PROPOSED

SYLLABUS

FOR

SECOND YEAR DEGREE COURSE IN COMPUTER SCIENCE ENGINEERING AND INFORMATION TECHNOLOGY

DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY,

AURANGABAD

With effect from Academic Year 2012-2013

FACULTY OF ENGINEERING AND TECHNOLOGY
Proposed Revised Structure
[Second Year CSE/IT]
With effective from 2012-13

Sub No.	SEMESTER-I	Contact Hrs / Week				Examination Scheme					
	Subject	L	T	P	Total	CT	TH	TW	PR	Total	Duration of Theory Examination
BSH-201	Engineering Mathematics-III	4	-	-	4	20	80	-	-	100	3 Hrs
CSE-202	Digital Electronics	4	-	-	4	20	80	-	-	100	3 Hrs
CSE-203	Data Structures using C	4	-	-	4	20	80	-	-	100	3 Hrs
CSE-204	Computer Networks-I	4	-		4	20	80	-	-	100	3 Hrs
CSE-205	Unix and Shell Programming	4	-	-	4	20	80	-	-	100	3 Hrs
CSE-221	LAB-I Digital Electronics Lab	-	-	2	2	-	-	50	-	50	---
CSE-222	LAB-II Data Structure using C	-	-	2	2	-	-	-	50	50	---
CSE-223	LAB-III Computer Network-I Lab	-	-	2	2	-	-	50	-	50	
CSE-224	LAB-IV Unix and Shell Programming	-	-	2	2	-	-	-	50	50	---
CSE-225	LAB-V Introduction to Web Programming	2	-	2	4	-	-	-	50	50	---
	Total	**22**		**10**	**32**	**100**	**400**	**100**	**150**	**750**	

Sub No.	SEMESTER-II	Contact Hrs / Week				Examination Scheme					
	Subject	L	T	P	Total	CT	TH	TW	PR	Total	Duration of Theory Examination
BSH-252	Engineering Mathematics-IV	4		-	4	20	80	-	-	100	3 Hrs
CSE-253	Discrete Mathematics	4	-	-	4	20	80	-	-	100	3 Hrs
CSE-254	Object Oriented Programming with C++	4	-	-	4	20	80	-	-	100	3 Hrs
CSE-255	Microprocessors	4	-	-	4	20	80	-	-	100	3 Hrs
CSE-256	Computer Graphics	4	-	-	4	20	80	-	-	100	3 Hrs
CSE-271	LAB-VI Object Oriented Programming with C++ Lab	-	-	2	2	-	-	-	50	50	---
CSE-272	LAB-VII Microprocessors Lab	-	-	2	2	-	-	-	50	50	---
CSE-273	Lab-VIII Computer Graphics Lab	-	-	2	2	-	-	50	-	50	---
CSE-274	LAB-IX Open Source Lab	2	-	2	4	-	-	-	50	50	---
BSH-275	Communication Skills	2	-	2	4	-	-	50	-	50	
	Total	**24**	**-**	**10**	**34**	**100**	**400**	**100**	**150**	**750**	---

L: Lecture hours per week **T:** Tutorial hours per week **P:** Practical hours per week **CT:** Class Test **TH:** University Theory Examination **TW:** Term Work **PR:** Practical/Oral Examination

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FACULTY OF ENGINEERING AND TECHNOLOGY

Second Year Engineering

Semester-I

BSH-201: Engineering Mathematics-III

Teaching Scheme		**Examination Scheme**	
Lectures	4 Hrs/week	Theory	80 Marks
		Class Test	20 Marks
		Duration of Theory paper	3Hrs

Objectives:

1. To develop Logical understanding of the subject
2. To develop mathematical skill so that students are able to apply mathematical methods & Principal's in solving problems from Engineering fields
3. To produce graduates with mathematical knowledge & computational skill.

Unit 1: **[6 Hours]**

Linear Differential Equations : Linear Differential Equations with constant coefficients General method, shortcut methods to find particular integral, Homogenous Linear differential equations (Cauchy's & Legendre's form), method of variation of parameters.

