	**2**	**2**
	23442SA	**NAAN MUDHALVAN**- Language Proficiency for Employability- Effective English	**2**	**2**
TOTAL			**23**	**30**

SECOND YEAR - THIRD SEMESTER				
Part	**Course Code**	**Title of the Course**	**Credits**	**Hours**
Part I	23L13AC	Language – Tamil	**3**	**6**
Part II	23E13AC	English	**3**	**6**
Part III	23C443A	Core Paper V- **Corporate Accounting I**	**5**	**5**
Part III	23C443B	Core Paper VI – **Business Mathematics and Statistics**	**5**	**5**
Part III	23E443A	Elective III – Programming in JAVA and Lab	**3**	**4**
	23E443B	Elective III – Web Technology(PHP) and Lab		
Part IV	23443SA	Skill Enhance Course Quantitative Aptitude	**1**	**1**
	23443SB	Skill Enhancement Course – Python Programming	**2**	**2**
		Environmental Studies		**1**
TOTAL			**22**	**30**

SECOND YEAR - FOURTH SEMESTER				
Part	**Course Code**	**Title of the Course**	**Credits**	**Hours**
Part I	23L14AC	Language – Tamil	**3**	**6**
Part II	23E14AC	English	**3**	**6**
Part III	23C444A	Core Paper VII–**Corporate Accounting II**	**5**	**5**
Part III	23C444B	Core Paper VIII-**Company Law**	**5**	**5**
Part III	23E444A	Elective IV– Relational Database Management System	**3**	**3**
	23E444B	Elective IV– Introduction to Data Science		
Part IV	23444SA	Skill Enhance Course Python Programming Lab	**2**	**2**
	23444SB	**NAAN MUDHALVAN** -Digital Skills for Employability- Office Fundamentals	**2**	**2**
		Environmental Studies	**2**	**1**
TOTAL			**25**	**30**

THIRD YEAR - FIFTH SEMESTER				
Part	**Course Code**	**Title of the Course**	**Credits**	**Hours**
Part III	23C445A	Core Paper IX –**Cost Accounting I**	**4**	**5**
Part III	23C445B	Core Paper X - **Banking Law and Practice**	**4**	**5**
Part III	23C445C	Core Paper XI – **Income Tax Law and Practice I**	**4**	**5**
Part III	23C445D	Core Paper XII – Project Viva vove **Auditing and Corporate Governance**	**4**	**5**
Part III	23E445A	Discipline Specific Elective 1/2 - Operation Research / 2/2 –Research Methodology	**3**	**4**
	23E445B	Discipline Specific Elective 3/4 – Software Engineering+(UML Lab)/4/4– Cryptography and Network Security	**3**	**4**
Part IV	23445SA	Value Education	**2**	**2**
		Summer Internship / Industrial Training	**2**	**-**
TOTAL			**26**	**30**

THIRD YEAR - SIXTH SEMESTER				
Part	**Course Code**	**Title of the Course**	**Credits**	**Hours**
Part III	23C446A	Core Paper XIII –**Cost Accounting - II**	**4**	**6**
Part III	23C446B	Core Paper XIV-**Management Accounting**	**4**	**6**
Part III	23C446C	Core Paper XV- **Income Tax Law and Practice II**	**4**	**6**
Part III	23E446A	Discipline Specific Elective ⅝- Entrepreneurial Development /6/-6 Management Information System	**3**	**5**
	23E446B	Discipline Specific Elective 7/8- R Language/ 8/8 –Practical Tally	**3**	**5**
	23446SA	General awareness for Competitive Examination/ **NAAN MUDHALVAN** - Digital Banking, Logistics and Audit Essentials	**2**	**2**
Part V		Extension Activity	**1**	**-**
TOTAL			**21**	**30**
GRAND TOTAL			**140**	**180**

FIRST YEAR – SEMESTER – I

CORE – I: FINANCIAL ACCOUNTING I

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23C441A	5				5	5	25	75	100

Learning Objectives	
LO1	To understand the basic accounting concepts and standards.
LO2	To know the basis for calculating business profits.
LO3	To familiarize with the accounting treatment of depreciation.
LO4	To learn the methods of calculating profit for single entry system.
LO5	To gain knowledge on the accounting treatment of insurance claims.

Prerequisites: Should have studied Accountancy in XII Std

Unit	Contents
I	**Fundamentals of Financial Accounting** Financial Accounting – Meaning, Definition, Objectives, Basic Accounting Concepts and Conventions - Journal, Ledger Accounts– Subsidiary Books — Trial Balance - Classification of Errors – Rectification of Errors – Preparation of Suspense Account – Bank Reconciliation Statement - Need and Preparation
II	**Final Accounts** Final Accounts of Sole Trading Concern- Capital and Revenue Expenditure and Receipts – Preparation of Trading, Profit and Loss Account and Balance Sheet with Adjustments.
III	**Depreciation and Bills of Exchange** Depreciation - Meaning – Objectives – Accounting Treatments - Types - Straight Line Method – Diminishing Balance method – Conversion method. Units of Production Method – Cost Model vs Revaluation **Bills of Exchange** – Definition – Specimens – Discounting of Bills – Endorsement of Bill – Collection – Noting – Renewal – Retirement of Bill under rebate

IV	**Accounting from Incomplete Records – Single Entry System** Incomplete Records -Meaning and Features - Limitations - Difference between Incomplete Records and Double Entry System - Methods of Calculation of Profit - Statement of Affairs Method – Preparation of final statements by Conversion method.
V	**Royalty and Insurance Claims** Meaning – Minimum Rent – Short Working – Recoupment of Short Working – Lessor and Lessee – Sublease – Accounting Treatment. **Insurance Claims** –Calculation of Claim Amount-Average clause (Loss of Stock only)

THEORY 20% & PROBLEM 80%

CO	Course Outcomes
CO1	Remember the concept of rectification of errors and Bank reconciliation statements
CO2	Apply the knowledge in preparing detailed accounts of sole trading concerns
CO3	Analyse the various methods of providing depreciation
CO4	Evaluate the methods of calculation of profit
CO5	Determine the royalty accounting treatment and claims from insurance companies in case of loss of stock.

Textbooks

1.	S. P. Jain and K. L. Narang Financial Accounting- I, Kalyani Publishers, New Delhi.
2.	S.N. Maheshwari, Financial Accounting, Vikas Publications, Noida.
3.	Shukla Grewal and Gupta, “Advanced Accounts”, volume 1, S.Chand and Sons, New Delhi.
4.	Radhaswamy and R.L. Gupta: Advanced Accounting, Sultan Chand, New Delhi.
5.	R.L. Gupta and V.K. Gupta, “Financial Accounting”, Sultan Chand, New Delhi.

Reference Books

1.	Dr. Arulanandan and Raman: Advanced Accountancy, Himalaya Publications, Mumbai.
2.	Tulsian , Advanced Accounting, Tata McGraw Hills, Noida.

3.	Charumathi and Vinayagam, Financial Accounting, S.Chand and Sons, New Delhi.
4.	Goyal and Tiwari, Financial Accounting, Taxmann Publications, New Delhi.
5.	Robert N Anthony, David Hawkins, Kenneth A. Merchant, Accounting: Text and Cases. McGraw-Hill Education, Noida.
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1.	https://www.slideshare.net/mcsharma1/accounting-for-depreciation-1
2.	https://www.slideshare.net/ramusakha/basics-of-financial-accounting
3.	https://www.accountingtools.com/articles/what-is-a-single-entry-system.html

MAPPING WITH PROGRAMME OUTCOMES
AND PROGRAMME SPECIFIC OUTCOMES

	PO 1	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PSO 1**	**PSO 2**	**PSO 3**
CO1	3	2	3	3	2	3	2	2	3	2	2
CO2	3	2	3	3	3	2	2	2	3	2	2
CO3	3	2	3	3	3	2	2	2	3	2	2
CO4	3	2	3	3	2	2	2	2	3	2	2
CO5	3	2	3	3	3	2	2	2	3	2	2
TOTAL	15	10	15	15	13	11	10	10	15	10	10
AVERAGE	3	2	3	3	2.6	2.2	2	2	3	2	2

3 – Strong, 2- Medium, 1- Low

FIRST YEAR – SEMESTER – I

CORE – II: PRINCIPLES OF MANAGEMENT

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23C441B	5				4	5	25	75	100

Learning Objectives	
LO1	To understand the basic management concepts and functions
LO2	To know the various techniques of planning and decision making
LO3	To familiarize with the concepts of organisation structure
LO4	To gain knowledge about the various components of staffing
LO5	To enable the students in understanding the control techniques of management

Prerequisites: Should have studied Commerce in XII Std

Unit	Contents
I	**Introduction to Management** Meaning- Definitions – Nature and Scope - Levels of Management – Importance - Management Vs. Administration – Management: Science or Art – Evolution of Management Thoughts – F. W. Taylor, Henry Fayol, Peter F. Drucker, Elton Mayo - Functions of Management - Trends and Challenges of Management. Managers – Qualification – Duties & Responsibilities.
II	**Planning** Planning – Meaning – Definitions – Nature – Scope and Functions – Importance and Elements of Planning – Types – Planning Process - Tools and Techniques of Planning – Management by Objective (MBO). Decision Making: Meaning – Characteristics – Types - Steps in Decision Making – Forecasting.

III	**Organizing** Meaning - Definitions - Nature and Scope – Characteristics – Importance – Types - Formal and Informal Organization – Organization Chart – Organization Structure: Meaning and Types - Departmentalization– Authority and Responsibility – Centralization and Decentralization – Span of Management.
IV	**Staffing** Introduction - Concept of Staffing- Staffing Process – Recruitment – Sources of Recruitment – Modern Recruitment Methods - Selection Procedure – Test- Interview– Training: Need - Types– Promotion –Management Games – Performance Appraisal - Meaning and Methods – 360 degree Performance Appraisal – Work from Home - Managing Work from Home [WFH].
V	**Directing** Motivation –Meaning - Theories – Communication – Types - Barriers to Communications – Measures to Overcome the Barriers. Leadership – Nature - Types and Theories of Leadership – Styles of Leadership - Qualities of a Good Leader – Successful Women Leaders – Challenges faced by women in workforce - Supervision. **Co-ordination and Control** Co-ordination – Meaning - Techniques of Co-ordination. Control - Characteristics - Importance – Stages in the Control Process - Requisites of Effective Control and Controlling Techniques – Management by Exception [MBE].
	Total

Course Outcomes	
CO1	Demonstrate the importance of principles of management.
CO2	Paraphrase the importance of planning and decision making in an organization.
CO3	Comprehend the concept of various authorizes and responsibilities of an organization.
CO4	Enumerate the various methods of Performance appraisal

CO5	Demonstrate the notion of directing, co-coordination and control in the management.
Textbooks	
1	Gupta.C.B, -Principles of Management-L.M. Prasad, S.Chand& Sons Co. Ltd, New Delhi.
2	DinkarPagare, Principles of Management, Sultan Chand & Sons Publications, New Delhi.
3	P.C.Tripathi& P.N Reddy, Principles of Management. Tata McGraw, Hill, Noida.
4	L.M. Prasad, Principles of Management, S.Chand&Sons Co. Ltd, New Delhi.
5	R.K. Sharma, Shashi K. Gupta, Rahul Sharma, Business Management, Kalyani Publications, New Delhi.
Reference Books	
1	K Sundhar, Principles Of Management, Vijay Nichole Imprints Limited, Chennai
2	Harold Koontz, Heinz Weirich, Essentials of Management, McGraw Hill, Sultan Chand and Sons, New Delhi.
3	Grifffin, Management principles and applications, Cengage learning, India.
4	H.Mintzberg - The Nature of Managerial Work, Harper & Row, New York.
5	Eccles, R. G. & Nohria, N. Beyond the Hype: Rediscovering the Essence of Management. Boston The Harvard Business School Press, India.
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1	http://www.universityofcalicut.info/sy1/management
2	https://www.managementstudyguide.com/manpower-planning.htm
3	https://www.businessmanagementideas.com/notes/management-notes/coordination/coordination/21392

MAPPING WITH PROGRAMME OUTCOMES
AND PROGRAMME SPECIFIC OUTCOMES

	PO 1	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PSO 1**	**PSO 2**	**PSO 3**
CO1	3	2	2	3	3	2	2	2	3	2	3
CO2	3	2	3	3	2	2	2	2	3	2	2
CO3	3	2	2	3	2	2	2	1	3	2	2
CO4	3	2	2	3	2	2	2	2	3	2	2
CO5	3	2	3	3	2	2	2	1	3	2	2
TOTAL	15	10	12	15	11	10	10	8	15	10	11
AVERAGE	3	2	2.4	3	2.2	2	2	1.6	3	2	2.2

3 – Strong, 2- Medium, 1- Low

FIRST YEAR – SEMESTER – I

ELECTIVE - I: PROGRAMMING IN C AND LAB

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23E441A	2		2		3	4	25	75	100

Learning Objectives	
LO1	Describe the core syntax and semantics of C programming language.
LO2	Discover the need for working with the strings and functions.
LO3	Illustrate the process of structuring the data using matrix, struct .

Prerequisites: Should have studied Commerce in XII Std

Unit	Contents
I	Introduction to C Language:C Language Introduction-Features of C Language-Benefits of C over other languages-Compilation of C Program-First Program in CPre-processor in CPre-processor directives
II	Variables, Data Types & Operators:Variables and Keywords in C-Scope rules in C-Data Types in C-Operators & Its Types-Typecasting in C
III	Control Flow Statements:Decision Making Statements-Switch Statement in C-C Loops & Control Structure Practice problems-Continue Statement , Break Statement Array & String Handling in C:Arrays in C-Strings in C
IV	Multidimensional Arrays in C-String functions in C- Practice problems Functions in C:Function Prototype-Parameter Passing Techniques in C-Storage Classes in C-Recursion Concept -Functions in CPractice problems
V	Pointers, Structures, and Unions:Pointers in C-Structures- Union - Enumeration (or enum) in C- Pointer vs Array in C – C application programs (Sorting, Matrix manipulations, student's mark list preparation)

Course Outcomes	
CO1	Apply the concept of Control Structures to solve any given problem.

CO2	Apply the concept of single and multi-dimensional arrays to solve problems related to searching, sorting and matrix operations.
CO3	Apply the concept of Strings for writing programs related to character array.
CO4	Write programs using concept of user defined and recursive functions.
CO5	Apply concept of structures to write programs.
Textbooks	
1	E. Balaguruswamy, "Programming in ANSI C", 8th Edition, 2019, McGraw Hill Education, ISBN:978-93-5316-513-0.
2	Pradip Dey, Manas Ghosh, "Programming in C", 2nd Edition, 2018, Oxford University Press, ISBN: 978-01-9949-147-6.
3	Kernighan B.W and Dennis M. Ritchie, "The C Programming Language", 2nd Edition, 2015, Pearson Education India, ISBN: 978-93-3254-944-9.
Reference Books	
1	Yashavant P. Kanetkar, "Let Us C", 16th Edition, 2019, BPB Publications, ISBN: 978- 93-8728-449-4.
2	Jacqueline A Jones and Keith Harrow, "Problem Solving with C", Pearson Education. ISBN: 978-93-325-3800-9.
3	Dr. Guruprasad Nagraj, "C Programming for Problem Solving", Himalaya Publishing House. ISBN-978-93-5299-361-1.
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1	http://elearning.vtu.ac.in/econtent/courses/video/BS/14CPL16.html
2	https://nptel.ac.in/courses/106/105/106105171/

FIRST YEAR – SEMESTER – I

C Programming Lab	

Learning Objectives: (for teachers: what they have to do in the class/lab/field)

- Understand problem statements and identify appropriate solutions.
- Demonstrate the use of IDE and C Compiler.
- Develop programs using C Programming Language.

Course Outcomes: (for students: To know what they are going to learn)

CO1: Apply the concept of Control Structures to solve any given problem.

CO2: Apply the concept of single and multi-dimensional arrays to solve problems related to searching, sorting and matrix operations.

CO3: Apply the concept of Strings for writing programs related to character array.

CO4: Write programs using concept of user defined and recursive functions.

CO5: Apply concept of structures to write programs.

List of Programs

1. Write a C program to find roots of a Quadratic equation.
2. Write a C program to find the total no. of digits and the sum of individual digits of a positive integer.
3. Write a C program to generate the Fibonacci sequence of first N numbers.
4. Write a C program to sum the series S=1 – x + (x^2/2!) - (x^3/3!) + ---- - (x^n/n!)
5. Write a C program to arrange the elements of an integer array using Bubble Sort algorithm.
6. Write a C program to input two matrices and perform matrix multiplication on them
7. Write a C program to check whether the given string is palindrome or not without using Library functions.
8. Write a C program to count the number of lines, words and characters in a given text.
9. Write a C program to generate Prime numbers in a given range using user defined function.
10. Write a C program to find factorial of a given number using recursive function.
11. Write a C program to maintain a record of n student details using an array of structures with four fields - Roll number, Name, Marks and Grade. Calculate the Grade according to the following conditions.

