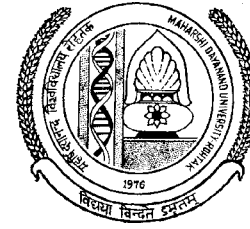# Maharshi Dayanand University
Rohtak

**Ordinance, Syllabus and Courses
of Reading for
B.Tech. (Information Technology)
V and VI Semester
Examination**

Session - 2009-2010

M.D. UNIVERSITY, ROHTAK
SCHEME OF STUDIES & EXAMINATION
Bachelor of Technology SEMESTER VTH 2009-10

Sr. No.	Course No.	Subject	Teaching Schedule				Examination Schedule (Marks)				Duration of exam
			L	T	P	Total	Theory	Marks of Class work	Practical	Total	(Hours)
1.	IT-301 E	Rapid Application Development	3	1	–	4	100	50	–	150	3
2.	IT-303 E	System Programming & System Administration (Common with CSE-VIth Sem.)	3	1	–	4	100	50	–	150	3
3.	IT-305 E	Computer Networks (Common with IT, ASE CSE & EL- VIth Sem.)	3	1	–	4	100	50	–	150	3
4.	CSE-301E	Principles of Operating System (CSE, IT)	3	1	–	4	100	50	–	150	3
5.	EE-309 E	Microprocessor & Interfacing (EL, CSE, IT, EI, IC, EEE, AEI)	3	1	–	4	100	50	–	150	3
6.	CSE-303 E	Computer Graphics (CSE, IT)	3	1	–	4	100	50	–	150	3
7.	IT-307 E	Rapid Application Development Lab. (CSE, IT)	–	–	2	2	–	25	25	50	3
8.	CSE-309E	Computer Graphic Lab. (CSE, IT)	–	–	3	3	–	50	50	100	3
9.	CSE-313E	Operating System Lab. (Common with CSE-V Sem.)	–	–	2	2	–	25	25	50	3
10.	EE-329 E	Microprocessor & Interfacing Lab. (CSE, IT, EL, EI, IC AEI, EEE)	–	–	2	2	–	25	25	50	3
11.	IT-309 E	Practical Training-I	–	–	2	2	–	50	–	50	3
		Total	18	6	11	35	600	425	125	1150	

Note :

1. Students will be allowed to use non-programmable scientific calculator. However, sharing of calculator will not be permitted in the examination.

2. The marks of class work as well as practical examination in the subject CSE-309 E (Computer Graphics Lab.) has been increased from 25 each to 50 each. Thus the total marks for the subjects shall be 100 in place of 50 from the session 2007-08

3. Assessment of Practical Training-I, undergone at the end of Iv semester, will be based on seminar, viva-voce, report and certificate of practical training obtained by the student from the industry. According to performance letter grades A, B, C, F are to be awarded. A student who is awarded 'F' grade is required to repeat Practical Training.

4. The course number of the subject of Operating System Lab. has been changed from CSE-308E to CSE-313 E and will be implemented w.e.f. 2007-08.

IT-301 E **Rapid Application Development**

L	T	P			
3	1	-	Class Work	:	50 Marks
			Exam.	:	100 Marks
			Total	:	150 Marks
			Duration of Exam	:	3 Hours

Unit-1: Visual Programming Environment: Concept of procedure and event oriented languages, Integrated Development Environment for VC++ and Visual Basic, Components of Visual C++ and Visual Basic.

Unit-2: Parts of Visual C++ Program: Application object, main window object, view object, document object, Document-View architecture and its advantages, dEvent oriented windows Programming, device context, Microsoft Foundation Classes- an Overview, Simple MFC application, API's .

Unit-3: Reading keystrokes, handling mouse, creating menus, toolbars, buttons, status bar prompts, dialog box, check box, radio buttons, list boxes, combo boxes, sliders, multiple documents.

Unit-4: Serialization, file handling, debugging.

Unit-5: DLL's, OLE Object Technologies, Creating Internet Programs using Visual C++ and Visual Basic, Creating Active X Controls, connecting to Database (using DAO/ ADO/ RDO) using Visual Basic and Visual C++.

Text Books

- Microsoft Visual C++ By Steven Holzner (Pub: BPB)
- Visual C++ Programming, 2ⁿᵈ edition by Steven Holzner(Pub: PHI)
- Using Visual Basic for Applications By Paul Sanna(Pub: PHI)

- Visual Basic Programming By Steven Holzner
- MSDN Help

Reference Books

- Visual C++: From the ground Up By Mucller (Pub :TMH)
- Programming Visual C++ by David J. Kruglinski

IT-303 E **Systems Programming &System Administration**

L	T	P			
3	1	-	Class Work	:	50 Marks
			Exam.	:	100 Marks
			Total	:	150 Marks
			Duration of Exam	:	3 Hours

Unit-1: Evolution of Components Systems Programming, Assemblers, Loaders, Linkers, Macros, Compilers. software tools, Text editors, Interpreters and program generators, Debug Monitors, Programming environment.