Unit 2: **[6 Hours]**

Application of LDE: To Electrical circuits & to Mechanical system (Analogous study of two systems),To Civil Engineering, Free oscillations / vibrations, Forced oscillation /vibrations, Damped Free oscillations / vibrations, Damped Forced oscillations / vibrations.

Unit 3: **[8 Hours]**

Statistics & Probability: Measures of Dispersion, Moments, coefficient of skewness and Kurtosis, Probability distribution for random variables, Binomial, Poisson and Normal distributions, Curve fitting**:** Principle of least squares, Fitting of linear curve, parabola, exponential curve.

Unit4: **[6 Hours]**

Vector Differentiation: Differentiation of vectors, Gradient of scalar point function, Directional derivative, Divergence of vector point function, Curl of a vector point function. Irrotational and solenoidal vector field.

Unit 5: **[6 Hours]**

Vector Calculus (Integral calculus): The line integral, Surface integral, volume integral, Gauss Divergence theorem, Stoke's theorem, Green's theorem

Unit 6: **[8 Hours]**

Numerical Methods: Solution of transdental equations by Newton Raphson method, Gauss Seidel method to solve simultaneous linear equations, Lagranges Interpolation formula for unequal intervals, Numerical Differentiation: - Newton's forward and Newton's Backward difference formulae, Solution of ordinary differential equation by Euler's modified method, and Runge-Kutta IV^{th} order method.

Note: All Theorems are without proofs

Section A: Unit 1, 2, 3

Section B: Unit 4, 5, 6

Reference Books:

1. P. N. Wartikar and J. N. Wartikar, *"A Text Book of Engineering Mathematics (Volume-I, II,III),"* Pune Vidyarthi Griha Prakashan, Pune.
2. B. S. Grewal, "*Higher Engineering Mathematics*," Khanna Publications, New Delhi.
3. H.K. Das, "*Advanced Engineering Mathematics* ," S. Chand & Company.
4. B.V. Ramana, "*Higher Engineering Mathematics*," (Tata McGraw-Hill).
5. Erwin Kreyszig **, "***Advanced Engineering Mathematics*," Wiley Eastern Ltd.
6. Ravish R Singh, Mukul Bhat, "*Engineering Mathematics," A Tutorial Approach*, Mc Graw Hill

Pattern of Question Paper:

The units in the syllabus shall be divided in two equal sections. Question paper shall be set having two sections A and B. Section A questions shall be set on first three units (1,2,3) and Section B questions on remaining three units (4,5,6) . Question paper should cover the entire syllabus.

For 80 marks Paper:

1. Minimum ten questions

2. Five questions in each section

3. Question no 1 and 6 be made compulsory and should have at least ten bits of two marks out of which FIVE to be solved.

4. Two questions from remaining questions from each section be asked to solve having weightage of 15 marks

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FACULTY OF ENGINEERING AND TECHNOLOGY

Second Year Engineering

Semester-I

CSE-202: DIGITAL ELECTRONICS

Teaching Scheme		**Examination Scheme**	
Lectures	4 Hrs/week	Theory	80 Marks
		Class Test	20 Marks
		Duration of Theory paper	3Hrs

Objectives:

- To understand different methods used for the simplification of Boolean functions
- To design and implement combinational circuits
- To design and implement synchronous sequential circuits
- To design and implement asynchronous sequential circuits

UNIT – 1 **5 Hours**

Digital Principles, Digital Logic: Definitions for Digital Signals, Digital Waveforms, Digital Logic, 7400 TTL Series, TTL Parameters The Basic Gates: NOT, OR, AND, Universal Logic Gates: NOR, NAND, Positive and Negative Logic, Introduction to HDL.

UNIT – 2 **5 Hours**

Combinational Logic Circuits Sum-of-Products Method, Truth Table to Karnaugh Map, Pairs Quads, and

Octets, Karnaugh Simplifications, Don't-care Conditions, Product-of-sums Method, Product-of-sums simplifications, Simplification by Quine-McClusky Method, Hazards and Hazard Covers, HDL Implementation Models.