    Marks Grade
    >=80 A
    >=60 B
    >=50 C
    >=40 D
    <40 E
    Print the details of the student, given the student Roll number as input.

Extended Professional Component	Questions related to the above topics, from various competitive examinations UPSC / TRB / NET / UGC –CSIR / GATE / TNPSC / others to be solved (To be discussed during the Tutorial hour)
Skills acquired from the course	Knowledge, Problem Solving, Analytical ability, Professional Competency, Professional Communication and Transferrable Skill

Text Books:

E. Balaguruswamy, "Programming in ANSI C", 8th Edition, 2019, McGraw Hill Education, ISBN:978-93-5316-513-0.

Reference Books:

1. Pradip Dey, Manas Ghosh, "Programming in C", 2nd Edition, 2018, Oxford University Press, ISBN: 978-01-9949-147-6.

2. Kernighan B.W and Dennis M. Ritchie, "The C Programming Language", 2nd Edition, 2015, Pearson Education India, ISBN: 978-93-3254-944-9.

3. Yashavant P. Kanetkar, "Let Us C", 16th Edition, 2019, BPB Publications, ISBN: 978-93-8728-449-4.

4. Jacqueline A Jones and Keith Harrow, "Problem Solving with C", Pearson Education. ISBN: 978-93-325-3800-9.

5. Dr. Guruprasad Nagraj, "C Programming for Problem Solving", Himalaya Publishing House. ISBN-978-93-5299-361-1.

Weblinks and Video Lectures (e-Resources):

1. http://elearning.vtu.ac.in/econtent/courses/video/BS/14CPL16.html
2. https://nptel.ac.in/courses/106/105/106105171/

FIRST YEAR – SEMESTER – I

ELECTIVE– II: OFFICE AUTOMATION AND LAB

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23441F1	2		2		3	4	25	75	100

Learning Objectives	
LO1	The major objective in introducing the Computer Skills course is to impart training for students in Microsoft Office which has different components like MS Word, MS Excel and Power point.
LO2	The course is highly practice oriented rather than regular class room teaching.
LO3	To acquire knowledge on editor, spread sheet and presentation software.

Prerequisites: Should have studied Commerce in XII Std

Unit	Contents
I	Introductory concepts: Hardware and Software - Memory unit – CPU-Input Devices: Key board, Mouse and Scanner. Output devices: Monitor, Printer. Introduction to Operating systems - Introduction to Programming Languages.
II	Word Processing: File menu operations - Editing text – tools, formatting, bullets and numbering - Spell Checker - Document formatting – Paragraph alignment, indentation, headers and footers, printing – Preview, options, merge.
III	Spreadsheets: Excel – opening, entering text and data, formatting, navigating; Formulas – entering, handling and copying
IV	Charts – creating, formatting and printing, analysis tables, preparation of financial statements, introduction to data analytics.
V	Power point: Introduction to Power point - Features – Understanding slide typecasting & viewing slides – creating slide shows. Applying special object – including objects & pictures – Slide transition – Animation effects, audio inclusion, timers.

Course Outcomes	
CO1	Understand the basics of computer systems and its components.
CO2	Understand and apply the basic concepts of a word processing package.
CO3	Understand and apply the basic concepts of electronic spreadsheet software.

CO4	Understand and apply the basic concepts of database management system.
CO5	Understand and create a presentation using PowerPoint tool.
Textbooks	
1	Peter Norton, “Introduction to Computers” –Tata McGraw-Hill.
Reference Books	
1	Jennifer Ackerman Kettel, Guy Hat-Davis, Curt Simmons, “Microsoft 2003”, Tata McGraw- Hill.
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1	Web content from NDL / SWAYAM or opensource web resources

Office Automation Lab	

Learning Objectives: (for teachers: what they have to do in the class/lab/field)
Office tools course would enable the students in crafting professional word documents, excel spread sheets, power point presentations using the Microsoft suite of office tools.
To familiarize the students in preparation of documents and presentations with office automation tools.

Course Outcomes: (for students: To know what they are going to learn)
CO1: to perform documentation
CO2: to perform accounting operations
CO3: to perform presentation skills

List of Programs

Word

Word Orientation: The instructor needs to give an overview of Microsoft word & Importance of MS Word as word Processor, Details of the four tasks and features that would be covered Using word – Accessing, overview of toolbars, saving files, Using help and resources, rulers, format painter.

Task 1 : Using word to create project certificate. Features to be covered:-Formatting Fonts in word, Drop Cap in word, Applying Text effects, Using Character Spacing, Borders and Colors, Inserting Header and Footer, Using Date and Time option in Word.

Task 2 : Creating project abstract Features to be covered:-Formatting Styles, Inserting table, Bullets and Numbering, Changing Text Direction, Cell alignment, Footnote, Hyperlink, Symbols, Spell Check , Track Changes.

Task 3 : Creating a Newsletter : Features to be covered:- Table of Content, Newspaper columns, Images from files and clipart, Drawing toolbar and Word Art, Formatting Images, Textboxes and Paragraphs

Excel

Excel Orientation : The instructor needs to tell the importance of MS Excel as a Spreadsheet tool, give the details of the four tasks and features that would be covered Excel – Accessing, overview of toolbars, saving excel files, Using help and resources {Comdex Information Technology course tool kit Vikas }

Task1: Creating a Scheduler - Features to be covered: Gridlines, Format Cells, Summation, auto fill, Formatting Text

Task 2 : Calculations - Features to be covered:- Cell Referencing, Formulae in excel – average, standard deviation, Charts, Renaming and Inserting worksheets, Hyper linking, Count function, LOOKUP/VLOOKUP

Task 3 : Performance Analysis - Features to be covered:- Split cells, freeze panes, group and outline, Sorting, Boolean and logical operators, Conditional formatting

MS Power Point

Task1 : Students will be working on basic power point utilities and tools which help them create basic power point presentation. Topic covered includes :- PPT Orientation, Slide Layouts, Inserting Text, Word Art, Formatting Text, Bullets and Numbering, Auto Shapes, Lines and Arrows

Task 2 : This session helps students in making their presentations interactive. Topics covered includes: Hyperlinks, Inserting –Images, Clip Art, Audio, Video, Objects, Tables and Charts

Task 3 : Concentrating on the in and out of Microsoft power point. Helps them learn best practices in designing and preparing power point presentation. Topics covered includes :- Master Layouts (slide, template, and notes), Types of views (basic, presentation, slide slotter, notes etc), Inserting – Background, textures, Design Templates, Hidden slides.Auto content wizard, Slide Transition, Custom Animation, Auto Rehearsing

Extended Professional Component	Questions related to the above topics, from various competitive examinations UPSC / TRB / NET / UGC –CSIR / GATE / TNPSC / others to be solved (To be discussed during the Tutorial hour)
Skills acquired from the course	Knowledge, Problem Solving, Analytical ability, Professional Competency, Professional Communication and Transferrable Skill

1. Comdex Information Technology course tool kit Vikas Gupta, WILEY Dreamtech,2005 2. The Complete Computer upgrade and repair book,3rd edition Cheryl A Schmidt, WILEY Dreamtech

. Introduction to Information Technology, ITL Education Solutions limited, Pearson Education.

4. PC Hardware and A + Handbook – Kate J. Chas PHI (Microsoft)

FIRST YEAR – SEMESTER - II

CORE – III: FINANCIAL ACCOUNTING-II

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23C442A	5				4	5	25	75	100

Learning Objectives	
LO1	The students are able to prepare different kinds of accounts such Higher purchase and Instalments System.
LO2	To understand the allocation of expenses under departmental accounts
LO3	To gain an understanding about partnership accounts relating to Admission and retirement
LO4	Provides knowledge to the learners regarding Partnership Accounts relating to dissolution of firm
LO5	To know the requirements of international accounting standards

Prerequisites: Should have studied Accountancy in XII Std

Unit	Contents
I	**Hire Purchase and Instalment System** Hire Purchase System – Accounting Treatment – Calculation of Interest - Default and Repossession - Hire Purchase Trading Account - Instalment System - Calculation of Profit
II	**Branch and Departmental Accounts** Branch – Dependent Branches: Accounting Aspects - Debtors system -Stock and Debtors system – Distinction between Wholesale Profit and Retail Profit – Independent Branches (Foreign Branches excluded) - Departmental Accounts: Basis of Allocation of Expenses – Inter- Departmental Transfer at Cost or Selling Price.

III	**Partnership Accounts - I** Partnership Accounts: –Admission of a Partner – Treatment of Goodwill - Calculation of Hidden Goodwill –Retirement of a Partner – Death of a Partner.
IV	**Partnership Accounts - II** Dissolution of Partnership - Methods – Settlement of Accounts Regarding Losses and Assets – Realization account – Treatment of Goodwill – Preparation of Balance Sheet - One or more Partners insolvent – All Partners insolvent – Application of Garner Vs Murray Theory – Accounting Treatment - Piecemeal Distribution – Surplus Capital Method – Maximum Loss Method.
V	**Accounting Standards for financial reporting (Theory only)** Objectives and Uses of Financial Statements for Users-Role of Accounting Standards - Development of Accounting Standards in India Role of IFRS- IFRS Adoption vs Convergence Implementation Plan in India-Ind AS- An Introduction - Difference between Ind AS and IFRS.

THEORY 20% & PROBLEMS 80%

Course Outcomes	
CO1	To evaluate the Hire purchase accounts and Instalment systems
CO2	To prepare Branch accounts and Departmental Accounts
CO3	To understand the accounting treatment for admission and retirement in partnership
CO4	To know Settlement of accounts at the time of dissolution of a firm.
CO5	To elaborate the role of IFRS

Textbooks	
1	Radhaswamy and R.L. Gupta: Advanced Accounting, Sultan Chand, New Delhi.
2	M.C. Shukla T.S. Grewal & S.C. Gupta, Advance Accounts, S Chand Publishing, New Delhi.
3	R.L. Gupta and V.K. Gupta, “Financial Accounting”, Sultan Chand, New Delhi.

4	S P Jain and K. L. Narang: Financial Accounting- I, Kalyani Publishers, New Delhi.
5	T.S. Reddy& A. Murthy, Financial Accounting, Margam Publishers, Chennai.
Reference Books	
1	Dr. S.N. Maheswari: Financial Accounting, Vikas Publications, Noida.
2	Dr. Venkataraman& others (7 lecturers): Financial Accounting, VBH, Chennai.
3	Dr.Arulanandan and Raman: Advanced Accountancy, Himalaya publications, Mumbai.
4	Tulsian , Advanced Accounting, Tata MC. Graw hills, India.
5	Charumathi and Vinayagam, Financial Accounting, S.Chand and sons, New Delhi.
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1	https://www.slideshare.net/mcsharma1/accounting-for-depreciation-1
2	https://www.slideshare.net/ramusakha/basics-of-financial-accounting
3	https://www.accountingtools.com/articles/what-is-a-single-entry-system.html

MAPPING WITH PROGRAMME OUTCOMES
AND PROGRAMME SPECIFIC OUTCOMES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	3	3	2	3	2	2	3	2	2
CO2	3	2	3	3	3	2	2	2	3	2	2
CO3	3	2	2	3	3	2	2	2	3	2	2
CO4	3	2	3	3	2	2	2	2	3	2	2
CO5	3	3	3	3	3	3	3	3	3	3	3
TOTAL	16	11	14	15	14	12	11	11	15	11	11
AVERAGE	3.2	2.2	2.8	3	2.8	2.4	2.2	2.2	3	2.2	2.2

3 – Strong, 2- Medium, 1- Low

FIRST YEAR – SEMESTER – II

CORE – IV: BUSINESS LAW

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23C442B	5				4	5	25	75	100

Learning Objectives	
LO1	To know the nature and objectives of Mercantile lawand the essentials of valid contract
LO2	To gain knowledge on performance contracts
LO3	To be acquainted with the rules of Indemnity and Guarantee
LO4	To make aware of the essentials of Bailment and pledge
LO5	To understand the provisions relating to sale of goods

Prerequisites: Should have studied Commerce in XII Std

Unit	Contents
I	**Elements of Contract** **Indian Contract Act 1872:** Definition of Contract, Essentials of Valid Contract, Classification of Contract, Offer and Acceptance – Consideration – Capacity to Contract – Free Consent - Legality of Object – Contingent Contracts – Void Contract
II	**Performance of Contract** Meaning of Performance, Offer to Perform, Devolution of Joint liabilities & Rights, Time and Place of Performance, Reciprocal Promises, Assignment of Contracts - Remedies for Breach of contract - Termination and Discharge of Contract - Quasi Contract
III	**Contract of Indemnity and Guarantee** Contract of Indemnity and Contract of Guarantee - Extent of Surety's Liability, Kinds of Guarantee, Rights of Surety, Discharge of Surety –

IV	**Bailment and Pledge** Bailment and Pledge – Bailment – Concept – Essentials - Classification of Bailments, Duties and Rights of Bailor and Bailee – Law of Pledge – Meaning – Essentials of Valid Pledge, Pledge and Lien, Rights of Pawner and Pawnee.
V	**Sale of Goods Act 1930:** Definition of Contract of Sale – Formation - Essentials of Contract of Sale - Conditions and Warranties - Transfer of Property – Contracts involving Sea Routes - Sale by Non-owners - Rights and duties of buyer - Rights of an Unpaid Seller
Course Outcome	
CO1	Explain the Objectives and significance of Mercantile law
CO2	Understand the clauses and exceptions of Indian Contract Act.
CO3	Outline the contract of indemnity and guarantee
CO4	Familiar with the provision relating to Bailment and Pledge
CO5	Explain the various provisions of Sale of Goods Act 1930
Textbooks	
1	N.D. Kapoor , Business Laws- Sultan Chand and Sons, New Delhi.
2	R.S.N. Pillai – Business Law, S.Chand, New Delhi.
3	M C Kuchhal& Vivek Kuchhal, Business law, S Chand Publishing, New Delhi
4	M.V. Dhandapani, Business Laws, Sultan Chand and Sons, New Delhi.
5	Shusma Aurora, Business Law, Taxmann, New Delhi.
Reference Books	
1	Preethi Agarwal, Business Law, CA foundation study material, Chennai.
2	Business Law by Saravanavel, Sumathi, Anu, Himalaya Publications, Mumbai.
3	Kavya and Vidhyasagar, Business Law, Nithya Publication, New Delhi.
4	D.Geet, Business Law Nirali Prakashan Publication, Pune.

5	M.R. Sreenivasan , Business Laws, Margham Publications, Chennai.
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1	www.cramerz.comwww.digitalbusinesslawgroup.com
2	http://swcu.libguides.com/buslaw
3	http://libguides.slu.edu/businesslaw

MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	2	3	2	2	2	2	2	2	2
CO2	3	2	3	3	2	2	2	2	2	2	2
CO3	3	2	2	3	2	2	2	2	2	2	2
CO4	3	2	3	3	2	2	2	2	2	2	2
CO5	3	2	3	3	2	2	2	2	2	2	2
TOTAL	15	10	13	15	10	10	10	10	10	10	10
AVERAGE	3	2	2.6	3	2	2	2	2	2	2	2

3 – Strong, 2- Medium, 1- Low

FIRST YEAR – SEMESTER - II

ELECTIVE - II: PROGRAMMING IN C++ AND LAB

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23E442B	2		2		3	4	25	75	100

Learning Objectives	
LO1	To engender an appreciation for the need and characteristics of Object-orientation.
LO2	To impart knowledge of the C++ language grammar in order to design and implement programming solutions to simple problems by applying Object-oriented thinking.

Prerequisites: Should have studied Commerce in XII Std

Unit	Contents
I	Object Oriented Programming Concepts: Complexity in software - The need for object-orientation – Abstraction – Encapsulation – Modularity – Hierarchy. Basic Elements of C++: Classes – Objects – Data members and member functions – private and public access specifiers - Static members - Constructors – Singleton class - Destructors
II	Friend Functions and Friend Classes - Array of objects – Pointer to objects - this pointer – References – Dynamic memory allocation - Namespaces. Function Overloading: Overloading a function - Default arguments – Overloading Constructors. Operator Overloading: Overloading an operator as a member function – Overloading an operator as a friend function
III	Overloading the operators [], (), -> and comma operators – Conversion Functions.Inheritance: Types of inheritance – protected access specifier – Virtual Base Class – Base class and derived class constructors. Run-time Polymorphism: Virtual Functions
IV	Function overriding - Pure virtual function – Abstract base class. Templates: Function templates – Overloading a function template – Class templates.
V	Exception Handling: Exceptions – try, catch, throw – Rethrowing an exception – Restricting exceptions - Handling exceptions in derived classes - terminate(), abort(), unexpected(), set_terminate(). I/O Streams: Formatted I/O with ios class functions - Manipulators – Creating own manipulator – Overloading << and >> operators.