Unit-2: Compiler: Brief overview of compilation process, Incremental compiler, Assembler: Problem statement, single phase and two phase assembler, symbol table; Loader schemes, compile and go Loader, general loader schemes, absolute loader, Subroutine linkage, Reallocating loader, Direct linkage Loader, Binders, Linking loader, overlays.

Unit-3: Macro language and macro-processor, macro instructions, features of macro facility, macro instruction arguments, conditional macro expansion, macro calls with macro instruction defining macros.

Unit-4: Theoretical Concept of Unix Operating System: Basic features of operating system;

File structure: CPU scheduling; Memory management: swapping, demand paging; file system: block and fragments, inodes, directory structure; User to user communication.

Unit-5: Getting Started with Unix: User names and groups, logging in; Format of Unix commands; Changing your password; Characters with special meaning; Unix documentation; Files and directories; Current directory, looking at the directory contents, absolute and relative pathnames, some Unix directories and files; Looking at the file contents; File permissions; basic operation on files; changing permission modes; Standard files, standard output; Standard input, standard error; filters and pipelines; Processes; finding out about processes; Stopping background process; Unix editor vi.

Unit-6: Test Manipulation: Inspecting files; File statistics; Searching for patterns; Comparing files; Operating on files; Printing files; Rearranging files; Sorting files; Splitting files; Translating characters; AWK utility.

Unit-7: Shell Programming: Programming in the Borne and C-Shell; Wild cards; Simple shell programs; Shell variables; Shell programming constructs; interactive shell scripts; Advanced features.

Unit-8: System Administration: Definition of system administration; Booting the system; Maintaining user accounts; File systems and special files; Backups and restoration; Role and functions of a system manager.

Overview of the linux. operating system

Text Books:

- Systems Programming by Donovan, TMH.

- The unix programming environment by Brain Kernighen & Rob Pike, 1984, PHI & Rob Pike.

- Design of the Unix operating system by Maurich Bach, 1986, PHI.

- Introduction to UNIX and LINUX by John Muster, 2003, TMH.

Reference Book:

- Advanced Unix programmer's Guide by Stephen Prato, BPB

- Unix- Concept and applications by Sumitabha Das, 2002, T.M..H

Note : Eight questions will be set in all by the examiners taking at least one question from each unit. Students will be required to attempt five questions in all.

IT-305 E	Computer Networks

L	T	P		
3	1	-	Class Work	: 50 Marks
			Exam.	: 100 Marks
			Total	: 150 Marks
			Duration of Exam	: 3 Hours

Unit-1: OSI Reference Model and Network Architecture: Introduction to Computer Networks, Example networks ARPANET, Internet, Private Networks, Network Topologies: Bus-, Star-, Ring-, Hybrid -, Tree -, Complete -, Irregular –Topology; Types of Networks : Local Area Networks, Metropolitan Area Networks, Wide Area Networks; Layering architecture of networks, OSI model, Functions of each layer, Services and Protocols of each layer

Unit–2: TCP/IP: Introduction, History of TCP/IP, Layers of TCP/IP, Protocols, Internet Protocol, Transmission Control Protocol , User Datagram Protocol, IP Addressing, IP address classes, Subnet Addressing, Internet Control Protocols, ARP, RARP, ICMP, Application Layer, Domain Name System, Email – SMTP, POP,IMAP; FTP, NNTP, HTTP, Overview of IP version 6.

Unit-3: Local Area Networks: Introduction to LANs, Features of LANs, Components of LANs, Usage of LANs, LAN Standards, IEEE 802 standards, Channel Access Methods, Aloha, CSMA, CSMA/CD, Token Passing, Ethernet, Layer 2 & 3 switching, Fast Ethernet and Gigabit Ethernet, Token Ring, LAN interconnecting devices: Hubs, Switches, Bridges, Routers, Gateways.

Unit–4: Wide Area Networks: Introduction of WANs, Routing, Congestion Control, WAN Technologies, Distributed Queue Dual Bus (DQDB), Synchronous Digital Hierarchy (SDH)/ Synchronous Optical Network (SONET), Asynchronous Transfer Mode (ATM), Frame Relay.,Wireless Links.

Unit-5: Introduction to Network Management: Remote Monitoring Techniques: Polling, Traps, Performance Management, Class of Service, Quality of Service, Security management, Firewalls, VLANs, Proxy Servers, Introduction to Network Operating Systems: Client-Server infrastructure, Windows NT/2000.

Text Book:

- Computer Networks (3rd edition), Tanenbaum Andrew S., International edition, 1996.

Reference Books:

- Data Communications, Computer Networks and Open Systems (4th edition), Halsall Fred, 2000, Addison Wesley, Low Price Edition.

- Business Data Communications, Fitzgerald Jerry,.

- Computer Networks – A System Approach, Larry L. Peterson & Bruce S. Davie, 2nd Edition

- Computer Networking – ED Tittel , 2002, T.M.H.

Note : Eight questions will be set in all by the examiners taking at least one question from each unit. Students will be required to attempt five questions in all.

