B.Com (Computer Applications)
I, II, III & IV Semester Syllabus
(CBCS)

(w.e.f. 2026–2027)

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FACULTY OF COMMERCE
TELANGANA UNIVERSITY
NIZAMABAD – 503 322 TELANGANA

2026

(Applicable to the batch of students admitted in the academic year 2026-2027 onwards)

B.COM (Computer Applications)
CBCS COURSE STRUCTURE w.e.f. 2026-2027

SL.No.	*Code*	*Course Title*	*HPW*	*Credits*	*Exam Hrs*	*Marks*
(1)	(2)	(3)	(5)	(6)	(7)	(8)
		SEMESTER – I				
1.	AEC1	English (First Language)	4	4	3 hrs	80U+20I
2.	SLS1	Second Language	4	4	3 hrs	80U+20I
3.	MJR101	Financial Accounting–I	5	5	3 hrs	80U+20I
4.	MJR102	Business Organization and Management	5	5	3 hrs	80U+20I
5.	MJR103	Fundamentals of Information Technology	3T+4P (5)	5	3hrs	50T+35P + 15I
		Total	**23**	**23**		
		SEMESTER – II				
6.	AEC2	English (First Language)	4	4	3 hrs	80U+20I
7.	SLS2	Second Language	4	4	3 hrs	80U+20I
8.	MJR201	Financial Accounting–II	5	5	3 hrs	80U+20I
9.	MJR202	Business Laws	5	5	3 hrs	80U+20I
10.	MJR203	Programming with C & C++	3T+4P (5)	5	3hrs	50T+35P + 15I
		Total	**23**	**23**		
		SEMESTER – III				
11.	AEC3	English (First Language)	4	4	3 hrs	80U+20I
12.	SLS3	Second Language	4	4	3 hrs	80U+20I
13.	MJR301	Advanced Accounting	5	5	3 hrs	80U+20I
14.	MJR302	Business Statistics-I	5	5	3 hrs	80U+20I
15.	MJR303	Relational Database Management System	3T+4P (5)	5	3hrs	50T+35P + 15I
		Total	**23**	**23**		
		SEMESTER – IV				
16.	AEC4	English (First Language)	4	4	3 hrs	80U+20I
17.	SLS4	Second Language	4	4	3 hrs	80U+20I
18.	MJR401	Income Tax	5	5	3 hrs	80U+20I
19.	MJR402	Business Statistics-II	5	5	3 hrs	80U+20I
20.	MJR403	Web Technologies	3T+4P (5)	5	3hrs	50T+35P+ 15I
		Total	**23**	**23**		
		SEMESTER – V				
21.	MJR501	**a)** Cost Accounting/ **b)** Business Economics/ **c)** Management Information Systems	5	5	3 hrs	80U+20I
22.	MJR502	**a)** Business Ethics & Corporate Governance/ b) Auditing **c)** Mobile Applications	3T+4PR (5)	5	3 hrs	80U+20I 80U+20I 50T+35P+ 15I/
23.	MDC503 (Offered to other Students)	a) Introduction to Accounting b) Principles of Management	4	4	3 hrs	80U+20I
24.	SEC1	a) Entrepreneurship & Startups b) Communication Skills/ c) Professional Development Skills	2	2	2 hrs	40U+10I

25.	SEC2	a) Professional Development Skills b) Entrepreneurship & Startups c) Communication Skills/	2	2	2 hrs	40U+10I
26.	VAC1	a) Environmental Science/ b) Cyber Security & Laws	2	2	2 hrs	40U+10I
		Total	**20**	**20**		
		SEMESTER – VI				
27.	MJR601	**a) Management Accounting/** **b)** Ecommerce c**)** Multimedia Systems	5	5	3 hrs	80U+20I
28.	MJR602	a) Theory and Practice of GST **b)** Management Information System **c)** Data Analytics	3T+4P (5)	5	3hrs	50T+35P + 15I
29.	RMP603	Research Methodology/ Internship/Project Report	2T+4PR 4	4	2 hrs	40U+10I 25PR+15I S+10VV
30.	SEC3	**a**) Fundamentals of AI Tools/ b) Ability Skills (Competitive Mathematics)	2	2	2 hrs	40U+10I
31.	SEC4 (Dept. specified)	a) Computerized Accounting b) E-filing of Tax Returns	2	2	2	40U+10I
32.	VAC2	a) Cyber Security & Laws/ b) Environmental Science	**2**	**2**	**2 hrs**	**40U+10I**
		Total	**20**	**20**		
		GRAND TOTAL	**132**	**132**		

THPW: Teaching Hour Per Week; ESED: End Semester Exam Duration AEC: Ability Enhancement Course; SLS: Second Language Skill; SEC: Skill Enhancement Course; MJR: Major Course ; VAC: Value Added Course; MDC: Multi-disciplinary Course; T: Theory; P: Practical; I: Internal Exam U: University Exam: RMP: Research Methodology & Project Report; PR: Project Report; IS: Internship; VV: Viva-Voce Examination.

Note: If a student opts for "a" in SEC in V Semester, the student has to opt for "a' only in VI Semester and so is the case with "b" and "c" in the case of Major/MDC papers also the rule applies.

SUMMARY OF CREDITS

Sl. No.	Course Category	No. of Courses	Credits Per Course	Credits
1	AEC: English Language	4	4	16
2	Second Language	4	4	16
3	**SEC**	**4**	**2**	**8**
4	**MDC**	**1**	**4**	**4**
5	**VAC**	**2**	**2**	**4**
6	**RMP**	**1**	**4**	**4**
7	**MJR**	**16**	**5**	**80**
	TOTAL	**32**		**132**
	Commerce	**18**		**86**
CREDITS UNDER NON-CGPA		**NSS/NCC/Sports/Extra Curricular**	**Up to 6 (2 in each year)**	
		Summer Internship	**Up to 4 (2 in each after I & II years)**	

SEMESTER - I

Paper MJR 101: FINANCIAL ACCOUNTING - I

PAPER CODE: MJR101 **Max. Marks: 80U +20I=100**
THPW: 5; Credits: 5 **ESED: 3 hrs**

Course Objectives:

1) To understand the accounting process.
2) To classify and record various business transactions in the respective subsidiary books.
3) To know the reasons for disagreement of cash book and bank pass book balances.
4) To identify and rectify the accounting errors at various stages of accounting cycle.
5) To prepare the final accounts of the sole trader.

Course Outcomes:

1) Describe and understand the accounting principles and recording of business transactions in Journal.
2) Prepare ledgers and subsidiary books.
3) Prepare and analyze the bank reconciliation statement.
4) Understand the way of rectification of errors in the books of accounts.
5) Understand the needs of preparing financial statements with adjustments.

UNIT-I:ACCOUNTIN GPROCESS:

Financial Accounting: Introduction – Definition – Evolution – Functions - Advantages and Limitations – Users of Accounting Information - Branches of Accounting – AccountingPrinciples: Concepts and Conventions - Accounting Standards – Meaning – Importance – List of Accounting Standards issued by ASB - Accounting System - Types of Accounts – Accounting Cycle – Journal - Ledger and Trial Balance (Including Problems)

UNIT-II:SUBSIDIARY BOOKS AND RECTIFICATION OF ERRORS:

Meaning– Types:PurchasesBook-PurchasesReturnsBook-SalesBook-SalesReturnsBook- Bills Receivable Book - Bills Payable Book – Cash Book: Single Column, Two Column, Three Column and Petty Cash Book - Journal Proper (Including Problems)

Rectification of Errors: Types of Errors - Suspense Account – Effect of Errors on Profit (Including Problems)

UNIT-III:BANK RECONCILIATION STATEMENT:

Meaning-Need-ReasonsfordifferencesbetweenC ashB ookandP assB ookb alances– Favourable and Overdraft balances – Ascertainment of correct Cash Book balance (Amended Cash Book) - Preparation of Bank Reconciliation Statement (Including Problems)

UNIT-IV:DEPRECIATION ACCOUNTING:

Depreciation (Ind-AS-16): Meaning – Causes – Difference between Depreciation, Amortization and Depletion - Objectives of providing for depreciation – Factors affecting depreciation –Accounting Treatment – Methods of Depreciation: Straight Line Method - Diminishing Balance Method and Sum of the Units Method (Including Problems)

UNIT-V:FINALACCOUNTS OF SOLE TRADER:

Capital and Revenue Expenditure – Capital and Revenue Receipts: Meaning and Differences -Deferred Revenue Expenditure.Final Accounts of SoleTrader : Meaning-Uses- Preparation of Manufacturing, Trading and Profit & Loss Account and Balance Sheet – Adjustments – Closing Entries (Including problems)

SUGGESTEDREADINGS:

1) Haneef and Mukherjee: Accountancy-I:Tata Mc Graw Hill Company.
2) R. L. Gupta & V. K. Gupta: Principles & Practice of Accounting: Sultan Chand.
3) S. P.Jain&K. L.Narang:Accountancy-I:Kalyani Publishers.
4) Tulasian: Accountancy–I: TataMcGraw HillCompany.
5) T. S. Grewal:Introduction to Accountancy:S. Chandand Company.
6) Prof.Prashanta Athma: Financial Accounting -I: Himalaya Publishing HousePvt Ltd.
7) S. N. Maheshwari & V. L. Maheswari:Advanced Accountancy-I: Vikas Publishing House.
8) Deepak Sehgil: Fundamentals of Financial Accounting: Tax Mann Publication.
9) Jawahar Lal: Financial Accounting: Himalaya Publishing House.
10) Kamatam Srinivas: Financial Accounting –I : S Publishers.
11) Kamala Devi, Dr Padmalatha, Rachana Sharma : Financial Accounting-I **:** Professional Books Publisher.
12) Dr. K. Naveen Kumar: Financial Accounting -1: Vedashree Publishers.