Course Outcomes	
CO1	Explain the various basic concepts of Object-orientation.
CO2	Write programs to implement static binding
CO3	Write programs to implement inheritance and dynamic binding
CO4	Write programs to implement templates and exception handling and learn how to use STL class library.
CO5	Write programs implementing File and Stream I/O.
Textbooks	
1	Herbert Schildt, *C++ - The Complete Reference*, Third Edition, TMH, 1999.
2	Grady Booch, *Object Oriented Analysis and Design*, Pearson Education, 2008. (For Unit I)
Reference Books	
1	Bjarne Strousstrup, *The C++ Programming Language*, Addison Wesley, 2000.
2	J. P. Cohoon and J. W. Davidson, *C++ Program Design – An Introduction to Programming and Object-Oriented Design*, Second Edition, McGraw Hill, 1999.
3	C. J. Lippman, *C++ Primer*, Third Edition, Addison Wesley, 2000.
NOTE: Latest Edition of Textbooks May be Used	

FIRST YEAR – SEMESTER - II

Object Oriented Programming with C++	

Learning Objectives: (for teachers: what they have to do in the class/lab/field)

- Design classes for the given problems.
- Write programs in C++.
- Code, debug and execute a C++ program to solve the given problems using an IDE.

Course Outcomes: (for students: To know what they are going to learn)

CO1: Design and create classes.Implement Stream I/O as appropriate.
CO2: Design appropriate data members and member functions.
CO3: Implement functions, friend functions, static members, constructors and compile-time polymorphism.
CO4: Implement inheritance, run-time polymorphism and destructors.
CO5: Implement templates and exceptions. Use STL class library.Implement File I/O.

List of Programs

1. Write a class to represent a complex number which has member functions to do the following
   a. Set and show the value of the complex number
   b. Add, subtract and multiply two complex numbers
   c. Multiplying the complex number with a scalar value
2. Write a Point class that represents a 2-d point in a plane. Write member functions to
   a. Set and show the value of a point
   b. Find the distance between two points
   c. Check whether two points are equal or not

4. Design and implement a class to represent a Solid object.
   a. Apart from data members to represent dimensions, use a data member to specify the type of solid.
   b. Use functions to calculate volume and surface area for different solids.
5. Design a class representing time in hh:mm:ss. Write functions to
   a. Set and show the time
   b. Find the difference between two time objects
   c. Adding a given duration to a time
   d. Conversion of the time object to seconds
6. Design a 3x3 matrix class and demonstrate the following:
   a. Addition and multiplication of two matrices using operator overloading
   b. Maintaining a count of the number of matrix object created
7. Design a class called cString to represent a string data type. Create a data member in the class to represent a string using an array of size 100. Write the following functionality as member functions:
   a. Copy Constructor
   b. Concatenate two strings
   c. Find the length of the string

d. Reversing a string
e. Comparing two strings

8. Design a class called cString to represent a string data type. Create a data member in the class to represent a string whose size is dynamically allocated. Write the following as member functions:

a. Copy Constructor
b. Destructor
c. Concatenate two strings
d. Find the length of the string
e. Reversing a string
f. Comparing two strings

Extended Professional Component	Questions related to the above topics, from various competitive examinations UPSC / TRB / NET / UGC –CSIR / GATE / TNPSC / others to be solved (To be discussed during the Tutorial hour)
Skills acquired from the Course	Knowledge, Problem Solving, Analytical ability, Professional Competency, Professional Communication and Transferrable Skill

Learning Resources:

Learning Resources:

Recommended Texts

1. Herbert Schildt, *C++ - The Complete Reference*, Third Edition, TMH, 1999.
2. Grady Booch, *Object Oriented Analysis and Design*, Pearson Education, 2008. (For Unit I)

Reference Books

1. Bjarne Strousstrup, *The C++ Programming Language*, Addison Wesley, 2000.
2. J. P. Cohoon and J. W. Davidson, *C++ Program Design – An Introduction to Programming and Object-Oriented Design*, Second Edition, McGraw Hill, 1999.

C. J. Lippman, *C++ Primer*, Third Edition, Addison Wesley, 2000.

SECOND YEAR – SEMESTER - III
CORE – V: CORPORATE ACCOUNTING - I

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23C443A	5				4	5	25	75	100

Learning Objectives	
LO1	To understand about the pro-rata allotmentand Underwriting of Shares
LO2	To know the provisions of companies Act regarding Issue and Redemption of Preference shares and debentures
LO3	To learn the form and contents of financial statements as per Schedule III of Companies Act 2013
LO4	To examine the various methods of valuation of Goodwill and shares
LO5	To identify the Significance of International financial reporting standard (IFRS)

Prerequisite: Should have studied Financial Accounting in I Year

Unit	Contents
I	**Issue of Shares** Issue of Shares – Premium - Discount - Forfeiture - Reissue – Pro-rata Allotment Issue of Rights and Bonus Shares - Underwriting of Shares and Debentures – Underwriting Commission - Types of Underwriting.
II	**Issue & Redemption of Preference Shares & Debentures** Redemption of Preference Shares–Provisions of Companies Act– Capital Redemption Reserve – Minimum Fresh Issue – Redemption at Par, Premium and Discount. Debentures: Issue and Redemption – Meaning – Methods – In-One lot–in Instalment – Purchase in the Open Market includes Ex Interest and Cum Interest - Sinking Fund Investment Method.
III	**Final Accounts** Introduction – Final Accounts – Form and Contents of Financial Statements as Per Schedule III of Companies Act 2013 – Part I Form of Balance Sheet – Part II Form of Statement of Profit and Loss – Ascertaining Profit for Managerial Remuneration
IV	**Valuation of Goodwill & Shares** Valuation of Goodwill – Meaning – Need for Valuation of Goodwill – Methods of Valuing Goodwill – Average Profit – Super Profit – Annuity and Capitalisation Method. Valuation of Shares – Need for Valuation of Shares – Methods of Valuation of Shares – Net Assets Method – Yield and Fair Value Methods.
V	**Indian Accounting Standards** International Financial Reporting Standard (IFRS)–Meaning and its Applicability in India - Indian Accounting Standards – Meaning – Objectives – Significance – Procedures for Formulation of Standards – Ind AS – 1 Presentation of Financial Statement, Ind AS – 2 Valuation of Inventories, Ind AS – 7 Cash Flow Statement, Ind AS – 8 Accounting Policies, Changes in Accounting Estimate and Errors, Ind AS – 16 – Property, Plant & Equipment, Ind AS 38 – Intangible Assets Ind AS – 103, Business Combinations Ind AS 110, Consolidated Financial Statement. (Theory Only)

THEORY 20% & PROBLEMS 80%

Course Outcomes	
CO1	Prepare and account for various entries to be passed in case of issue, forfeiture and reissue of shares and compute the liability of underwrites
CO2	Asses the accounting treatment of issue and redemption of preference shares and debentures
CO3	Construct Financial Statements applying relevant accounting treatments
CO4	Compute the value of goodwill and shares under different methods and assess its applicability
CO5	Integrate theoretical knowledge on all accounting in par with IFRS and IND AS
Textbooks	
1	S.P. Jain and N.L. Narang, Advanced Accounting Vol I, Kalyani Publication, New Delhi.
2	R.L. Gupta and M. Radha swamy, Advanced Accounts Vol I, Sultan Chand, New Delhi.
3	Broman, Corporate Accounting, Taxmann, New Delhi.
4	Shukla, Grewal and Gupta- Advanced Accounts VolI,S.Chand, New Delhi.
5	M.C.Shukla, Advanced accounting Vol I, S.Chand, New Delhi.
Reference Books	
1	T.S. Reddy, A. Murthy – Corporate Accounting- Margham Publication, Chennai.
2	D.S.Rawat&NozerShroff,Students Guide To Accounting Standards ,Taxmann, New Delhi
3	Prof. Mukeshbramhbutt, Devi,Corporate Accounting I, Ahilya Publication, Madhya Pradesh
4	Anil Kumar, Rajesh kumar, Corporate accounting I, Himalaya Publishing house, Mumbai.
5	PrasanthAthma, Corporate Accounting I, Himalaya Publishing house, Mumbai.
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1	https://www.tickertape.in/blog/issue-of-shares/
2	https://www.taxmann.com/bookstore/bookshop/bookfiles/chapter12valuationofgoodwillandshares.pdf
3	https://www.mca.gov.in/content/mca/global/en/acts-rules/ebooks/accounting-standards.html

MAPPING WITH PROGRAMME OUTCOMES
AND PROGRAMME SPECIFIC OUTCOMES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	3	2	2	2	2	2	3	2	2
CO2	3	2	3	2	2	2	2	2	3	2	2
CO3	3	2	3	2	3	2	2	2	3	2	2
CO4	3	1	3	2	3	2	2	2	3	2	2
CO5	3	3	3	2	3	2	2	2	3	2	2
TOTAL	15	11	15	10	13	10	10	10	15	10	10
AVERAGE	3	2.2	3	2	2.6	2	2	2	3	2	2

3 – Strong, 2- Medium, 1- Low

SECOND YEAR – SEMESTER - III

CORE – VI: BUSINESS MATHEMATICS & STATISTICS

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23C443B	5				4	5	25	75	100

Learning Objectives	
LO1	To impart knowledge on the basics of ratio, proportion, indices and proportions
LO2	To learn about simple and compound interest and arithmetic, geometric and harmonic progressions.
LO3	To familiarise with the measures of central tendency
LO4	To conceptualise with correlation co-efficient
LO5	To gain knowledge on time series analysis

Prerequisite: Should have studied Commerce in XII Std

Unit	Contents
I	**Ratio** Ratio, Proportion and Variations, Indices and Logarithms.
II	**Interest and Annuity** Banker's Discount – Simple and Compound Interest - Arithmetic, Geometric and Harmonic Progressions. Annuity - Meaning - Types of Annuity Applications.
III	**Business Statistics Measures of Central Tendency** Arithmetic Mean, Geometric Mean - Harmonic Mean - Mode and Median – Quartiles – Deciles - Percentiles. Measures of Variation – Range - Quartile Deviation and Mean Deviation - Variance and Standard Deviation & Co-efficient.
IV	**Correlation and Regression** Correlation - Karl Pearson's Coefficient of Correlation – Spearman's Rank Correlation – Regression Lines and Coefficients.

V	**Time Series Analysis and Index Numbers** Time Series Analysis : Secular Trend – Seasonal Variation – Cyclical variations - Index Numbers – Aggregative and Relative Index – Chain and Fixed Index –Wholesale Index – Cost of Living Index.
Course Outcomes	
CO1	Learn the basics of ratio, proportion, indices and logarithm
CO2	Familiarise with calculations of simple and compound interest and arithmetic, geometric and harmonic progressions.
CO3	Determine the various measures of central tendency
CO4	Calculate the correlation and regression co-efficient.
CO5	Assess problems on time series analysis
Textbooks	
1	Dr. B.N. Gupta, Business Mathematics & Statistics, Shashibhawan publishing house, Chennai
2	Asim Kumar Manna, Business Mathematics & Statistics, McGraw hill education, Noida
3	A.V. Rayarikar and Dr. P.G. Dixit, Business Mathematics & Statistics, Nirali Prakashan Publishing, Pune
4	Dr.S. Sachdeva, Business Mathematics & Statistics, Lakshmi NarainAgarwal, Agra
5	P.R. Vittal, Business Mathematics & Statistics, Margham Publications, Chennai
Reference Books	
1	J.K. Sharma, Fundamentals of business statistics, Vikas publishing, Noida
2	Peter Waxman, Business Mathematics & Statistics, Prentice Hall, New York
3	Andre Francis, Business Mathematics & Statistics, Cengage Learning EMEA, Andover
4	Aggarwal B M, Business Mathematics & Statistics, Ane Book Pvt. Ltd., New Delhi

5	R.S. Bhardwaj, Business Mathematics & Statistics, Excel Books Publisher, New Delhi
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1	https://www.britannica.com/biography/Henry-Briggs
2	https://corporatefinanceinstitute.com/resources/data-science/central-tendency/
3	https://www.expressanalytics.com/blog/time-series-analysis/

MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	3	2	2	2	3	2	3	2	2
CO2	3	2	3	2	3	2	3	2	3	2	2
CO3	3	2	3	2	3	2	3	2	3	2	2
CO4	3	2	3	2	2	2	3	2	3	2	2
CO5	3	2	3	2	2	2	3	2	3	2	2
TOTAL	15	10	15	10	12	10	15	10	15	10	10
AVERAGE	3	2	3	2	2.4	2	3	2	3	2	2

3 – Strong, 2- Medium, 1- Low

SECOND YEAR – SEMESTER – III

ELECTIVE - III: PROGRAMMING IN JAVA AND LAB

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23E443A	2		2		3	4	25	75	100

Learning Objectives	
LO1	To provide fundamental knowledge of object-oriented programming.
LO2	To equip the student with programming knowledge in Core Java from the basics up.
LO3	To enable the students to use AWT controls, Event Handling and Swing for GUI.

Prerequisite: Should have studied Commerce in XII Std

Unit	Contents
I	Introduction: Review of Object-Oriented concepts - Java buzzwords (Platform independence, Portability, Threads)- JVM architecture –Java Program structure - –Java main method - Java Console output(System.out) - simple java program - Data types - Variables - type conversion and casting- Java Console input: Buffered input - operators - control statements - Static Data - Static Method - String and String Buffer Classes
II	Java user defined Classes and Objects – Arrays – constructors - Inheritance: Basic concepts - Types of inheritance - Member access rules - Usage of this and Super key word - Method Overloading - Method overriding - Abstract classes - Dynamic method dispatch - Usage of final keyword
III	Packages: Definition - Access Protection - Importing Packages - Interfaces: Definition – Implementation – Extending InterfacesException Handling: try – catch - throw - throws –- finally – Built-in exceptions - Creating own Exception classes - garbage collection, finalise -
IV	Multithreaded Programming: Thread Class - Runnable interface – Synchronization – Using synchronized methods – Using synchronized statement - Interthread Communication – Deadlock.
V	Adapter classes - Inner classes -Java Util Package / Collections Framework:Collection & Iterator Interface- Enumeration- List and ArrayList- Vector- Comparator

Course Outcomes	
CO1	Understand the basic Object-oriented concepts.Implement the basic constructs of Core Java
CO2	Implement inheritance, packages, interfaces and exception handling of Core Java.
CO3	Implement multi-threading and I/O Streams of Core Java
Textbooks	
1	Herbert Schildt, The Complete Reference, Tata McGraw Hill, New Delhi, 7th Edition, 2010.
2	Gary Cornell, Core Java 2 Volume I – Fundamentals, Addison Wesley, 1999.
Reference Books	
1	Head First Java, O'Rielly Publications, Y. Daniel Liang, Introduction to Java Programming, 7th Edition, Pearson Education India, 2010.

Java Programming Lab	**Core -S2EC1L**
Learning Objectives: (for teachers: what they have to do in the class/lab/field) • To gain practical expertise in coding Core Java programs • To become proficient in the use of AWT, Event Handling and Swing.	
Course Outcomes: (for students: To know what they are going to learn) CO1: Code, debug and execute Java programs to solve the given problems CO2: Implement multi-threading and exception-handling CO3: Implement functionality using String and StringBuffer classes	

List of Programs
1. Write a Java program that prompts the user for an integer and then prints out all the prime numbers up to that Integer?
2. Write a Java program to multiply two given matrices.
3. Write a Java program that displays the number of characters, lines and words in a text?
4. Generate random numbers between two given limits using Random class and print messages according to the range of the value generated.
5. Write a program to do String Manipulation using Character Array and perform the

following string operations:

a) String length
b) Finding a character at a particular position
c) Concatenating two strings

6. Write a program to perform the following string operations using String class:

a) String Concatenation

b) Search a substring

c) To extract substring from given string

7. Write a program to perform string operations using String Buffer class:

a) Length of a string

b) Reverse a string

c) Delete a substring from the given string

8. Write a java program that implements a multi-thread application that has three threads. First thread generates random integer every 1 second and if the value is even, second thread computes the square of the number and prints. If the value is odd, the third thread will print the value of cube of the number.

9. Write a threading program which uses the same method asynchronously to print the numbers 1 to 10 using Thread1 and to print 90 to 100 using Thread2.