CSE-301 E   **Principles of Operating Systems**

L	T	P			
3	1	-	Class Work	:	50 Marks
			Exam.	:	100 Marks
			Total	:	150 Marks
			Duration of Exam	:	3 Hours

Unit-1: Introduction: Introduction to Operating System Concepts (including Multitasking, multiprogramming, multi user, Multithreading etc)., Types of Operating Systems: Batch operating system, Time-sharing systems, Distributed OS, Network OS, Real Time OS; Various Operating system services, architecture, System programs and calls.

Unit–2: Process Management: Process concept, process scheduling, operation on processes; CPU scheduling, scheduling criteria, scheduling algorithms -First Come First Serve (FCFS), Shortest-Job-First (SJF), Priority Scheduling, Round Robin(RR), Multilevel Queue Scheduling.

Unit–3: Memory Management: Logical & Physical Address Space, swapping, contiguous memory allocation, non-contiguous memory allocation paging and segmentation techniques, segmentation with paging; virtual memory management - Demand Paging & Page-Replacement Algorithms; Demand Segmentation.

Unit–4: File System: Different types of files and their access methods, directory structures, various allocation methods, disk scheduling and management and its associated algorithms, Introduction to distributed file system.

Unit–5: Process-Synchronization & Deadlocks: Critical Section Problems, semaphores; methods for handling deadlocks-deadlock prevention, avoidance & detection; deadlock recovery.

Unit-6: I/O Systems: I/O Hardware, Application I/O Interface, Kernel, Transforming I/O requests, Performance Issues.

Unit–7: Unix System And Windows NT Overview
Unix system call for processes and file system management, Shell interpreter, Windows NT architecture overview, Windows NT file system.

Text Books:

- Operating System Concepts by Silberchatz et al, 5th edition, 1998, Addison-Wesley.

- Modern Operating Systems by A. Tanenbaum, 1992, Prentice-Hall.

- Operating Systems Internals and Design Principles by William Stallings,4th edition, 2001, Prentice-Hall

Reference Books:

- Operating System By Peterson , 1985, AW.

- Operating System By Milankovic, 1990, TMH.

- Operating System Incorporating With Unix & Windows By Colin Ritche, 1974, TMH.

- Operating Systems by Mandrik & Donovan, TMH

- Operating Systems By Deitel, 1990, AWL.

- Operating Systems – Advanced Concepts By Mukesh Singhal , N.G. Shivaratri, 2003, T.M.H

Note: Eight questions will be set in all by the examiners taking at least one question from each unit. Students will be required to attempt five questions in all.

EE-309-E   MICROPROCESSORS AND INTERFACING

L	T	P			
3	1	-	Class Work	:	50 Marks
			Exam.	:	100 Marks
			Total	:	150 Marks
			Duration of Exam	:	3 Hours

PART A

UNIT1. THE 8085 PROCESSOR :
Introduction to microprocessor, 8085 microprocessor: Architecture, instruction set, interrupt structure, and assembly language programming.

UNIT2. THE 8086 MICROPROCESSOR ARCHITECTURE:
Architecture, block diagram of 8086, details of sub-blocks such as EU, BIU; memory segmentation and physical address computations, program relocation, addressing modes, instruction formats, pin diagram and description of various signals.

UNIT3. INSTRUCTION SET OF 8086:
Instruction execution timing, assembler instruction format, data transfer instructions, arithmetic instructions, branch instructions, looping instructions, NOP and HLT instructions, flag manipulation instructions, logical instructions, shift and rotate instructions, directives and operators, programming examples.

PART B

UNIT 4. INTERFACING DEVICE :
The 8255 PPI chip: Architecture, control words, modes and examples.

UNIT 5. DMA :
Introduction to DMA process, 8237 DMA controller,

UNIT 6. INTERRUPT AND TIMER :
8259 Programmable interrupt controller, Programmable interval timer chips.

TEXT BOOKS :

1. Microprocessor Architecture, Programming & Applications with 8085 : Ramesh S Gaonkar; Wiley Eastern Ltd.

2. The Intel Microprocessors 8086- Pentium processor : Brey; PHI

REFERENCE BOOKS:

1. Microprocessors and interfacing : Hall; TMH

2. The 8088 & 8086 Microprocessors-Programming, interfacing,Hardware & Applications :Triebel & Singh; PHI

3. Microcomputer systems: the 8086/8088 Family: architecture, Programming & Design : Yu-Chang Liu & Glenn A Gibson; PHI.

4. Advanced Microprocessors and Interfacing : Badri Ram; TMH

NOTE: Eight questions are to be set selecting FIVE questions from PART A and THREE questions from PART- B .Students have to attempt any five questions.

CSE -303 E   **Computer Graphics**

L	T	P		
3	1	-	Class Work	: 50 Marks
			Exam.	: 100 Marks
			Total	: 150 Marks
			Duration of Exam	: 3 Hours

Unit-1: Introduction to Computer Graphics: What is Computer Graphics, Computer Graphics Applications, Computer Graphics Hardware and software, Two dimensional Graphics Primitives: Points and Lines, Line drawing algorithms: DDA, Bresenham's; Circle drawing algorithms: Using polar coordinates, Bresenham's circle drawing, mid point circle drawing algorithm; Filled area algorithms: Scanline: Polygon filling algorithm, boundary filled algorithm.