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SEMESTER - I

Paper MJR 102: BUSINESS ORGANIZATION AND MANAGEMENT

PAPER CODE: MJR102 **Max. Marks: 80U +20I=100**
THPW: 5; Credits: 5 **ESED: 3 hrs**

Course Objectives:

1) To know the forms of business organization.
2) To understand the meaning and classification of joint stock companies.
3) To know the meaning and functions of management.
4) To study the importance of planning and organizing in a business organization.
5) To differentiate the concepts of authority, power, accountability, responsibility, delegation and decentralization.

Course Outcomes:

1) Describe and understand the forms of business organization.
2) Knows the forms of companies and important documents.
3) Equips with the application of Fayol's 14 principles of management.
4) Understand the benefits of planning and organizing in an organization.
5) Gain confidence in proper use of authority, responsibility, centralization, decentralization, coordination, cooperation and control terms.

UNIT-I: INTRODUCTION:

Concepts of Business, Trade, Industry and Commerce - Objectives and functions of Business – Social Responsibility of a Business - Forms of Business Organization - Meaning, Characteristics, Advantages and Disadvantages of Sole Proprietorship – Meaning, Characteristics, Advantages and Disadvantages of Partnership - Kinds of Partners - Partnership Deed -Concept of Limited liability partnership – Meaning, Characteristics, Advantages and Disadvantages of Hindu Undivided Family – Meaning, Advantages and Disadvantages of Co-Operative Organization, One Person Company.

UNIT-II: JOINT STOCK COMPANY:

Joint Stock Company - Meaning - Definition - Characteristics - Advantages and Disadvantages - Kinds of Companies - Promotion - Stages of Promotion - Promoter - Characteristics - Kinds - Preparation of Important Documents - Memorandum of Association - Clauses - Articles of Association - Contents – Prospectus - Contents – Red herring Prospectus- Statement in lieu of Prospectus (As per Companies Act-2013).

UNIT-III: FUNCTIONS OF MANAGEMENT:

Management - Meaning - Characteristics - Functions of Management - Levels of Management – Organization Structure – Types of Organization Structure – Skills of Management - Scientific Management - Meaning - Definition - Objectives - Criticism – Fayol's Principles of Management.

UNIT-IV: PLANNING AND ORGANISING:

Meaning - Definition - Characteristics - Types of Plans - Advantages and Disadvantages – Approaches to Planning - Management by Objectives (MBO) - Steps in MBO - Benefits –Weaknesses—Definition of Organizing-Organization-Process of Organizing - Principles of Organization - Formal and Informal Organizations - Line, Staff Organizations - Line and Staff Conflicts - Functional Organization - Span of Control - Meaning - Determining Span – Factors influencing the Span of Control.

UNIT-V: AUTHORITY, COORDINATION AND CONTROL:

Meaning of Authority, Power, Responsibility and Accountability - Delegation of Authority - Decentralization of Authority - Definition, Importance, Process, and Principles of Coordination - Techniques of Effective Coordination - Control - Meaning - Definition – Relationship between Planning and Control - Steps in Control – Requirements for Effective Control.

SUGGESTED READINGS:

1) R K Sharma& Shashi K. Gupta : Business Organization & Management: Kalyani Publishers
2) Patrick Anthony: Business Organization& Management: Himalaya Publishing House
3) Dr. Manish Gupta, Business Organization & Management: PBP.
4) R. D. Agarwal: Organization & Management: McGraw Hill.
5) S.A. Sherlekar, V.S. Sherlekar: Modern Business Organization: Himalaya Publishing House
6) C.R. Basu: Business Organization & Management: Tata McGraw Hill
7) M.C. Shukla: Business Organization & Management: S. Chand,
8) D.S. Vittal: Business Organization and Management: S. Chand
9) V.S.P. Rao:OrganizationalBehavior Text & Cases: Himalaya Publishing House
10) Uma Shekaram: Business Organization & Management: Tata McGraw Hill
11) Dr. R. Sushama, Mrs. R. Renuka: Business Organisation and Management: Vedashree Publishers.
12) Dr. R. Sridhar : Business Organisation and Management : S Publishers.
13) Sherlekar&Khuspat Jain: Business Organization& Management: Himalaya Publishing House
14) R K Chopra: Office Organization& Management: Himalaya Publishing House
15) RS Gupta & BD Sharma:Principles and Practice of Management: Kalyani Publishers
16) RK Sharma: Principles of Management: Kalyani Publishers
17) Mrs. Vinaya Chaturvedi, Ms. Ankita Nagra, Mrs. R. Anuradha & Ms. B. S. Sai Leena: Business Organization & Management: Professional Books Publishers
18) Dr. Ramakrishna Bandaru: Business Organization and Management: TATA Publications

SEMESTER - I

Paper MJR103: FUNDAMENTALS OF INFORMATION TECHNOLOGY

Paper Code: MJR103 **MaxMarks:50T+35P+15I=100**

THPW:5(3T+4P),Credits:5 **ESED:3Hours**

CourseObjectives:

1. To introduce students to the basic structure, functions, and types of computers.
2. To develop understanding of number systems, computer arithmetic and data storage fundamentals.
3. To provide foundational knowledge of system and application software.
4. To explain the role and functions of operating systems and system utilities.
5. To impart knowledge on data communication, networking concepts and related hardware.

CourseOutcomes:

1. Identify and describe components and functions of a computer system.
2. Perform conversions and arithmetic operations in various number systems.
3. Distinguish between system software and application software with examples.
4. Understand operating system functions and classify processing techniques.
5. Explain data communication concepts and recognize basic networking devices and topologies.

UNITI:FOUNDATIONSOFCOMPUTING&DIGITALBUSINESS:

Components of a Computer System: Hardware (CPU, RAM/ROM), **Input/output Devices:** Traditional (Mouse, Keyboard, Printer) and Modern (Biometric Scanners, IoT Sensors, Touch Devices) - **Software** - System Software & Application Software, Bits, Bytes & Data Representation, **Types of Storage:**RAM,ROM,SSD,HDD,FlashDrives- **Cloud vs.LocalStorage:** ApplicationsinBusiness- **File Systems & Organization:** Files, folders, extensions - **Operating Systems:** Functions, types (Windows, Linux, MacOS, Android, iOS) - **Utility Software:** Antivirus, Backup, File compression, Systemoptimizationtools- **IntroductiontoDigitalTransformationinBusiness** –StrategicRoleofITin FunctionalAreas(Finance,Marketing,HR,SCM)- **EmergingBusinessApplications**:ERP,CRM-SCM-HR, Meaning, Benefits - Applications in Business.

UNITII:NUMBERSYSTEM, NETWORKINGANDINTERNETINBUSINESS:

Encoding Schemes and Number System: Introduction – Number System – Conversion between Number Systems - **Binary Logic:** Binary system, AND, OR, NOT (basic illustrations) - **Basics of Networking:** LAN, WAN, WLAN - Network Topologies (Star, Bus, Ring, Mesh - conceptual) - **Devices:** Routers, Switches, Modems (roles and applications) - Client-Server Architecture - **Internet Fundamentals: :** Internet, Uses of Internet, Types of Internet Connection, (Dial-up Connection, Broadband Connection, Wi-Fi, Mobile Internet, Bluetooth, HotSpots),Browsers, URL, IP Address, Webpage and Websites - Basic Internet Navigation and Search Techniques - Bandwidth & Speed Concepts (bps, Mbps, Gbps) - **E-Commerce Basics:** Models and relevance - Social Media in Business.