UNIT – 3 **10 Hours**

Data-Processing Circuits: Multiplexers, Demultiplexers, 1-of-16 Decoder, Encoders, Exclusive-or Gates, Parity Generators and Checkers, Magnitude Comparator, Programmable Array Logic, Programmable Logic Arrays, HDL Implementation of Data Processing Circuits

Clocks, Flip-Flops: Clock Waveforms, TTL Clock, Schmitt Trigger, Clocked D FLIP-FLOP, Edge-triggered D FLIP-FLOP, Edge-triggered JK FLIP-FLOP, FLIP-FLOP Timing, JK Master-slave FLIP-FLOP, Switch Contact Bounce Circuits, Various Representation of FLIP-FLOPs, Analysis of Sequential Circuits, HDL Implementation of FLIP-FLOP

UNIT – 4 **6 Hours**

Registers: Types of Registers, Serial In - Serial Out, Serial In - Parallel out, Parallel In - Serial Out, Parallel In - Parallel Out, Universal Shift Register, Applications of Shift Registers, Register Implementation in HDL

UNIT – 5 **6 Hours**

Counters: Asynchronous Counters, Decoding Gates, Synchronous Counters, Changing the Counter Modulus, Decade Counters, Presettable Counters, Counter Design as a Synthesis problem, A Digital Clock, Counter Design using HDL

UNIT – 6 **8 Hours**

D/A Conversion and A/D Conversion: Variable, Resistor Networks, Binary Ladders, D/A Converters, D/A Accuracy and Resolution, A/D Converter-Simultaneous Conversion, A/D Converter-Counter Method, Continuous A/D Conversion, A/D Techniques, Dual-slope A/D Conversion, A/D Accuracy and Resolution

Text Book:

1. Donald P Leach, Albert Paul Malvino & Goutam Saha, *"Digital Principles and Applications,"* 7th Edition, Tata McGraw Hill, 2010.

Reference Books:

1. Stephen Brown, Zvonko Vranesic, *"Fundamentals of Digital Logic Design with VHDL,"* 2nd Edition, Tata McGraw Hill, 2005.
2. R D Sudhaker Samuel, *Illustrative Approach to Logic Design*, Sanguine-Pearson, 2010.
3. Charles H. Roth, *Fundamentals of Logic Design, Jr.*, 5th Edition, Cengage Learning, 2004.
4. Ronald J. Tocci, Neal S. Widmer, Gregory L. Moss " *Digital Systems Principles and Applications,"* 10th Edition, Pearson Education, 2007. M Morris Mano: Digital Logic and Computer Design, 10th Edition, Pearson Education, 2008.

Section A: Unit 1, 2, 3

Section B: Unit 4, 5, 6

PATTERN OF QUESTION PAPER:

Six units in the syllabus shall be divided in two equal parts i.e. 3 units in each part. Question paper shall be set having two sections A and B. Section A questions shall be set on first part and Section B questions on second part. Question paper should cover the entire syllabus.

For 80 marks Paper:

1. Minimum ten questions

2. Five questions in each section

3. Question no 1 from section A and Question no 6 from section B having weightage of 10 marks each be made compulsory and should have at least eight bits of two marks out of which five to be solved.

4. Two questions from remaining questions from each section A and B be asked to solve each having weightage of 15 marks.

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FACULTY OF ENGINEERING AND TECHNOLOGY

Second Year Engineering

Semester-I

CSE-203: DATA STRUCTURE USING C

Teaching Scheme		**Examination Scheme**	
Lectures	4 Hrs/week	Theory	80 Marks
		Class Test	20 Marks
		Duration of Theory paper	3Hrs

Objective:

- To study the representation, implementation and applications of data structures

UNIT - 1 **6 Hours**

BASIC CONCEPTS: Pointers and Dynamic Memory Allocation, Algorithm Specification, Data Abstraction, Performance Analysis, Performance Measurement

UNIT - 2 **4 Hours**

ARRAYS and STRUCTURES: Arrays, Dynamically Allocated Arrays, Structures and Unions, Polynomials, Sparse Matrices, Representation of Multidimensional Arrays

UNIT - 3 **10 Hours**

STACKS AND QUEUES: Stacks, Stacks Using Dynamic Arrays, Queues, Circular Queues Using Dynamic Arrays, Evaluation of Expressions, Multiple Stacks and Queues.

