Program Structure for B.E. Computer Engineering

Third Year (Computer)
(Semester V)

(REV 2012)

Course Code	Course Name	Teaching Scheme (Contact Hours)			Credits Assigned			
		Theory	Pract	Tut	Theory	TW/ Pract	Tut	Total
CPC501	Microprocessor	4	2	-	4	1	-	5
CPC502	Operating Systems	4	2	-	4	1	-	5
CPC503	Structured and Object Oriented Analysis and Design	4	2	-	4	1	-	5
CPC504	Computer Networks	4	2	-	4	1	-	5
CPL501	Web Technologies Laboratory	-	4	-	-	2	-	2
CPL502	Business Communication and Ethics*	-	2+ 2*	-	-	2	-	2
	Total	**16**	**16**	**-**	**16**	**8**	**-**	**24**

* 2 hours shown as Practicals to be taken class wise and other 2 hours to be taken as batch wise

Course Code	Course Name	Examination Scheme							
		Internal Assesment							
		Internal Assesment			End Sem Exam	Exam Duration (in Hrs)	TW	Oral / Pract	Total
		Test 1	Test 2	Avg					
CPC501	Microprocessor	20	20	20	80	03	25	25 (prac)	150
CPC502	Operating Systems	20	20	20	80	03	25	25 (prac)	150
CPC503	Structured and Object Oriented Analysis and Design	20	20	20	80	03	25	25 (oral)	150
CPC504	Computer Networks	20	20	20	80	03	25	25 (pract)	150
CPL501	Web Technologies Laboratory	-	-	-	-	-	25	50 (oral)	75
CPL502	Business Communication and Ethics	-	-	-	-	-	50	-	50
	Total	**-**	**-**	**80**	**320**		**175**	**150**	**725**

Course Code	Course/Subject Name	Credits
CPC501	**Microprocessor**	**5**

Objectives:
1. To understand basic architecture of 16 bit and 32 bit microprocessors.
2. To understand interfacing of 16 bit microprocessor with memory and peripheral chips involving system design.
3. To understand techniques for faster execution of instructions and improve speed of operation and performance of microprocessors.
4. To understand RISC and CISC based microprocessors.
5. To understand concept of multi core processors.

Outcomes: Learner will be able to…
1. Write programs to run on 8086 microprocessor based systems.
2. Design system using memory chips and peripheral chips for 16 bit 8086 microprocessor.
3. Understand and devise techniques for faster execution of instructions, improve speed of operations and enhance performance of microprocessors.
4. Distinguish between RISC and CISC processors.
5. Understand multi core processor and its advantages.

Module	Detailed Contents	Hrs.
01	**Intel 8086/8088 Architecture** 1.1 8086/8088 Microprocessor Architecture, Pin Configuration, Programming Model, Memory Segmentation, Study of 8284 Clock Generator, Operating Modes, Study of 8288 Bus Controller, Timing diagrams for Read and Write operations, Interrupts.	10
02	**Instruction Set and Programming** 2.1 Instruction Set of 8086, Addressing Modes, Assembly Language Programming, Mixed Language Programming with C Language and Assembly Language.	08
03	**System designing with 8086** 3.1 Memory Interfacing: SRAM, ROM and DRAM (using DRAM Controller-Intel 8203). 3.2 Applications of the Peripheral Controllers namely 8255-PPI, 8253-PIT, 8259-PIC and 8237-DMAC. Interfacing of the above Peripheral Controllers with 8086 microprocessor. 3.3 Introduction to 8087 Math Coprocessor and 8089 I/O Processor.	12
04	**Intel 80386DX Processor** 4.1 Study of Block Diagram, Signal Interfaces, Bus Cycles, Programming Model, Operating Modes, Address Translation Mechanism in Protected Mode, Memory Management, Protection Mechanism.	06
05	**Pentium Processor** 5.1 Block Diagram, Superscalar Operation, Integer & Floating Point Pipeline Stages, Branch Prediction, Cache	08

		Organization.	
		5.2 Comparison of Pentium 2, Pentium 3 and Pentium 4 Processors. Comparative study of Multi core Processors i3, i5 and i7.	
06		**SuperSPARC Architecture** 6.1 SuperSPARC Processor, Data Formats, Registers, Memory model. Study of SuperSPARC Architecture.	04

Term Work:

The distribution of marks for term work shall be as follows:
- Laboratory work (experiments/practical & case studies):…………. (15)   Marks.
- Assignments……………………………………………….. (05)   Marks.
- Attendance ………………………………………………… (05)   Marks
  TOTAL: …………………………………………………… (25)   Marks.