10. Write a program to demonstrate the use of following exceptions.

a) Arithmetic Exception

b) Number Format Exception

c) Array Index Out of Bound Exception

d) Negative Array Size Exception

Extended Professional Component	Questions related to the above topics, from various competitive examinations UPSC / TRB / NET / UGC –CSIR / GATE / TNPSC / others to be solved (To be discussed during the Tutorial hour)
Skills acquired from the course	Knowledge, Problem Solving, Analytical ability, Professional Competency, Professional Communication and Transferrable Skill

Learning Resources:

Recommended Texts

Herbert Schildt, The Complete Reference, Tata McGraw Hill, New Delhi, 7th Edition, 2010.

Gary Cornell, Core Java 2 Volume I – Fundamentals, Addison Wesley, 1999.

Reference Books

Head First Java, O'Rielly Publications, Y. Daniel Liang, Introduction to Java Programming, 7th Edition, Pearson Education India, 2010.

Web resources: Web resources from NDL Library, E-content from open-source libraries

SECOND YEAR – SEMESTER - III

ELECTIVE III :Web Technology(PHP) and Lab

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23E443B	2		2		3	4	25	75	100

Learning Objectives	
LO1	To use PHP and MySQL to develop dynamic web sites for user on the Internet
LO2	To develop web sites ranging from simple online information forms to complex e-commerce sites with MySQL database, building, connectivity, and maintenance

Prerequisite: Should have studied Commerce in XII Std

Unit	Contents
I	Introducing PHP – Basic development Concepts – Creating first PHP Scripts – Using Variableand Operators – Storing Data in variable – Understanding Data types – Setting and Checkingvariables Data types – Using Constants – Manipulating Variables with Operators.
II	Controlling Program Flow: Writing Simple Conditional Statements - Writing More ComplexConditional Statements – Repeating Action with Loops – Working with String and NumericFunctions.
III	Working with Arrays: Storing Data in Arrays – Processing Arrays with Loops and Iterations –Using Arrays with Forms - Working with Array Functions – Working with Dates and Times.
IV	Using Functions and Classes: Creating User-Defined Functions - Creating Classes – UsingAdvanced OOP Concepts.
V	Working with Database and SQL : Introducing Database and SQL- Using MySQL-Adding andmodifying Data-Handling Errors – Using SQLite Extension and PDO Extension. IntroductionXML - Simple XML and DOM Extension.

CO	Course Outcomes
CO1	Understand the general concepts of PHP scripting language for the development of Internetwebsites.

CO2	Understand the basic functions of MySQL database program and XML concepts
CO3	Learn the relationship between the client side and the server side scripts.
Textbooks	
1	VikramVaswani, "PHP A Beginner's Guide", Tata McGraw Hill 2008.
Reference Books	
1	Steven Holzner , "The PHP Complete Reference", Tata McGraw Hill, 2007.
2	Steven Holzer , "Spring into PHP", Tata McGraw Hill 2011, 5thEdition.
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1	https://www.w3schools.com/php/
2	https://www.phptpoint.com/php-tutorial-pdf/
3	http://www.xmlsoftware.com/

SECOND YEAR – SEMESTER – III

WEB TECHNOLOGY LAB	
Learning Objectives: (for teachers: what they have to do in the class/lab/field) • The objectives of this course are to have a practical understanding about how to writePHP code to solve problems. • Display and insert data using PHP and MySQL. • Test, debug, and deploy web pages containing PHP and MySQL. • It also aims to introduce practical session to develop simple applications using PHP andMySQL.	
Course Outcomes: (for students: To know what they are going to learn) 1. On the completion of this laboratory course the students ought to 2. Obtain knowledge and develop application programs using Python. 3. Create dynamic Web applications such as content management, user registration, and ecommerce using PHP and to understand the ability to post and publish a PHP website. 4. Develop a MySQL database and establish connectivity using MySQL.	

LIST OF PRACTICALS
1. Write a PHP program which adds up columns and rows of given table

2. Write a PHP program to compute the sum of first n given prime numbers
3. Write a PHP program to find valid an email address
4. Write a PHP program to convert a number written in words to digit.
5. Write a PHP script to delay the program execution for the given number of seconds.
6. Write a PHP script, which changes the colour of the first character of a word
7. Write a PHP program to find multiplication table of a number.
8. Write a PHP program to calculate Factorial of a number.
9. Write a PHP code to create a student mark sheet table. Insert, delete and modify records.
10. From a XML document (email.xml), write a program to retrieve and print all the e-mailaddresses from the document using XML
11. From a XML document (tree.xml), suggest three different ways to retrieve the text value'John' using the DOM:
12. Write a program that connects to a MySQL database and retrieves the contents of any oneof its tables as an XML file. Use the DOM.

Extended Professional Component	Questions related to the above topics, from various competitive examinations UPSC / TRB / NET / UGC – CSIR / GATE / TNPSC / others to be solved (To be discussed during the Tutorial hour)
Skills acquired from the Course	Knowledge, Problem Solving, Analytical ability, Professional Competency, Professional Communication and Transferrable Skill

FIRST YEAR – SEMESTER - III

ELECTIVE - I: PYTHON PROGRAMMING AND LAB

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23443SB	2		2		3	4	25	75	100

Learning Objectives	
LO1	Describe the core syntax and semantics of Python programming language.
LO2	Discover the need for working with the strings and functions.
LO3	Illustrate the process of structuring the data using lists, dictionaries, tuples and sets.
LO4	Understand the usage of packages and Dictionaries

Prerequisites: Should have studied Commerce in XII Std

Unit	Contents
I	Introduction: Computer algorithms-Computer Hardware-Computer Software-Python programming language - Literals - Variables and Identifiers - Operators - Expressions and Data types, Input / output
II	Control Structures: Boolean Expressions - Selection Control - If Statement-Indentation in Python- Multi-Way Selection -- Iterative Control- While Statement- Infinite loops- Definite vs. Indefinite Loops- Boolean Flag. String, List and Dictionary, Manipulations Building blocks of python programs,Understanding and using ranges.
III	Functions: Program Routines- Defining Functions- More on Functions: Calling Value-Returning Functions- Calling Non-Value-Returning Functions-Parameter Passing - Keyword Arguments in Python - Default Arguments in Python-Variable Scope. Recursion: Recursive Functions
IV	Objects and their use: Software Objects - Turtle Graphics – Turtle attributes-Modular Design: Modules - Top-Down Design - Python Modules -
V	Dictionaries and Sets: Dictionary type in Python - Set Data type. Text Files: Opening, reading and writing text files – Exception Handling

Course Outcomes	
CO1	Develop and execute simple Python programs

CO2	Write simple Python programs using conditionals and looping for solving problems
CO3	Decompose a Python program into functions
CO4	Represent compound data using Python lists, tuples, dictionaries etc.
Textbooks	
1	Charles Dierbach, "Introduction to Computer Science using Python - A computational Problem-solving Focus", Wiley India Edition, 2015.
2	Wesley J. Chun, "Core Python Applications Programming", 3rd Edition , Pearson Education, 2016
3	Mark Lutz, "Learning Python Powerful Object Oriented Programming", O'reilly Media 2018, 5th Edition.
Reference Books	
1	Timothy A. Budd, "Exploring Python", Tata MCGraw Hill Education Private Limited 2011, 1 st Edition.
2	John Zelle, "Python Programming: An Introduction to Computer Science", Second edition, Course Technology Cengage Learning Publications, 2013, ISBN 978- 1590282410
3	Michel Dawson, "Python Programming for Absolute Beginers" , Third Edition, Course Technology Cengage Learning Publications, 2013, ISBN 978-1435455009
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1	https://onlinecourses.swayam2.ac.in/cec22_cs20/preview

Python Programming Lab	

Learning Objectives: (for teachers: what they have to do in the class/lab/field)

- Acquire programming skills in core Python.
- Acquire Object-oriented programming skills in Python.
- Develop the skill of designing graphical-user interfaces (GUI) in Python.
- Develop the ability to write database applications in Python.
- Acquire Python programming skills to move into specific branches

Course Outcomes: (for students: To know what they are going to learn)

CO1: To understand the problem solving approaches

CO2: To learn the basic programming constructs in Python

CO3: To practice various computing strategies for Python-based solutions to real world problems

CO4: To use Python data structures - lists, tuples, dictionaries.

List of Programs

1. Program to convert the given temperature from Fahrenheit to Celsius and vice versa depending upon user's choice.
2. Write a Python program to construct the following pattern, using a nested loop

```
*
**
***
****
*****
****
***
**
*
```

3. Program to calculate total marks, percentage and grade of a student. Marks obtained in each of the five subjects are to be input by user. Assign grades according to the following criteria:

Grade A: Percentage >=80 Grade B: Percentage >=70 and 80
Grade C: Percentage >=60 and <70 Grade D: Percentage >=40 and <60
Grade E: Percentage < 40

4. Program, to find the area of rectangle, square, circle and triangle by accepting suitable input parameters from user.
5. Write a Python script that prints prime numbers less than 20.
6. Program to find factorial of the given number using recursive function.
7. Write a Python program to count the number of even and odd numbers from array of N numbers.
8. Write a Python class to reverse a string word by word.
9. Read a file content and copy only the contents at odd lines into a new file.

10. Create a Turtle graphics window with specific size.

Extended Professional Component	Questions related to the above topics, from various competitive examinations UPSC / TRB / NET / UGC –CSIR / GATE / TNPSC / others to be solved (To be discussed during the Tutorial hour)
Skills acquired from the course	Knowledge, Problem Solving, Analytical ability, Professional Competency, Professional Communication and Transferrable Skill

Learning Resources:

- **Recommended Texts**

1. Charles Dierbach, "Introduction to Computer Science using Python - A computational Problem-solving Focus", Wiley India Edition, 2015.

2. Wesley J. Chun, "Core Python Applications Programming", 3rd Edition , Pearson Education, 2016

- **Reference Books**

1. Mark Lutz, "Learning Python Powerful Object Oriented Programming", O'reilly Media 2018, 5th Edition.
2. Timothy A. Budd, "Exploring Python", Tata MCGraw Hill Education Private Limited 2011, 1 st Edition.
3. John Zelle, "Python Programming: An Introduction to Computer Science", Second edition, Course Technology Cengage Learning Publications, 2013, ISBN 978-1590282410
4. Michel Dawson, "Python Programming for Absolute Beginers" , Third Edition, Course Technology Cengage Learning Publications, 2013, ISBN 978-1435455009

SECOND YEAR – SEMESTER – IV

CORE – VII: CORPORATE ACCOUNTING - II

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23C444A	**5**				**4**	**5**	**25**	**75**	**100**

LO1	To know the types of Amalgamation, Internal and external Reconstruction
LO2	To know Final statements of banking companies
LO3	To understand the accounting treatment of Insurance company accounts
LO4	To understand theprocedure for preparation of consolidated Balance sheet
LO5	To have an insight on modes of winding up of a company
Prerequisite: Should have studied Financial Accounting in I Year	
Unit	**Contents**
I	**Amalgamation, Internal & External Reconstruction** Amalgamation – **Meaning** - Purchase Consideration - Lump sum Method, Net Assets Method, Net Payment Method, Intrinsic Value Method - Types of **Methods of Accounting for**Amalgamation -**The Pooling of Interest Method - The Purchase Method**(Excluding Inter-Company Holdings). **Internal & External Reconstruction** **Internal Reconstruction – Conversion of Stock – Increase and Decrease of Capital – Reserve Liability - Accounting Treatment of External Reconstruction**
II	**Accounting of Banking Companies** Final Statements of Banking Companies (As Per New Provisions) - Non-Performing Assets - Rebate on Bills Discounted- Profit and Loss a/c - Balance Sheet as Per Banking Regulation Act 1949.
III	**Insurance Company Accounts:** Meaning of Insurance – Principles – Types – Preparation of Final Accounts of Insurance Companies – Accounts of Life Insurance Business – Accounts of General Insurance Companies -New Format.
IV	**Consolidated Financial Statements** Introduction-Holding & Subsidiary Company-Legal Requirements Relating to Preparationof Accounts -Preparation of Consolidated Balance Sheet (Excluding Inter-Company Holdings).
V	**Liquidation of Companies** Meaning-Modes of Winding Up – Preparation of Statement of Affairs and Statement of Deficiency **or Surplus (List H)** Order of Payment – Liquidators Remuneration- Liquidator's Final Statement of Accounts.
THEORY 20% & PROBLEMS 80%	
Course Outcomes	
CO1	Understand the accounting treatment of amalgamation, Internal and external reconstruction

CO2	Construct Profit and Loss account and Balance Sheet of Banking Companies in accordance in the prescribed format.
CO3	Synthesize and prepare final accounts of Insurance companies in the prescribed format
CO4	Give the consolidated accounts of holding companies
CO5	Preparation of liquidator's final statement of account

Textbooks	
1	S.P. Jain and K.L Narang. Advanced Accountancy, Kalyani Publishers, New Delhi.
2	Dr.K.S .Raman and Dr. M.A. Arulanandam , Advanced Accountancy, Vol. II, Himalaya Publishing House, Mumbai.
3	R.L. Gupta and M. Radhaswamy, Advanced Accounts, Sultan Chand, New Delhi.
4	M.C. Shukla and T.S. Grewal, Advanced Accounts Vol.II, S Chand & Sons, New Delhi.
5	T.S. Reddy and A.Murthy, Corporate Accounting II, Margham Publishers, Chennai
Reference Books	
1	B.Raman, Corporate Accounting, Taxmann, New Delhi
2	M.C.Shukla, Advanced Accounting,S.Chand, New Delhi
3	Prof. MukeshBramhbutt, Devi Ahilya publication, Madhya Pradesh
4	Anil kumar, Rajesh kumar, Advanced Corporate Accounting, Himalaya Publishing house, Mumbai.
5	PrasanthAthma, Corporate Accounting, Himalaya Publishing house, Mumbai.
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1	https://www.accountingnotes.net/amalgamation/amalgamation-absorption-and-reconstruction-accounting/126
2	https://www.slideshare.net/debchat123/accounts-of-banking-companies
3	https://www.accountingnotes.net/liquidation/liquidation-of-companies-accounting/12862

MAPPING WITH PROGRAMME OUTCOMES
AND PROGRAMME SPECIFIC OUTCOMES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	3	2	2	2	3	2	3	2	2
CO2	3	2	3	2	3	2	3	2	3	2	2
CO3	3	2	3	2	3	2	3	2	3	2	2
CO4	3	2	3	2	2	2	3	2	3	2	2
CO5	3	2	3	2	2	2	3	2	3	2	2
TOTAL	15	10	15	10	12	10	15	10	15	10	10
AVERAGE	3	2	3	2	2.4	2	3	2	3	2	2

3 – Strong, 2- Medium, 1- Low

SECOND YEAR– SEMESTER– IV

CORE PAPER VIII – COMPANY LAW

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23C444B	5				4	5	25	75	100

Learning Objectives	
LO1	To know Company Law 1956 and Companies Act 2013
LO2	To have an understanding on the formation of a company
LO3	To understand the requisites of meeting and resolution
LO4	To gain knowledge on the procedure to appoint and remove Directors
LO5	To familiarize with the various modes of winding up

Prerequisite: Should have studied Commerce in XII Std

Unit	Contents
I	**Introduction to Company law** Companies Act 2013 – Definition of a Company, Characteristics of Company – Lifting or Piercing the Corporate Veil – Company Distinguished from Partnership and Limited Liabilities Partnerships – Classification of Companies – Based on Incorporation, Liability, Number of Members, Control.
II	**Formation of Company** Formation of a Company – Promoter –Incorporation Documents e-filing – Memorandum of Association – Contents – Alteration – Legal Effects – Articles of Association - Certificate of Incorporation – Prospectus – Contents - Kinds – Liabilities – Share Capital – Kinds – Issue – Alteration – Dividend – Debentures.
III	**Meeting** Meeting and Resolution – Types – Requisites – Voting & Poll – Quorum – Proxy - Resolution – Ordinary & Special - Audit & Auditors – Qualification, Disqualification, Appointment and Removal of an Auditor -

IV	**Management & Administration** Management & Administration – Directors – Legal Position – Board of Directors – Appointment/ Removal – Disqualification – Director Identification Number – Directorships – Powers – Duties – Board Committees – Related Party Transactions – Contract by One Person Company – Insider Trading- Managing Director – Manager – Secretarial Audit – Administrative Aspects and Winding Up – National Company Law Tribunal (NCLT) – National Company Law Appellate Tribunal (NCLAT) – Special Courts.
V	**Winding up** Meaning – Modes – Compulsory Winding Up – Voluntary Winding Up – Consequences of Winding Up Order – Powers of Tribunal – Petition for Winding Up – Company Liquidator.
Course Outcomes	
CO1	Understand the classification of companies under the act
CO2	Examine the contents of the Memorandum of Association & Articles of Association
CO3	Know the qualification and disqualification of Auditors
CO4	Understand the workings of National Company Law Appellate Tribunal (NCLAT)
CO5	Analyse the modes of winding up
Textbooks	
1	N.D. Kapoor, Business Laws, Sultan Chand and Sons, Chennai
2	R.S.N. Pillai – Business Law, S.Chand, New Delhi.
3	M.V. Dhandapani, Business Laws Sultan Chand and Sons, Chennai
4	Shusma Aurora, Business Law,Taxmann, New Delhi
5	M.C.Kuchal, Business Law, VikasPublication, Noida
Reference Books	
1	Gaffoor&Thothadri, Company Law, Vijay Nichole Imprints Limited, Chennai

2	M.R. Sreenivasan, Business Laws, Margham Publications, Chennai
3	KavyaAndVidhyasagar, Business Law, Nithya Publication, Bhopal
4	S.D.Geet, Business Law Nirali Prakashan Publication, Pune
5	PreethiAgarwal, Business Law, CA foundation study material
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1	https://www.mca.gov.in/content/mca/global/en/acts-rules/companies-act/companies-act-2013.html
2	https://vakilsearch.com/blog/explain-procedure-formation-company/
3	https://www.investopedia.com/terms/w/windingup.asp

MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	3	2	3	3	2	3	3	2	2
CO2	3	2	3	2	3	3	2	3	3	2	2
CO3	3	2	3	2	3	3	2	3	3	2	2
CO4	3	2	3	2	3	3	2	3	3	2	2
CO5	3	2	3	2	3	3	2	3	3	2	2
TOTAL	15	10	15	10	15	15	10	15	15	10	10
AVERAGE	3	2	3	2	3	3	2	3	3	2	2

3 – Strong, 2- Medium, 1- Low

SECOND YEAR – SEMESTER – IV

ELECTIVE IV –RELATIONAL DATABASE MANAGEMENT SYSTEM

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23E444A	3				3	3	25	75	100

Learning Objectives	
LO1	Gain a good understanding of the architecture and functioning of Database Management Systems
LO2	Understand the use of Structured Query Language (SQL) and its syntax.
LO3	Apply Normalization techniques to normalize a database.
LO4	Understand the need of transaction processing and learn techniques for controlling theconsequences of concurrent data access.