LINKED LISTS: Singly Linked lists and Chains, Representing Chains in C, Linked Stacks and Queues, Polynomials, Additional List operations, Sparse Matrices, Doubly Linked Lists

UNIT - 4 **10 Hours**

TREES-1: Introduction, Binary Trees, Binary Tree Traversals, Threaded Binary Trees,Heap

TREES -2, GRAPHS: Binary Search Trees, Selection Trees, Forests, Representation of Disjoint Sets, Counting Binary Trees, The Graph Abstract Data Type.

UNIT - 5 **5 Hours**

PRIORITY QUEUES Single- and Double-Ended Priority Queues, Leftist Trees, Binomial Heaps, Fibonacci Heaps, Pairing Heaps.

UNIT-6 **5 Hours**

EFFICIENT BINARY SEARCH TREES: Optimal Binary Search Trees, AVL Trees, Red-Black Trees, Splay Trees.

Text Book:

1. Horowitz, Sahni, Anderson-Freed, "*Fundamentals of Data Structures in C*," 2nd Edition, Universities Press, 2007.(Chapters 1, 2.1 to 2.6, 3, 4, 5.1 to 5.3, 5.5 to 5.11, 6.1, 9.1 to 9.5,10)

Reference Books:

1. Yedidyah, Augenstein, Tannenbaum, "*Data Structures Using C and C++*," "2nd Edition, Pearson Education, 2003.
2. Debasis Samanta, "Classic Data Structures, 2nd Edition," PHI, 2009.
3. Richard F. Gilberg and Behrouz A. Forouzan, "Data Structures A Pseudocode Approach with C," Cengage Learning, 2005.

Section A: Unit 1, 2, 3

Section B: Unit 4, 5, 6

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FACULTY OF ENGINEERING AND TECHNOLOGY

Second Year Engineering

Semester-I

CSE-204: COMPUTER NETWORKS-I

Teaching Scheme		**Examination Scheme**	
Lectures	4 Hrs/week	Theory	80 Marks
		Class Test	20 Marks
		Duration of Theory paper	03 Hrs

Unit-1: [5 Hours]

Introduction: Data Communications, Networks, the Internet, Protocols & Standards, Layered Tasks,

The OSI model, Layers in OSI model, TCP/IP Protocol suite, addressing

Unit 2: [5 Hours]

Physical Layer-1: Analog & Digital Signals, Transmission Impairment, Data Rate limits, Performance, Digital-digital conversion (Only Line coding: Polar, Bipolar and Manchester coding), Analog-to-digital conversion (only PCM), Transmission Modes, Digital-to-analog conversion

Unit 3: [10 Hours]

Physical Layer-2 and Switching: Multiplexing, Spread Spectrum, Introduction to switching, Circuit Switched Networks, Datagram Networks, Virtual Circuit Networks

Data Link Layer-1: Error Detection & Correction: Introduction, Block coding, linear block codes, cyclic codes, Checksum**.**

Unit 4: [10 hours]

Data Link Layer-2: Framing, Flow and Error Control, Protocols, Noiseless Channels, Noisy channels, HDLC, PPP (Framing, Transition phases only)

Multiple Access & Ethernet: Random access, Controlled Access, Channelization, Ethernet: IEEE standards, Standard Ethernet, Changes in the standard, Fast Ethernet, Gigabit Ethernet

Unit 5: [5 hours]

Wireless LANs and Cellular Networks: Introduction, IEEE 802.11, Bluetooth, Connecting devices, Cellular Telephony

Unit 6: [5 hours]

Network Layer: Introduction, Logical addressing, IPv4 addresses, IPv6 addresses, Internetworking basics, IPv4, IPv6, Comparison of IPv4 and IPv6 Headers

Text Books:

1. Behrouz A. Forouzan: *Data Communication and Networking*, 4th Edition Tata McGraw-Hill, 2006.
   (Chapters 1.1 to 1.4, 2.1 to 2.5, 3.1 To 3.6, 4.1 to 4.3, 5.1, 6.1, 6.2, 8.1 to 8.3, 10.1 to 10.5, 11.1 to 11.7, 12.1 to 12.3, 13.1 to 13.5, 14.1, 14.2, 15.1, 16.1, 19.1, 19.2, 20.1 to 20.3)

Reference Books:

1. Alberto Leon-Garcia and Indra Widjaja: *Communication Networks - Fundamental Concepts and Key architectures*, 2nd Edition Tata McGraw-Hill, 2004.
2. William Stallings: *Data and Computer Communication*, 8th Edition, Pearson Education, 2007.
3. Larry L. Peterson and Bruce S. Davie: *Computer Networks – A Systems Approach*, 4th Edition, Elsevier, 2007.
4. Nader F. Mir: *Computer and Communication Networks*, Pearson Education, 2007.