Unit-2: Two/Three Dimensional Viewing: The 2-D viewing pipeline, windows, viewports, window to view port mapping; Clipping: point, clipping line (algorithms):- 4 bit code algorithm, Sutherland-cohen algorithm, parametric line clipping algorithm (Cyrus Beck).

Polygon clipping algorithm; Sutherland-Hodgeman polygon clipping algorithm. Two dimensional transformations: transformations, translation, scaling, rotation, reflection, composite transformation.

Three dimensional transformations: Three dimensional graphics concept, Matrix representation of 3-D Transformations, Composition of 3-D transformation.

Unit-3: Viewing in 3D: Projections, types of projections, the mathematics of planner geometric projections, coordinate systems.

Unit-4: Hidden surface removal: Introduction to hidden surface removal. The Z- buffer algorithm, scanline algorithm, area sub-division algorithm.

Unit-5: Representing Curves and Surfaces: Parametric representation of curves: Bezier curves, B-Spline curves. Parametric representation of surfaces; Interpolation method.

Unit-6: Illumination, shading, image manipulation: Illumination models, shading models for polygons, shadows, transparency. What is an image? Filtering, image processing, geometric transformation of images.

Text Books:

- Computer Graphics Principles and Practices second edition by James D. Foley, Andeies van Dam, Stevan K. Feiner and Johb F. Hughes, 2000, Addision Wesley.

- Computer Graphics by Donald Hearn and M.Pauline Baker, 2nd Edition, 1999, PHI

Reference Books:

- Procedural Elements for Computer Graphics – David F. Rogers, 2001, T.M.H Second Edition

- Fundamentals of 3Dimensional Computer Graphics by Alan Watt, 1999, Addision Wesley.

- Computer Graphics: Secrets and Solutions by Corrign John, BPB

- Graphics, GUI, Games & Multimedia Projects in C by Pilania & Mahendra, Standard Publ.

- Computer Graphics Secrets and solutions by Corrign John, 1994, BPV

- Introduction to Computer Graphics By N. Krishanmurthy T.M.H 2002

Note : Eight questions will be set in all by the examiners taking at least one question from each unit. Students will be required to attempt five questions in all.

IT-307 E   **Rapid Application Development Lab.**

L	T	P			
-	-	2	Class Work	:	25 Marks
			Exam.	:	25 Marks
			Total	:	50 Marks
			Duration of Exam	:	3 Hours

Note : At least 10 experiments are to be performed by the students in the semester

1.   Study window's API's? Find out their relationship with MFC classes. Appreciate how they are helpful in finding complexities of window's programming?

2.   Get familiar with the essential classes in a typical (document view architecture) VC program and their relationships with each other.

3.   Write a program to handle the mouse event right click on client area and display a message box as "Right Button Click".

4.   Create a simple model dialog box to read the information about a student i.e. name, roll no. class using appropriate fields.

5.   Write a simple console application to create archive class object from file class that reads and stores a simple structure (record).

6.   Create a simple database in MS access and connect it to Visual Basic using ADO or DAO.

7. Write a program that reads a text and changes its font, font size as selected by the user from different fonts contained in a list box.

8. With the help of Visual Basic, created an object of excel application and implement any function of it.

9. Write a simple program that displays an appropriate message when an illegal operation is performed, using error handling technique in VB.

10. Make an active X control of your own using Visual Basic.

CSE-309 E   Computer Graphics Lab.

L	T	P		
-	-	3	Class Work : 50
			Exam: 50
			Total: 100
			Duration of Exam: 3 Hrs.

List of programs to be developed

1. Write a program for 2D line drawing as Raster Graphics Display.

2. Write a program for circle drawing as Raster Graphics Display.

3. Write a program for polygon filling as Raster Graphics Display

4. Write a program for line clipping.

5. Write a program for polygon clipping.

6. Write a program for displaying 3D objects as 2D display using perspective transformation.

7. Write a program for rotation of a 3D object about arbitrary axis.

8. Write a program for Hidden surface removal from a 3D object.

Note: At least 5 to 10 more exercises to be given by the teacher concerned.

CSE-313 E   Operating Systems Lab.

L	T	P		
-	-	2	Class Work	: 25 Marks
			Exam.	: 25 Marks
			Total	: 50 Marks
			Duration of Exam	: 3 Hours

- Study of WINDOWS 2000 Operating System.

- Administration of WINDOWS 2000 (including DNS,LDAP, Directory Services)

- Study of LINUX Operating System (Linux kernel, shell, basic commands pipe & filter commands).

- Administration of LINUX Operating System.

- Writing of Shell Scripts (Shell programming).

- AWK programming.

Note : At least 5 to 10 more exercises to be given by the teacher concerned.

EE-329-E   MICROPROCESSORS AND INTERFACING LAB

L	T	P		
-	-	2	Class Work	: 25 Marks
			Exam.	: 25 Marks
			Total	: 50 Marks
			Duration of Exam	: 3 Hours

LIST OF EXPERIMENTS:

1. Study of 8085 Microprocessor kit.

2. Write a program using 8085 and verify for :

   a. Addition of two 8-bit numbers.

   b. Addition of two 8-bit numbers (with carry).