Prerequisite: Should have studied Commerce in XII Std

Unit	Contents
I	Introduction to DBMS– Data and Information - Database – Database Management System – Objectives- Advantages – Components - Architecture. ER Model: Building blocks of ER Diagram –
II	Relationship Degree – Classification – ER diagram to Tables – ISA relationship – Constraints –Aggregation and Composition – Advantages Structure of Relational Database. Introduction to Relational Database Design - Objectives – Tools –Redundancy and Data Anomaly
III	– Functional Dependency - Normalization – 1NF – 2NF – 3NF –BCNF. Transaction Processing – Database Security.
IV	Introduction to SQL: Data Definition Commands – Data Manipulation Commands – SELECT Queries – Additional Data Definition Commands – Additional SELECT Query Keywords – Joining Database Tables.Advanced SQL:Relational SET Operators: UNION – UNION ALL – INTERSECT - MINUS.
V	SQL Join Operators: Cross Join – Natural Join – Join USING Clause – JOIN ON Clause – Outer Join. Sub Queries and Correlated Queries: WHERE – IN – HAVING – ANY and ALL – FROM. SQL Functions: Date and Time Function – Numeric Function – String Function – Conversion Function

Course Outcomes	
CO1	Describe basic concepts of database system
CO2	Design a Data model and Schemas in RDBMS
CO3	Competent in use of SQL
CO4	Analyse functional dependencies for designing robust Database
Textbooks	
1	S. Sumathi, S. Esakkirajan, "Fundamentals of Relational Database Management System",Springer International Edition 2007.
Reference Books	
1	Abraham Silberchatz, Henry F. Korth, S. Sudarshan, "Database System Concepts",McGrawHill2019, 7th Edition.
2	Alexis Leon & Mathews Leon, "Fundamentals of DBMS", Vijay Nicole Publications 2014, 2nd Edition.
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1.https://nptel.ac.in/courses/106106093/	
2.https://nptel.ac.in/courses/106106095/	
3.NPTEL & MOOC courses titled Relational Database Management Systems	

SECOND YEAR – SEMESTER – IV

ELECTIVE - IV: INTRODUCTION TO DATA SCIENCE

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23E444B	3				3	3	25	75	100

Learning Objectives	
LO1	To introduce the concepts, techniques and tools in Data Science
LO2	To understand the various facets of data science practice, including data collection and integration, exploratory data analysis, predictive modelling, descriptive modelling and effective communication.

Prerequisite: Should have studied Commerce in XII Std

Unit	Contents
I	**Introduction:** Benefits and uses – Facets of data – Data science process – Big data ecosystem and data science
II	**The Data science process:** Overview – research goals - retrieving data - transformation – Exploratory Data Analysis – Model building - Data Visualization
III	**Algorithms:** Machine learning algorithms – Modelling process – Types – Supervised – Unsupervised - Semi-supervised
IV	**Introduction to Hadoop:** Hadoop framework – Spark – replacing MapReduce– NoSQL – ACID – CAP – BASE – types
V	**Case Study:** Prediction of Disease - Setting research goals - Data retrieval – preparation - exploration - Disease profiling - presentation and automation

Course Outcomes	
CO1	To describe what Data Science is, what Statistical Inference means, identify probability distributions, fit a model to data and use tools for basic analysis and communication
CO2	To describe what Data Science is, what Statistical Inference means, identify probability distributions, fit a model to data and use tools for basic analysis and communication
CO3	To describe what Data Science is, what Statistical Inference means, identify probability distributions, fit a model to data and use tools for basic analysis and communication
CO4	To describe what Data Science is, what Statistical Inference means, identify probability distributions, fit a model to data and use tools for basic analysis and communication
CO5	To describe what Data Science is, what Statistical Inference means, identify probability distributions, fit a model to data and use tools for basic analysis and communication
Textbooks	
1	Davy Cielen, Arno D. B. Meysman, Mohamed Ali, "Introducing Data Science", manning publications 2016
	Roger Peng, "The Art of Data Science", lulu.com 2016.
	MurtazaHaider, "Getting Started with Data Science – Making Sense of Data with Analytics", IBM press, E-book.
Reference Books	
1	Davy Cielen, Arno D.B. Meysman, Mohamed Ali,"Introducing Data Science: Big Data, Machine Learning, and More, Using Python Tools", Dreamtech Press 2016.
2	Annalyn Ng, Kenneth Soo, "Numsense! Data Science for the Layman: No Math Added", 2015,1st Edition.
3	Cathy O'Neil, Rachel Schutt, "Doing Data Science Straight Talk from the Frontline", O'Reilly Media 2013.
4	Lillian Pierson, "Data Science for Dummies", 2015 II Edition
NOTE: Latest Edition of Textbooks May be Used	

THIRD YEAR – SEMESTER - V

CORE – IX: COST ACCOUNTING - I

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23C445A	5				4	5	25	75	100

Learning Objectives	
LO1	To understand the various concepts of cost accounting.
LO2	To prepare and reconcile Cost accounts.
LO3	To gain knowledge regarding valuation methods of material.
LO4	To familiarize with the different methods of calculating labour cost.
LO5	To know the apportionment of Overheads.

Prerequisite: Should have studied Commerce in XII Std

Unit	Contents
I	**Introduction of Cost Accounting** Definition-Nature and Scope – Principles of Cost Accounting – Cost Accounting and Financial Accounting - Cost Accounting Vs Management Accounting – Installation of Costing System –Classification of Costs– Cost Centre– Profit Centre.
II	**Cost Sheet and Methods of Costing** Preparation of Cost Sheet - Tenders & Quotations - Reconciliation of Cost and Financial Accounts –Unit Costing-Job Costing.
III	**Material Costing** Material Control – Meaning and Objectives – Purchase of Materials – EOQ – Stores Records – Reorder Levels – ABC Analysis - Issue of Materials –Methods of Issue – FIFO – LIFO – Base Stock Method – Specific Price Method – Simple and Weighted Average Method.
IV	**Labour Costing** Direct Labour and Indirect Labour – Time Keeping – Methods and Calculation of Wage Payments – Time Wages – Piece Wages – Incentives – Different Methods of Incentive Payments - Idle time–Overtime – Labour Turnover - Meaning, Causes and Measurement.

V	**Overheads Costing** Overheads – Definition – Classification – Allocation and Apportionment of Overheads – Basis of Apportionment – Primary and Secondary Distribution - Absorption of Overheads – Methods of absorption Preparation of Overheads Distribution Statement – Machine Hour Rate – Computation of Machine Hour Rate.
	TOTAL

THEORY 20% & PROBLEMS 80%

Course Outcomes	
CO1	Remember and recall the various concepts of cost accounting
CO2	Demonstrate the preparation and reconciliation of cost sheet.
CO3	Analyse the various valuation methods of issue of materials.
CO4	Examine the different methods of calculating labour cost.
CO5	Critically evaluate the apportionment of Overheads.

Textbooks	
1	Jain S.P. and Narang K.L, Cost Accounting. Kalyani Publishers, New Delhi
2	Khanna B.S., Pandey I.M., Ahuja G.K., and Arora M.N., Practical Costing, S. Chand & Co, New Delhi,
3	Dr.S.N. Maheswari, Principles of Cost Accounting, Sultan Chand Publications, New Delhi
4	T.S. Reddy and Y. Hari Prasad Reddy, Cost Accounting, Margham publications, Chennai
5	S.P. Iyengar, Cost Accounting, Sultan Chand Publications, New Delhi

Reference Books	
1	Polimeni, Cost Accounting: Concepts and Applications for Managerial Decision Making, 1991, McGraw–Hill, New York.
2	Jain S.P. and Narang K.L. Cost Accounting, Latest Edition.2013, Kalyani Publishers, New Delhi,

3	V.K.Saxena and C.D.Vashist, Cost Accounting, Sultan Chand publications, New Delhi
4	Murthy A &GurusamyS,CostAccounting,Vijay Nicole Imprints Pvt. Ltd. Chennai
5	Prasad.N.K and Prasad.V.K, Cost Accounting, Book Syndicate, Kolkata
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1	https://study.com/learn/lesson/cost-accounting-principles-examples-what-is-cost-accounting.html
2	https://www.accountingtools.com/articles/what-is-material-costing.html
3	https://www.freshbooks.com/hub/accounting/overhead-cost

MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	3	2	2	2	2	2	3	2	2
CO2	3	2	2	2	2	2	2	2	3	2	2
CO3	3	2	3	2	2	2	2	2	3	2	2
CO4	3	2	2	2	2	2	2	2	3	2	2
CO5	3	2	3	2	2	2	2	2	3	2	2
TOTAL	15	10	13	10	10	10	10	10	15	10	10
AVERAGE	3	2	2.6	2	2	2	2	2	3	2	2

3 – Strong, 2- Medium, 1- Low

THIRD YEAR – SEMESTER - V

CORE – X: BANKING LAW AND PRACTICE

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23C445B	5				4	5	25	75	100

Learning Objectives	
LO1	To help the students understand various provision of Banking Regulation Act 1949 applicable to banking companies including cooperative banks
LO2	To trace the evolution of central bank concept and prevalent central banking system around the world and their roles and function
LO3	To throw light on Central Bank in India, its formation, nationalizing its organization structure, role of bank to government, role in promoting agriculture and industry, role in financial inclusion
LO4	To understand how capital fund of commercial banks, objectives and process of Asset securitization etc.
LO5	To explore practical banking systems relationship of bankers and customers, crossing of cheques, endorsement etc.

Unit	Contents
I	**Introduction to Banking** History of Banking- Provisions of Banking Regulations Act 1949 - Components of Indian Banking - Indian Banking System-Phases of Development - Banking Structure in India – Public Sector Banks, Private Banks, Foreign Banks, RRB, UCB, Payment Banks and Small Finance Banks - Banking System – Branch Banking - Unit Banking - Universal Banking- Financial Inclusion

II	**Central Bank and Commercial Bank** Central Banking: Definition –Need - Principles- Central Banking Vs Commercial Banking - Functions of Central Bank – Credit Creation. Commercial Banking: Definition - Functions – Personal Banking – Corporate Banking – Digital banking – Core Banking System (CBS) - Role of Banks in Economic Development.
III	**Banking Practice** Types of Accounts CASA – Types of Deposits - Opening Bank Account- Jan Dhan Yojana - Account Statement vs Passbook vs e-statement - Banker Customer Relationship - Special Types of Customers – KYC norms. Loans & Advances –Lending Sources- Lending Principles-Types of Loans - classification of assets and income recognition / provisioning (NPA) – Repo Rate & Reverse Repo Rate - securities of lending-Factors influencing bank lending.
IV	**Negotiable Instruments Act** Negotiable Instruments – Meaning & Definition – Characteristics -Types of negotiable instruments. Crossing of Cheques– Concept - Objectives – Types of Crossing - - Consequences of Non-Crossing. Endorsement - Meaning-Components-Kinds of Endorsements-Cheques payable to fictitious person Endorsement by legal representative –Negotiation bank-Effect of endorsement-Rules regarding Endorsement. Paying banker - Banker's duty - Dishonouring of Cheques- Discharge by paying banks - Payments of a crossed cheque - Refusal of cheques Payment. Duties of Collecting Banker-Statutory protection under section 131-Collecting bankers' duty –RBI instruction –Paying Banker Vs Collecting Banker- Customer Grievances-Grievance Redressal –Banking Ombudsman.
V	Digital Banking Meaning- Services - e-banking and financial services- Initiatives-Opportunities - Internet banking Vs Traditional Banking Mobile banking–Anywhere Banking-Any Time Banking- Electronic Mobile Wallets. ATM – Concept - Features - Types-. Electronic money-Meaning-Categories-Merits of e-money - National Electronic Funds Transfer (NEFT), RTGS, IMPS, UPI and Digital currency – Differences - Safety and Security in Digital Banking.

Course Outcomes	
CO1	Aware of vvarious provision of Banking Regulation Act 1949 applicable to banking companies including cooperative banks
CO2	Analyse the evolution of Central Banking concept and prevalent Central Banking system in India and their roles and function
CO3	Gain knowledge about the Central Bank in India, its formation, nationalizing its organization structure, role of bank to government, role in promoting agriculture and industry, role in financial inclusion
CO4	Evaluate the role of capital fund of commercial banks, objectives and process of Asset securitization etc
CO5	Define the practical banking systems relationship of bankers and customers, crossing of cheques, endorsement etc.
Textbooks	
1	Gurusamy S, Banking Theory: Law and Practice, Vijay Nicole Publication, Chennai
2	Muraleedharan, Modern Banking: Theory and Practice, Prentice Hall India Learning Private Ltd, New Delhi
3	Gupta P.K. Gordon E.Banking and Insurance, Himalaya publication, Kolkata
4	Gajendra,A Text on Banking Theory Law & Practice, Vrinda Publication, Delhi
5	K P Kandasami, S Natarajan & Parameswaran, Banking Law and Practice, S Chand publication, New Delhi
Reference Books	
1	B. Santhanam, Banking & Financial System, Margam Publication, Chennai
2	KataitSanjay, Banking Theory and Practice, Lambert Academic Publishing,
3	Henry Dunning Macleod, The Theory And Practice Of Banking, Hard Press Publishing, Old New Zealand
4	William Amasa Scott, Money And Banking: An Introduction To The Study Of Modern Currencies, Kesinger publication, USA

5	NektariosMichail, Money, Credit, and Crises: Understanding the Modern Banking System, Palgrave Macmillan, London
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1	https://www.rbi.org.in/
2	https://businessjargons.com/e-banking.html
3	https://www.wallstreetmojo.com/endorsement/

MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	3	2	3	2	2	2	3	3	2
CO2	3	2	2	2	3	2	2	2	3	3	2
CO3	3	2	3	2	3	2	2	2	3	3	2
CO4	3	2	2	2	3	2	2	2	3	3	2
CO5	3	2	3	2	3	2	2	2	3	3	2
TOTAL	15	10	13	10	15	10	10	10	15	15	10
AVERAGE	3	2	2.6	2	3	2	2	2	3	3	2

3 – Strong, 2- Medium, 1- Low

THIRD YEAR – SEMESTER - V

CORE – XI: INCOME TAX LAW AND PRACTICE- I

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23C445C	5				4	5	25	75	100

Learning Objectives	
LO1	To understand the basic concepts & definitions under the Income Tax Act,1961.
LO2	To compute the residential status of an assessee and the incidence of tax.
LO3	To compute income under the head salaries.
LO4	To learn the concepts of Annual value, associated deductions and the calculation of income from House property.
LO5	To compute the income from Business & Profession considering its basic principles & specific disallowances.

