

INTRODUCTION TO ICT RESOURCES

CODE IT 201

L T P
2 -- 2**RATIONALE**

The objective of this course is to introduce the concept of PC hardware and its utilities. Students are able to understand network concepts and networking administration in detailed. The ICT applications are very popular these days specially is E-governance, computer based learning & EMIS.

CONTENTS**1. PC Assembly & Operation :**

- 1.1 Assembly & Disassembly of PC & its various parts
- 1.2 Booting and BIOS Setup
- 1.3 CMOS Setup & meaning of its various setting
- 1.4 Installation of Windows OS
- 1.5 Installation of S/W packages such as MS office etc.
- 1.6 Operation of printers & installation of printer driver
- 1.7 Backup & Restore operation

2. Utilities :

- 2.1 Concept of Compression
- 2.2 Compression Utilities: winzip, pkzip, winrar
- 2.3 Defragmenting hard disk using defrag
- 2.4 Scandisk for checking disk spaces
- 2.5 Lost files & recovery
- 2.6 Formatting Hard disk
- 2.7 Antivirus packages
- 2.8 CD Writing Software, Nero etc.

3. Networking Concepts:

- 3.1 Introduction
- 3.2 LAN, WAN, MAN
- 3.3 Network Topologies
- 3.4 Transmission media & method of communication
- 3.5 Cabling : Straight through cross over
- 3.6 Study of components: switches, bridges, routers, WI FI routers etc.
- 3.7 Communication Protocol, TCP/IP
- 3.8 IP Addressing
- 3.9 MAC Address
- 3.10 Sub netting

4. Network Administration:

- 4.1 Installing & Configuring the Network Windows operating system
- 4.2 Creation of user& groups
- 4.3 File Sharing
- 4.4 Resource sharing

5. Information Communication Techniques (ICT) Application :

- 5.1 Advantages of ICT
- 5.2 Computer based learning, presentation
- 5.3 E-Governance
- 5.4 Education management information system
- 5.5 National Mission on Education through Information and Communication Technology (NMEICT)

PRACTICALS

1. Installation of Windows OS
2. Study of Window registry
3. Backup & Restore procedure of Windows.
4. Use of Compression Utilities.
5. Use of CD Writing Software.
6. To prepare straight & Cross over cable using standard color coding.
7. Install NIC, assigning of IP address to the system.
8. To Create simple LAN with two PC using single cross over cable to connect the workstation.

REFERENCE BOOKS :

- | | |
|--|--------------------------------------|
| 1. Upgrading & Repairing PC's | Scott & Muella, Techmedia, New Delhi |
| 2. Computer Installation and Servicing | D. Balasubramanian, TMH |
| 3. Basic of Network | NIIT, Prentice, Hall of India |
| 4. Network Protocols & Slandered | NIIT, Prentice, Hall of India |

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COMPUTER SYSTEM ARCHITECTURE

CODE IT 202
CS 202

L T P
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RATIONALE

The aim of this course is to provide adequate knowledge about computer hardware. In this course student are taught about evolution of the computer (how computer technology developed from the early days) CPU (Central processing unit) architecture, Memory management, File organization, and other peripherals.

By acquiring adequate knowledge of this subject student may be able to understand the hardware functioning of the computer and also get an overall idea of the computer system organization. After completing this course, the student will be able to undertake maintenance and repair tasks of computer hardware at IC level.

CONTENTS

1. Overview of Computer Organization :

- 1.1 Evolution of computer,
- 1.2 Von Neumann architecture,
- 1.3 Computer generations,
- 1.4 Microprocessors and micro-computers design methodology

2. Register and Micro -Operations :

- 2.1 Register
- 2.2 Register transfer
- 2.3 Arithmetic micro operations
- 2.4 Logic micro operations
- 2.5 Shift micro operations
- 2.6 Control functions.

3. Basic Computer Organization :

- 3.1 Instruction codes
- 3.2 Computer Instructions
- 3.3 Timing and Control
- 3.4 Execution of instructions
- 3.5 I/O and interrupt

4. Central Processor Organization :

- 4.1 Processor Bus organisation
- 4.2 ALU : Simple and floating point
- 4.3 Stack Organisation
- 4.4 Instruction formats modes
- 4.5 Addressing schemes
- 4.6 Data transfer and manipulation
- 4.7 Program control

5. Arithmetic Processor Organization :

- 5.1 Comparison and subtraction of unsigned binary numbers
- 5.2 Addition and subtraction Algorithm
- 5.3 Multiplication and division Algorithms,
- 5.4 Floating point operations.