Practical/Experiments:

1. Total eight experiments / practical must be performed out of which five practical must be performed on assemblers for 8086 and three experiments must be performed on interfacing of 8086 with peripheral chips like 8255 PPI, 8253 PIT, 8259 PIC and 8237 DMAC.
2. In addition to eight experiments/practical, two case studies are mandatory, one case study on RISC processor and second case study on CISC processor.

Practical examination will be conducted based on the above syllabus.

Text Books:

1. Microprocessor and Interfacing: Douglas Hall, Tata McGraw Hill.
2. Microcomputer Systems: 8086/8088 family Architecture, Programming and Design: Liu & Gibson, PHI Publication.
3. Pentium Processor System Architecture: Tom Shanley & Don Anderson, Addison-Wesley.
4. Advanced Microprocessor: Daniel Tabak, Tata McGraw Hill.
5. The 80386DX Microprocessor: Hardware, Software and Interfacing: Walter A Triebel, Prentice Hall.

Reference Books:
1. 8086/8088 family: Design Programming and Interfacing: John Uffenbeck , PHI.
2. Intel Microprocessors: Barry B. Brey, 8th Edition, Pearson Education India.
3. Processor Architecture and Interfacing: Swati Joshi, Atul Joshi, Hemlata Jadhav, Wiley.
4. The X86 Microprocessors: Architecture and Programming (8086 to Pentium): Das Lyla B, Pearson Education India.
5. The SPARC Architecture Manual
6. I Intel Manuals

7. Programmer's Reference Manual for IBM Personal Computers: Steven Armbrust, Ted Forgeron, McGraw Hill
8. IBM PC Assembly Language and Programming: Peter Abel, 5th Edition, Prentice Hall of India

Course Code	Course/Subject Name	Credits
CPC502	**Operating Systems**	**5**

Objectives:
1. To introduce students with basic concepts of Operating System, its functions and services.
2. To familiarize the students with various views and management policies adopted by O.S. as pertaining with processes , Deadlock , memory , File and I/O operations.
3. To brief the students about functionality of various OS like Unix , Linux and Windows 7 as pertaining to resource management.
4. To provide the knowledge of basic concepts towards process synchronization and related issues.

Outcomes: Learner will be able to…
1. Appreciate the role of operating system as System software.
2. Compare the various algorithms and comment about performance of various algorithms used for management of memory , CPU scheduling, File handling and I/O operations.
3. Apply various concept related with Deadlock to solve problems related with Resources allocation, after checking system in Safe state or not.
4. To appreciate role of Process synchronization towards increasing throughput of system.
5. Describe the various Data Structures and algorithms used by Different Oss like Windows 7, Linux and Unix pertaining with Process , File , I/O management.
6. To control the behavior of OS by writing Shell scripts.

Module	Detailed Contents	Hrs.
01	**Introduction** 1.1 Introduction to Operating System, Objectives and Functions of O.S., OS Services, Special purpose systems, Types Of OS, System Calls, types of system calls, Operating system structure ,System Boot.	04
02	**Process Management** 2.1 **Process concept**, operations on process Process scheduling: basic concepts , scheduling criteria , scheduling algorithms, Preemptive, Non-preemptive, FCFS ,SJF ,SRTN ,Priority based, Round Robin ,Multilevel Queue scheduling,Operating System Examples. 2.2 **Synchronization:** Background , the critical section problem , Peterson's Solution, Synchronization Hardware Semaphores, classic problems of Synchronization: The Producer Consumer Problem:Readers writers problem, Semaphores, Dinning Philosopher Problem	10
03	**Deadlock** 3.1 Deadlock Problem, Deadlock Characterization, Deadlock Prevention. Deadlock avoidance Banker's algorithm for single & multiple resources , Deadlock recovery , Deadlock Detection,	04