3. Write a program using 8085 and verify for :

   a. 8-bit subtraction (display borrow)

   b. 16-bit subtraction (display borrow)

4. Write a program using 8085 for multiplication of two 8- bit numbers by repeated addition method. Check for minimum number of additions and test for typical data.

5. Write a program using 8085 for multiplication of two 8- bit numbers by bit rotation method and verify.

6. Write a program using 8085 for division of two 8- bit numbers by repeated subtraction method and test for typical data.

7. Write a program using 8085 for dividing two 8- bit numbers by bit rotation method and test for typical data.

8. Study of 8086 microprocessor kit

9. Write a program using 8086 for division of a defined double word (stored in a data segment) by another double Word division and verify.

10. Write a program using 8086 for finding the square root of a given number and verify.

11. Write a program using 8086 for copying 12 bytes of data from source to destination and verify.

12. Write a program using 8086 and verify for :

   a. Finding the largest number from an array.

   b. Finding the smallest number from an array.

13. Write a program using 8086 for arranging an array of numbers in descending order and verify.

14. Write a program using 8086 for arranging an array of numbers in ascending order and verify.

15. Write a program for finding square of a number using look-up table and verify.   .

16. Write a program to interface a two digit number using seven-segment LEDs. Use 8085/8086 microprocessor and 8255 PPI.

17. Write a program to control the operation of stepper motor using 8085/8086 microprocessor and 8255 PPI.

NOTE:

At least ten experiments have to be performed in the semester out of which seven experiments should be performed from above list. Remaining three experiments may either be performed from the above list or designed & set by the concerned institution as per the scope of the syllabus of EE-309-C.

Maharshi Dayanand University, Rohtak   19

20   Syllabus B.Tech. (Information Technology) V and VI

M.D.UNIVERSITY, ROHTAK
SCHEME OF STUDIES & EXAMINATION
Bachelor of Technology SEMESTER VITH
EFFECTIVE FROM THE SESSION 2009-10

Sr. No.	Course No.	Subject	Teaching Shedule				Examination Schedule (Marks)				Duration of exam
			L	T	P	Total	Theory	Marks of Classwork	Practical	Total	(Hours)
1.	IT–302 E	Network Programming	3	1	–	4	100	50	–	150	3
2	CSE–302E	Principles of Software Engineering (CSE,IT)	3	1	–	4	100	50	–	150	3
3	CSE–304 E	Intelligent Systems (CSE, IT	3	1	–	4	100	50	–	150	3
4	CSE–307E	Web Development (Common with CSE– V Sem.)	3	1	–	4	100	50	–	150	3
5	EE–402 E	Wireless Communication (CSE, IT and Common with 8th Sem.– EL)	3	1	–	4	100	50	–	150	3
6	EE–407 E	Digital Signal Processing	3	1	–	4	100	50	–	150	3
7.	IT–304 E	Network Programming Lab. (EL, IT, AEI)	–	–	2	2	–	25	25	50	3
8.	CSE–306 E	Intelligent Systems Lab. (CSE, IT)	–	–	3	3	–	25	25	50	3
9.	CSE–311 E	Web Development & Core JAVA Lab. (Common with V– Sem–CSE)	–	–	2	2	–	25	25	50	3
10	GPIT–302 E	General Proficiency	–	–	–	–	–	50	–	50	3
		Total	18	6	7	31	600	425	75	1100	–

Note :

1. Each student has to undergo practical training of 6 weeks during summer vacation and its evaluation shall be carried out in the VII semester.

2. Students will be allowed to use non-programable scientific calculator. However, sharing of calculator will not be permitted in the examination.

3. The practical hour for the subject CSE-306 E. (Intelligent System Lab.) has been increased from 2 hours to 3 hours w.e.f. this session 2007-08.

IV SEMESTER

IT-302 E   **Network Programming**

L	T	P		
3	1	-	Class Work	: 50 Marks
			Exam.	: 100 Marks
			Total	: 150 Marks
			Duration of Exam	: 3 Hours

Unit-1: Introduction to networking, TC/IP Protocol architecture, Classful internet addresses, subnets, super netting, address resolution Protocol (RAP) and RARP, IP datagram format, UDP and TCP/data grams , ICMP, its purpose , FINGER, NET STAT details & IPconfig, Ping, TRACERT, ROUTE.

Unit-2: Socket introduction, elementary TCP sockets, TCP client sever, I/O functions, select& poll functions, socket options elementary UDP sockets, elementary node and address conversions, echo service (TCP and UDP).

Unit-3: Algorithm and issues in server software design :iterative connectionless servers, (UDP), Iterative, connection oriented servers (TCP), single process, concurrent servers multiprotocol servers (TCP,UDP), multi service servers (TCP,UDP).

Unit-4: Remote procedure call concept (RCP) :RPC models, analogy between RPC of client and server, remote programs and procedures, their multiple versions and mutual exclusion communication semantics, RPC retransmits, dynamic port mapping ,authentication.