6. Input / Output Organization :

- 6.1 Peripheral devices
- 6.2 I/O processors
- 6.3 DMA
- 6.4 Interrupt handling
- 6.5 Data communication
- 6.6 Multiprocessor organizations

7. Memory Organization :

- 7.1 Concept of primary and secondary memory
- 7.2 Memory hierarchy
- 7.3 Cache memory
- 7.4 Associative memory (CAM)
- 7.5 Virtual memory concept
- 7.6 Memory management unit

8. Introduction to Parallel Processing :

- 8.1 Flynn's Classification
- 8.2 Pipelining
- 8.3 Vector Processor
- 8.4 Parallel Processors

REFERENCE BOOKS:

- | | |
|--|---------------------------------|
| 1. Computer System Architecture | Morris Mano, PHI |
| 2. Structured Computer Organization | Tanenbaum (PHI) |
| 3. Computer Organization and Architecture | Stallings (PHI) |
| 4. Computer Architecture and Organisation | John P. Hayes |
| 5. Advanced Computer Architecture | Rajeev Chopra, Vikas Pub. House |
| 6. Computer Organization and Design | Pal Choudhary (PHI) |
| 7. Introduction to Digital Computer Design | V. Rajaraman |

OPERATING SYSTEM PRINCIPLESCODE IT 203
CS 203L T P
2 2/2 --**RATIONALE**

This course is aimed at teaching the basic concepts of operating system principles, Memory management, job scheduling, multiprogramming, concurrent device operations deadlocks, buffer management etc.

CONTENTS**1. Introduction :**

- 1.1 What is an operating System?
- 1.2 Mainframe, Desktop & Multi processor
- 1.3 Distributed System
- 1.4 Real time Systems
- 1.5 Operating System Services

2. Process Management and CPU Scheduling:

- 2.1 Process Concept
- 2.2 Process Scheduling
- 2.3 Concept of Threads & Multithreading
- 2.4 Basic Complets – CPU/IU burst, CPU Scheduler, Preemptive scheduling dispatcher
- 2.5 Scheduling Criteria
- 2.6 Scheduling Algos : FCFS, SJF, Priority, Round Robin

3. Deadlocks :

- 3.1 What is Deadlock?
- 3.2 Necessary Conditions for deadlock
- 3.3 Resource allocation graph
- 3.4 Deadlock prevention
- 3.5 Deadlock avoidance – Banker's Algo
- 3.6 Deadlock Detection wait for graph and detection algorithm
- 3.7 Deadlock recovery

4. Memory Management:

- 4.1 Structure of computer memory
- 4.2 Logical verses physical address space
- 4.3 Contiguous memory allocation and Fragmentation
- 4.4 Concept of Paging: Basic method & h/w support
- 4.5 Concept of segmentation: Basic Method & h/w support

5. Virtual Memory:

- 5.1 Concept of Virtual memory
- 5.2 Concept of Demand Paging
- 5.3 Page replacement Algorithms: FIFO, Optimal, LRU
- 5.4 Allocation Algorithms: equal & proportional allocation
- 5.5 Thrashing: Cause and Solution (working set model)

6. File System:

- 6.1 File concept
- 6.2 File Attributes
- 6.3 File Operations
- 6.4 File Types
- 6.5 File Access: Sequential and Direct

- 6.6 Allocation Methods :
 - 6.6.1 Contiguous Allocation
 - 6.6.2 Linked Allocation
 - 6.6.3 Indexed Allocation

7. Distributed Operating System (DOS):

- 7.1 Introduction
- 7.2 Hardware Concept: Multiprocessor and Multicomputer Systems
- 7.3 Software Concept: Network File System (NFS), Network Operating System (NOS) verses DOS
- 7.4 Design Issues: Transparency, Flexibility, Reliability, Performance, Scalability

REFERENCE BOOKS :

- | | |
|---------------------------------|--|
| 1. Operating System | Silber Schaltz, Galvin, Gagne , Wiley Pub. |
| 2. Operating System | Tannenbaum. |
| 3. Operating System | Godebole |
| 4. Operating System | Stallings |
| 5. Distributed Operating System | Tannenbaum |

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PROGRAMMING IN C AND DATA STRUCTURE

CODE IT 204

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RATIONALE

'C' is system programming language and also structured programming language, In 'C' programming language we consider various syntax used in programming. By having good knowledge of 'C', students can write modular application and system programs. 'C' is mainly used in software developments, projects involving compiler design, operating system design, system software etc. By acquiring a sound knowledge of 'C' students will be able to understand the concept of all the application areas.