UNITIII:OFFICEAUTOMATION ANDAPPLICATIONSFOR BUSINESS:

Definition& Importance ofOfficeAutomation- Benefits ofOfficeAutomationinBusiness-Overview of Office Automation Tools (MS Office) - Office Automation vs. Traditional Office Work**OfficeProductivity**:**MicrosoftWord&GoogleDocs**-Creating,Editing,andFormattingDocumentsWorkingwithTables,Charts,andSmartArt - MailMerge:AutomatingLetters,Invoices,andReportsCreatingBusinessReports,Resumes,andLegalDocuments-**PresentationSoftware(MSPowerPoint&GoogleSlides)-**CreatingProfessionalBusinessPresentations-SlideLayouts,Transitions, and Animations - Using SmartArt and Charts for Business Data Representation – CustomTemplates for Corporate Reports and Proposals.

UNITIV:SPREADSHEETAPPLICATIONS(MS-EXCEL,GOOGLE SHEETS):

Basics of Excel: Data Entry, Formatting, and Cell References - Formulas & Functions (SUM, AVERAGE, IF, VLOOKUP, HLOOKUP) – data Charts and Graphs for Business Analysis, validation - Pivot Tables - Automation - Financial Functions (NPV, IRR, PMT) for Accounting.

UNITV:EMERGINGTECHNOLOGIES,ETHICAL&SOCIALASPECTS

Cloud Computing: Concepts, characteristics, advantages - **Service Models:** SaaS, PaaS, IaaS - **Deployment Models:** Public, Private, Hybrid - **Cyber security Essentials: Types of threats:**Malware, Phishing, DoS attacks - **Protective Measures:** Strong passwords, MFA, antivirus, firewalls - Data Backup and Recovery - Safe Browsing Practices - Introduction to Cyber Laws & Data Privacy Regulations (GDPR &India's DPDPA)

EmergingTechnologies:AI&ML, InternetofThings(IoT),BlockChainTechnology,BigData,RPA – Definition, Examples, Benefits and Applications.**Ethical&SocialAspects:**Digitaldivide,DigitalFootPrints,DigitalSocietyandNetizen,Data Protection, IT Act, Impact on Health, Intellectual property.

PracticalComponent(2HoursperWeek)

Hands-onsessionsalignedwith each unit:

- OSNavigation&FileHandling
- MicrosoftOffice/GoogleWorkspace:
  - AdvancedWord,Excel,andPowerPointfeatures
  - Mailmerge,Datasorting,PivotTables,Charts
- Internet Browsing&ResearchSkills
- CloudTools:GoogleDrive,OneDrivecollaboration

SUGGESTED READINGS*:*

1. FundamentalsofInformationTechnology:PuneetKumar&S.Bhardwaj,KalyaniPublishers.
2. Fundamentals of Information Technology: Dr.G.Srinivas, Kavitha Reddy, &Others SPublishers.
3. Computer Fundamentals:P.K.Sinha
4. FundamentalsofInformationTechnology:Dr.Jayalaxmiandothers:ProfessionalBooksPublisher
5. FundamentalsofInformationTechnology:Mrs.R.Renuka:VedashreePublishers
6. FundamentalsofInformationTechnology:TulasiRamKandula:HimalayaPublishingHouse
7. FundamentalsofComputers:CSVMurthy:HimalayaPublishingHouse

8. ComputerScienceReferenceTextBooksofXI& XIIofNCERT2025-2026Edition.

SEMESTER - II

Paper MJR 201: FINANCIAL ACCOUNTING-II

PAPER CODE: MJR 201 **Max. Marks: 80U +20I=100**
THPW: 5; Credits: 5 **ESED: 3 hrs**

Objective: *To acquire Accounting knowledge of bills of exchange and other business accountingmethods.*
Course Objectives:
1. Understand accounting treatment for bills of exchange, consignment accounts, and joint ventures
2. Develop skills in accounting for incomplete records and single entry system
3. Familiarize with accounting for non-profit organizations
4. Apply accounting principles and standards to various business transactions
5. Analyze and interpret financial statements for different types of organizations

Course Outcomes:
1. Prepare accounting records for bills of exchange, consignment accounts, and joint ventures
2. Convert incomplete records to double-entry system and prepare financial statements
3. Prepare financial statements for non-profit organizations, including receipts and payments account, income and expenditure account, and balance sheet
4. Apply accounting standards and principles to various business transactions and events
5. Analyze and interpret financial statements for informed decision-making

UNIT-I: BILLS OF EXCHANGE:

Bills of Exchange – Definition - Distinction between Promissory note and Bills of exchange - Accounting treatment of Trade bills: Books of Drawer and Acceptor- Honour and Dishonour of Bills - Renewal of bills - Retiring of bills under rebate – Endorsement of bills - Accommodation bills (Including problems)

UNIT-II: CONSIGNMENT ACCOUNTS:

Consignment - Meaning – Features - Proforma invoice - Account sales - Del credere commission-Accounting treatment in the books of the consignor and the consignee - Valuation of consignment stock (Focusing on proportionate non-recurring expenses) - Treatment of Normal and abnormal Loss - Invoice of goods at a price higher than the cost price (Including problems)

UNIT-III: JOINT VENTURE ACCOUNTS:

Joint Venture - Meaning – Features - Difference between Joint Venture and Consignment - Accounting Procedure - Methods of Keeping Records for Joint Venture Accounts - Method of Recording in co-ventures books (When separate books are not maintained) - Separate Set of Books Method - Joint Bank Account – Brief overview of Memorandum Joint Venture Account (Including problems)

UNIT-IV: ACCOUNTS FROM INCOMPLETE RECORDS:

Single Entry System - Meaning – Features - Difference between Single Entry and Double Entry systems - Defects in Single Entry System - Books and accounts maintained - Ascertainment of Profit - Statement of Affairs Method - Conversion method (Preparing complete trading, Profit and Loss Account and Balance Sheet (Including problems)

UNIT-V: ACCOUNTING FOR NON-PROFIT ORGANIZATIONS:

Non- Profit Organization - Meaning - Features - Receipts and Payments Account - Income and Expenditure Account - Balance Sheet Treatment of special items like Entrance Fees, Donations, Legacy, etc. – Calculation of consumption of consumables (E.g., Stationary, Medicines) and Stock adjustments (Including problems)

SUGGESTED READINGS:

1. Accountancy-I: Haneef and Mukherjee, Tata McGraw Hill Co.
2. Principles and Practice of Accounting: R.L. Gupta & V.K. Gupta,Sultan Chand & Sons.
3. Accountancy–I: Tulasian, Tata McGraw Hill Co.
4. Financial Accounting -1: Prof. PrashantaAthma: Himalaya Publishing HousePvt Ltd.
5. Financial Accounting -II: Prof. K. Krishna Chaitanya: Kamala Devi, Kalyani Publishers-2025.
6. Financial Accounting- II: S.P. Jain & K.L Narang, Kalyani publishers. 2nd Revised Edition- 2017
7. Advanced Accountancy-I: S.N.Maheshwari&V.L.Maheswari, Vikas.
8. Advanced Accountancy: M Shrinivas& K Sreelatha Reddy, Himalaya Publishers.
9. Financial Accounting: M.N Arora, Tax Mann Publications.
10. Financial Accounting -1: Dr. K. Naveen Kumar:Vedashree Publishers-2024
11. Financial Accounting –II: Prof. Kamatam. Srinivas, S. Publications-2025.
12. Financial Accounting-II: Mrs. K.Archana, P.Subhashini, SV Publication.First Edition-2025
13. Financial Accounting-II: Dr Yogeshwaran, E.V. Chandramohan Sastry, Professional books Publishers. New edition-2025, Year of Publication-2018
14. Financial Accounting-II: Prof Prabhu Sahai, Mary Vinaya Sheela and Others, DL Publishers and Distributors-2025.
15. Financial Accounting-II: Dr K Naveen Kumar and Dr D SreeRam Vedashree Publishers- 2025.

SEMESTER - II

Paper MJR 202: BUSINESS LAWS

PAPER CODE: MJR 202 **Max. Marks: 80U +20I=100**
THPW: 5; Credits: 5 **ESED: 3 hrs**

Objective: *To understand basics of contract act, sales of goods act, IPRs and legal provisions applicable for establishment, management and winding up of companies in India.*

Course Objectives:

1. 1. Understand the fundamental principles and application of Indian Contract Act, 1872.
2. Analyze the Key provisions of the Sale Goods Act, 1930 and the Consumer Protection Act, 2019
3. Learn about the Intellectual Property Rights, (IPRs) Protection.
4. Understand Legal aspects of Company Management and Governance under the Companies Act, 2013.
5. Study the modern process of corporate insolvency and liquidation under the insolvency and bankruptcy Code (IBC), 2016

Course Outcomes:

1. Analyze and apply contract law principles to business transactions
2. Understand consumer rights and protection under the Consumer Protection Act
3. Identify and protect intellectual property rights, including trademarks, patents, and copyrights
4. Apply company law principles to manage companies and conduct meetings
5. Understand the process of winding up and insolvency laws, including the Insolvency and Bankruptcy Code

UNIT–I: INDIAN CONTRACT ACT, 1872:

Agreement and Contract : Definition - Essentials of a valid contract - Types of contracts (Valid Void Voidable, Unenforceable, Quasi-Contracts) – Formation of Contract: Offer and Acceptance - Essentials of valid offer and acceptance - Communication and revocation – Capacity and Consent: Competency to contract Free Consent (Coercion, Undue influence, Fraud, Misrepresentation, Mistake) – Consideration and Legality: Definition - Essentials of valid consideration (Nudum pactum), Agreements Declared Void (Restraint of Trade, Legal Proceedings) – Discharge and Breach: Modes of Discharge of a contract – Breach of Contract (Actual and Anticipatory)- Remedies for Breach (Damages, Specific Performance, Injunction, Rescission - Special Contracts (Introduction) – Overview of Contract Indemnity and Contract Guarantee.