Unit-5: **N**etwork file system concept of data link access, debugging techniques ,Routing sockets, broadcasting to mobile network.

Text Books:

- Unix Network programming Vol -2nd edition, W.Richard Stevens

- Internet working with TCP/IP Vol-1, Doubles e-commer.

- Internetworking TCP/IP Vol III Doubles E comer, David L.Stevens

Reference Book:
- Internetworking with TCP/IP, Vol II

Note : Eight questions will be set in all by the examiners taking at least one question from each unit. Students will be required to attempt five questions in all.

CSE-302 E   **Principles of Software Engineering**

L	T	P		
3	1	-	Class Work	: 50 Marks
			Exam.	: 100 Marks
			Total	: 150 Marks
			Duration of Exam	: 3 Hours

Unit-1: Introduction: The process, software products, emergence of software engineering, evolving role of software, software life cycle models, Software Characteristics, Applications, Software crisis.

Unit-2 : Software project management:Project management concepts, software process and project metrics, Project planning, project size estimation metrics, project estimation Techniques, empirical estimation techniques, COCOMO- A Heuristic estimation techniques, staffing level estimation, team structures, staffing, risk analysis and management, project scheduling and tracking.

Unit-3 : Requirements Analysis and specification

requirements engineering, system modeling and simulation Analysis principles modeling, partitioning Software, prototyping:, Prototyping methods and tools; Specification principles, Representation, the software requirements specification and reviews Analysis Modeling: Data Modeling, Functional modeling and information flow: Data flow diagrams, Behavioral Modeling; The mechanics of structured analysis: Creating entity/ relationship diagram, data flow model, control flow model, the control and process specification; The data dictionary; Other classical analysis methods.

Unit-4: System Design

Design concepts and principles: the design process: Design and software quality, design principles; Design concepts: Abstraction, refinement, modularity, software architecture, control hierarchy, structural partitioning, data structure, software procedure, information hiding; Effective modular design: Functional independence, Cohesion, Coupling; Design Heuristics for effective modularity; The design model; Design documentation.

Architectural Design: Software architecture, Data Design: Data modeling, data structures, databases and the data warehouse, Analyzing alternative Architectural Designs ,architectural complexity; Mapping requirements into a software architecture; Transform flow, Transaction flow; Transform mapping: Refining the architectural design.

Unit-5 : Testing and maintenance

Software Testing Techniques, software testing fundamentals: objectives, principles, testability; Test case design, white box testing, basis path testing: Control structure testing: Black box testing, testing for specialized environments ,architectures and applications. Software Testing Strategies: Verification and validation, Unit testing, Integration testing,; Validation testing, alpha and beta testing; System testing: Recovery testing, security testing, stress testing, performance testing; The art of debugging, the debugging process debugging

approaches. Software re-engineering, reverse engineering, restructuring, forward engineering.

Unit-6 : Software Reliability and Quality Assurance :

Quality concepts, Software quality assurance , SQA activities; Software reviews: cost impact of software defects, defect amplification and removal; formal technical reviews: The review meeting, review reporting and record keeping, review guidelines; Formal approaches to SQA; Statistical software quality assurance; software reliability: Measures of reliability and availability ,The ISO 9000 Quality standards: The ISO approach to quality assurance systems, The ISO 9001 standard, Software Configuration Management.

Unit-7:

Computer Aided software Engineering: CASE, building blocks, integrated case environments and architecture, repository.

Text Book:

- Software Engineering – A Practitioner's Approach, Roger S. Pressman, 1996, MGH.

Reference Books:

- F undamentals of software Engineering, Rajib Mall, PHI

- Software Engineering by Ian sommerville, Pearson Edu, 5th edition, 1999, AW,

- Software Engineering – David Gustafson, 2002, T.M.H

- Software Engineering Fundamentals Oxford University, Ali Behforooz and Frederick J. Hudson 1995

  JW&S,

- An Integrated Approach to software engineering by Pankaj jalote , 1991 Narosa,

Note: Eight questions will be set in all by the examiners taking at least one question from each unit. Students will be required to attempt five questions in all.

CSE-304 E **INTELLIGENT SYSTEMS**

L	T	P		Class Work	: 50 Marks
3	1	-		Exam.	: 100 Marks
				Total	: 150 Marks
				Duration of Exam	: 3 Hours

Unit-1: Foundational issues in intelligent systems: Foundation and history of AI, Ai problems and techniques – AI programming languages, introduction to LISP and PROLOG- problem spaces and searches, blind search strategies, Breadth first- Depth first- heuristic search techniques Hill climbing: best first- A * algorithm AO* algorithm- game tree, Min max algorithms, game playing- alpha beta pruning.

Unit-2: Knowledge representation issues, predicate logic- logic programming, semantic nets- frames and inheritance, constraint propagation, representing knowledge using rules, rules based deduction systems.

Unit-3: Reasoning under uncertainty, review of probability, Baye's probabilistic interferences and Dempster shafer theory, Heuristic methods, symbolic reasoning under uncertainty, Statistical reasoning, Fuzzy reasoning, Temporal reasoning, Non monotonic reasoning.