CONTENTS

1. Introduction :

- 1.1 Scope of 'C' Language
- 1.2 Distinction and similarities with other HLLs
- 1.3 Special features and Application areas

2. Elements of 'C' :

- 2.1 Character set
- 2.2 Key words
- 2.3 Data types
- 2.4 Constants and Variables
- 2.5 Operators: unary, binary, ternary
- 2.6 Operator precedence

3. Console Input-Output :

- 3.1 Types of I-O
- 3.2 Console I-O
- 3.3 Unformatted console I-O: getchar(), putchar(), gets(), puts(), getch(), getche()
- 3.4 Formatted I-O: scanf(), printf()

4. Control Flow :

- 4.1 Statements and blocks
- 4.2 if
- 4.3 switch
- 4.4 Loops: for, while, do-while
- 4.5 goto and labels
- 4.6 break, continue, exit
- 4.7 Nesting control statements

5. Arrays :

- 5.1 Basic concepts
- 5.2 Memory representation
- 5.3 One dimensional array
- 5.4 Two dimensional array
- 5.5 Three dimensional array

6. Functions :

- 6.1 Basic concepts
- 6.2 Declaration and prototypes
- 6.3 Calling
- 6.4 Arguments
- 6.5 Scope rules
- 6.6 Recursion
- 6.7 Storage classes types
- 6.8 Library of functions: math, string, system

7. Pointers :

- 7.1 Basic concepts
- 7.2 &, * operator
- 7.3 Pointer expression: assignment, arithmetic, comparison
- 7.4 Dynamic memory allocation
- 7.5 Pointer v/s Arrays
- 7.6 Array of pointers
- 7.7 Pointer v/s Functions

8. Structure, Union and Enumerated Data Types :

- 8.1 Basic concepts
- 8.2 Declaration and memory map
- 8.3 Elements of structures
- 8.4 Structure v/s array
- 8.5 Structure v/s function
- 8.6 Union
- 8.7 Enumerated data types : typedef, enum
- 8.8 Self-referential structures

9. File Handling :

- 9.1 Types of files
- 9.2 File organization
- 9.3 Opening, reading, writing, closing
- 9.4 Text and binary file.

10. Introduction to Data Structure :

- 10.1 Array
- 10.2 Linked List

- 10.3 Stacks
- 10.4 Queues
- 10.5 Trees
- 10.6 Common Operation on Data Structures

PRACTICALS

1. Problems based on arithmetic expression, fixed mode arithmetic
2. Problems based on conditional statements and control structures.
3. Problems based on arrays (1-D, 2-D), functions, pointers, files
4. Problems based on string and character manipulation.
5. Basic Operation based on linked list, stacks, queues & trees.

REFERENCE BOOKS :

- | | |
|--------------------------------|---------------------------|
| 1. Programming with 'C' | Schaum's Series, TMH |
| 2. 'C' Programming | E. Balguru Swami, TMH |
| 3. 'C' Programming | Kernighan & Ritchie, TMH |
| 4. Let us 'C' | Yashwant Kanetkar, BPB |
| 5. Data Structures & Algorithm | R.S. Salaria, Khanna Pub. |

BASICS OF DIGITAL ELECTRONICS

CODE IT 205
CS 205

L T P
2 -- 2

RATIONALE

Basic digital electronics is the requirement of modern computer, microprocessor and digital communication systems. On account of reliability and accuracy digital electronic systems are replacing conventional analog systems. A diploma pass out having knowledge of digital system will be useful to the industries.