UNIT–II: SALE OF GOODS ACT, 1930 AND CONSUMER PROTECTION ACT, 2019:

The Sale of Goods Act, 1930: Contract of Sale - Essentials of Valid Sale - Sale and Agreement to Sell – Definition and Types of Goods. Stipulations: Conditions and Warranties (Implied and Express) - Caveat Emptor and its Exceptions. Transfer of Title: Rules regarding Transfer of Property – Rights of Unpaid Seller: Definition of an Unpaid Seller - Rights of Unpaid Seller – Against the Goods and Against the Buyer personally. Consumer Protection Act, 2019 (Latest Act) Core Concepts: Definition of Consumer (Includes E-Commerce) - Goods - Service - Consumer Dispute – Unfair Trade Practices – Misleading Advertisement and Product Liability. Institutional Framework: Introduction to the Central Consumer Protection Authority (CCPA). Redressal Agencies: Consumer Dispute Redressal Commissions (District, State, National) - Compositions and Latest Monitory Jurisdiction Limits, E-Commerce and Digital Age: Key Provision of the Consumer Protection (E-Commerce) Rules, 2020 (e.g., Liability of Market Place vs. Inventory Model.

UNIT–III: INTELLECTUAL PROPERTY RIGHTS (IPRS):

Trade Marks: Definition – Functions – Procedure for Registration, Duration and Renewal, Infringement and Passing off - Patents: Definition - Kinds of Patents –patentable and non-patentable Inventions - Rights of the Patentee - Transfer of the Patent Rights, Infringement - Copy Rights: Definition -Rights of the Copyright Owner -Terms of Copy Right - Infringement and Faire Use - Other Intellectual Property Rights: Introduction to Design Act, 2000 - Trade Secrets and Geographical Indications (GI).

UNIT–IV: MANAGEMENT OF COMPANIES AND CORPORATE GOVERNANCE:

Directors: Qualification - Disqualification – Position (Fiduciary) - Appointment (First Subsequent) - Removal - Duties and Liabilities – Loans and Directors – Independent Director (Brief Note) - Corporate Governance: Meaning – Need and Key Principles- Corporate Social Responsibility (CSR) – Provisions of Section135 of the Companies Act, 2013 Applicability – Composition of CSR Committee – Mandatory 2% Spending and Treatment of unspent amount –Meetings: Meaning - Requisites of Valid Meeting (Notice, Proxy, Agenda, Quorum) – Resolutions (Ordinary, Special) - Kinds of Meetings – Annual General Meeting (AGM) - Extraordinary General Meeting - Board Meetings (Frequency and Rules).

UNIT–V: CORPORATE INSOLVENCY AND WINDING UP:

Winding up under Companies Act, 2013: Meaning - Modes of Winding Up (Primarily Winding Up by tribunal on non-insolvency grounds like Fraud, Oppression) - Removal of name of the company (Striking Off) – Conditions and Procedure under the Companies Act. Insolvency and Bankruptcy code – 2016: Objective and Applicability – The Process – Overview of the Corporate Insolvency Resolution Process (CIRP) –Key Functionaries: National Company Law Tribunal (NCLT) – Committee of Creditors (CoC) – Insolvency Professional (IP) – Liquidation: Grounds for Liquidation and Brief on the Distribution of Assets (Order of Priority).

SUGGESTED READINGS:

1) Company Law: ND Kapoor, Sultan Chand and Co.
2) Company Law: Rajashree. – HPH
3) Business Law - Kavitha Krishna, Himalaya Publishing House
4) Business Laws – Dr. B. K. Hussain, Nagalakshmi – PBP
5) Business Law: V K Sareen, Kalyani Publishers. 1st Edition-2020
6) Company Law: Prof. G. Krishna Murthy, G. Kavitha, PBP
7) Company Law and Practice: GK Kapoor& Sanjay Dhamija, Taxmann Publication.
8) Business Law – Dr. Indrakanti Sekhar & Ms. Tulja Bhavani, SIA Publishing & Distributors Pvt. Ltd.
9) Company Law: Revised as per Companies Act- 2013: KC Garg et al, Kalyani Publication.
10) Corporate Law: PPS Gogna, S Chand.
11) Business Law: D.S. Vital, S Chand
12) Company Law: Bagrial AK, Vikas Publishing House.
13) Business Law: B.K. Hussain, S. Gopal Rao, Professional books Publishers, Edition-2024, Year of Publication – 2020.
14) Business Laws: Madhavi AVR, D. Bhaskara Lakshmi, SV Publication. First Edition-2025
15) Business Laws: S.P. NeehalikaBavya: S. Publishers.
16) Business Laws: Dr D Saritha and Prof Prabhu Sahai, DL Publishers and Distributors-2025.
17) Business Laws: Revathi Devi Mathur, Vedashree Publishers-2025.

SEMESTER - II

Paper MJR 203: PROGRAMMING WITH C & C++

PAPER CODE: MJR 203: **Total Marks:50T+35P+15I=100**

THPW: 5 (3T+4P) ; Credits: 5 **ESED: 3 HRS**

Objective: To understand the fundamental concepts of programming in C and Object OrientedProgramming using C++.

Course Objectives:

1. Learn the basics of C programming language
2. Understand control statements, loops, functions, arrays, and strings in C
3. Familiarize with pointers, structures, and unions in C
4. Learn object-oriented programming concepts using C++
5. Develop problem-solving skills using C and C++ programming languages

Course Outcomes:

1. Write C programs using variables, data types, operators, control statements, loops, functions, arrays, and strings
2. Use pointers, structures, and unions to solve complex problems in C
3. Develop C++ programs using object-oriented programming concepts, including classes, objects, inheritance, polymorphism, encapsulation, and abstraction
4. Apply problem-solving skills to real-world problems using C and C++ programming languages
5. Analyze and debug C and C++ programs to ensure correctness and efficiency

UNIT-I: INTRODUCTION TO C LANGUAGE, VARIABLES, DATA TYPES AND OPERATORS:

Introduction: Types of Languages- History of C language – Basic Structure –Programming Rules – Flow charts-algorithms–Commonly used library functions - Executing the C Program - Pre-processors in "C"- Keywords & Identifiers – Constants – **Variables:** Rules for defining variables - Scope and Life of a Variable–- **Data types** - Type Conversion - Formatted Input and Output operations. **Operators:** Introduction – Arithmetic – Relational – Logical – Assignment - Conditional - Special - Bitwise - Increment / Decrement operator.

UNIT-II: WORKING WITH CONTROL STATEMENTS, LOOPS:

Conditional statements: Introduction - If statements - If-else statements – nested if-else – break statement-continue statement-go to statement-Switch statements. **Looping statements:** Introduction-While statements – Do-while statements - For Statements-nested loop statements.

UNIT-III: FUNCTIONS, ARRAYS AND STRINGS:

Functions: Definition and declaration of functions- Function proto type-return statement- types of functions-formatted and unformatted functions. **Built in functions:** Mathematical functions – String functions – Character functions – Date functions. **User defined functions:** Introduction – Need for user defined functions – Elements of functions – Function call – call by value and call by reference – Recursive functions. **Arrays:** Introduction – Defining an array – Initializing an array –characteristics of an array- One dimensional array – Two dimensional array – Multi dimensional array. **Strings:** Introduction – Declaring and initializing string – Reading and Writing strings – String standard functions.

UNIT-IV: POINTERS, STRUCTURES AND UNIONS:

Pointers: Features of pointers- Declaration of Pointers-arithmetic operations with pointers

Structures: Features of Structures - Declaring and initialization of Structures –Structure within Structure-Array of Structures- Enumerated data type-**Unions**-Definition and advantages of Unions comparison between Structure & Unions.