Section A: Unit 1, 2, 3

Section B: Unit 4, 5, 6

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FACULTY OF ENGINEERING AND TECHNOLOGY

Second Year Engineering

Semester-I

CSE-205: UNIX AND SHELL PROGRAMMING

Teaching Scheme		**Examination Scheme**	
Lectures	4 Hrs/week	Theory	80 Marks
		Class Test	20 Marks
		Duration of Theory paper	3Hrs

Unit-1: **[6 hours]**

The Unix Operating System, The UNIX architecture and Command Usage, The File System

Unit-2: **[6 Hours]**

Basic File Attributes, the VI Editor, More file attributes,

Unit 3: **[8 Hours]**

The Shell, The Process, Customizing the environment

Unit 4: **[8 Hours]**

Simple filters, filters using regular expressions, awk – An Advanced Filter

Unit-5: **[6 Hours]**

Essential Shell Programming

Unit 6: **[6 Hour]**

perl - The Master Manipulator

Text Book:

1. Sumitabha Das: *UNIX – Concepts and Applications*, 4th Edition, Tata McGraw Hill, 2006. (Chapters 1.2, 2, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 18, 19)

Reference Books:

1. Behrouz A. Forouzan and Richard F. Gilberg: *UNIX and Shell Programming***,** Cengage Learning, 2005.
2. M.G. Venkateshmurthy: *UNIX & Shell Programming***,** Pearson Education, 2005.

Section A: Unit 1, 2, 3

Section B: Unit 4, 5, 6

PATTERN OF QUESTION PAPER:

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FACULTY OF ENGINEERING AND TECHNOLOGY

Second Year Engineering

Semester-I

CSE-221: LAB-I: DIGITAL ELECTRONICS LABORATORY

Teaching Scheme	**Examination Scheme**
Practical: 2 Hrs/week	Term Work: 50 Marks

Term Work:

Term work shall consists of record of the experiments carried out during the course, which should include neat labeled figures and appropriate explanation for the corresponding experiment indicating what is learnt from the experiment. The term work shall consist of at least 10 experiments.

Assessment of term work should be done as follows:

* Continuous lab assessment: 40 %

* Actually performing practical in the laboratory: 40 %

* Oral Examination conducted (internally) at the time of submission: 20%

LIST OF EXPERIMENTS

1. Given a 4-variable logic expression, simplify it using Entered Variable Map and realize the simplified logic expression using 8:1 multiplexer IC.
2. Design and develop the Verilog /VHDL code for an 8:1 multiplexer. Simulate and verify its working.
3. Realize a J-K Master / Slave Flip-Flop using NAND gates and verify its truth table.
4. Design and develop the Verilog / VHDL code for D Flip-Flop with positive-edge triggering. Simulate and verify its working.
5. Design and implement a mod-n (n<8) synchronous up counter using J-K Flip-Flop ICs and demonstrate its working.
6. Design and develop the Verilog / VHDL code for mod-8 up counter. Simulate and verify its working.
7. Design and implement a ring counter using 4-bit shift register and demonstrate its working.
8. Design and develop the Verilog / VHDL code for switched tail counter. Simulate and verify its working.
9. Design and implement an asynchronous counter using decade counter IC to count up from 0 to n (n<=9) and demonstrate its working.
10. Study & verification of operation of half and full Adder.