CONTENTS

1. Introduction :

- 1.1 Digital signal and its representation
- 1.2 Advantages of digital techniques

2. Number System :

- 2.1 Decimal, binary, octal and hexa-decimal number system
- 2.2 Conversion of a number from one system to another system
- 2.3 Binary addition, subtraction and multiplication
- 2.4 Representation of positive and negative numbers
- 2.5 1's complement and 2's complement
- 2.6 Subtraction using 2's complement
- 2.7 Parity bit
- 2.8 Binary codes (Gray, Excess -3, hamming codes), ASCII code
- 2.9 Floating point number

3. Logic Gates & Families :

- 3.1 Introduction
- 3.2 Symbol and truth table of NOT, AND, OR, NAND, NOR, EX-OR and EX-NOR gates
- 3.3 Universal gates
- 3.4 Positive, negative and tristate logic

- 3.5 Classification of digital ICs.
- 3.6 Characteristics of digital ICs.
- 4. Boolean Algebra :**
 - 4.1 Historical review - logical statements, logical constants and variables, truth table
 - 4.2 Boolean operators
 - 4.3 Postulates of Boolean algebra
 - 4.4 Laws of Boolean algebra
 - 4.5 Duality theorem
 - 4.6 De' Morgan's theorem
 - 4.7 Simplification of Boolean expressions
 - 4.8 Verification of Boolean expressions using truth table
- 5. Minimization Techniques (K-Mapping) :**
 - 5.1 Representation of Boolean expression - min. and max. Term SOP, POS
 - 5.2 Conversion of truth tables in POS and SOP form
 - 5.3 Karnaugh map upto 4 variables - implication of logic function with and without don't care conditions
 - 5.4 Realization of logic diagrams using NAND/NAND, NOR/NOR gate
- 6. Combinational Logic Design :**
 - 6.1 Binary half and full adder
 - 6.2 Binary half and full subtractor
 - 6.3 Binary serial, parallel and BCD adder
 - 6.4 Parity bit generator and checker
 - 6.5 Binary comparator
 - 6.6 Multiplexer
 - 6.6.1 4 to 1 multiplexer
 - 6.6.2 16 to 1 multiplexer
 - 6.7 Demultiplexer
 - 6.7.1 1 to 4 Demultiplexer
 - 6.7.2 1 to 16 Demultiplexer
 - 6.8 Encoder
 - 6.8.1 Decimal to BCD
 - 6.9 Decoder
 - 6.9.1 BCD to Decimal
 - 6.9.2 BCD to seven segment
- 7. Sequential Systems :**
 - 7.1 Introduction
 - 7.2 Symbol, logic circuit, truth table of R-S, J-K, M/S J-K,D,T flip-flops
 - 7.3 Edge and level triggering
 - 7.4 Shift registers
 - 7.4.1 Left, right and bi-direction
 - 7.4.2 Series and parallel
 - 7.4.3 Universal shift register
 - 7.5 Asynchronous and synchronous counters - up, down and up-down
 - 7.6 Mod counters - Mod 5, Mod 9, decade counter
 - 7.7 Ring counters, Johnson counter

- 7.8 Programmable counters
- 7.9 Use of shift register for simple binary multiplication and division.

PRACTICALS

1. Verify the truth tables of NOT, AND, OR, NAND, NOR, EX-OR, EX-NOR gates
2. Design a NOT, AND, OR, EX-OR, EX-NOR gates using universal gates
3. Design a binary half and full adder
4. Design a binary half and full subtractor
5. Study of BCD to 7 segment decoder
6. Verify the truth table of RS, D, J-K, M/S J-K, D, T flip-flops.
7. Study of asynchronous binary ripple up, down and up-down and different mod counters
8. Study of synchronous counters
9. Study of decade counter
11. Study of programmable counter
12. Study of a shift register using flip flops
13. Study of ring counter using flip flops

REFERENCE BOOKS :

- | | |
|--|-----------------------------|
| 1. Digital Principles & Applications | Malvino Leach., TMH |
| 2. Integrated Electronics | Millman & Halkias, M. Hill |
| 3. Digital Electronics | T.C. Bartee |
| 4. Digital Electronics Practice Using IC's | R.P. Jain. TMH |
| 5. Modern Digital Electronics | R.P. Jain, TMH |
| 6. Digital Circuit & Design | S. Salivahanan, Vikash Pub. |
| 7. Digital Intregrated Circuit | K.R. Botker |
| 8. Digital Design | Fllloyd |
| 9. Digital Logic Design | Morris Mano., PHI |

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DATA COMMUNICATION

CODE IT 206
CS 206

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RATIONALE

For the transmission and reception of signals in industry and domestic life the basic knowledge of communication engineering is essential. The study of the subject provides the basic knowledge of various modulation, demodulation technique which further provide the fundamentals to understands the operation of communication systems. Detailed knowledge of radio receiver is also included in the syllabus.