UNIT-V: OBJECT ORIENTED CONCEPTS USING C++:

Object Oriented Programming: Introduction to Object Oriented Programming - Structure of C++ – Simple programof C++– Storage Classes-Similarities and Differences between C & C++ - Data Members-Member Functions - Object Oriented Concepts-Class-Object-Inheritance-Polymorphism-Encapsulation-Abstraction.

SUGGESTED READINGS:

1. Programming with C&C++ :Indrakanti Sekhar, V.V.R.Raman&V.N.Battu, Himalaya Publishers.
2. Programming with C& C++: M. Shalini, Kalyani Publishers. 1st Edition, Year of Publication -2020.
3. Programming in ANSI C: Balagurusamy, McGraw Hill.
4. Mastering C: K.R. Venugopal, McGraw Hill.
5. C: The Complete Reference: H.Schildt, McGraw Hill.
6. Let Us C: Y.Kanetkar, BPB.
7. Objected Oriented Programming with C++: E. Balagurusamy, McGraw Hill.
8. Mastering C++: KR.Venugopal&R.Buyya, McGraw Hill.
9. Schaum"s Outlines: Programming with C++: by John R Hubbard.
10. Let Us C++: Y.Kanetkar, BPB.
11. Programming with C& C++: G. Kavitha Reddy,Dr. G. Srinivas Rao &Mubeena Shaheen: S Publishers.
12. Programming with C& C++: Mrs. A Madhavi, K. Maheshwari, S.V. Publications. First Edition – 2025.
13. Programming with C++: KVR Saraswathi, S. Jayalakshmi & M. Sudha, Professional Books Publishers. Edition – 2025, Year of Publication – 2020.
14. Programming with C& C++: Dr N Uday Bhaskar and Dr Sambasiva Rao Bargada, DL Publishers and Distributors, 2025.
15. Programming with C& C++: R Renuka, Veda Shree Publishers 2025.

SEMESTER - III

Paper MJR 301: ADVANCED ACCOUNTING

PAPER CODE: MJR 301 **Max. Marks: 80U +20I=100**
THPW: 5; Credits: 5 **ESED: 3 hrs**

Objective: To enable undergraduate students to acquire comprehensive, advanced accounting knowledge concerning partnership frameworks and joint stock companies. The course is structurally aligned with professional accounting standards in India, preparing students to handle complex partnership transitions, manage corporate equity and debt issuances, and construct company final accounts under Schedule III of the Companies Act, 2013.

Course Objectives:
1. Understand partnership accounting for operational changes and ownership transitions
2. Apply accounting procedures for dissolution, insolvency, and corporate conversion of firms
3. Analyze corporate equity and debt structure including shares and debentures
4. Prepare company final accounts as per statutory requirements
5. Apply valuation techniques for goodwill and shares

Course Outcomes:
1. Record partnership transactions including admission, retirement, death, and adjustments of capital
2. Prepare accounts for dissolution of firms, including insolvency and piecemeal distribution using Garner vs. Murray rule
3. Account for issue, forfeiture, and re-issue of shares and debentures per Companies Act, 2013
4. Prepare Company Final Accounts with Schedule III compliance and allocate profits prior to incorporation
5. Compute goodwill and share values using Average Profits, Super Profits, Capitalization, Net Assets, and Yield methods

UNIT - I: PARTNERSHIP ACCOUNTS - I (OPERATIONAL & OWNERSHIP TRANSITIONS):

Foundations of Partnership: Meaning, Legal Framework of the Indian Partnership Act, 1932; Essential clauses and significance of a Partnership Deed; Maintenance of Capital Accounts — Fixed Capital Method vs. Fluctuating Capital Method; Accounting for Interest on Capital, Interest on Drawings, Salaries, and Commission to partners.

Admission of a Partner: Calculation of New Profit Sharing Ratio and Sacrificing Ratio; Treatment of Goodwill (Premium Method, Revaluation Method, and Memorandum Revaluation Method); Valuation and accounting treatment of accumulated profits, unrecorded assets, reserves, and revaluation of assets and liabilities; Adjustment of Partner Capitals based on new ratios.

Retirement and Death of a Partner: Calculation of New Profit Sharing Ratio and Gaining Ratio; Revaluation of assets/liabilities and treatment of goodwill upon retirement; Accounting treatment for the transfer of a retiring partner's balance to a Loan Account; Accounting for the Death of a Partner: Computation of a deceased partner's share of profit up to the date of dissolution (Excluding Joint Life Policy calculations) *(Theory and Numericals)*.

UNIT - II: PARTNERSHIP ACCOUNTS - II (DISSOLUTION, INSOLVENCY & CORPORATE CONVERSION):

Dissolution of Partnership Firms: Meaning and Legal distinction between the dissolution of a partnership and the dissolution of a firm; Statutory provisions for the settlement of accounts upon dissolution (Section 48 of the Indian Partnership Act); Preparation of Realisation Account, Partner's Loan Account, Partner's Capital Accounts, and Cash/Bank Account.

Insolvency of Partners: Advanced application of the **Garner vs. Murray rule** (Distribution of capital deficiency caused by insolvency among solvent partners); Accounting treatment excluding the case of insolvency of all partners simultaneously.

Piecemeal Distribution & Corporate Sale: Piecemeal distribution of cash assets to partners during gradual liquidation (Maximum Loss Method and Surplus Capital Method); Conversion and sale of an ongoing partnership firm to a Limited Joint Stock Company — Computation of Purchase Consideration and final closing books of accounts of the firm *(Theory and Numericals)*.

UNIT - III: CORPORATE EQUITY, DEBT ARCHITECTURE & SHARE CAPITAL LOGISTICS

Issue of Shares: Overview of the Share Capital structure of corporate entities; Accounting mechanics for the issue of equity and preference shares at Par and Premium; Strict compliance with Section 52 of the Companies Act, 2013 regarding the statutory utilization of the Securities Premium Account; Pro-rata allotment mechanics, handling of calls-in-arrears and calls-in-advance.

Forfeiture & Capital Optimization: Accounting for the Forfeiture of shares and the Re-issue of forfeited shares under varied conditions; Deletion of discount issuances as per Section 53.

Debentures & Capital Reserve Allocations: Issue of Debentures — Accounting entries for the issue of debentures with explicit conditions of redemption (at par, premium); Underwriting of Shares and Debentures: Statutory provisions, determining underwriters' absolute and contingent liabilities (Gross, Net, and Marked applications); Bonus Shares: Meaning, Purpose, SEBI Guidelines for bonus issues, sources of capitalization, and accounting entry design *(Theory and Numericals)*.

UNIT - IV: COMPANY FINAL ACCOUNTS & PRE-INCORPORATION RESTRUCTURING:

Company Final Accounts Framework: Structure and statutory mandates of the **Companies Act, 2013**; Thorough analysis and application of **Schedule III (Division I)**; General instructions, formats, and structural protocols for the presentation of the Corporate Balance Sheet (Part-I) and the Statement of Profit and Loss (Part-II).

Corporate Financial Reporting: Preparation of standard corporate Final Accounts including comprehensive modern adjustments (Current Corporate Tax provisions, Transfer to statutory Reserves, Managerial Remuneration adjustments, and Dividend Distribution constraints).

Profits Prior to Incorporation: Conceptual understanding of pre-incorporation and post-incorporation trading horizons; Principles governing the allocation of income and expenses between pre- and post-incorporation phases using Time Basis, Turnover Basis, and Specific Weighted Allocation methods; Accounting treatment and balance sheet presentation of pre-incorporation profits/losses *(Theory and Numericals)*.

UNIT - V: VALUATION OF GOODWILL AND SHARES:

Valuation of Goodwill: Meaning, features, and corporate/regulatory circumstances necessitating the valuation of goodwill; Comprehensive methods of calculation: Average Profits Method (Simple and Weighted), Super Profits Method, and Capitalization Methods (Capitalization of Average Profits vs. Capitalization of Super Profits).

Valuation of Shares: Fundamental corporate needs for share pricing and asset valuation; Analytical methods of share valuation: Net Assets Method (Intrinsic Value factoring revalued assets), Yield Basis Method (Earning Capacity and Dividend Yield), and Fair Value Method; Interpreting valuation discrepancies between asset-backed and earning-backed assessment models *(Theory and Numericals)*.