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FACULTY OF ENGINEERING AND TECHNOLOGY

Second Year Engineering

Semester-I

CSE-222: LAB-II: DATASTRUCTURE USING C LABORATORY

Teaching Scheme	**Examination Scheme**
Practical: 2 Hrs/week	Practical & Oral: 50 Marks

Design, develop and implement for the following problems using C Language in LINUX /Windows environment

1. Write a C program to implement stack using dynamic array.
2. Write a C program to implement 2 stacks in one static array.
3. Using circular representation for a polynomial, design, develop, and execute a program in C to accept two polynomials, add them, and then print the resulting polynomial.
4. Design, develop, and execute a program in C to convert a given valid parenthesized infix arithmetic expression to postfix expression and then to print both the expressions. The expression consists of single character operands and the binary operators + (plus), - (minus), * (multiply) and / (divide).
5. Design, develop, and execute a program in C to evaluate a valid postfix expression using stack. Assume that the postfix expression is read as a single line consisting of non-negative single digit operands and binary arithmetic operators. The arithmetic operators are + (add), - (subtract), * (multiply) and / (divide).
6. Design, develop, and execute a program in C to simulate the working of a queue of integers using an array. Provide the following operations:
   a. Insert b. Delete c. Display
7. Design, develop, and execute a program in C to read a sparse matrix of integer values and to search the sparse matrix for an element specified by the user. Print the result of the search appropriately. Use the triple <row, column, value> to represent an element in the sparse matrix
8. Design, develop, and execute a program in C to create a max heap of integers by accepting one element at a time and by inserting it immediately in to the heap. Use the array representation for the heap. Display the array at the end of insertion phase.

9. Design, develop, and execute a program in C to implement a doubly linked list where each node consists of integers. The program should support the following operations:
    a. Create a doubly linked list by adding each node at the front.
    b. Insert a new node to the left of the node whose key value is read as an input.
    c. Delete the node of a given data if it is found, otherwise display appropriate message.
    d. Display the contents of the list.

    (Note: Only either (a,b and d) or (a, c and d) may be asked in the examination)
10. Write a C program to construct binary tree & binary tree traversal.
11. Write a C program to construct binary search tree.

Practical Examination:

Practical Examination should be conducted for three hours under the supervision of external examiner. External examiner should evaluate student by practically and orally.

Note: In the examination each student picks one question from a lot of *all* the 11 question

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FACULTY OF ENGINEERING AND TECHNOLOGY

Second Year Engineering

Semester-I

CSE-223: LAB-III: COMPUTER NETWORKS-I LABORATORY

Teaching Scheme	**Examination Scheme**
Practical: 2 Hrs/week	Term Work: 50 Marks

Term Work:

Term work shall consists of record of the experiments carried out during the course, which should include appropriate explanation for the corresponding experiment indicating what is learnt from the experiment. The term work shall consist of at least 10 experiments

Assessment of term work should be done as follows:

* Continuous lab assessment: 40 %

* Actually performing practical in the laboratory: 40 %

* Oral Examination conducted (internally) at the time of submission: 20

LIST OF EXPERIMENTS

1. Study of Data Communication and Networking. Identify five components of Data communication system.
2. Study of computer network topology and OSI model layered architecture.
3. Installation of TC/IP protocol configuration and study the classification of addresses employing TCP/IP protocols.
4. Write a C program to determine if the IP address is in Class A, B, C, D, or E.
5. Write a C program to translate dotted decimal IP address into 32 bit address.
6. Study of basic network commands: ipconfig, hostname, ping <ip_address>, tracert <ip_address>, netstat<ip_address> etc..
7. To establish a straight over and a cross over cable in LAN
8. Study of Digital-Digital Conversion and Analog-Digital Conversion
9. Study of multiplexing and switching.
10. Write a C program to generate Hamming code.
11. Study of IEEE Standards
12. Study of IEEE 802.11 wireless standard
13. Study of IPv4 and IPv6

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FACULTY OF ENGINEERING AND TECHNOLOGY

Second Year Engineering

Semester-I

CSE 224: LAB-IV: UNIX AND SHELL PROGRAMMING LABORATORY

Teaching Scheme	**Examination Scheme**
Practical: 2 Hrs/week	Practical/Oral: 50 Marks

LIST OF EXPERIMENTS

1. Execution of various file/directory handling commands.
2. Simple shell script for basic arithmetic and logical calculations.
3. Shell scripts to check various attributes of files and directories.
4. Shell scripts to perform various operations on given strings.
5. Shell scripts to explore system variables such as PATH, HOME etc.
6. Shell scripts to check and list attributes of processes.
7. Execution of various system administrative commands.
8. Write awk script that uses all of its features.
9. Use seed instruction to process /etc/password file.
10. Write a shell script to display list of users currently logged in.
11. Write a shell script to delete all the temporary files.
12. Write a shell script to search an element from an array using binary searching.