CONTENTS

1. Introduction :

- 1.1 Data Communication: Model and Components
- 1.2 Computer Networks
- 1.3 Line Configurations
- 1.4 Topology
- 1.5 Transmission modes
- 1.6 Communication Protocol: Layered Architecture
- 1.7 Reference Models: OSI and TCP/IP

2. Signals and Transmission

- 2.1 Analog and Digital Forms
- 2.2 Analog Signals : Amplitude, Period and Frequency, Phase, Spectrum and bandwidth
- 2.3 Digital Signals : Bit Interval and Bit Rate

- 2.4 Digital Data Transmission : Parallel and Serial, Asynchronous and Synchronous
- 2.5 Modems

3. Multiplexing and Communication Hardware

- 3.1 FDM and TDM
- 3.2 Transmission Media: Guided & Unguided media, Performance factors
- 3.3 Network devices: Repeaters, Bridges, Switches, Routers and Gateways

4. Data Link Layer :

- 4.1 Introduction
- 4.2 Flow control & Error control
- 4.3 Types of errors : Single bit & burst errors
- 4.4 Error Detection & Correction
 - 4.4.1 VRC, LRC, CRC
 - 4.4.2 Checksum
 - 4.4.3 Hamming Code
- 4.5 Flow control & error control protocols:
 - 4.5.1 Stop & Wait
 - 4.5.2 Sliding window
 - 4.5.2 ARQ
- 4.6 HDLC
- 4.7 Local Area Networks : Introduction to Ethernet, Token bus, Token Ring & FDDI.

5. Switching and Frame Relay :

- 5.1 Circuit Switching
- 5.2 Packet Switching : Datagram & Virtual Circuit approach
- 5.3 Introduction to Frame relay : Its role, advantages & disadvantages.
- 5.4 Frame relay operation
- 5.5 Congestion Control : BECN, FECN, Leaky Bucket Algorithm.

REFERENCES BOOKS :

- | | |
|--------------------------------------|---------------------------------|
| 1. Data Communications & Networking | Behrouz A. Forouzan, TMH |
| 2. Data & Computer Communication | William Stallings, PHI |
| 3. Data Communication & Computer N/W | Sanjay Pahuja, Std. Publication |
| 4. Data Communication and Networks | Godbole, TMH |

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DATA BASE MANAGEMENT SYSTEM

CODE IT 207
CS 207

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RATIONALE

This course objective is to expose the students to the theoretical concepts of introduction to data base, physical and logical data base, schema design, study of entity, rational diagram, different type of data base modules, also involves the principle of designing relational data bases, normalisation process, storing and retrieval of data, securities, features of locking.

An elementary introduction to the distributed data bases will be covered apart from this the students will be completely exposed to the practical applications of dbase III, development of application software by getting exposures to the commands, program development, After completion of the course the students will achieve full competence in the area of application software development using data base.

CONTENTS

1. An overview of database management system
 2. Need for DBMS
 3. Components of DBMS
 4. Applications of DBMS
 5. Advantage of DBMS
 6. Database system versus file system
 7. Disadvantages of DBMS
 8. Database System Concepts and Architecture
 9. Application Architecture of DBMS
 - 9.1. Two-Tier Architecture
 - 9.2. Three-Tier Architecture
 10. Database Models
 - 10.1 Hierarchical Database Model
 - 10.2 Network Database Model
 - 10.3 Relational Database Model
 - 10.4 Object-Oriented Database Model
 11. Schema and Instances
 12. Data Independence
 - 12.1 Physical Data Independence
 - 12.2 Logical Data Independence
 13. Database Language and Interface
 14. Overall Database Structure
- 2. Data Modeling Using the E-R Model :**
- 2.1 E-R Model concepts
 - 2.2 Notations of E-R Diagram
 - 2.3 Mapping Constraints
 - 2.3.1 One-to-one
 - 2.3.2 One-to-Many
 - 2.3.3 Many-to-One
 - 2.3.4 Many-to-many
 - 2.4 Keys
 - 2.4.1 Super key
 - 2.4.2 Candidate Key
 - 2.4.3 Primary key
 - 2.4.4 Composite key
 - 2.4.5 Foreign key
 - 2.4.6 Alternate key
 - 2.4.7 Secondary key
 - 2.5 Examples of E-R Diagrams
- 3. Relational Data Model and Language :**
- 3.1 Introduction
 - 3.2 Properties of Relational Tables
 - 3.3 Differences between DBMS and RDBMS
 - 3.4 Codd's Rules of RDBMS
 - 3.5 Integrity Constraints
 - 3.5.1 Entity Integrity Constraints
 - 3.5.2 Referential Integrity Constraints
 - 3.6 Domain Integrity Constraints
 - 3.7 Query Language
 - 3.7.1 Relational Algebra
 - 3.8.2 Relational Calculus