04	**Memory Management**	05
	4.1 **Memory management strategies:** background , swapping ,contiguous memory allocation, paging , structure of page tables , segmentation	
	4.2 **Virtual memory management:** Demand paging , copy-on write,Page replacement, FIFO, Optimal, LRU, LRU Approximation,Counting Based, , Allocation of frames , Thrashing	
05	**File Management**	06
	5.1 Files-System Structure, File System implementation, Directory implementation , Allocation Methods contiguous allocation, linked list allocation, indexed allocations, Free space management.	
	5.2 **Secondary storage** : structures: Disks Scheduling Algorithm: FCFS, SSTF, SCAN, CSCAN, LOOK, Disk Management	
06	**Input Output Management**	02
	6.1 Overview , I/O Hardware , Application I/O Interface	
07	**Case Study of UNIX**	08
	7.1 History of UNIX, Overview of UNIX ,UNIX File System, Data structures for process/memory management ,Process states and State Transitions, Using the System(Booting and login),Process scheduling , Memory management , Shell programming	
08	**Case Study of Linux**	05
	8.1 History , Design Principles , Kernel Modules , Process management , Scheduling , Memory management , File Systems , Input and Output , Inter process communication , Network structure , Security	
09	**Case study: Windows 7**	04
	9.1 History, Design Principles , System components , environmental subsystems , File System, Networking, Programmer Interface	

Term Work:

The distribution of marks for term work shall be as follows:

- Laboratory work (experiments+mini project): …………… (15)
- Assignments:…………………………………………….. (05)
- Attendance ……………………………………………. (05)
- **TOTAL: ………………………………………… (25)**

Practical/Experiments:

Laboratory work shall consist of minimum **08** experiments and mini project, 2 assignments based on above theory syllabus.
For mini project form a group of maximum 3 students.
The final certification and acceptance of term work ensures that satisfactory performance of laboratory work and minimum passing marks in term work.
Practical exam will be based on the above syllabus.

Text Books:
1. Silberschatz A., Galvin P., Gagne G. "Operating Systems Principles", Willey Eight edition
2. Achyut S. Godbole , Atul Kahate "Operating Systems" McGraw Hill Third Edition
3. "Operating System-Internal & Design Principles", William Stallings, Pearson
4. Andrew S. Tanenbaum, "Modern Operating System", Prentice Hall.

Reference Books:
1. "Linux Command Line & Shell Scripting", Richard Blum and Christine Bresnahan, 2nd edition, Wiley.
2. "The Design of Unix Operating System", Maurice J. Bach, Prentice Hall.
3. Unix and Shell Programming by B. M. Harwani Oxford
4. Unix Concept and Application 4th Edition by Sumitabha Das 'Mc Graw Hill'
5. Thomas Rebecca : Yates A user guide to the Unix system.

Syllabus for Practical:
Suggested topics for experiment but not limited to:
1. *Exploring basic commands for handling File system under Unix/Linux using shell scripts.
   (creating groups , chown , chmod , directory name, tty , diff, umask ,top)
2. *Pattern matching utilities like awk, grep , nroff , troff , sort etc.
3. *Exploring the boot process of Unix/Linux and implementing practical on it (for ex. MBR, passing different parameter to kernel, do different activity while booting and power-off   ).
4. Basic Process management algorithms (Any from FCFS , SJF , SRTN, RR , multilevel Queue scheduling)
5. Process synchronization algorithms like producer consumer problem , dining philosopher problem
6. Implementing Various page replacement policies: FIFO, Optimal, LRU, LFU
7. Implementation of Disk scheduling algorithms like FCFS,SSTF,SCAN ,CSCAN,LOOK.
8. Implementing Various file allocation methods : Index Allocation , Contiguous allocation.
9. Simulating Paging and Segmentation
10. Implementation of System calls like printing a file, display file using Unix/Linux internals.
11. Study booting process of Windows 7 , Linux , and Unix.