Unit-4: Planning, planning in situational calculus, representation for planning, partial order planning algorithm, learning from examples, discovery as learning, I earning by analogy, explanation based learning, neural nets, genetic algorithms.

Unit-5: Principles of Natural language processing, rule based systems architecture, Expert systems, knowledge acquisition concepts, AI application to robotics, and current trends in intelligent systems.

Text Book:

- Artificial Intelligence: A Modern Approach,. Russell & Norvig. 1995, Prentice Hall.

Reference Books:

- Artificial Intelligence, Elain Rich and Kevin Knight, 1991, TMH.

- Artificial Intelligence-A modern approach, Staurt Russel and peter norvig, 1998, PHI.

- Artificial intelligence, Patrick Henry Winston:, 1992, Addition Wesley 3rd Ed.,

Note : Eight questions will be set in all by the examiners taking at least one question from each unit. Students will be required to attempt five questions in all.

CSE- 307 E **Web Development**

L	T	P		Class Work	: 50 Marks
3	1	-		Exam.	: 100 Marks
				Total	: 150 Marks
				Duration of Exam	: 3 Hours

Unit-1 : Introduction to the Internet, The world wide web: The idea of hypertext and hyper media; How the web works-HTTP, HTML and URLs; How the browser works-MIME types, plugins and helper applications; The standards-HTML, XML, XHTML and the W3C.

Hypertext markup language: The anatomy of an HTML document; Marking up for structure and style: basic page markup, absolute and relative links, ordered and unordered lists, embedding images and controlling appearance, table creation and use, frames, nesting and targeting.

Descriptive markup: Meta tags for common tasks, semantic tags for aiding search, the doubling code and RDF.

Unit-2: Separating style from structure with style sheets: Internal style specifications within HTML, External linked style specification using CSS, page and site design considerations.

Client side programming: Introduction to the JavaScript syntax, the JavaScript object model, Event handling, Output in JavaScript, Forms handling, miscellaneous topics such as cookies, hidden fields, and images; Applications.

Unit-3: Server side programming: Introduction to Server Side Technologies CGI/ASP/JSP., Programming languages for server Side Scripting, Configuring the server to support CGI, applications; Input/ output operations on the WWW, Forms processing, (using PERL/VBSCRIPT/JavaSCIPT)

Unit-4: Other dynamic content technologies: introduction to ASP & JSP, Delivering multimedia over web pages, The VRML idea, The Java phenomenon-applets and servelets, issues and web development.

Unit-5 : Introduction to Microsoft .NET Technology and its comparison with the competing Technologies.

Text books:

- Beginning XHTML by Frank Boumpery, Cassandra Greer, Dave Raggett, Jenny Raggett, Sebastian Schnitzenbaumer & ted Wugofski, 2000, WROX press (Indian Shroff Publ.

SPD) 1st edition

- HTML & XHTML: The Definitive Guide by Chuck Musciano, Bill Kennedy, 2000, 4th Edi.

Reference books:

- XHTML Black Book by Steven Holzner, 2000

- CGI Programming on the World Wide Web. O'Reilly Associates.

- Web Technologies By Achyut S Godbole , Atul Kahate, 2003, T.M.H

- Scott Guelich, Shishir Gundararam, Gunther Birzniek; CGI Programing with Perl 2/e   O'Reilly.

- Doug Tidwell, James Snell, Pavel Kulchenko; Programming Web services, O'Reilly.

- Intranets by James D.Cimino, 1997, Jaico Publ.

- Internet and Web Technologies – Raj Kamal, 2002, T.M.H

Note : Eight questions will be set in all by the examiners taking at least one question from each unit. Students will be required to attempt five questions in all.

EE-402-E   WIRELESS COMMUNICATION

L	T	P		
3	1	0	Class Work	: 50 Marks
			Exam.	: 100 Marks
			Total	: 150 Marks
			Duration of Exam	: 3 Hours

UNIT 1. INTRODUCTION TO WIRELESS COMMUNICATION SYSTEMS :
Evolution of mobile radio communications, examples of wireless comm. systems, paging systems, Cordless telephone systems, comparison of various wireless systems.

UNIT 2. MODERN WIRELESS COMMUNICATION SYSTEMS:

Second generation cellular networks, third generation wireless networks, wireless in local loop, wireless local area networks, Blue tooth and Personal Area networks.

UNIT 3. INTRODUCTION TO CELLULAR MOBILE SYSTEMS:

Spectrum Allocation, basic Cellular Systems, performance Criteria, Operation of cellular systems, analog cellular systems, digital Cellular Systems.

UNIT 4. ELLULAR SYSTEM DESIGN FUNDAMENTALS:

Frequency Reuse, channel assignment strategies, handoff Strategies, Interference and system capacity, tracking and grade off service, improving coverage and capacity.

UNIT 5. MULTIPLE ACCESS TECHNIQUES FOR WIRELESS COMMUNICATION:

Introduction to Multiple Access, FDMA, TDMA, Spread Spectrum multiple Access, space division multiple access, packet ratio, capacity of a cellular systems.