4. Normalization :

- 4.1 Normalization Concepts
- 4.2 Functional Dependencies
- 4.3 Lossless/Lossy Join Decomposition
- 4.4 Normal Forms
 - 4.4.1 First Normal Form (1NF)
 - 4.4.2 Second Normal Form (2NF)
 - 4.4.3 Third Normal Form (3NF)
 - 4.4.4 Boyce-Codd Normal Form (BCNF)
- 4.5 Multi-valued Dependency & Fourth normal Form
- 4.6 Join Dependency and Fifth Normal Form.

5. Transaction Processing Concepts :

- 5.1 Transaction System
- 5.2 Properties of Transaction
 - 5.2.1 Atomicity
 - 5.2.2 Consistency
 - 5.2.3 Isolation
- 5.3 Transaction States
- 5.4 Transaction Processing System
- 5.5 Recovery from Transaction Failures
 - 5.5.1 Cascading Rollback
 - 5.5.2 Recoverable Schedule
 - 5.5.3 Log Based Recovery
 - 5.5.4 Check Points
 - 5.5.5 Backup Mechanism
 - 5.5.6 Shadow Paging
- 5.6 Distributed Database
 - 5.6.1 Homogeneous Distributed Database
 - 5.6.2 Heterogeneous Distributed Database
- 5.7 The major Advantages of Distributed DBMS (DDBMS)

6. Deadlock Handling :

- 6.1 Introduction
- 6.2 Deadlock Detection
- 6.3 Recovery from Deadlock

7. Concurrency Control Techniques

- 7.1 Concurrency Control
- 7.2 Locking Techniques for Concurrency Control
- 7.3 Mode of Locking
 - 7.3.1 Shared Lock
 - 7.3.2 Exclusive Lock
- 7.4 The Two-phase Locking Protocol
 - 7.4.1 Static (or Conservative) Two-phase Locking
 - 7.4.2 Dynamic Two-phase Locking
 - 7.4.3 Strict Two-phase Locking
- 7.5 Time Stamping Protocol for Concurrency Control

REFERENCES :

- | | |
|--|---|
| 1. Database management System | P.K. Yadav, S.K. Kataria & Sons, Delhi |
| 2. An Introduction to Database System | Bipin C. Desai, Galgotia Publications |
| 3. Fundamentals of Database Systems | R. Elmasri, S.B. Navathe, Pearson Education |
| 4. An Introduction to Database management System (A-level) | Satish jain, BPB Publication |
| 5. Database Ssystems: Concepts, Design & Applications" | S.K. Singh, Pearson Education |

E - COMMERCE

CODE IT 208

L T P
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RATIONALE

Electronic commerce introduces both the theory & practices of doing business over the internet & word wide web. The course looks briefly at the traditional practices of business & then gives an insight into the emerging technologies leading to the concept of E-Commerce to improve standard business activities & product to operate in the global environment of business.

Business & Security are two sides of the same coin in any business environment. Security threads to electronic commerce is a ever growing problem. The course discusses many internal & external security threads to electronic commerce. The role of copy right and intellectual property security and threats to them have also been included in this course.

The course presents a comprehensive discussion of electronic payment system covering electronic cash, electronic wallet technologies. Smart cards, and credit & charge cards.