* Marked experiments are mandatory

Course Code	Course/Subject Name	Credits
CPC503	**Structured and Object Oriented Analysis and Design**	**5**

Outcomes: Learner will be able to…

1. Understand and apply techniques to get the system requirements and present it in standard format.
2. Apply key modeling concepts to both the traditional structured approach and the object-oriented approach.
3. Construct the candidate system following design methodology.

Module	Detailed Contents	Hrs.
01	**Introduction** 1.1 System overview, Types of Systems , 1.2 Key Differences Between Structured and Object-Oriented Analysis and Design 1.3 Role of the System Analyst 1.4 Systems Development Life Cycle	06
02	**System Analysis** 2.1 Business process Reengineering and the Zachman Framework, System Requirement, Stakeholders, Techniques for information gathering, Validating the requirements.	06
03	**Feasibility Analysis** 3.1 Feasibility Analysis, Tests for feasibility, Cost-Benefit Analysis, Feasibility analysis of candidate system. 3.2 The system Proposal.	06
04	**Modeling System Requirements** 4.1 Traditional Approach to Requirement: Data Flow Diagrams, Documentation of DFD Components. Information Engineering Models, 4.2 Object-Oriented Approach to Requirement: Object-Oriented Requirements, The System Activities, Identifying Input and Outputs, Identifying Object Behavior, Integrating Object-Oriented Models. 4.3 Evaluating Alternatives for requirements, Environment and Implementation	12
05	**System Design** 5.1 Moving To Design 5.2 The traditional Approach to design 5.3 The Object-Oriented Approach to design: Use Case REaliztion 5.4 Designing Database, Designing the User Interface, Designing System Interfaces, Controls and security	12
06	**Application Architecture** 6.1 IT Architecture, Application Architecture Strategies, Modeling Application Architecture for Information System. 6.2 Deployment using UML diagrams, Component and deployment diagram for various architectures.	06

List of Assignment:

Assignments can be based on following topics
1. Feasibility analysis
2. Design patterns.

Term Work:

The distribution of marks for term work shall be as follows:
- Laboratory work: ……………………………………….. (10)   Marks.
- Mini Project presentation:………………………………..(10)   Marks.
- Attendance ……………………………………….   (05)   Marks
- **TOTAL: ……………………………………………….   (25)   Marks.**

Oral exam will be based on the above syllabus and tLaboratory work.

Suggested Practical List:
1. Develop Requirement specification document of the selected / alloted project.
2. Develop DFD model (level-0, level-1 DFD and Data dictionary) of tselected / alloted project.
3. Develop UML Use case model for selected / alloted project. .
4. Develop sequence diagram selected / alloted project. .
5. Develop Class diagram selected / alloted project.
6. Develop prototype of your project selected / alloted project.
7. Draw system architecture diagram selected / alloted project.

Text Books:
1. System Analysis & Design by Satzinger, Jackson and Burd, Cengage Learning, 2007
2. System Analysis and Design Methods by Jeffery l. Whitten, Lonnie D Bentley, McGraw Hill, 7th edition.
3. System Analysis and Design by Alan Dennis, Barbara H. Wixom, Roberta M. Roth, Wiley India 4th edition

Reference Books:
1. Systems Analysis and Design by Kendall & Kendall, PHI Publication, 7th Edition.
2. Analysis and Design of Information Systems by James a. Senn, 2nd Edition, McGrawHill.
3. Object-Oriented Modeling and Design with UML by Michael Blaha, James Rumbaugh, Pearson Education Publication, 2nd Edition.
4. The Unified Modeling Language - User Guide by Grady Booch, James Rumbaugh, Ivar Jacobson, Pearson Education Publication.
5. Modern Systems Analysis and Design by Jeffrey A. Hoffer, Joey F. George, Joseph S. Valacich, Prabin K. Panigrahi, Pearson Education Publication, 4th Edition.
6. UML Distilled by Martin Fowler, Pearson Edition, 3rd Edition.

7. Object Oriented Systems Development Using the Modified Modeling Language by Ali Bahrami, Tata McGraw Hill Publication.

