

PAPER CODE: MJR 103:

Total Marks: 50T+35P+15I=100

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

ESED: 2 HRS

Objective: To understand the basic concepts and terminology of information technology and to identify issues related to information security.

Course Objectives:

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.

Course Outcomes:

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.

UNIT I: FOUNDATIONS OF COMPUTING & DIGITAL BUSINESS:

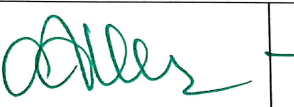
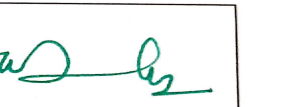
Introduction to Digital Transformation in Business - Strategic Role of IT in Functional Areas (Finance, Marketing, HR, SCM) - **Components of a Computer System:** Hardware (CPU, RAM/ROM), Software (System & Application) - **Input/output Devices:** From keyboards & printers to biometric & IoT devices - Bits, Bytes & Data Representation - **Ethical & Social Aspects:** Digital privacy (GDPR, India's DPDPA), Digital divide, Intellectual property - **Emerging Technologies Overview:** AI, ML, IoT, Block chain, RPA (conceptual)

UNIT II: DATA, STORAGE & LOGICAL FOUNDATIONS:

Binary Logic: Binary system, AND, OR, NOT (basic illustrations) - **Types of Storage:** RAM, ROM, SSD, HDD, Flash Drives - **Cloud vs. Local Storage:** Applications in Business - **File Systems & Organization:** Files, folders, extensions - **Conceptual Database Overview:** Tables, Fields, Records - **Organizing Business Data:** Numeric/Text/Date, basic tabular format - Role of Data in Business Decision-Making

UNIT III: SOFTWARE APPLICATIONS FOR BUSINESS:

Operating Systems: Functions, types (Windows, Linux, MacOS, Android, iOS) - **Utility Software:** Antivirus, Backup, File compression, System clean-up tools - **Word Processing:** Formatting, tables, mail merge, collaborative editing - **Spreadsheets:** Formulas (SUM, AVERAGE, IF, VLOOKUP), data charts, validation, pivot tables - **Presentations:** Design, transitions, multimedia integration - **Enterprise Software:** ERP (basic modules and benefits), **(a) CRM:** Customer interaction management, **(b) DBMS:** Use cases in business operations - **Software as a Service (SaaS):** Cloud-based app delivery model

			
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UNIT IV: NETWORKING & INTERNET IN BUSINESS:

Basics of Networking: LAN, WAN, WLAN, Internet - Network Topologies (Star, Bus, Ring, Mesh - conceptual) - **Devices:** Routers, Switches, Modems (roles and applications) - Client-Server Architecture - **Internet Fundamentals:** IP, DNS, URLs, Browsers, Search Engines - **E-Commerce Basics:** Models and relevance - Social Media in Business - **Data Communication:** Wired (Ethernet, Fiber), Wireless (Wi-Fi, Bluetooth) - Bandwidth & Speed Concepts (bps, Mbps, Gbps)

UNIT V: CLOUD COMPUTING & CYBERSECURITY:

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)

Practical Component (2 Hours per Week)

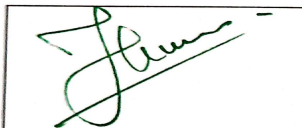
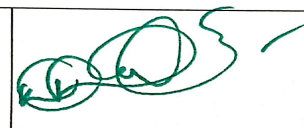
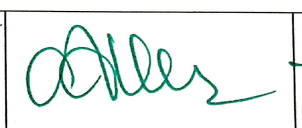
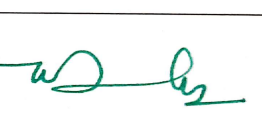
Hands-on sessions aligned with each unit:

- OS Navigation & File Handling
- Microsoft Office / Google Workspace:
 - Advanced Word, Excel, and PowerPoint features
 - Mail merge, Data sorting, Pivot tables, Charts
- Internet Browsing & Research Skills
- Cloud Tools: Google Drive, OneDrive collaboration

SUGGESTED READINGS:

1. Fundamentals of Information Technology: Puneet Kumar & S. Bhardwaj, Kalyani Publishers.
2. Computer Fundamentals: P.K.Sinha
3. Fundamentals of Information Technology : G. Kavitha Reddy, S Publishers.
4. Fundamentals of Informantion Technology : Dr.Jayalaxmi and others : Professional Books Publisher
5. Fundamentals of Information Technology: Mrs. R. Renuka: Vedashree Publishers
6. Fundamentals of Information Technology: Tulasi Ram Kandula: Himalaya Publishing House
7. Fundamentals of Computers: C S V Murthy: Himalaya Publishing House

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