CONTENTS

1. Fundamentals of E-Commerce :

- 1.1 Introduction
- 1.2 Objectives
- 1.3 Commerce – The Traditional way
 - 1.3.1 The Buyer
 - 1.3.2 The Seller
- 1.4 History of Electronic Commerce
- 1.5 Definition of Electronic Commerce
- 1.6 Comparison between Traditional Commerce and E-Commerce
- 1.7 The Technologies of E-Commerce
- 1.8 Advantages of E-Commerce
- 1.9 Disadvantages of E-Commerce
- 1.10 International Electronic Commerce

2. Types of E-Commerce:

- 2.1 Introduction
- 2.2 Objectives
- 2.3 Types of Business Transactions
- 2.4 Business to Customer
- 2.5 Customer to Customer
- 2.6 Business to Business

3. Security of E-Commerce:

- 3.1 Introduction
- 3.2 Learning Objectives
- 3.3 Security Overview
- 3.4 Computer Security Classification
- 3.5 Copyrights and Intellectual Property
- 3.6 Electronic Commerce Threats
 - 3.6.1 Communication Channel Threats
 - 3.6.2 Secrecy Threats
 - 3.6.3 Integrity Threats
 - 3.6.4 Necessity Threats
 - 3.6.5 Server Threats

- 3.6.6 Web Server Threats
- 3.6.7 Database Threats
- 3.6.8 Common Gateway Interface Threats
- 3.6.9 Other Programming Threats
- 3.7 CERT - Computer Emergency Response Term

4. Electronic Payment Systems:

- 4.1 Introduction
- 4.2 Objectives
- 4.3 The Basics
- 4.4 Credit and Charge cards
- 4.5 Open and Closed Loop Systems
- 4.6 Secure Electronic Transaction (SET) Protocol
- 4.7 Dual Signature Scheme
- 4.8 Electronic Cheque Payment
- 4.9 Electronic Cash
- 4.10 Holding Electronic Cash
- 4.11 Advantages and Disadvantages of Electronic Cash
- 4.12 How Does Electronic Cash Work
- 4.13 Security for Electronic Cash
- 4.14 Electronic Wallets
- 4.15 Smart Cards

Reference Books :

- | | |
|--|--------------------|
| 1. http://www.ksouonline.org/download.htm | |
| 2. E-Commerce Business | Brenda Kienew, PH |
| 3. Instant- E-Commerce | Kate J. Chase, BPB |
| 4. E-Commerce : A Managers Guide | KalaKota, PE |

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INTERNET AND WEB TECHNOLOGIES

CODE IT 209
CS 209

L T P
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RATIONALE

Web programming will help you plan and develop well-designed web sites that combine effective navigation with the balanced use of graphics, text, and color. You will learn how to create web sites that let users easily and quickly access your information, regardless of browser type, connection speed, or computing platform.

CONTENTS

1. Internet Basics :

- 1.1. Concept
- 1.2. Establishing Connectivity on Internet
- 1.3. Email: POP, SMTP
- 1.4. www, File Transfer, Telnet
- 1.5. IP Address
- 1.6. Brief overview of TCP/IP

2. HTML :

- 2.1 File Creation, Web Server, Web Client
- 2.2 Introduction to HTML
 - 2.2.1 HTML Tags

- 2.2.2 Structure of HTML Programs
- 2.2.3 Heading, Titles and Footers
- 2.2.4 Text Formatting
- 2.2.5 Text Styles
- 2.2.6 Text Effects
- 2.2.7 Color and Backgrounds
- 2.2.8 Lists
- 2.2.9 Adding Graphics
- 2.2.10 Tables
- 2.2.11 Linking Documents
- 2.2.12 Frames

3. JavaScript :

- 3.1 Java script in web pages
- 3.2 Advantages of JavaScript
- 3.3 Writing JavaScript into HTML
- 3.4 Programming
 - 3.4.1 Data types and Literals
 - 3.4.2 Type casting
 - 3.4.3 Variables
 - 3.4.4 Arrays
 - 3.4.5 Operators and Expressions
 - 3.4.6 Conditional and Iterative Loops
 - 3.4.7 Functions
- 3.5 Dialog Boxes
- 3.6 Cookies

4 DHTML :

- 4.1 Introduction to DHTML
- 4.2 Cascading Style sheets (CSS)
 - 4.2.1 Font Attributes
 - 4.2.2 Color, Background
 - 4.2.3 Text and Border
 - 4.2.4 List Attributes
- 4.3 Class
 - 4.3.1 The ... Tag
- 4.4 Java Script Style Sheet
 - 4.4.1 The <DIV> ... </DIV> Tag

