101MECOM - INTRODUCTION TO E-COMMERCE

UNIT 1: Introduction
Brief history of e-com, Types, Advantages & Disadvantages of e-com, Elements of e-com, Principles of e-com, Messaging and Information distribution, Messaging and information distribution, Common service infrastructure, other key support layers.

UNIT 2: EDI to e-com

UNIT 3: Electronic communication
PC and networking, Network topologies and communication media, E-mail, OSI and TCP/IP Models, LAN, WAN, MAN Internetworking – Bridges and gateways, Internet Vs Online services, Open vs. Closed Architecture, Controlled contained Vs Uncontrolled contained, Metered Pricing Vs Flat pricing, Innovation Vs Control.

UNIT 4: WWW & Electronic Payment System
Applications – what is web, Why is the Web such a hit, The Web and E-Com, Concepts & Technology – Key concepts, Web Software development Tools, Electronic payment system – Overview, Electronic or digital cash, Electronic Checks, Online credit card based system, other Engineering financial instruments, Consumer legal and Business issues.

UNIT 5: Security and Application

REFERENCE BOOKS:
2. "Web Commerce Technologies Handbook" By Daniel Minoli & Emma Minoli
3. "E-Commerce" By Dr. Varinder Bhatia
4. "Promise Of E-Governance" By M P Gupta
102 MEGOM -- INTRODUCTION TO INFORMATION TECHNOLOGY

UNIT 1: INTRODUCTION: Basic concepts of information technology, Application of IT in business, education, industry, home and training, entertainment, science and engineering and medicine, multimedia data types (graphics, images, audio, video), virtual reality applications, History of computers, Classification of computers, Organization of computers, Input/Output Devices, Storage Devices, File organization, System software, application software.


UNIT 4: OPERATING SYSTEM: Introduction to Operating System, Function Provided by O.S, Introduction to Multiprogramming, Timesharing, Real-time, Batch processing, DOS: Functions of DOS, structure booting, simple internal & external command, WINDOWS.

UNIT 5: COMMUNICATION & NW TECHNOLOGIES: Goals & Application, protocol hierarchies, design issues, connection oriented & connectionless services, communication modes (Simplex, Half Duplex, Full Duplex), Switching Techniques (circuit switching and packet switching), communication media (Twisted pair & Coaxial cables, fiber optics), network topologies, LAN, WAN & MAN.

References:
1. Computer Fundamentals by P.K. Sinha
2. Operating System by Silberschatz Galvin
3. Computer Network by A.S Tannenbaum
4. Computer Architecture by Morrismano
103MECOM : Programming In 'C' 

UNIT 1: An Overview : Problem identification, analysis, design, coding, testing & debugging, implementation, modification & maintenance; algorithm & flowcharts; Characteristics of a good program - accuracy, simplicity, robustness, portability, minimum resource & time requirement, modularization, Rules/conventions of coding, documentation, naming variables; Top down design, Bottom up design.

UNIT 2: Fundamentals of C Programming : History of C; structure of a C program; Data types, Constants & Variables; Operators & expressions; Control Constructs - if-else, for, while, do-while; Case statement; Arrays; Formatted and unformatted I/O; Type modifiers & storage classes; Ternary operator; Type conversion & type casting; Priority & associativity of operators.

UNIT 3: Modular Programming: functions, Arguments, Return value, Parameter passing, call by value, call by reference, Return statement, Scope visibility and life-time rules for various types of variable, static variable, Calling a function, Recursion - basics, comparison with iteration, tail recursion, when to avoid recursion examples.

UNIT 4: Advanced Programming techniques : Special constructs- break, continue, exit, goto & label; pointers & '* operator', pointer expression, pointer arithmetic, dynamic memory management functions (malloc(), calloc(), free()); string(), pointer vs array; array of pointer and its limitations; function returning pointer, function as parameter; structure: basic declaration, pointer to structure, referential operator, self referential structure, array of structure; Union - basic, declaration, enumerated data type, Types.

UNIT 5: Miscellaneous Features : File handling and related functions, printf and scanf family C preprocessor- basics, #include, #define, #undef.

References:
1. The C Programming Language - B.W. Kernighan & D.M. Ritchie
2. The Spirit of C - Cooper, Mullish
3. Kanekar Y : Let us C
4. Kanekar Y : Pointers in C
104MECOM : OPERATING SYSTEMS

UNIT 1: Introduction: Evolution of operating systems, Types of operating systems, Different views of the operating system, operating system Concepts and structure.
Processes : The Process concept, systems programmer’s view of processes, operating system services for process management. Scheduling algorithms. Performance evaluation.

UNIT 2: Memory Management: Memory management without swapping or paging, swapping, virtual memory, page replacement algorithms, modeling paging algorithms, design issues for paging systems, segmentation.
Inter-process Communication and Synchronization: The need for inter-process synchronization, mutual exclusion, semaphores, hardware support for mutual exclusion, queuing implementation of semaphores, classical problems, in concurrent programming, critical region and conditional critical region, monitors, messages.
Deadlocks: Deadlock Prevention, deadlock avoidance.


UNIT 4: Disks: Disk hardware, scheduling algorithms, RAM Disks.
Processes and Processors in Distributed Systems:
Threads, System models, processor allocation, scheduling.


References:
105MECOM : System Analysis And Design

UNIT 1- System Definition And Concept: Characteristics and Types of System, System Environment And Boundaries, Role and Need of system Analyst, Qualification and Responsibilities, system analyst as an agent of change, as Investigator and Monitor, as Architect, as Psychologist.

UNIT 2- System Development Cycle: Introduction to various phases of system development life cycle (SDLG), Fact Gathering Techniques (Review of literature, Procedure & Forms, On-Site Observation, Interview, Questionnaire), Feasibility study and Feasibility Reports, Prototyping, Cost-Benefit Analysis.

UNIT 3- System Analysis: Structures system analysis, Process Modeling using DFD (Data Flow Diagram), Logic Modeling (structured English, Decision tables, Decision trees), Conceptual data modeling (E-R diagram), Issues in generating Alternative design strategies, selecting the best alternative design strategies.

UNIT 4- System Design: Logical & Physical design, Design Representation, System Flowcharts & structured charts, Designing forms & reports, Designing interfaces & dialogues, file organization and database design.

UNIT 5- System Testing And Quality Assurance: Need of Testing, Test plan- Activity network for system testing, system testing-Types of system test, Quality Assurance. Goals, Levels of quality assurance.

Reference:
Jiwaji University, Gwalior – MBA eCommerce - Session 2008-10

106MECOM: Operation Research

Introduction to Linear Programming: Construction of the L. P. Model; Graphical L. P. solution, simplex method, Big m method, Two phase method, primal & dual problem.

UNIT 2: Replacement Problems: Capital equipment; Discounted Cost; replacement in anticipation of failure; Age replacement. Transportation and Assignment Problems.

UNIT 3: Queueing Models: Description of Queues; Arrival and Service Times, Birth & Death queueing system; M/M/1 model.

UNIT 4: Game Theory: Pure and Mixed strategy; two person zero sum game; game with and without saddle points; rule of dominance.
Project Management Techniques, Network representation; CPM and PERT; Determination of Critical Path; Optimization of project time and cost, crash cost and crash time

UNIT 5: Dynamic Programming: Deterministic and probabilistic dynamic programming, Bellman’s Principle.
Integer Programming Problem, Gomory, Branch and Bound Techniques

REFERENCES:
1. "Introduction to Operation Research" by F. S. Hiter & Liberman
2. "Operation Research" by H. A. Tara
3. "Operation Research" by S. D. Sharma