8. Appling UML and Patterns by Craig Larman, Pearson Education, 2nd Edition.

Course Code	Course/Subject Name	Credits
CPC504	**Computer Networks**	**4+1**

Objectives:

1. To provide students with an overview of the concepts and fundamentals of data communication and computer networks
2. To familiarize with the basic taxonomy and terminology of computer networking area.
3. To experience the designing and managing of communication protocols while getting a good exposure to the TCP/IP protocol suite.

Outcomes:

After completion of this course learner will be able to:

1. Conceptualize all the OSI Layers
2. Use appropriate network tools to build network topologies
3. Install and configure an open source tool NS2
4. Test simple protocols in a laboratory scenario

Module	Detailed Contents	Hrs.
01	**Introduction** 1.1 History and development of computer network, network application, network software and hardware components, topology, protocol hierarchies, design issues for the layers, connection oriented and connectionless services, reference models: layer details of OSI, TCP/IP models. Communication between layers.	06
02	**Physical Layer** 2.1 Guided Transmission Media: Twisted pair, Coaxial, Fiber optics. 2.2 Unguided media (Wireless Transmission): Radio Waves, Bluetooth, Infrared, Virtual LAN.	06
03	3.1 **Data Link Layer** DDL Design Issues, Functionalities of DLL, Flow control algorithms - Sliding Window, Error Detection & Correction techniques, SDLC, PPP, Framing. 3.2 **MAC Layer** Aloha protocols, Control Access Protocol, Carrier Sense Multiple Access(CSMA), Ethernet, Local Area Networks - Ethernet, Token ring, FDDI.	09
04	**Network layer** 4.1 Communication Primitives: Unicast, Multicast, Broadcast. IP Addressing, Subnetting, IPv4, IPv6, Routing algorithms : Link state routing, Distance Vector Routing, ARP, RARP, ICMP, Routing protocols - RIP, OSPF, BGP, IGRP, Congestion control algorithms: Open Loop congestion control, Closed Loop congestion control.	08

05	**Transport Layer** 5.1 The Transport Service: Transport service primitives, Berkeley Sockets, Connection management, UDP, TCP, Socket Programming (TCP & UDP), Socket Programming examples, TCP Flow control, TCP Congestion Control, Multiplexing.	08
06	**Application Layer** 6.1 DNS, HTTP, E-mail, SMTP, Telnet, FTP, Security-PGP-SSH.	06
07	**Network Management** 7.1 SNMP Concept, Management Components, SMI, MIB, SNMP Format, Messages.	04

Term Work:

Term work shall consist of minimum **12** experiments.
Journal must include at least 2 assignments.
The final certification and acceptance of term work ensures that satisfactory performance of laboratory work and minimum passing marks in term work.
The distribution of marks for term work shall be as follows:

- Experiments: ………….………………………………… (15)   Marks.
- Assignments:………………………………………….. (05)   Marks.
- Attendance ……………………………………………. (05)   Marks
- **TOTAL: ……………………………………………. (25)   Marks.**

Practical exam will be based on the above syllabus.

Suggested Practicals:

1.   Study of LAN Topology.
2.   Study of various Network devices.
3.   Building of any topology using Network tool.
4.   Installation & Configuration of NS2 in Linux environment.
5.   Basic wired & wireless topology in NS2.
6.   Build class A & Class B Network using router in Network tool.
7.   Implement subnetting concept using Network tool.
8.   Write a program to implement find out class of a given IP address, subnet mask & first & last IP address of that block.
9.   Write a program to build client-server model on different computers.
10.   Congestion Control: Stop & Wait, Sliding Window & Selective Repeat, Go Back n.
11.   Datalink Layer : Error Detection and correction, Flow Control, Framing
12.   Network Layer : IP Addressing, Routing
13.   Transport Layer : Socket Programming, Network Management/ Monitoring Tools.

Text Books:
1. A.S. Tanenbaum, "Computer Networks", Pearson Education, Fourth Edition.
2. B.A. Forouzan, "Data Communications and Networking", TMH, Fourth Edition.

