MANAGEMENT INFORMATION SYSTEMS

**Introduction:**

Management Information Systems provides the fundamental concepts of a system. It pinpoints the importance of information in today’s organization and the role, which IT is playing in this regard. Course also describes the key features of computer hardware and software. Besides this, it gives an introduction to the significance of information technology (IT) in business and society. Also practical training in every-day computer software packages will be provided to the students.

**Specification Grid:**

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| Part | Chapters |
| I | 1. **Introduction to Information Systems in Business.** 2. **Fundamentals of Information Systems.** |
| **II** | 1. **Solving Business Problems with Information Systems.** 2. **Computer Hardware.** |
| **III** | 1. **Computer Software.** 2. **Telecommunications.** |
| **IV** | 1. **Information Systems for End User Computing and Collaboration.** 2. **Information Systems for Business Operations.** 3. **Information Systems and Artificial Intelligence Technologies.** |

# COURSE OUTLINE

1. **Introduction to Information Systems in Business.**
   1. Reasons for studying Information Systems (IS).
      1. Importance of Information Systems.
2. **Fundamentals of Information Systems.**
   1. Fundamental Information System Concepts.
      1. Components of an Information System.
      2. Information System Resources.
      3. Information System Activities.
         1. Input of Data., Processing of Data into Information. Output of Information. Storage of Data.
   2. Brief overview of Information Systems.
      1. Operations Support Systems.
         1. Transaction Processing Systems.
         2. Process Control Systems.
      2. Management Support Systems.
         1. Management Information Systems.
         2. Decision Support Systems.
         3. Executive Support Systems.
      3. Other Classifications of Information System.
         1. Expert System.
         2. Business Information Systems.
3. **Solving Business Problems with Information Systems.**
   1. Developing Information System Solutions.
      1. The Systems Development Life Cycle.
      2. System Investigation.
      3. System Analysis.
      4. Requirements Engineering
      5. System Design (algorithm, flowchart and pseudo code)
      6. Coding
      7. Testing/verification
      8. Deployment/implementation
      9. Maintenance/support
4. **Computer Hardware.**
   1. Computer System Components.
      1. Input/output Devices.
      2. CPU and Its Components
      3. Memory and Storage Devices, Trends and Trade-Offs.
      4. Primary Memory, Secondary Storage (Magnetic disk, SSD, BIOS, taps, cloud STORAGE – PERSONAL, PRIVATE, PUBLIC and HYBRID), Optical).
      5. Communication Devices (Wifi, Bluetooth, Network Card, Modem)
      6. Types of Computers
5. **Computer Software.**
   1. System Software: Computer System Management.
      1. Introduction to System Software.
      2. Operating Systems.
      3. Embedded Operating Systems
      4. Device Drivers Software
      5. Windows Utility Programs: (anti-virus, backup s/w, data compression s/w, Disk defragmenters, Disk compression, File managers, Scandisk)
      6. System Development Softwares
      7. Firmware
      8. Networking softwares
   2. Applications Software: End User Applications.
      1. Word Processing Packages: MS Word: creating, saving, editing, opening, and printing new documents.
      2. Electronic Spreadsheet Packages: What-if Analysis. Excel build-in functions (average, sum, absolute, logarithm), linking excel sheet with MS word document
      3. Database Management Packages. MS Access - Database design and implementation (tables, forms, queries, reports)
      4. Multimedia Packages ( e.g., Media Player)
      5. Presentation software (MS PowerPoint)
      6. Educational Software (Dictionaries)
6. **Telecommunications.**
   1. A Manager’s Overview of Telecommunications.
      1. Why Telecommunication is Important?
      2. Types of Telecommunications Networks: Wide Area Networks (WAN). Local Area Networks (LAN). Client/Server Computing. Wireless networks and its types, Virtual private networks (VPN), Peer-to-peer network, Internet/Intranet/Extranet
      3. Business on the Internet E-Commerce and E-business.
   2. Technical Telecommunications Alternatives.
      1. Telecommunications Media: Twisted-Pair Wire. Coaxial Cable. Fiber Optics.

Terrestrial Microwave. Communications Satellite. Wireless LANs.

* + 1. Telecommunication Network Topologies.

Star, Ring and Bus Networks.

1. **Information System for End User Computing and Collaboration.**
   1. End User Computing and Collaboration.
      1. End User Collaboration.
      2. Work Group Computing. Electronic Work Groups.

Electronic Communications Systems: Electronic Mail. Voice Mail. Bulletin Board Systems. Public Information Systems. ideotex. Facsimile.

1. **Information Systems for Business Operations.**
   1. Business Information Systems.
   2. Brief Description of:
      1. Transaction Processing Systems
      2. Marketing Information System (MkIS)
      3. Decision Support System (DSS).
      4. Executive Information System (EIS).
      5. Group Decision Support System (GDSS).
2. **Information Systems and Artificial Intelligence Technologies.**
   1. Artificial Intelligence and Human Information Processing.
      1. Machine Learning, Data mining and Deep learning for business data analytics
   2. Expert Systems and Other Knowledge-Based Systems.
      1. Types of Expert Systems (ES): Rule-Based ES. Probability-based ES. Case-Based ES.
3. **Internet (where available).**
   * 1. History of Internet and Internet Protocols (TCP/IT)
     2. History of WWW and Web 1.0 to 4.0 (higher versions)
     3. Browsing (list of browsers, how browsers work)
     4. Web sites/design steps

**Prescribed Books:**

1. Rahman Ali & Asmat Ali, “Management Information Systems (MIS)” 1st Edition 2018, Al-Ilm Publisher, Peshawar.
2. Management Information Systems: James A. O’Brien, Irwin.
3. Mastering Microsoft Office.

**Suggested Reading:**

1. Management Information System: Charles Parker & Thomas Case, McGraw Hill Book Company.