Prerequisite: Should have studied Commerce in XII Std

Unit	Contents
I	**Introduction to Income Tax** Introduction to Income Tax – History – Objectives of Taxation - Features of Income Tax – Meaning of Income – Types – Important Definitions Under the Income Tax Act –Types of Assessee – Income exempted under Section 10.
II	**Residential Status** Residential Status – Residential Status of an Individual – Company – HUF – Basic Conditions – Additional Conditions – Incidence of Tax and Residential Status – Problems on Residential Status and Incidence of Tax.

III	**Income from Salary** Salary Income - Definition – Allowances –Taxability - Perquisites – Kinds of Perquisites –Types of Provident Fund - Gratuity – Pension – Commutation of Pension – Deduction of Salary - Profits in Lieu of Salary - Computation of Salary Income .
IV	**Income from House Property** Income from House Property –Basis of Charge – Annual Value – Gross Annual Value, Net Annual Value - Let-out vs Deemed to be let out Self-Occupied Property – Deductions – Computation of Income from House Property.
V	**Profits and Gains from Business or Profession** Income from Business or Profession – Allowable Expenses – Expenses Disallowed - General Deductions – Depreciation – Undisclosed Income & Investments, Unexplained expenditure (Sec 69A, 69B, 69C, 69D) – Compulsory Maintenance of Books of Accounts – Audit of Accounts of Certain Persons – Special Provisions for Computing Incomes on Estimated Basis (Deemed Income) – Computation of Income from Business or Profession.
Course Outcomes	
THEORY 20% & PROBLEMS 80%	
CO1	Demonstrate the understanding of the basic concepts and definitions under the Income Tax Act.
CO2	Assess the residential status of an assessee& the incidence of tax.
CO3	Compute income of an individual under the head salaries.
CO4	Ability to compute income from house property.
CO5	Evaluate income from a business carried on or from the practice of a Profession.
Textbooks	
1	V.P. Gaur, Narang, Puja Gaur and Rajeev Puri - Income Tax Law and Practice, Kalyani Publishers, New Delhi.
2	T.S. Reddy and Hariprasad Reddy, Income Tax Law and Practice, Margham Publications, Chennai.

3	DinkarPagare, Income Tax Law and Practice, Sultan & Chand Sons, New Delhi.
4	H.C. Mehrotra, Dr.Goyal S.P, Income Tax Law and Accounts, Sahitya Bhavan Publications, Agra.
5	T. Srinivasan – Income Tax & Practice –Vijay Nicole Imprints Private Limited , Chennai.
Reference Books	
1	Hariharan N, Income Tax Law & Practice, Vijay Nicole Imprints Pvt. Ltd. Chennai
2	Bhagwati Prasad, Income Tax Law and Practice, Vishwa Prakasan. New Delhi.
3	Vinod K. Singhania, Students Guide to Income Tax.,U.K.Bharghava Taxman.
4	Dr.Vinod K Singhania, Dr. Monica Singhania, Taxmann's Students' Guide to Income Tax, New Delhi.
5	Mittal Preethi Rani and Bansal Anshika, Income Tax Law and Practice, Sultan & Chand Sons, New Delhi.
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1	https://cleartax.in/s/residential-status/
2	https://www.legalraasta.com/itr/income-from-salary/
3	https://taxguru.in/income-tax/income-house-properties.html

3 – Strong, 2- Medium, 1- Low

MAPPING WITH PROGRAMME OUTCOMES
AND PROGRAMME SPECIFIC OUTCOMES

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PSO1**	**PSO2**	**PSO3**
CO1	3	2	3	2	3	2	2	2	3	3	2
CO2	3	2	2	2	2	2	2	2	3	2	2
CO3	3	3	3	2	3	2	2	2	3	3	2
CO4	3	2	2	2	2	2	2	2	3	3	2
CO5	3	3	3	2	3	2	2	2	3	2	2
TOTAL	15	12	13	10	13	10	10	10	15	13	10
AVERAGE	3	2.2	2.6	2	2.6	2	2	2	3	2.6	2

THIRD YEAR – SEMESTER – V

CORE –XII : AUDITING & CORPORATE GOVERNANCE

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23C445D	5				4	5	25	75	100

Learning Objectives	
LO1	To enable students to understand process of auditing and its classification.
LO2	Toimpart knowledge on internal check and internal control.
LO3	To illustrate the role of auditors in company.
LO4	To help students understand the framework, theories and models of Corporate Governance.
LO5	To provide insights into the concept of Corporate Social Responsibility

Prerequisite: Should have studied Commerce in XII Std

Unit	Contents
I	**Introduction to Auditing** Meaning and Definition of Auditing –Distinction between Auditing and Accounting – Objectives – Advantages and Limitations of Audit – Scope of Audit – Classifications of Audits – Audit of For Profit enterprises and Non–profit Organizations
II	**Audit Procedures and Documentation** Audit Planning – Audit Programme – Procedures - Internal Audit - Internal Control – Internal Check System – Vouching – Cash and Trade Transactions - Verification of Assets and Liabilities and its Valuation
III	**Company Auditor** Appointment and Removal of Auditors – Rights, Duties and Liabilities of Auditor –Audit Report - Recent Trends in Auditing - Information Systems Audit (ISA) – Auditing around the computer – Auditing through the computer - e-audit tools.

IV	**Introduction to Corporate Governance** Conceptual Framework of Corporate Governance: Theories & Models, Broad Committees - Corporate Governance Reforms. Major Corporate Scandals in India and Abroad: Common Governance Problems Noticed in various Corporate Failures. Introduction to Environment, Social and Governance (ESG - Code of Conduct – Directors and Auditors
V	**Corporate Social Responsibility** Concept of CSR, Corporate Philanthropy, Strategic Relationship of CSR with Corporate Sustainability - CSR and Business Ethics, CSR and Corporate Governance - CSR Provisions under the Companies Act, 2013 (Section 135 schedule – VII). – CSR Policy Rules

Course Outcomes	
CO1	Define auditing and its process.
CO2	Compare and contrast essence of internal check and internal control.
CO3	Identify the role of auditors in companies.
CO4	Define the concept of Corporate Governance.
CO5	Appraise the implications of Corporate Social Responsibility
Textbooks	
1	Dinkar Pagare, Principles and Practice of Auditing, Sultan Chand & Sons, New Delhi
2	B. N. Tandon, S. Sudharsanam&S.Sundharabahu, Practical Auditing, S.Chand& Sons New Delhi.
3	Dr.T.R. Sharma, Dr. Gaurav Sankalp, Auditing & Corporate Governance, Sahithya Bhawan Publications, Agra
4	ArunaJha, Auditing & Corporate Governance, Taxmann Publication Pvt. Ltd, New Delhi.
Reference Books	
1	Kevin Keasey, Steve Thompson & Mike wright, Governance & Auditing, Emerald Group Publishing Limited, Bingley
2	Dr.T.R. Sharma, Auditing, Sahithya Bhawan Publications, Agra
3	C.B.Gupta, NehaSinghal, Auditing & Corporate Governance, Scholar Tech Press, New Delhi.
4	Shri. Vengadamani, Practical Auditing, Margham Publication, Chennai.
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1	https://www.wallstreetmojo.com/audit-procedures/
2	https://theinvestorsbook.com/company-auditor.html

3	https://www.investopedia.com/terms/c/corp-social-responsibility.asp

MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	3	2	3	2	3	3	3	3	2
CO2	3	2	2	2	2	2	2	2	3	2	2
CO3	3	3	3	2	3	2	3	3	3	3	2
CO4	3	2	2	2	2	2	2	2	3	3	2
CO5	3	3	3	2	3	2	3	3	3	2	2
TOTAL	15	12	13	10	13	10	13	13	15	13	10
AVERAGE	3	2.2	2.6	2	2.6	2	2.6	2.6	3	2.6	2

3 – Strong, 2- Medium, 1- Low

THIRD YEAR – SEMESTER – V

DISCIPLINE SPECIFIC ELECTIVE – 1 / 2 : Operation Research

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23E445A	4				3	4	25	75	100

Learning Objectives	
LO1	To introduce the students to operations research and linear programming.
LO2	To impart knowledge about transportation and assignment problems.
LO3	To get acquainted with game theory and simulation.
LO4	To develop abilities to analyse and manage inventories using various methods.
LO5	To acquire knowledge on network analysis.

Prerequisite: Should have studied Statistics in 1st year B.Com.

UNIT	Contents
I	**Introduction to Operations research and Linear Programming Problem** Operations research – Origin and development - Role in decision making - Phases and approaches to OR - Linear programming problem – Applications and limitations - Formulation of LPP - Optimal Solution to LPP - Graphical method - Simplex Method
II	**Transportation and Assignment problem** Transportation Problem – methods - North West corner method - Least cost method - Vogel's approximation method - Moving towards optimality - Stepping stone & MODI methods - Assignment problem

III	**Game Theory and Simulation** Game Theory- different strategies followed by the players in a game - Optimal strategies of a game using maxi-min criterion - Dominance property - Graphical method - Simulation
IV	**Inventory Management** Introduction to inventory systems, inventory classification. Economic order quantity (EOQ) model, Single period probabilistic inventory models with discrete and continuous demand, determination of reorder point for deterministic and probabilistic Inventory System. Basic concepts of Just-in-Time (JIT) and Material Requirement Planning (MRP)
V	**Network Analysis** Network models- CPM and PERT Determination of Critical Path Method (CPM)- PERT cost- Crashing a project- Scheduling of a project- Application of PERT and CPM.
CO	**Course Outcomes**
CO1	Frame a linear programming problem for quantitative decisions in business planning.
CO2	Optimise economic factors by applying transportation and assignment problems.
CO3	Apply the concept of game theory and simulation for optimal decision making.
CO4	Analyse and manage inventories to meet the changes in market demand.
CO5	Construct networks including PERT, CPM for strategic management of business projects.
Textbooks	
1.	C.R.Kothari, “Quantitative Techniques”, Vikas Publications, Noida
2.	V.K. Kappor, "Operations Research - Problems and Solutions", Sultan Chand & Sons Publisher, New Delhi
3.	Anand Sharma, Operation Research, Himalaya Publishing House, 2014, Mumbai

4.	M Sreenivasa Reddy, Operation Research, CENGAGE, New Delhi
5.	S. Gurusamy, Elements of Operation Research, Vijay Nicole Imprints Private Limited
Reference Books	
1.	S Kalavathy, Operations Research, Vikas Publications, Noida
2.	S.P. Gupta, "Statistical Methods", S.Chand& Sons Publisher, New Delhi. 2019
3.	Sarangi, SK Applied Operations Research and Quantitative Methods, Himalaya Publishing House, 2014, Mumbai
4.	ND Vohra, Quantitative Techniques in Management, McGraw Hill, 6th Edition, New Delhi 2021
5.	P.R.Vittal - Operation Research, Margham Publications, Chennai
Web Resources	
1.	www.orsi.in
2.	www.learnaboutor.co.uk
3.	www.theorsociety.com

MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	3	2	2	2	2	2	3	2	2
CO2	3	2	3	2	2	2	2	2	3	2	2
CO3	3	2	3	2	3	2	2	2	3	2	2
CO4	3	1	3	2	3	2	2	2	3	2	2
CO5	3	3	3	2	3	2	2	2	3	2	2
TOTAL	15	11	15	10	13	10	10	10	15	10	10
AVERAGE	3	2.2	3	2	2.6	2	2	2	3	2	2

3-Strong, 2-Medium , 1- Low

THIRD YEAR – SEMESTER - V

DISCIPLINE SPECIFIC ELECTIVE – 2 /2 :RESEARCH METHODOLOGY

Subject Code	Subject Name	Category	L	T	P	S	Credits	Inst. Hours	Marks		
									CIA	External	Total
23E445A	Research Methodology	Discipline Specific Elective 2/2	4				3	4	25	75	100

Learning Objectives	
LO1	To get introduced to research methodology
LO2	To have an overview of sampling techniques
LO3	To be familiar with testing of data
LO4	To learn procedures of statistical analysis of data
LO5	To gain knowledge about preparation of report .
Prerequisite: Should have studied Commerce in XII Std	
Unit	**Contents**
I	Introduction to research methodology – meaning and purpose – Types of Research; Research design –steps in selection & formulation of a research problem – steps in research
II	Hypothesis – Types – concept and procedures of testing of Hypothesis – sampling techniques – sampling error and sample size
III	Measurement & scaling techniques – Data collection – methods – testing validity and reliability
IV	Processing of data – Editing, coding, classification & tabulation, analysis of data – outline of statistical analysis – elements of processing through computers (Application of SPSS)
V	UNIT V (CASE STUDY) Interpretation and Report Writing – meaning & precautions in interpretation, types of reports – style &conventions in reporting – steps in drafting of report
CO	**Course Outcomes**
CO1	Acquaintance with basics of research and general introduction to Research Methodology
CO2	Outline theMeaning of Hypotheses, its types and Purpose of using sampling technique
CO3	Apply provisions of Different methods of data Collection
CO4	Summarise the Stages and steps in Processing of Data and Application of Computers for analysi

CO5	Discuss Different types of report and the methodology in writing the same
Textbooks	
1	Kothari C.R., Research Methodology, Vikas Publishing Ltd.
2	Ratan Khasnabis, SuvasisSaha – Research methodology –Universities Press (India) Private Limited, Hyderabad.
3	Shashi K. Gupta, Praneet Rangi, Research Methodology and Report writing, Kalyani Publishers
4	Kartikeya Bolar, Rajdeep Chakraborti , Amarnath Mitra, l.Shridharan – Business research and Analytics – Cengage , New Delhi
Reference Books	
1	William G.Zikmund, Barry J.Babin, Jon C.Carr, Mitch Griffin – Business Research methods - Cengage, New Delhi
2	Dr M Ranganatham, Business Research Methods, Himalayas Publishing
3	William C Emory, Business Research Methods, R.D. Irwin. Inc
4	Robert G Murdick, Business Research – Concepts & Practice, International text book Company
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1	https://research.com/research/how-to-write-research-methodology
2	https://eduvoice.in/types-research-methodology/
3	https://research-methodology.net/research-methodology/

MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PSO1**	**PSO2**	**PSO3**	**PSO4**
CO1	3	2	3	2	3	2	3	3	3	2	2	3
CO2	3	2	2	2	2	2	2	2	3	2	3	3
CO3	3	3	3	2	3	2	3	3	3	2	2	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	2	3	2	3	3	3	2	3	3
TOTAL	15	13	14	11	14	11	14	14	15	11	13	15
AVERAGE	3	2..6	2.8	2.2	2.8	2.2	2.8	2.8	3	2.2	2.6	3

3-Strong, 2-Medium , 1- Low

THIRD YEAR – SEMESTER - V

DISCIPLINE SPECIFIC ELECTIVE – 3 /4 :SOFTWARE ENGINEERING AND UML LAB

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23E445B	2		2		3	4	25	75	100

Learning Objectives	
LO1	To introduce the software development life cycles
LO2	To introduce concepts related to structured and objected oriented analysis & design co
LO3	To provide an insight into UML and software testing techniques

Prerequisite: Should have studied Commerce in XII Std

Unit	Contents
I	Introduction – Evolution – Software Development projects – Emergence of Software Engineering.Software Life cycle models – Waterfall model – Rapid Application Development – Agile Model – SpiralModel
II	Requirement Analysis and Specification – Gathering and Analysis – SRS – Formal System Specification
III	Software Design – Overview – Characteristics – Cohesion & Coupling – Layered design – Approaches Function Oriented Design – Structured Analysis – DFD – Structured Design – Detailed design
IV	Object Modeling using UML – OO concepts – UML – Diagrams – Use case, Class, Interaction, Activity, State Chart – Postscript
V	Coding & Testing – coding – Review – Documentation – Testing – Black-box, White-box, Integration, OO Testing, Smoke testing.

Course Outcomes	
CO1	The students should be able to specify software requirements, design the software using tools
CO2	To write test cases using different testing techniques.

Textbooks	
1	Rajib Mall, “Fundamentals of Software Engineering”, PHI 2018, 5th Edition.
2	Roger S. Pressman, “Software Engineering - A Practitioner’s Approach”, McGraw Hill 2010, 7thEdition.
Reference Books	
1	Pankaj Jalote, “An Integrated Approach to Software Engineering”, Narosa Publishing House 2011,3rd Edition.
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1	NPTEL online course – Software Engineering - https://nptel.ac.in/courses/106105182/

UML Lab **Common for both Electives in semester V**	**Core - Core -S5EC1/2L**
Credits 4	**Lecture Hours:5 per week**

Learning Objectives: (for teachers: what they have to do in the class/lab/field)

- To get familiarized to the usage of UML tool kit.
- To understand the requirements of the software and to map them appropriately to subsequent phases of the software development
- To develop the ability to verify and validate their designs

Course Outcomes: (for students: To know what they are going to learn)

CO1: Students must be able to analyse and design the problem at hand.
CO2: Students should be able to use UML tools for the designing the software and test thecorrectness and soundness of their software through testing tools.