SUGGESTED READINGS:

1. R.L. Gupta & V.K. Gupta: Principles and Practice of Accounting:, Sultan Chand & Sons.
2. S.P. Jain & Narang: Advanced Accounting: Kalyani Publishers, Reprinted 2025.
3. BM Agarwal and MP Gupta: Advanced Accountancy: Sultan Chand and Son's Volume -1&2, New Delhi
4. R.L.Gupta&Radhaswamy: Advanced Accountancy: Sultan Chand & Sons.
5. S.N.Maheshwari&V.L.Maheswari: Advanced Accountancy (Vol-II): Vikas Publishers.
6. Dr. G. Yogeshwaran, Julia Allen: Advanced Accountancy - PBP
7. Tulasian: Accountancy–III: Tata McGraw Hill Co.
8. Arulanandam: Advanced Accountancy: Himalaya Publishers.
9. S.P. Jain & K.L Narang: Advanced Accountancy–II: Kalyani Publishers.
10. Prof. Kamatam Srinivas: Advanced Accounting: S Publishers, .
11. Sumera Anwar, B. Sunitha, Y.Venkat Reddy Advanced Accounting, First Edition: SV Publications.
12. Guidance Note on the Revised Schedule VI to the Companies Act, 1956, The Institute of Chartered Accounts of India.
13. D. G. Sharma: Advanced Accounting (IPCC): Tax Mann Publications.

SEMESTER - III

Paper MJR 302: BUSINESS STATISTICS -I

PAPER CODE: MJR 302 **Max. Marks: 80U +20I=100**
THPW: 5; Credits: 5 **ESED: 3 hrs**

Objective: *To inculcate analytical and computational ability among the students.*

Course Objectives: _
1. Understand basic statistical concepts and methods of data collection
2. Organize and present data using classification, tabulation, diagrams, and graphs
3. Compute and interpret measures of central tendency for different data series
4. Analyze dispersion and shape of distributions using various statistical measures
5. Construct and apply index numbers for economic and business analysis

Course Outcomes:_
1. Plan statistical investigations and collect primary and secondary data with awareness of errors
2. Classify, tabulate, and present data using bar diagrams, histograms, frequency curves, and other tools
3. Calculate and compare Mean, Median, Mode, Geometric Mean, and Harmonic Mean across individual, discrete, and continuous series
4. Measure dispersion using Range, Quartile Deviation, Mean Deviation, Standard Deviation, Coefficient of Variation, and interpret skewness and kurtosis
5. Construct index numbers using Laspeyres', Paasche's, and Marshall–Edgeworth methods, and apply tests of adequacy, base shifting, splicing, and deflating

UNIT I: INTRODUCTION, DATA ORGANIZATION AND PRESENTATION:

Meaning and scope of statistics. Importance and limitations of statistics in business and commerce; Statistical investigation: Planning of a statistical enquiry. Sources of data – primary and secondary data. Methods of collecting data. Census and sampling methods. Errors in statistical investigation and approximation; Organization of data: Classification and tabulation of data. Frequency distribution and grouped frequency tables; Diagrammatic and graphical presentation of data: Bar diagrams, component bar diagrams, pie diagrams and line graphs. Histograms, frequency polygon and frequency curve. Interpretation of statistical diagrams and graphs.

UNIT II: MEASURES OF CENTRAL TENDENCY:

Definition and types of data: Individual series, discrete series and continuous series; Meaning and importance of measures of central tendency; Arithmetic Mean – computation for individual, discrete and continuous series. Combined mean, Weighted Mean; Geometric Mean and Harmonic Mean – meaning, computation and applications.
Partition values – Median , Quartiles, Deciles and Percentiles, and Mode – calculation for different series and graphical location; Comparison of averages – advantages and limitations of different measures of central tendency.

UNIT III: MEASURES OF DISPERSION:

Meaning and significance of dispersion. Characteristics of a good measure of dispersion. Absolute and relative measures of dispersion. Measurement of dispersion through Range, Quartile Deviation, Mean Deviation and Standard Deviation – computation and applications for individual, discrete and continuous series; Relative measures of dispersion – Coefficient of Range, Coefficient of Quartile Deviation and Coefficient of Mean Deviation. Combined Standard Deviation – computation and applications; Applications of dispersion in business and economic analysis. Advantages and limitations of various measures of dispersion.

UNIT IV: RELATIVE DISPERSION AND SHAPE OF DISTRIBUTION:

Coefficient of Variation: Meaning and significance, Relative measure of dispersion, Computation and interpretation, Comparison of consistency and stability of two or more series; Lorenz Curve: Meaning and significance, Construction of Lorenz Curve, Measurement of inequality and concentration, Applications in income, wealth and market-share analysis; Skewness: Meaning and significance, Symmetrical and asymmetrical distributions, Positive and negative skewness, Karl Pearson's Coefficient of Skewness, Bowley's Coefficient of Skewness, Interpretation and applications; Kurtosis: Meaning and significance, Types of kurtosis, Interpretation of kurtosis in statistical analysis.

UNIT V: INDEX NUMBERS:

Meaning and importance of index numbers in economic and business analysis. Uses and limitations of index numbers; Problems in the construction of index numbers; Methods of constructing index numbers: Simple index numbers and weighted index numbers – Fisher, Laspeyres', Paasche's and Marshall–Edgeworth methods; Tests of adequacy of index numbers – Unit test, Time Reversal test and Factor Reversal test, Base shifting, splicing and deflating of index numbers.

SUGGESTED READINGS:

1. Levin & Rubin: Statistics for Management: Pearson Publications
2. Gupta S.C: Fundamentals of Statistics: Himalaya Publishers
3. Arun Kumar Singh: Business Statistics: Kalyaniu Publishers, First Edition 2017
4. S. L Aggarwal, S. L. Bhardwaj: Business Statistics: Kalyani Publications
5. E. Narayanan Nadar: Statistics: PHI Learning
6. Dr. Obul Reddy, Dr. D. Shridevi: Business Statstics –I: PBP
7. Dr. J. K. Thukral: Business Statistics: Taxmann Publications
8. Dr.PrashantaAthma, N. Rajyalaxmi: Business Statistics –I:SIA Publishers & Distributors Pvt. Ltd.
9. K. Alagar: Business Statistics: Tata McGraw Hill
10. S. P Gupta: Fundamentals of Statistical: Sultan Chand
11. Dr. Padmaja, K.Kamakshi: Business Statistics-I: SV Publications, First Edition
12. J. K. Sharma: Business Statistics: Vikas Publishers
13. Dr. Nazia Sultana: Business Statistics- 1: S Publishers
14. Kapoor V.K: Statistics-Problems and Solutions: S. Chand
15. Sancheti D.C. & Kapoor: Statistics - Theory, Methods and Applications: V.K
16. S. K. Chakravarty: Business Statistics: New Age International Publishers
17. Andasn,Sweenly,Williams: Statistics: Cingage.

SEMESTER - III

Paper MJR 303: RELATIONAL DATABASE MANAGEMENT SYSTEM

Hours Per Week: (3T+4P) **Credits**: 5

Exam Hours: 3 **Marks:** 50U+35P+15I=100

Objective: *To acquire basic conceptual background necessary to design and develop simple database system, Relational database mode, ER model and distributed databases, and to write good queries using a standard query language called SQL.*

Course Objectives:

1. Understand DBMS architecture, advantages over file systems, and role of DBA
2. Apply ER and relational models, keys, constraints, and convert ER diagrams to relational schema
3. Normalize databases to 3NF/BCNF and evaluate file organization and indexing techniques
4. Use SQL for DDL, DML, DCL, TCL, joins, views, subqueries, and table handling
5. Analyze transactions, concurrency control, recovery, security, and distributed client-server databases

Course Outcomes:

1. Differentiate file-based systems vs DBMS and explain 3-level architecture, data dictionary, and DBA functions
2. Design ER models and implement relational schemas with primary, foreign keys, and integrity constraints
3. Apply normalization rules to remove redundancy and choose suitable file organization and indexing methods
4. Write SQL queries using order by, group by, joins, nested queries, and manage views, sequences, and indexes
5. Implement concurrency control using 2PL, deadlock prevention, recovery techniques, and explain DDBMS, fragmentation, replication, and client-server architecture

UNIT-I: BASIC CONCEPTS:

Database Management System - File based system - Advantages ofDBMS over file based system - Database Approach - Logical DBMS Architecture - Three level architecture of DBMS or logical DBMS architecture - Need for three level architecture - Physical DBMS Architecture - Database Administrator (DBA) Functions & Role - Data files indices and Data Dictionary

- Types of Database. Relational and ER Models**:** Data Models - Relational Model – Domains - Tuple and Relation - Super keys - Candidate keys - Primary keys and foreign key for the Relations - Relational Constraints - Domain Constraint - Key Constraint - Integrity Constraint - Update Operations and Dealing with Constraint Violations - Relational Operations - Entity Relationship (ER) Model – Entities – Attributes – Relationships - More about Entities and Relationships - Defining Relationship for College Database - E-R Diagram - Conversion of E-R Diagram to Relational Database.

