ITC – 211: Computers Information System (CIS)

Module Objectives

This module aims to introduce students to the basics of computer and its use and application in real world situations. Students are expected to learn to use the MS Office for word processing, spreadsheet, graphic presentation, and Internet. Laboratory work is essential in this module.

Contents

Introduction to computer system, Programming Language, Computer System development, Multimedia, Network and Communication, Introduction to the Internet, Data Processing and Database, Artificial Intelligence, Computer crime and safety measures.

Detailed Course

Unit 1: Introduction to computer System **LH 13**

1. Introduction to computer
2. Characteristics of computer
    a. Word Length
    b. Speed
    c. Storage
    d. Accuracy
    e. Diligence
3. Types Of computer
    a. Laptop
    b. Desktop
    c. Palmtop
4. Use of Computer
5. Input output device
    a. Input device
        i. Keyboard and its use
        ii. Mouse and its use
        iii. Micro phone
    b. Output Device
        i. VDU
            1. CRT and its use
            2. LCD and its use
            3. Plasma and its use
        ii. Printer
            1. Impact
                a. Dot Matrix
            2. Non-Impact
                a. Ink-jet printer
                b. Laser Printer

iii. Speakers

6. CPU(CU, ALU and Registers)
7. Bus and its type
8. Storage
    a. Primary
        i. Cache Memory
        ii. RAM and its type
        iii. ROM and its type
    b. Auxiliary
        i. Magnetic Tape
        ii. Hard Disk
        iii. Pen Drive
        iv. Memory Card
        v. Optical Disk
            1. CD
            2. DVD
            3. Magneto-optical (MO) drives
9. Software
    a. Introduction
    b. System Software
        i. OS
            1. Introduction
            2. Features
        ii. Utility Software
            1. Device Driver
            2. Anti virus
    c. Application Software
        i. Word Processer
        ii. Spread Sheet
        iii. Presentation Tool

Unit 2: Programming Language **LH 6**

1. Machine language and assembly language
2. High-level and low-level language
3. Assemblers, Compilers and Interpreter
4. Problem – Solving and programming
    a. Algorithms
    b. Flow Charts
    c. Three Basic Operations (sequence, selection, iteration)
    d. Procedures and programs
5. Structured Programming
    a. Features
    b. Advantages

6. OOPS
    a. Features
    b. Advantages
7. Scripting Language
    a. Introduction
    b. Client side scripting
    c. Server side scripting

Unit 3: Computer system Development **LH 4**

1. Investigation
2. Analysis
3. Design
4. Implementation
5. Documentation

Unit 4: Multimedia **LH 2**

1. What is multimedia?
2. Uses of multimedia
3. Image Quality
4. Image File Format (TIF, JPEG, GIF)
5. Animation
6. Audio

Unit 5: Network and Communication **LH 4**

1. Overview of Network
2. Types of Transmission (Data communication and voice communication)
3. Network topologies (Ring, Bus, Star)
4. Communication media
    a) Guided
        i) Twisted pair cable
        ii) Coaxial cable
        iii) Optical Fiber
    b) Unguided
        i) Microwave System
        ii) Communication Satellites
5. Types of Network
    a) LAN
    b) WAN
6. Network Protocol
    a) TCP/IP

Unit 6: Introduction to the Internet **LH 4**

1. IP Address and Domain Name System (DNS)

2. Client-Server Architecture
3. Hyper Text Transfer Protocol (HTTP)
4. Electronic Mail (Email)
5. File Transfer Protocol (FTP)
6. World Wide Web (WWW)
7. Remote Login (TELNET)
8. Static and Dynamic web pages
9. Search Engines

Unit 7: Data Processing and Database **LH 5**

1. Data Processing
    a) Introduction to Data processing
    b) File Processing
    c) Sequential File processing
    d) Direct-access file processing
2. Database
    a) Introduction to database
    b) E-R diagram (Symbols)
    c) Relation Database
        i) Primary Key
        ii) Foreign Key
3. Data Mining
    a) Introduction To data mining
    b) Uses of Data Mining
4. Data warehouse
    a) Introduction to data warehouse
    b) Use of data warehouse

Unit 8: Artificial Intelligence **LH 3**

1. Introduction
2. Application
3. Neural Networks
4. Genetic Algorithms
5. Expert System

Unit 9: Computer Crime and Safety Measure **LH 4**

1. Computer Crime
2. Software Piracy
3. Anti Piracy
4. Computer Virus, Worm, Spyware
5. Ethical Issues in Computer
6. Cyber Law.
7. Network Security
    a. Firewall

8. Data and message security
    a. Encryption and Decryption

References

Introduction to Computers, Peter Norton's, Tata McGraw-Hill
Data Mining, Pieter Adriaans, Dolft Zantinge, Pearson Education
Foundations of IT--------- Atul Kahate-------Tata mcGrawhill