LIST OF PRACTICALS
Using UML tools produce analysis and design models for a. Library Management System b. Automatic Teller Machine c. Student Information Management d. Matrimony Service

e. Stock Management System

Extended Professional Component	Questions related to the above topics, from various competitive examinations UPSC / TRB / NET / UGC – CSIR / GATE / TNPSC / others to be solved (To be discussed during the Tutorial hour)
Skills acquired from the Course	Knowledge, Problem Solving, Analytical ability, Professional Competency, Professional Communication and Transferrable Skill

Extended Professional Component	Questions related to the above topics, from various competitive examinations UPSC / TRB / NET / UGC – CSIR / GATE / TNPSC / others to be solved (To be discussed during the Tutorial hour)
Skills acquired from the Course	Knowledge, Problem Solving, Analytical ability, Professional Competency, Professional Communication and Transferrable Skill

Learning Resources:

Recommended Texts

1. Roger D. Peng," R Programming for Data Science ", 2012
2. Norman Matloff,"The Art of R Programming- A Tour of Statistical Software Design", 2011

Reference Books

1. Garrett Grolemund, Hadley Wickham,"Hands-On Programming with R: Write Your Own Functions and Simulations" , 1st Edition, 2014
2. Venables ,W.N.,andRipley,"S programming", Springer, 2000.

THIRD YEAR – SEMESTER – V

DISCIPLINE SPECIFIC ELECTIVE – 4 /4 :Cryptography & Network Security

Subject code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23E445B	4				3	4	25	75	100

Learning Objectives	
LO1	To understand on the security trends
LO2	To apply the mathematical symmetric key cryptography
LO3	To analyze the mathematics of asymmetric key cryptography
LO4	To imply the authentication requirements
LO5	To understand election mail survey and firewall

Prerequisite: Should have studied Commerce in XII Std

Unit	Contents
I	Security trends – Legal, Ethical and Professional Aspects of Security, Need for Security at Multiple levels, Security Policies – Model of network security – Security attacks, services and mechanisms – OSI security architecture – Classical encryption techniques: substitution techniques, transposition techniques, steganography- Foundations of modern cryptography: perfect security – information theory – product cryptosystem – cryptanalysis.
II	Mathematics of Symmetric Key Cryptography: Algebraic structures – Modular arithmetic-Euclid‟s algorithm- Congruence and matrices -Groups, Rings, Fields- Finite fields- SYMMETRIC KEY CIPHERS: SDES – Block cipher Principles of DES – Strength of DES – Differential and linear cryptanalysis – Block cipher design principles – Block cipher mode of operation – Evaluation criteria for AES – Advanced Encryption Standard – RC4 – Key Distribution.
III	Mathematics of Asymmetric Key Cryptography: Primes – Primality Testing –Factorization – Euler‟s totient function, Fermat‟s and Euler‟s Theorem – Chinese Remainder Theorem – Exponentiation and logarithm – ASYMMETRIC KEY CIPHERS: RSA cryptosystem – Key distribution – Key management – Diffie Hellman key exchange -ElGamal cryptosystem – Elliptic curve arithmetic-Elliptic curve cryptography.
IV	Authentication requirement – Authentication function – MAC – Hash function – Security of hash function and MAC – SHA –Digital signature and authentication protocols – DSS- Entity Authentication: Biometrics, Passwords, Challenge Response protocols- Authentication applications – Kerberos, X.509

V	Electronic Mail security – PGP, S/MIME – IP security – Web Security – SYSTEM SECURITY: Intruders – Malicious software – viruses – Firewalls.
	TOTAL
CO	**Course Outcomes**
CO1	Remember the security trends in cryptography and network security
CO2	Enumerate the algebra structures
CO3	Apply and analyze the key distribution of mathematical of asymmetrical key
CO4	Implication of authentication requirement and functions
CO5	Describe the electronic mail security and web security system
Textbooks	
1	William Stallings, "Cryptography And Network Security – Principles and Practices", Prentice Hall of India, Third Edition, 2003.
2	Atul Kahate, "Cryptography and Network Security", Tata McGraw-Hill, 2003.
3	Bruce Schneier, "Applied Cryptography", John Wiley & Sons Inc, 2001.
Reference Books	
1	Charles B. Pfleeger, Shari Lawrence Pfleeger, "Security in Computing", Third Edition, Pearson Education, 2003
2	William Stallings, Cryptography and Network security, Hardcover, 2016
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1	https://www.google.co.in/books/edition/Cryptography_and_Network_Security/v8nCCwAAQBAJ?hl=en&gl=in&kptab=editions&sa=X&ved=2ahUKEwiDnLTgxoP8AhXbpVYBHd18CggQmBZ6BAgBEAc
2	https://www.google.co.in/books/edition/Cryptography_And_Network_Security_4_E/qKcrce0x_2YC?hl=en&gbpv=1&dq=cryptography%20and%20network%20security&pg=PP1&printsec=frontcover
3	https://www.google.co.in/books/edition/Introduction_to_Cryptography_and_Network/JGPDxwEACAAJ?hl=en

MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PSO1**	**PSO2**	**PSO3**
CO1	3	3	3	2	3	2	3	3	3	2	2
CO2	3	2	2	3	2	2	2	2	3	2	3
CO3	3	3	3	2	3	2	3	3	3	2	2
CO4	3	2	2	2	2	2	2	2	3	2	2
CO5	3	3	3	3	3	2	3	3	3	2	3
TOTAL	15	13	13	12	13	10	13	13	15	10	12
AVERAGE	3	2.6	2.6	2.4	2.6	2	2.6	2.6	3	2	2.4

3 – Strong, 2- Medium, 1- Low

THIRD YEAR – SEMESTER - VI

CORE –XIII: COST ACCOUNTING - II

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23C446A	6				4	6	25	75	100

Learning Objectives	
LO1	To understand the standards in Cost Accounting
LO2	To know the concepts of contract costing.
LO3	To be familiar with the concept of process costing.
LO4	To learn about operation costing.
LO5	To gain insights into standard costing.

Prerequisite: Should have studied Cost Accounting in V Sem

Unit	Contents
I	**Cost Accounting Standards** An Introduction to CAS – Purpose of CAS – Advantages of CAS – Difference between CAS and FAR Regulations – Different Degrees of CAS Coverage – Cost Accounting Standards - Responsibility Accounting and Divisional Performance Measurement.
II	**Job Costing, Batch Costing and Contract Costing** Definitions - Features - A Comparison - Calculation of Profit on Contracts – Cost Plus Contract - Preparation of Contract A/c.
III	**Process Costing** Process Costing – Meaning – Features of Process Costing – Application of Process Costing – Fundamental Principles of Process Costing – Preparation of Process Accounts - Treatment of Loss and Gain : Normal and Abnormal Loss - Abnormal Gain - Concept of Equivalent Production - Joint Products and By Products.
IV	**Operation Costing** Operation Costing – Meaning – Preparation of Operating Cost Sheet – Transport Costing – Power Supply Costing–Hospital Costing–Simple Problems.

V	**Standard Costing and Variance Analysis** Definition – Objectives – Advantages – Standard Cost and Estimated Cost – Installation of Standard Costing System – Variance Analysis – Material, Labour, Overhead, and Sales Variances – Calculation of Variances.
THEORY 20% & PROBLEMS 80%	
Course Outcomes	
CO1	Remember and recall standards in cost accounting
CO2	Apply the knowledge in contract costing
CO3	Analyze and assimilate concepts in process costing
CO4	Understand various bases of classification cost and prepare operating cost statement.
CO5	Set up standards and analyse variances.
Textbooks	
1	Jain S.P. and Narang K.L. Cost Accounting. Kalyani Publishers. New Delhi.
2	Khanna B.S., Pandey I.M., Ahuja G.K., and Arora M.N., Practical Costing, S Chand & Co, New Delhi.
3	Dr.S.N. Maheswari, Principles of Cost Accounting, Sultan Chand publications, New Delhi.
4	T.S. Reddy and Y. Hari Prasad Reddy, Cost Accounting, Margham publications, Chennai.
5	S.P. Iyengar, Cost Accounting, Sultan Chand Publications, New Delhi.
Reference Books	
1	Polimeni, Cost Accounting: Concepts and Applications for Managerial Decision Making, New York, McGraw–Hill, Noida.
2	Jain S.P. and Narang K.L. Cost Accounting, Kalyani Publishers, New Delhi.
3	V.K.Saxena and C.D. Vashist, Cost Accounting, Sultan Chand publications, New Delhi.

4	Murthy A &Gurusamy S, Cost Accounting,Vijay Nicole Imprints Pvt. Ltd. Chennai.
5	Prasad. N.K and Prasad.V.K, Cost Accounting, Book Syndicate, Bangladesh.
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1	https://www.economicsdiscussion.net/cost-accounting/contract-costing/32597
2	https://www.wallstreetmojo.com/process-costing/
3	https://www.accountingnotes.net/cost-accounting/operating-costing/17755

MAPPING WITH PROGRAMME OUTCOMES
AND PROGRAMME SPECIFIC OUTCOMES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	3	3	2	3	3	3	3	3	2	2
CO2	3	3	3	2	2	3	2	2	3	2	3
CO3	3	3	3	2	3	3	3	3	3	2	2
CO4	3	3	3	2	2	3	2	2	3	2	2
CO5	3	3	3	2	3	3	3	3	3	2	3
TOTAL	15	15	15	10	13	15	13	13	15	10	12
AVERAGE	3	3	3	2	2.6	3	2.6	2.6	3	2	2.4

3 – Strong, 2- Medium, 1- Low

THIRD YEAR – SEMESTER – VI

CORE – XIV: MANAGEMENT ACCOUNTING

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23C446B	**6**				**4**	**6**	**25**	**75**	**100**
Learning Objectives									
LO1	To understand basics management accounting								
LO2	To know the aspects of Financial Statement Analysis								
LO3	To familiarize with fund flow and cash flow analysis								
LO4	To learn about budgetary control								
LO5	To gain insights into marginal costing.								
Prerequisite: Should have studied Financial Accounting in I Semester.									

Unit	Contents	No. of Hours
I	**Introduction to Management Accounting** Management Accounting – Meaning – Scope – Importance- Limitations - Management Accounting Vs Cost Accounting – Management Accounting Vs Financial Accounting. Analysis and Interpretation of Financial Statements – Nature and Significance – Types of Financial Analysis – Tools of Analysis – Comparative Statements – Common Size Statement – Trend Analysis.	**18**
II	**Ratio Analysis** Ratio Analysis: Meaning – Advantages – Limitations – Types of Ratios – Liquidity Ratios – Profitability Ratios -Turnover Ratios – Solvency Ratios – Leverage Ratios - Preparation of Financial Statements from Ratios.	**18**
III	**Funds Flow & Cash Flow Analysis** Introduction, Meaning of Funds Flow Statement-Ascertainment of Flow of Funds - Schedule of Changes in Working Capital-Adjusted Profit and Loss Account - Preparation of Funds Flow Statement. **Cash Flow Statement:** Meaning – Advantages – Limitations – Preparation of Cash Flow Statement as per AS 3 –Cash Flow from Operating, Financing and Investing activities	**18**
IV	**Budget and Budgetary Control** Meaning – Preparation of Various Budgets – Cash Budget - Flexible Budget– Production Budget – Sales Budget – Master Budget – Budgetary Control – Benefits	**18**

V	**Marginal Costing:** Meaning - Features – Marginal Costing vs Absorption Costing - Fixed Cost, Variable Cost and Semi Variable Cost- Contribution- Marginal Cost Equation- P/V Ratio - Break Even Point - Margin of Safety – Cost- Volume Profits Analysis. Decision Making: Selection of a Product Mix – Make or Buy Decision – Discontinuance of a product line – Change or Status quo – Limiting Factor or Key Factor.	**18**
	TOTAL	**90**
THEORY 20% & PROBLEMS 80%		
CO	**Course Outcomes**	
CO1	Remember and recall basics in management accounting	
CO2	Apply the knowledge of preparation of Financial Statements	
CO3	Analyse the concepts relating to fund flow and cash flow	
CO4	Evaluate techniques of budgetary control	
CO5	Formulate criteria for decision making using principles of marginal costing.	
Textbooks		
1	Jain S.P. & Narang K.L. (2018) Cost and Management Accounting, Kalyani Publications,	
2	Rds. Maheswari, Cost and Management Accounting, Sultan Chand Sons Publications, New Delhi.	
3	Sharma and Shashi K. Gupta, Management Accounting, Kalyani Publishers, Chennai.	
4	Jenitra L Mervin ,Daslton L Cecil, Management Accounting, Lerantec Press, Chennai.	
5	T.S.Reddy& Y. Hari Prasad Reddy, Management Accounting, MarghamPublications,Chennai.	
Reference Books		

1	Chadwick – The Essence of Management Accounting, Financial Times Publications, England.
2	Charles T.Horngren and Gary N. Sundem–Introduction to Management Accounting, Pearson, Chennai.
3	Murthy A and GurusamyS ,Management Accounting- Theory &Practice, Vijay Nicole Imprints Pvt. Ltd .Chennai.
4	Hansen - Mowen, Cost Management Accounting and Control, South Western College, India.
5	N.P. Srinivasan, Management Accounting, New Age publishers, Chennai.
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1	https://www.accountingnotes.net/companies/fund-flow-analysis/fund-flow-analysis-accounting/13300
2	https://accountingshare.com/budgetary-control/
3	https://www.investopedia.com/terms/m/marginalcostofproduction.asp

MAPPING WITH PROGRAMME OUTCOMES
AND PROGRAMME SPECIFIC OUTCOMES

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PSO1**	**PSO2**	**PSO3**
CO1	3	2	3	2	3	2	3	3	3	2	2
CO2	3	2	2	2	3	2	2	2	3	2	3
CO3	3	2	3	2	3	2	3	3	3	2	2
CO4	3	2	2	2	3	2	2	2	3	2	2
CO5	3	3	3	2	3	2	3	3	3	2	3
TOTAL	15	11	13	10	15	10	13	13	15	10	12
AVERAGE	3	2.1	2.6	2	2	2	2.6	2.6	3	2	2.4

3 – Strong, 2- Medium, 1- Low

THIRD YEAR – SEMESTER - VI

CORE – XV: INCOME TAX LAW AND PRACTICE - II

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23C446C	6				4	6	25	75	100

Learning Objectives	
LO1	To understand provisions relating to capital gains
LO2	To know the provisions for computation of income from other sources.
LO3	To familiarize law relating to set off and carry forward of losses and deductions from Gross Total Income.
LO4	To learn about assessment of individuals
LO5	To gain knowledge about assessment procedures.

Prerequisite: Should have studied Financial Accounting in I stSem

Unit	Contents
I	**Capital Gains** Capital Assets – Transfer – Short term vs Long term capital assets - Computation of Capital Gains – Exemption under Section 54 , 54B, 54D, 54EC, 54F, 54GA.
II	**Income From Other Sources & Clubbing of Income** Chargeability - Computation of Income from Other Sources – Deductions Allowed – Clubbing of Income – Concept
III	**Set Off and Carry Forward of Losses and Deductions From Gross Total Income** Gross Total Income vs Total Income - Provisions for Set-off and Carry Forward of Losses (Simple Problems). Deductions U/S 80C, 80CC, 80CCB, 80CCC, 80CCD, 80 CCE, 80D, 80DD, 80DDB, 80E, 80EE, 80EEA, 80EEB, 80G, 80GG, 80GGA, 80TTA, 80TTB, and 80U only.