UNIT-II: DATABASE INTEGRITY AND NORMALISATION:

Relational Database Integrity - TheKeys - Referential Integrity - Entity Integrity - Redundancy and Associated Problems – Single Valued Dependencies – Normalisation - Rules of Data Normalisation - The First Normal Form -The Second Normal Form - The Third Normal Form - Boyce Codd Normal Form - Attribute Preservation - Lossless-join Decomposition - Dependency Preservation. File Organisation : Physical Database Design Issues - Storage of Database on Hard Disks - File Organisation and Its Types - Heap files (Unordered files) - Sequential File Organisation - Indexed (Indexed Sequential) File Organisation - Hashed File Organisation

- Types of Indexes - Index and Tree Structure - Multi-key File Organisation - Need for Multiple Access Paths - Multi-list File Organisation - Inverted File Organisation.

UNIT-III: STRUCTURES QUERY LANGUAGE (SQL):

Meaning–SQL commands - DataDefinition Language - Data Manipulation Language - Data Control Language - Transaction Control Language - Queries using Order by – Where - Group by - Nested Queries. Joins – Views – Sequences - Indexes and Synonyms - Table Handling.

UNIT-IV: TRANSACTIONS AND CONCURRENCY MANAGEMENT:

Transactions - ConcurrentTransactions - Locking Protocol - Serialisable Schedules - Locks Two Phase Locking (2PL) - Deadlock and its Prevention - Optimistic Concurrency Control. Database Recovery and Security: Database Recovery meaning - Kinds of failures - Failure controlling methods - Database errors - Backup & Recovery Techniques - Security & Integrity - Database Security - Authorization.

UNIT-V: DISTRIBUTED AND CLIENT SERVER DATABASES:

Need for Distributed DatabaseSystems - Structure of Distributed Database - Advantages and Disadvantages of DDBMS - Advantages of Data Distribution - Disadvantages of Data Distribution - Data Replication - Data Fragmentation. Client Server Databases: Emergence of Client Server Architecture - Need for Client Server Computing - Structure of Client Server Systems & its advantages.

ADVANCED TOPICS: Overview: Parallel Database - Multimedia Database - Mobile Database - Web Database - Multidimensional Database. Data Warehouse - OLTP Vs OLAP - NoSQL Database.

LAB:SQL QUERIES BASED ON VARIOUS COMMANDS.

SUGGESTED READINGS:

1. R.Elmasri& S.B.Navathe :Database Systems: Pearson.
2. ISRD Group, Introduction to Database Management System: McGraw Hill.
3. K. Prashanth Kumar: Relational Database Management System: Kalyani Publishers, Year of Publication: 2017, Reprinted 2024.
4. Ms Sunanda Gutti: Relational Database Management: S Publishers
5. R.Ramakrishnan&J.Gehrke: Database Management System: McGraw Hill.
6. J.A.Hoffer,V.Rames&H.Topi, Modern Database Management: Pearson Publishers.
7. Silberschatz, Korth&Sudarshan,:Database System Concepts: McGraw Hill.
8. ParteekBhaiaSimplifiedApproach to DBMS: Kalyani Publishers.
9. Nirupma Pathak: Database Management System: Himalaya.
10. Pannerselvam: Database Management Systems: PHI.
11. Srivastava & Srivastava: Relational Database Management System: New Age
12. PHPMySQL SpokenTutorials byIIT Bombay.
13. I.Abramson: Oracle Database: A Beginner's GuideMcGraw Hill.
14. G. Kavitha Reddy, Dr. P. Nageshwar, Relational Database Management System: SV Publications, Second Edition

SEMESTER - IV

Paper MJR401: INCOME TAX

PAPER CODE: MJR 401 **Max. Marks: 80U +20I=100**
THPW: 5; Credits: 5 **ESED: 3 hrs**

Objective: *To acquire conceptual and legal knowledge about Income Tax provisions relating to computation of Income from different heads with reference to an Individual Assessee.*

Course Objectives:
1. Understand the history, concepts, and basic framework of Income Tax Act 1961 and Income Tax Act 2025
2. Compute income from salaries and house property with applicable deductions
3. Determine profits and gains from business or profession including depreciation and presumptive taxation
4. Analyze capital gains and income from other sources and apply relevant exemptions
5. Compute total income of individuals considering clubbing, set-off, carry forward of losses, and deductions

Course Outcomes:
1. Explain canons of taxation, residential status, scope of total income, and compare old and new tax regimes
2. Calculate taxable salary and house property income after considering allowances, perquisites, annual value, and deductions
3. Compute business and professional income by identifying allowable expenses, disallowed expenses, and deemed profits
4. Determine short-term and long-term capital gains and compute income from other sources with applicable deductions
5. Compute gross total income, claim deductions under Chapter VI-A, apply AMT, and calculate tax liability under both regimes

UNIT–I: INTRODUCTION:

Brief History of Income Tax Acts in India with a special reference to Income Tax Act 1961 and Income Tax Act 2025 - Canons of Taxation - Direct and Indirect Taxes – Definitions and Basic Concepts: Assessee – Deemed Assessee – Assessee-in default – Person – Income – Agricultural Income - Rules for Integration of Agricultural and Non Agricultural Incomes - Heads of Income - Gross Total Income – Total Income - Assessment Year - Previous Year Concept of Tax Year as per Income Tax Act 2025 - Incomes Exempt from Tax - Charge of Income Tax -Residential Status - Scope of Total Income - Old Tax Regime and New Tax Regime (Theory Only)

UNIT–II: INCOME FROM SALARIES AND INCOME FROM HOUSE PROPERTY

Definition of Salary – Characteristics of Salary – Allowances - Perquisites - Profits in lieu of Salary – Provident Funds – Deductions – Problems on Computation of Income from Salary.

Definition of House Property – Annual Value – Determination of Annual Value for Let-out House and Self-occupied House – Arrears of Rent and Unrealised Rent Received -Property Owned by Co-owners - Deductions – Problems on Computation of Income from House Property.

UNIT– III: PROFITS AND GAINS OF BUSINESS OR PROFESSION

Definition of Business and Profession – Procedure for Computation of Income from Business – Rules – Revenue and Capital Nature of Incomes and Expenses – Allowable Expenses – Expenses Expressly Disallowed – Deemed Profits – Valuation of Stock – Presumptive Taxation - Proforma of Computation of Professional Income- Chartered Accountant - Advocate - Medical Practitioner - Problems on computation of Income from Business and Profession.

Depreciation: Meaning – Conditions for charge of depreciation – Assets used for Business – Block of Assets – Rates of Depreciation (Theory only)

UNIT– IV: CAPITAL GAINS AND INCOME FROM OTHER SOURCES:

Introduction - Meaning – Basis of charge – Short term and Long term Capital Assets – Transfer of Capital Asset – Deemed Transfer – Transactions not Regarded as Transfer – Determination of Cost of Acquisition – Procedure for Computation of Long-term and Short-term Capital Gains/Losses – Exemptions in Respect of Certain Capital Gains – Problems on Computation of Capital Gains.

Incomes from Other Sources – Interest on Securities – Deductions - Amounts not Deductible - Problems on Computation on Income from Other Sources.

UNIT-V: COMPUTATION OF TOTAL INCOME OF INDIVIDUALS:

Income of Other Persons Included in the Total Income of Assessee – Aggregation of Income – Provisions of Set-off and Carry Forward of Losses – Computation of Gross Total Income – Deductions to be made from Gross Total Income – Alternate Minimum Tax - Problems on Computation of Total Income and Tax Liability as per both Old and New Regimes.

SUGGESTED READINGS:

1. V.P. Gaur & D.B Narang: Income Tax Law and Practice: Kalyani Publishers.
2. Dr. Vinod K. Singhania &Dr. Kapil Singhania: Direct Taxes Law & Practice: Taxmann Publishers
3. Dr. M.N. Ravi: Taxation: PBP.
4. V.P Gaur: Income Tax: Kalyani Publishers, Tenth Revised Edition 2017
5. B.B. Lal: Income Tax: Pearson Education.
6. R.G. Saha: Taxation: Himalaya Publishing House Pvt. Ltd.
7. Johar: Income Tax: McGrawHill Education.
8. Balachandran &Thothadri: Taxation Law and Practice: PHI Learning.
9. Ahuja Girish: Direct Tax Law and Practice
10. Dr. P.V. Ramana Rao &Dr. A. Sudhakar: Income Tax: National Publishing Co.
11. K. Phani Chakravarthy, Maruthi Rao Patil Biradar:Incometax:SV Publications, First Edition

SEMESTER - IV

Paper MJR 402: BUSINESS STATISTICS - II

PAPER CODE: MJR 402 **Max. Marks: 80U +20I=100**
THPW: 5; Credits: 5 **ESED: 3 hrs**

Objective: *To inculcate analytical and computational ability among the students.*

Course Objectives:
1. Understand correlation concepts and methods to measure relationships between variables
2. Apply regression analysis for estimation, prediction, and business forecasting
3. Analyze time series data and measure trend and seasonal variations
4. Understand probability theory, laws, and their application in decision making
5. Examine probability distributions and their use in business and economic analysis

Course Outcomes:
1. Compute and interpret Karl Pearson's and Spearman's correlation, covariance, and coefficients of determination
2. Derive regression equations, estimate regression coefficients, and use standard error of estimate for forecasting
3. Measure trend using graphic, semi-averages, moving averages, and least squares methods, and compute seasonal variations
4. Apply addition and multiplication theorems, conditional probability, and Bayes' Theorem to business problems
5. Fit and apply Binomial, Poisson, and Normal distributions, and use Central Limit Theorem for practical analysis

UNIT I: CORRELATION:

Meaning and types of correlation – positive, negative, simple, multiple, partial, linear and non-linear correlation. Correlation and causation. Methods of studying correlation: Scatter diagram, Concurrent Deviation Method, Karl Pearson's coefficient of correlation and Spearman's rank correlation coefficient. Covariance and its relationship with Correlation. Standard error and probable error of the coefficient of correlation. Coefficient of determination, coefficient of non-determination and coefficient of alienation. Interpretation, applications and limitations of correlation in business and economic analysis.