Reference Books:

1. M. A. Gallo and W. M. Hancock, Computer Communications and Networking Technologies, Cengage Learning (Indian Edition), First Edition.
2. Natalia Olifer & Victor Olifer, "Computer Networks : Principles, Technologies & Protocols for Network Design", Wiley India, 2011.
3. Computer Networks: A Systems Approach, Second Edition (The Morgan Kaufmann Series in Networking) Larry L.Peterson(Author),Bruce S.Davie(Author)
4. Computer Networking, 6e,James F. Kurose , Keith W. Ross.
5. An Engineering Approach To Computer Networking: Atm Networks, The Internet ...By Keshav

Course Code	Course/Subject Name	Credits
CPL502	**Business Communication & Ethics**	**2**

Objectives:
1. To inculcate in students professional and ethical attitude, effective communication skills, teamwork, skills, multidisciplinary approach and an ability to understand engineer's social responsibilities.
2. To provide students with an academic environment where they will be aware of the excellence, leadership and lifelong learning needed for a successful professional career.
3. To inculcate professional ethics and codes of professional practice
4. To prepare students for successful careers that meets the global Industrial and Corporate requirement' provide an environment for students to work on Multidisciplinary projects as part of different teams to enhance their team building capabilities like leadership, motivation, teamwork etc.

Outcomes: A learner will be able to …..
1. communicate effectively in both verbal and written form and demonstrate knowledge of professional and ethical responsibilities
2. Participate and succeed in Campus placements and competitive examinations like GATE, CET.
3. Possess entrepreneurial approach and ability for life-long learning.
4. Have education necessary for understanding the impact of engineering solutions on Society and demonstrate awareness of contemporary issues.

Module	Detailed Contents	Hrs.
01	**Report Writing** 1.1 Objectives of report writing 1.2 Language and Style in a report 1.3 Types of reports 1.4 Formats of reports: Memo, letter, project and survey based	08
02	**Technical Proposals** 2.1 Objective of technical proposals 2.2 Parts of proposal	02
03	**Introduction to Interpersonal Skills** 3.1 Emotional Intelligence 3.2 Leadership 3.3 Team Buliding 3.4 Assertiveness 3.5 Conflict Resolution 3.6 Negotiation Skills 3.7 Motivation 3.8 Time Management	08
04	**Meetings and Documentation** 4.1 Strategies for conducting effective meetings 4.2 Notice 4.3 Agenda	02

	4.4 Minutes of the meeting	

05	**Introduction to Corporate Ethics and etiquettes**
	      5.1 Business Meeting etiquettes, Interview etiquettes, Professional and work etiquettes, Social skills
	      5.2 Greetings and Art of Conversation
	      5.3 Dressing and Grooming
	      5.4 Dinning etiquette
	      5.5 Ethical codes of conduct in business and corporate activities (Personal ethics, conflicting values, choosing a moral response, the process of making ethical decisions)
		02

06	**Employment Skills**
	    6.1 Cover letter
	    6.2 Resume
	    6.3 Group Discussion
	    6.4 Presentation Skills
	    6.5 Interview Skills
		06

List of Assignment:

1. Report Writing (Synopsis or the first draft of the Report)

2. Technical Proposal (Group activity, document of the proposal)

3. Interpersonal Skills (Group activity and Role play)

4. Interpersonal Skills (Documentation in the form of soft copy or hard copy)

5. Meetings and Documentation (Notice, Agenda, Minutes of Mock Meetings)

6. Corporate ethics and etiquettes (Case study, Role play)

7. Cover Letter and Resume

8. Printout of the PowerPoint presentation

Term Work:

Term work shall consist of all assignments from the list. The distribution of marks for term work shall be as follows:

- Assignments: ……………………………………………… (20)   Marks.
- Project Report Presentation……………………………….. (15)   Marks.
- Group Discussion.………………………………………… (10)   Marks.
- Attendance ……………………………………………………(05)   Marks
- **TOTAL: …………………………………………………. (50)   Marks.**

The final certification and acceptance of term work ensures the satisfactory performance of work assigned and minimum passing in the term work.