IV	**Computation of Total Income – Individual** Computation of Total Income - Tax Liability of an Individuals (Old regime vs New regime
V	**Income Tax Authorities** Administration of Income Tax Act – Income Tax Authorities – Powers of CBDT – Powers of Income Tax Officer - Procedure for Assessment – Filing of Return – Due Dates of Filing – Voluntary Filing – Return of Loss – Belated Return – Defective Return – Signing of Return – Permanent Account Number (PAN) , e-PAN – Tax credit statement (26 AS) and Annual Information Statement (AIS).
THEORY 20% & PROBLEMS 80%	

Course Outcomes	
CO1	Remember and recall provisions on capital gains
CO2	Apply the knowledge about income from other sources
CO3	Analyse the set off and carry forward of losses provisions
CO4	Learn about assessment of individuals
CO5	Apply procedures learnt about assessment procedures.
Textbooks	
1	V.P.Gaur, Narang, Puja Gaur and Rajeev Puri- Income Tax Law and Practice, Kalyani Publishers, New Delhi.
2	T.S. Reddy and Hariprasad Reddy, Income Tax Law and Practice, Margham Publications, Chennai.
3	Dinkar Pagare, Income Tax Law and Practice, Sultan & Chand Sons, New Delhi.
4	Mehrotra H.C, Dr.Goyal S.P, Income Tax Law and Accounts, Sahitya Bhavan Publications, Agra.
5	T. Srinivasan – Income Tax & Practice –Vijay Nicole Imprints Private Limited, Chennai.

Reference Books	
1	Hariharan N, Income Tax Law & Practice, Vijay Nicole Imprints Pvt. Ltd. Chennai.
2	Bhagwati Prasad, Income Tax Law and Practice, Vishwa Prakasan, New Delhi.
3	Vinod K. Singhania, Students Guide to Income Tax., U.K. Bharghava Taxman, New Delhi.
4	Dr.Vinod K Singhania, Dr. Monica Singhania, Taxmann's Students' Guide to Income Tax, New Delhi.
5	Mittal Preethi Rani and Bansal Anshika, Income Tax Law and Practice, Sultan & Chand Sons, New Delhi.
NOTE: Latest Edition of Textbooks May be Used	

Web Resources	
1	https://www.investopedia.com/terms/c/capitalgain.asp
2	https://www.incometaxmanagement.com/Direct-Taxes/AY-2021-22/assessment/1-assessment-of-an-individual.html
3	https://www.incometax.gov.in/iec/foportal/

MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	3	2	3	2	3	3	3	2	2
CO2	3	2	2	2	2	2	2	2	3	2	3
CO3	3	3	3	2	3	2	3	3	3	2	2
CO4	3	2	2	2	2	2	2	2	3	2	2
CO5	3	3	3	2	3	2	3	3	3	2	3
TOTAL	15	12	13	10	13	10	13	13	15	10	12
AVERAGE	3	2.2	2.6	2	2.6	2	2.6	2.6	3	2	2.2

3 – Strong, 2- Medium, 1- Low

THIRD YEAR – SEMESTER – VI

DISCIPLINE SPECIFIC ELECTIVE 5/6 ENTREPRENEURIAL DEVELOPMENT

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23E446A	5				3	5	25	75	100

Learning Objectives	
LO1	To know the meaning and characteristics of entrepreneurship
LO2	To identify the various business opportunities
LO3	To understand the Process of setting up an enterprise
LO4	To gain knowledge in the aspects of legal Compliance of setting up of an enterprise
LO5	To develop an understanding of the role of MSME in economic growth

Prerequisite: Should have studied Commerce in XII Std

Unit	Contents
I	**Introduction to Entrepreneur** Meaning of Entrepreneurship – Characteristics of Entrepreneurship – Types of Entrepreneurship – Self Employment – Difference between Entrepreneurship and Employment – Meaning of Entrepreneur – Traits – Classification – Functions – Entrepreneurial Scenario in India.
II	**Design Thinking** Idea Generation – Identification of Business Opportunities – Design Thinking Process – Creativity – Invention – Innovation – Differences – Value Addition – Concept and Types – Tools and Techniques of Generating an Idea – Turning Idea into Business Opportunity.

III	**Setting up of an Enterprise** Process of Setting Up an Enterprise – Forms of an Enterprise – Sole Proprietorship – Partnership – Limited Liability Partnership Firm – Joint Stock Company – One Man partnership – Choice of Form of an Enterprise – Feasibility Study – Marketing, Technical, Financial, Commercial and Economical.
IV	**Business Model Canvas and Formulation of Project Report** Introduction – Contents of Project Report – Project Description – Market Survey – Fund Requirement – Legal Compliance of setting Up of an Enterprise – Registration – Source of Funds – Modern Sources of Funds.
V	**MSME's and Support Institutions** Government Schemes and Women Entrepreneurship – Importance of MSME for Economic Growth – MSME – Definition – Role of Government Organizations in Entrepreneurship Development – MSME DI – DIC – Khadi and Village Industries Commission – NSIC – NABARD, SICVI, SFC, SDC, EDII, EPCCB. Industrial Estates – Government Schemes – Prime Minister Employment Generation Programme – Women Entrepreneurship in India.

Course Outcomes	
CO1	Identify the various traits of an entrepreneur
CO2	Turn ideas into business opportunities
CO3	Do feasibility study before starting a project
CO4	Identify the sources of funds for funding a project
CO5	Develop an understanding about the Government schemes available for women entrepreneurs

Textbooks	
1	Jayashree Suresh, (Reprint 2017) Entrepreneurial Development, Margham Publications. Chennai.
2	Dr. C.B. Gupta &Dr. S.S. Khanka (Reprint 2014).Entrepreneurship And Small Business Management, Sultan Chand & Sons, New Delhi.

3	Charantimath Poornima, (Reprint 2014.), Entrepreneurship development-Small, Pearson Education, India.
4	RajShankar,(Reprint2016),EntrepreneurshipTheoryandPractice,VijayNicoleand Imprints Pvt. Ltd, Chennai.
5	Vasant Desai, (Reprint 2017).Dynamics of Entrepreneurial Development & Management Twenty Fourth Edition. Himalaya Publishing House. Mumbai.
Reference Books	
1	Anil kumar, Poornima, Principles of Entrepreneurial development, Newage publication, Chennai.
2	Dr.A.K.singh, Entreprenuerial development and management, Laxmi publications, Chennai.
3	Dr. R.K. Singal, Entreprenuerial development and management, S.K.Kataria publishers, New Delhi.
4	Dr. M.C. Garg, Entrepreneurial Development, New Delhi.
5	E.Gordon, K.Natrajan, Entreprenuerial development, Himalaya publishing, Mumbai.
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1.	https://www.interaction-design.org/literature/topics/design-thinking
2.	https://www.bms.co.in/steps-involved-in-setting-up-of-an-enterprise/
3.	http://www.msme.gov.in/

MAPPING WITH PROGRAMME OUTCOMES
AND PROGRAMME SPECIFIC OUTCOMES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	3	2	3	2	3	3	3	2	2
CO2	3	2	2	2	2	2	2	2	3	2	3
CO3	3	3	3	2	3	2	3	3	3	2	2
CO4	3	2	2	2	2	2	2	2	3	2	2
CO5	3	3	3	2	3	2	3	3	3	2	3
TOTAL	15	12	13	10	13	10	13	13	15	10	12
AVERAGE	3	2.2	2.6	2	2.6	2	2.6	2.6	3	2	2.4

3 – Strong, 2- Medium, 1- Low

THIRD YEAR – SEMESTER – VI

DISCIPLINE SPECIFIC ELECTIVE – 6 /6: Management Information Systems

Subject code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23E446A	5				3	5	25	75	100

Learning Objectives	
LO1	To understand the management information system
LO2	To explore the system concepts and to identify the characteristics of system
LO3	To analyse the transaction processing system
LO4	To apply the database management systems and architecture networks
LO5	To estimate the functional management information systems

Prerequisites: Should have studied Commerce in XII Std

Unit	Contents
I	Management information system: meaning – features – requisites of an effective MIS – MIS Model – components – subsystems of an MIS – role and importance – corporate planning for MIS – growth of MIS in an organization – centralization vs decentralization of MIS. Support – Limitations of MIS.
II	System concepts – elements of system – characteristics of a system – types of system – categories of information system – system development life cycle – system enhancement.
III	Information systems in business and management: Transaction processing system: Information repeating and executive information system.
IV	Database management systems – conceptual presentation – client server architectures networks.
V	Functional management information system: Financial – accounting – marketing – production – Human resource – business process outsourcing.

THEORY 20% & PROBLEMS 80%

CO	Course Outcomes
CO1	Paraphrase the characteristics of Management information system
CO2	Describe the elements and characteristics of system
CO3	Enumerate the application of information system in business
CO4	Explain the database management system
CO5	Elaborate the functional management information system in financial, accounting, marketing and production.
Textbooks	
1	Gordon B. Davis And MaggretheH .Olson , Management Information Systems , Mc Graw Hill International Edition - Second Edition , 1998
2	RoberG .Mudrick , Joel E . Ross And James R .ClAGGET , Information Systems For Modern Management , 33Rd Edition , 1992 , Prentice Hall Of India (P) Ltd ., Eastern Economy Edition .
3	Jerome Kanter Management Information Systems, 3 Edition , 1990 . Prentice Hall Of India Ltd. ,Eastern Economy Edition
Reference Books	
1	James A. O'Brien, Management information systems, McGraw Hill, 2002
2	Bagchi Nirmalya, Management Information systems, Vikas Publications, 2010
3	Indrajit Chattarjee, Management information systems, PHI Learning, 2010
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1	https://www.google.co.in/books/edition/Management_Information_Systems/RTZDDAAAQBAJ?hl=en&gbpv=1&dq=management%20information%20system&pg=PR4&printsec=frontcover
2	https://www.google.co.in/books/edition/MANAGEMENT_INFORMATION_SYSTEMS/DOi2meoOKWsC?hl=en
3	https://www.google.co.in/books/edition/Management_Information_Systems_Manageria/ZaNDDAAAQBAJ?hl=en&gbpv=1&dq=management%20information%20system&pg=PP1&printsec=frontcover

MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1	3	2	3	2	3	2	3	3	3	2	2
CO2	3	2	2	2	2	2	2	2	3	2	3
CO3	3	3	2	2	3	2	3	3	3	2	2
CO4	3	2	2	2	2	2	2	2	2	2	2
CO5	3	3	3	2	3	2	3	3	3	2	3
TOTAL	15	12	12	10	13	10	13	13	14	10	12
AVERAGE	3	2.4	2.4	2	2.6	2	2.6	2.6	2.8	2	2.4

3 – Strong, 2- Medium, 1- Low

THIRD YEAR – SEMESTER - VI

DISCIPLINE SPECIFIC ELECTIVE – 7 / 8: R LANGUAGE

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23E446B		2	3		3	5	25	75	100

Learning Objectives	
LO1	Acquire programming skills in core R Programming
LO2	Acquire Object-oriented programming skills in R Programming.
LO3	Develop the skill of designing graphical-user interfaces (GUI) in R Programming
LO4	Acquire R Programming skills to move into specific branches

Prerequisite: Should have studied Commerce in XII Std

	List of Exercises	

	1. Data In R 2. Reading And Writing Data 3. R And Databases 4. Dates 5. Factors 6. Subscribing 7. Character Manipulation 8. Data Aggregation 9. Reshaping DataBasics 10. The R Environment 11. Probability And Distributions 12. Descriptive Statistics and Graphics 13. One- And Two-Sample Tests 14. Regression And Correlation 15. Analysis Of Variance And The Kruskal–Wallis Test 16. Tabular Data 17. Power And The Computation Of Sample Size 18. Advanced Data Handling 19. Multiple Regression 20. Linear Models 21. Logistic Regression 22. Survival Analysis 23. Rates And Poisson Regression 24. Nonlinear Curve Fitting	
TOTAL		

Course Outcomes	
CO1	To understand the problem solving approaches
CO2	To learn the basic programming constructs in R Programming
CO3	To practice various computing strategies for R Programming -based solutions to real world problems
CO4	To use R Programming data structures - lists, tuples, dictionaries.
CO5	To do input/output with files in R Programming

THIRD YEAR – SEMESTER - VI
DISCIPLINE SPECIFIC ELECTIVE – 8 / 8: PRACTICAL TALLY

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23E446B		2	3		3	5	25	75	100
Learning Objectives									
LO1	Examination of general accounting applications as they apply to computerized financial records for eachstep of the accounting cycle to the completion of financial statements, as well as managementaccounting applications.								
Prerequisite: Should have studied Commerce in XII Std									
	List of Exercises								

	1. Preparation of Trial Balance - preparation of profit and loss accounts, Balance sheet 2. Interest simple, compound interest calculation. Setting ledger master,Interest report. 3. Receivable and payable management, meaning activating bill wise details, alltypes of entries 4. Cost Centres and Category summary, cost centre breakup ledgers and group breakup outstanding receivable and payable, interest receivable and payable,statistics, cash and fund flow daybook list of account reversing journals,optional vouchers. 5. Budget Budgetary control creation of budget, group budget Budgetary ledgercreation alteration of budget deletion of budget. 6. Introduction to GST, Getting started with GST, Transferring Input tax to GST,Interest supply of goods, GST reports 7. Recording advance entries, Exports, Imports, Exempted Goods, Adjustment andReturn filing, GST tax payments 8. Electronic Commerce Introduction, Tax Collected at Source (TCS), Proceduresfor E-commerce Operator, Input Tax Credit: - Introduction, Important Points, InputService Distributors 9. Matching of Input Tax Credit, Returns, GSTR-2, Other Taxable Persons, AnnualReturn, Overview of the IGST Act, Overview, Other Provisions. 10. GST Portal, Introduction, GST Eco-system, GST Suvidha Provider (GSP), UploadingInvoices	
TOTAL		
Course Outcomes		
CO1	input journal entries, adjust entries and prepare financial statements for cash and accrual-based businesses	
CO2	record vendor, customer, and inventory transactions essential for maintaining accounts payable,accounts receivable, and inventory subsidiary ledgers	

THIRD YEAR – SEMESTER - VI

PROFESSIONAL COMPETENCY SKILL
GENERAL AWARENESS FOR COMPETITIVE EXAMINATION

Subject Code	L	T	P	S	Credits	Inst. Hours	Marks		
							CIA	External	Total
23446SA	2				2	2	25	75	100

Learning Objectives	
LO1	To create the opportunity for learning across different disciplines and builds experience for students as they grow into lifelong learners.
LO2	To build experiences for students as they grow into lifelong learners.
LO3	To know the basic concepts of various discipline

Prerequisites: Should have studied Commerce in XII Std

UNIT	Details
I	**Indian Polity** Basics concepts- Three organs of Indian government (Executives, Legislature, Judiciary), Introduction to Indian Constitution – Salient features of constitution, Preamble, Fundamental rights, Fundamental duties, Directive Principles of State policy, Types of Majority, Amendments to the Constitution, Basic structure Doctrine, Division of subjects between the union and the states local Governance, Elections in India and Election Commission, CAG.
II	**Geography** Major oceans of the world –Important Canals – Gulfs – Straits and passes – Indian Rivers and its Tributaries – Climatology – Atmosphere, Wind systems, Clouds systems, World climatic classification – Indian climate – Indian Monsoon – Indian's physical features, Indian Soil types and Distribution – Importance Trade routes and projects, Indian naturals vegetation – Indian agriculture- Major crops and its distribution, Indian Industries and its Distribution.

III	**Economy** National Income – Inflation – Money and Banking - Agriculture in India – Union Budget – Planning in India – Poverty – Unemployment – Inclusive Development and Development issues – Industrial polices – Financial Markets.
IV	**History** Modern India – formation of Indian National Congress – Morley Minto Reforms, Revolutionary activities – World War I and India's Response – Home Rule league – Montague Chelmsford reforms – Rowlett Act – Non –Cooperation Movement – Simon commission and Nehru Report – Civil Disobedience Movement and Round Table conferences – Quit India Movement and Demand for Pakistan – Cabinet Mission – Formation of Constituents Assembly and partition of India.
V	**Environment and Ecology** Basic concepts – Ecology, Biodiversity- Food chain and food web – Bio Geo Chemical Cycles – International Bio Diversity organisations- International Conventions – Conferences and Protocol – Indian Environmental laws and Environment Related organisation

Course Outcomes	
CO1	Develop board knowledge of the different components in polity
CO2	Understand the Geographical features across countries and in India
CO3	Acquire knowledge on the aspects of Indian Economy
CO4	Understand the significance of India's Freedom Struggle
CO5	Gain knowledge on Ecology and Environment

Textbooks	
1	Class XI and XII NCERT Geography
2	History – Old NCERT'S Class XI and XII

Reference Books	
1	M. Laxmi Kant (2019), Indian polity, McGraw- Hill
2	Ramesh Singh (2022), Indian Economy, McGraw - Hill
3	G.C Leong, Physical and Human Geography, Oxford University Press
4	Majid Hussain- India Map Entries in Geography, GK Publications Pvt, Ltd.
NOTE: Latest Edition of Textbooks May be Used	
Web Resources	
1	https://www.freebookkeepingaccounting.com/using-excel-in-accounts
2	https://courses.corporatefinanceinstitute.com/courses/free-excel-crash-course-for-finance
3	https://www.youtube.com/watch?v=Nv_Nnw01FaU