5. CGI:

- 5.1 Use of CGI
- 5.2 Working of CGI
- 5.3 Methods of Data Submission (GET and POST)
- 5.4 Environment Variables
- 5.5 Process Form Information in CGI Program

6. Perl :

- 6.1 Basics of Perl
- 6.2 Strings, Scalar variables
- 6.3 Arrays, Hash Array
- 6.4 Arithmetic and Comparison Operators
- 6.5 Control Program Flow
- 6.6 Functions: String, Array, Mathematical and Time
- 6.7 File Handling
 - 6.7.1 STDIN & STDOUT
 - 6.7.2 Concept of Files and Directories
 - 6.7.3 Open and Close Files
 - 6.7.4 Reading and Writing Files

PRACTICALS

1. Installation of Web server and Web browser
2. Practice for creating web pages/sites using HTML
3. Practice for creating web pages/sites using JavaScript
4. Practice for creating web pages/sites using DHTML
5. Practice for creating web pages/sites using CGI
6. Practice for creating web pages/sites using Perl

REFERENCE BOOKS :

- | | |
|---|---------------------|
| 1. Web Enabled Commercial Application Development
Using HTML, DHTML, Java Script Ivan Bayross, BPB | |
| 2. Internet and Web Technology | Xavier, TMH |
| 3. Web 101, Making the Network for you | Wendy Lehnert, PEA |
| 4. Java Script | Flamange, (ORA/SPD) |
| 5. Dynamic HTML | Goodman, (ORA/SPD) |

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OFFICE PRODUCTIVITY TOOLS

CODE IT 210

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RATIONALE

The revolution in the office working is to make it paper less. More or less all offices are switching from paper works towards the Information technology era. The most popular tool used for office working is MS-Office. This subject covers all aspects of the office working using the tools like Excel, Power Point, Access, Managing E-mail using Outlook express etc. The student will be able to perform all the working of an office with computers after going through this course. Students can create various charts, filter data as per requirements and can maintain various e-mail accounts.

CONTENTS

1. Ms-Office :

- 1.1 Introduction
- 1.2 Office Components and their uses
- 1.3 Use of Embedded Objects to share information between office components
- 1.4 Other features : Office Short cut bar, Schedule Task management

2. Advanced MS-Word :

- 2.1 Insert : Footnote & Endnote, Index & Tables, Hyperlink
- 2.2 Tools : Mail Merge, Envelops & Labels, Letter Wizard
- 2.3 Table : Sort Text, Formula

3. Advanced MS-Excel :

- 3.1 Customization of work plan
- 3.2 Inserting : Charts, Functions, Maps, and Hyperlinks
- 3.3 Conditional formatting
- 3.4 Excel as Data Base
- 3.5 Tools : Goal seek, Scenario Manager, Auditing, Solver
- 3.6 Data : Table, Pivot Table Report, Get External Data

4. MS-PowerPoint :

- 4.1 Introduction to slide

- 4.2 Slide creation and insertion, and formatting
- 4.3 Background color settings
- 4.4 Animation and Sound effects
- 4.5 Auto-content wizard
- 4.6 Template
- 4.7 Blank presentation and alignment
- 4.8 Slide view : Action button, Preset animation, Custom animation, Slide transition

5. MS-Outlook Express :

- 5.1 Introduction
- 5.2 Menus of Outlook Express
- 5.3 Mail Inbox, Outbox
- 5.4 Message Rules
- 5.5 Internet Account : Mail, News, Directory service
- 5.6 Security Options
- 5.7 Managing address book
- 5.8 Managing various E-mail account : POP, HTTP, IMAP
- 5.9 Signature

6. MS - Access :

- 6.1 Database Basis and Table
- 6.2 Managing Table
- 6.3 Managing Database
- 6.4 Queries, Forms and Reports
- 6.5 Database Utilities and Security

7. Other Office Productivity Tools :

- 7.1 Elementary use of Lotus Smart Suit
- 7.2 Elementary use of Open Office
- 7.3 Elementary use of Browser
- 7.4 Net Meeting
- 7.5 Messenger
- 7.6 Multimedia Tools

REFERENCE BOOKS :

- 1. Office 97 Techmedia
- 2. Mastering MS-Office 2000 BPB, Publication
- 3. My First Course in MS-Office Sanjeev Saxsena, Vikas Pub.