UNIT II: REGRESSION ANALYSIS:

Meaning and significance of regression analysis. Difference between correlation and regression. Types of regression – linear and non-linear regression. Lines of regression – regression line of Y on X and regression line of X on Y; Regression equations and regression coefficients – derivation of regression equations, estimation of regression coefficients, properties of regression coefficients, and relationship between correlation coefficient and regression coefficients. Standard Error of Estimate – meaning, computation and interpretation. Prediction and forecasting using regression equations. Applications of regression analysis in business and economic decision-making. Limitations of regression analysis.

UNIT III: TIME SERIES ANALYSIS:

Meaning and importance of time series in business and economic analysis. Components of time series – Trend, Seasonal, Cyclical and Irregular Variations; Measurement of Trend: Graphic Method, Semi-Averages Method (for even and odd number of years/periods), Moving Averages Method (3-year, 4-year, 5-year and 7-year moving averages; centering of moving averages where necessary); Least Squares Method (Linear Trend); Measurement of Seasonal Variations: Simple Averages Method, Ratio-to-Moving Average Method, Link Relative Method, Applications, Uses and Limitations of Time Series Analysis in business and economic studies.

UNIT IV: PROBABILITY THEORY:

Meaning and importance of probability. Random experiments, sample space and events. Types of events – simple and compound events, mutually exclusive events, collectively exhaustive events and independent events. Basic concepts of set theory relevant to probability. Approaches to probability – classical, empirical and subjective approaches; Laws of probability – Addition Theorem and Multiplication Theorem. Conditional probability and Bayes' Theorem. Applications of probability in business and decision-making.

UNIT V: PROBABILITY DISTRIBUTIONS:

Binomial Distribution: Assumptions and characteristics, Properties of Binomial Distribution, Computation of probabilities, Fitting of Binomial Distribution; Poisson Distribution: Assumptions and characteristics, Properties of Poisson Distribution, Computation of probabilities, Fitting of Poisson Distribution; Normal Distribution: Characteristics and properties of Normal Distribution, Standard Normal Distribution, Computation of probabilities using Normal Distribution tables, Applications of Normal Distribution in business and economics, Central Limit Theorem – concept and significance.

SUGGESTED READINGS:

1. Levin & Rubin: Statistics for Management: Pearson Publications,
2. Gupta S.C: Fundamentals of Statistics: Himalaya
3. Arun Kumar Singla: Business Statistics II: Kalyani Publishers, Year of Publication: 2018, Reprinted 2025.
4. P. N. Jani: Business Statistics: Theory & Application, PHI Learning
5. S. L Aggarwal: Business Statistics II: Kalyani Publications
6. Dr. OBul Reddy, Dr. D. Shridevi: Business Statics – II: PBP
7. Dr. J. K. Thukral: Business Statistics: Taxmann Publications
8. Dr.PrashantaAthma, N. Rajyalaxmi: Business Statistics –II: SIA Publishers & Distributors Pvt. Ltd.
9. K. Alagar: Business Statistics: Tata Mc Graw Hill
10. S. P Gupta: Fundamentals of Statistical: Sultan Chand
11. J. K. Sharma: Business Statistics: Vikas Publishers
12. Vora: Business Statistics: Tata Mc Graw Hill
13. Kapoor V.K: Statistics-Problems and Solutions: S. Chand
14. SanchetiD.C. & Kapoor V.K: Statistics-Teory, Methods and Applications:
15. S. K. Chakravarty: Business Statistics: New Age International Publishers
16. Dr. G.Laxman,Vasudeva Reddy &K.Goud, Business Statistics:TaxmannPublications,Hyderabad.
17. Dr. Nazia Sultana: Business Statistics-II: S Publishers
18. S. Bhagya Laxmi, Gampala Sudhakar: Business Statistics-II: SV Publications, First Edition

SEMESTER - IV

Paper MJR 403: WEB TECHNOLOGIES

Hours Per Week:(3T+4P) **Credits**: 5
Exam Hours:3 **Marks:** 50U+35P+15I=100

Course Objectives:

1. To introduce the fundamentals of web technologies and HTML for web page creation.
2. To develop skills in designing responsive web pages using CSS.
3. To enable students to create dynamic web pages using JavaScript and DOM manipulation.
4. To provide knowledge of server-side scripting using PHP and database connectivity.
5. To familiarize students with modern web concepts and basic enterprise technologies.

Course Outcomes

CO1: Design structured web pages using HTML5 and apply web design principles.
CO2: Develop visually appealing and responsive web pages using CSS.
CO3: Implement dynamic functionality using JavaScript and event handling.
CO4: Build interactive web applications using PHP and connect them with databases.
CO5: Understand advanced web technologies and develop complete web-based solutions.

UNIT – I: INTRODUCTION TO WEB TECHNOLOGIES & HTML

Introduction to web technologies – Internet and World Wide Web – Structure of a website – HTML5 basics – Basic structure of HTML – Text formatting – Hyperlinks – Images – Lists – Tables – Forms and form elements – Attributes – Comments – Web design principles – Introduction to semantic elements (header, footer, section).

UNIT – II: CASCADING STYLE SHEETS (CSS)

Introduction to CSS – Types of CSS (Inline, Internal, External) – CSS syntax and selectors – Text and font styling – Colors and backgrounds – Box model – Margins, padding and borders –Layout techniques – Basic responsive design concepts – Positioning and alignment – Introduction to simple transitions and effects.

UNIT – III: JAVASCRIPT AND DOM MANIPULATION

Introduction to JavaScript – Client-side scripting – Variables, data types, operators – Control structures – Functions – Arrays and objects – Document Object Model (DOM) – Event handling– Form validation – Manipulating HTML and CSS dynamically – Basic debugging techniques.

UNIT – IV: SERVER-SIDE SCRIPTING USING PHP

Introduction to PHP – Syntax and basic constructs – Variables, data types, operators – Control structures and functions – Handling forms using PHP – File handling – Sessions and cookies –Introduction to MySQL – Database connectivity using PHP – Executing queries and handling
results – Building simple dynamic web applications.

UNIT – V: XML AND INTRODUCTION TO ENTERPRISE WEB TECHNOLOGIES

Introduction to XML – Structure and syntax – Creating XML documents – XML with CSS/XSL– Basic XML parsing concepts – Introduction to JSP – Structure of JSP page – Directives, expressions and implicit objects – Session tracking – Basic database connectivity – Overview ofmodern web technologies and frameworks.

LAB WORK

1. Create basic web pages using HTML5 elements.
2. Design web pages using CSS (layouts, styling, responsiveness).
3. Implement JavaScript programs for validation and DOM manipulation.
4. Develop dynamic forms using PHP.
5. Create database-driven applications using PHP & MySQL.
6. Build a mini project: Dynamic website with frontend and backend integration.

SUGGESTED READINGS:

1. Web Technology: Indrakanti Sekhar, V.N. Battu, Himalaya Publishers.
2. Internet & World Wide Web How to Program: Deitel&Deitel,Pearson.
3. Web Technologies: Puneet Kumar: Kalyani Publishers, Year of Publication:2021, Reprinted 2026.
4. Web Technology: Kavitha Reddy, S Publishers
5. Web programming: ChrisBates.
6. HTML & XML An Introduction NIIT,PHI.
7. HTML for the WWW with XHTML & CSS: WlizabethCastro,Pearson
8. Internet and Web Technologies: Raj Kamal, McGrawHill.
9. Web Technology: A Developer's Perspective: Gopalan&Sivaselvan,PHI.
10. Internet Technology and Web Page Design: R.Singh&M.Sonia,Kalyani.
11. Web Technology and Design by Xavier, New Age InternationalPub.
12. Web technologies: Bandari Vinod Babu, S.Sudharshan Goud, SV Publications, Second Edition