References:

1. Fred Luthans, "*Organisational Behavior*", Mc Graw Hill, edition
2. Lesiker and Petit, "*Report Writing for Business*", Mc Graw Hill, edition
3. Huckin and Olsen, "*Technical Writing and Professional Communication*", Mc Graw Hill
4. Wallace and Masters, "*Personal Development for Life and Work*", Thomson Learning, 12th edition
5. Heta Murphy, "*Effective Business Communication*", Mc Graw Hill, edition
6. R.C Sharma and Krishna Mohan, "*Business Correspondence and Report Writing*",
7. B N Ghosh, "*Managing Soft Skills for Personality Development*", Tata McGraw Hill.Lehman, Dufrene, Sinha, "*BCOM*", Cengage Learning, 2nd edition
8. Bell . Smith,"Management Communication" Wiley India Edition,3rd edition.Dr.K.Alex ,"Soft Skills",S Chand and Company
9. Dr.K Alex,"Soft Skills",S Chand and Company

Course Code	Course/Subject Name	Credits
CPL501	**Web Technologies Laboratory**	2

Module	Detailed Contents	Lab Sessions
01	**Title:** Create HTML Forms. Use of various HTML Tag on Web Forms. **Concept:** Designing of effective web site, Introduction of different Web Technologies: HTML, and Different HTML Tag. **Objective:** objective of this module is to provide students an overview of the concepts Web Technologies, and HTML. **Scope:** Designing static client side web page using various HTML tags. **Technology:** HTML	01
02	**Title:** Use of CSS on HTML Form. **Concept:** Cascaded Style Sheets **Objective:** In this module student will learn, defining a CSS and unstaring its purpose different syntax and types of CSS. **Scope:** Creating web pages and use CSS to control the layout pages. **Technology:** HTML with Cascade Style Sheet.	01
03	**Title:** Use of Java Script functions on Web Forms and Use of Dynamic HTML Page. **Concept:** Scripting Languages, Dynamic web pages **Objective:** in this lab student will learn how to define client side scripting and understand its advantages and disadvantages. Embedding JavaScript code into HTML document using script tag, and will understand dynamic HTML. **Scope:** Create animation using JavaScript. **Technology:** HTML with JavaScript.	02
04	**Title:** Creation of Web page with the help of Quanta Plus /Aptana /Kompozer. **Concept:** Web development Environment **Objective:** This module students will learn how will introduce editors for development of web pages. **Scope:** Development of web pages using any web tool. **Technology:** Quanta Plus /Aptana /Kompozer	03

05	**Title:** Write an XML file marksheet.xml representing your semester mark sheet**.** **Concept:** Extensible Mark up Language (XML) **Objective:** is to learn about basics of XML and how it can be used to store information away from the mechanism of processing or formatting of such data. Will also learn how to build simple XML files and be able to manipulate and refer to them. **Scope:** is to creating an XML file in that it must include basic syntax of an XML doc and DTD for the same.	03
06	**Title:** server side scripting. Use HTML form to accept the two numbers N1 and N2 and using PHP program display only prime numbers in between N1 and N2. **Concept:** Server side scripting**,** introduction to PHP **Objective:** this lab gives a basic introduction of to PHP and dynamic programming on the server side. **Scope:** creating a server side script using PHP, decisions, looping **Technology:** PHP, HTML	03

Term work Assessment:
Term work will consist of small assignments testing all the technologies included in syllabus and a Mini project solving an appropriate problem using the above technology

The distribution of marks for term work shall be as follows:
- Assignments: …………………………………………… (20)   Marks.
- Project Report Presentation……………………………….. (15)   Marks.
- Group Discussion.………………………………………… (10)   Marks.
- Attendance ……………………………………………………(05)   Marks
- **TOTAL: …………………………………………………. (50)   Marks.**

End Semester Examination:
Oral examination is to be conducted by pair of internal and external examiners based on the mini projects undertaken by student grooups.

Text Books:

1.   Ralph Moseley ,M.T. Savaliya "Developing Web Applications ", Willy India,Second Edition , ISBN:978-81-265-3867-6
2.   "Web Technology Black Book ",Dreamtech Press, First Edition,   ISBN 978-7722-997