UNIT 6. WIRELESS NETWORKING:

Difference between wireless and fixed telephone networks, development of wireless networks, fixed network transmission hierarchy, traffic routing in wireless networks, wireless data services, common channel signaling, ISDN (Integrated Services digital Networks), advanced intelligent networks.

UNIT 7. INTELLIGENT CELL CONCEPT AND APPLICATION:

Intelligent cell concept, applications of intelligent micro-cell Systems, in-Building Communication, CDMA cellular Radio Networks.

TEXT BOOKS:

1. Wireless Communications: Theodore S. Rappaport; Pearsons.

2. Mobile Cellular Telecommunication: W.C.Y.Lee; McGraw Hill

REFERENCE BOOK:

1. Mobile Communications: Jochen Schiller; Pearson

NOTE : Eight questions are to be set -one question from each unit. Students have to attempt any five question.

EE-407-E   DIGITAL SIGNAL PROCESSING

L	T	P		
3	1	0	Class Work	: 50 Marks
			Exam.	: 100 Marks
			Total	: 150 Marks
			Duration of Exam	: 3 Hours

UNIT1. DISCRETE-TIME SIGNALS:

Signal classifications, frequency domain representation, time domain representation, representation of sequences by Fourier transform, properties of Fourier transform, discrete time random signals, energy and power theorems.

UNIT2. DISCRETE-TIME SYSTEMS : Classification, properties, time invariant system, finite impulse Response (FIR) system, infinite impulse response (IIR) system.

UNIT3. SAMPLING OF TIME SIGNALS:

Sampling theorem, application, frequency domain representation of sampling, reconstruction of band limited signal from its samples. discrete time processing of continuous time signals, changing the sampling rate using discrete time processing.

UNIT4. Z-TRANSFORM :

Introduction, properties of the region of convergence, properties of the Z-transform, inversion of the Z-transform, applications of Z-transform.

UNIT5. BASICS OF DIGITAL FILTERS : Fundamentals of digital filtering, various types of digital filters, design techniques of digital filters : window technique for FIR, bi-linear transformation and backward difference methods for IIR filter design, analysis of finite word length effects in DSP, DSP algorithm implementation consideration. Applications of DSP.

UNIT6. MULTIRATE DIGITAL SIGNAL PROCESSING :

Introduction to multirate digital signal processing, sampling rate conversion, filter structures, multistage decimator and interpolators, digital filter banks.

TEXT BOOKS :

1.   Digital Signal Processing : Proakis and Manolakis; PHI

2.   Digital Signal Processing: Salivahanan, Vallavaraj and Gnanapriya;TMH

REFERENCE BOOKS:

1.   Digital Signal Processing: Alon V. Oppenhelm;PHI

2.   Digital Signal processing(II-Edition): Mitra, TMH

NOTE : Eight questions are to be set - at least one from each unit. Students have to attempt five questions.

IT-304 E   **Network Programming Lab.**

L	T	P		Class Work	: 25 Marks
-	-	2		Exam.	: 25 Marks
				Total	: 50 Marks
				Duration of Exam	: 3 Hours

The socket programming can be done on Unix/Linux operating or/and Windows. Socket programming, and the language can be C/VC++ and/or Java

1.   Write a program to Create Sockets For Sending And Receiving Data.

2.   Write a program to Obtain The Local & Remote Socket Address.

3.   Write a program to Create Sockets For Handling Multiple Connection

4.   Write a program to Obtain The Information About The (A) Host (B) Network (C) Protocols (D) Domains

5.   Write a program to Manipulate The IP Address.

6.   Write a program to Write A Telnet Client.

7.   Write a program to Make An FTP Client

Note : At least 5 to 10 more exercises to be given by the teacher concerned.

CSE-306 E   **Intelligent System Lab.**

L	T	P		Class Work	: 25 Marks
-	-	2		Exam.	: 25 Marks
				Total	: 50 Marks
				Duration of Exam	: 3 Hours

1. Study of PROLOG.
   Write the following programs using PROLOG.

2. Write a program to solve 8 queens problem.

3. Solve any problem using depth first search.

4. Solve any problem using best first search.

5. Solve 8-puzzle problem using best first search

6. Solve Robot (traversal) problem using means End Analysis.

7. Solve traveling salesman problem.

Note : At least 5 to 10 more exercises to be given by the teacher concerned.

CSE-311 E   **Web Development & Core JAVA Lab.**

L	T	P		Class Work	: 25 Marks
-	-	2		Exam.	: 25 Marks
				Total	: 50 Marks
				Duration of Exam	: 3 Hours

Java programs using classes & objects and various control constructs such as loops etc , and data structures such as arrays, structures and functions.
Java programs for creating Applets for display of Images ,Texts and Animation
Programs related to interfaces & packages
Input output & Random files programs in java
Java programs using Event driven concept
Programs related to Network Programming

Development of Web site for the college or newspaper agency.

Books recommended for Lab.

- Java Elements – Principles of Programming in Java , Duane A. Bailey , Duane W. Bailey, 2000, T.M.H

- The Java Handbook by Patrick Naughton, TMH, N.Delhi