Practical Examination:
Practical Examination should be conducted for three hour under the supervision of external examiner. External examiner should evaluate student by practically and orally.
Note: In the examination each student picks one question from a lot of *all* the 12 question

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FACULTY OF ENGINEERING AND TECHNOLOGY

Second Year Engineering

Semester-I

CSE 225: LAB-V: INTRODUCTION TO WEB PROGRAMMING

Teaching Scheme	**Examination Scheme**
Practical: 2 Hrs/week	Practical/Oral: 50 Marks
Theory: 2 Hrs/week	

Contents

1. **Introduction to web design**: Web page & web site, Web Publishing. Introduc tion to HTML: Structure tags: <html>, <head>, <title>, <body> Block level ta gs: Headings, Paragraph, Comments, Breaks, Center, Division, Preformatted, Text alignment and font size. Text level tags: Bold, Italic, Underlined, Strike-t hrough, superscript, subscript. Horizontal Rules Colours in web page: Backgr ound colour, Text colour, Link colour. Lists: Ordered Lists, Unordered Lists, Definition List, Nesting lists. Linking HTML Documents**. 4 hours**

2. **URLs Types of URLs:** Absolute URLs, Relative URLs. Linking HTML Documents: The Anchor tag, Linking to document in same folder, Linking to document in Different folder, Linking to document on the web, Linking to specific location within document. Inserting E-mail links Including Images: Image formats Linking HTML Docu ments: The Anchor tag, Linking to document in same folder, Linking to docu ment in Different folder, Linking to document on the web, Linking to specific location Within document. **4 hours**

3. **Inserting E-mail links tables, Forms, Frames**: Tables: Creating Tables, Editing of rows and columns of table, rowspan, colspan, formatting ta bles using attributes border, Border colour, back ground, align, width, cell spa cing, cell height. Forms: Creating Forms, Forms controls: text controls, Password fields, Radio Buttons, Check boxes, Reset and Submit buttons. The <TEXTAREA>, <SELECT> and <OPTION> tags. **3 hours**

4. **Frames:** Introduction to frames, Advantages and disadvantages of frames, cre ating basic frames Frame targeting. Style sheets: Adding style sheet to docum ent: Linking to a Style sheet, Embedding style sheet, Using inline Style sheet Building a small web site **3 hours**

5. **JavaScript:** Introduction to JavaScript, difference between Java and JavaScri pt, JavaScript syntax, variables and their types, JavaScript operators, arrays an d array methods, Program flow: Control statements, exercise, Built-in objects in JavaScript, Array, String, Math, Date objects, documents forms and form elements window location, History object**. 6 hours**

Reference Books:

1. Castro, "*HTML 4 for World Wide Web*, 3rd ed. Pearson education, 1998.
2. Barrett, "*Essential JavaScript for web professionals,*"Pearson Education, 2000
.

LIST OF EXPERIMENTS

1. Design a home page which will display your information i.e Bio data.
2. Create Hyperlinks in home page i.e educational details, Hobbies, Achievement, My Ideals etc
3. Use table tag to format web page. Also display educational details in tabular format.
4. Create Style sheet to set formatting for text tags. Use it in above pages
5. Design signup form to validate username, password, phone numbers etc .using Java script.
6. Design a sign up form information in database. Perform change password operation on it
7. Develop and demonstrate a DHTML file that includes Javascript for the folloing problems :
    a. Input : A number n obtained using prompt
       Output: The factorial of a number n
    b. Input : A number n obtained using prompt
       Output: The first n Fibonacci numbers
8. Develop and demonstrate a DHTML file the includes JavaScript for using various menu items and submenu items
9. Design a web page for departmental information system.
10. Design and Develop a shopping cart using HTML and JavaScript

Practical Examination:

Practical Examination should be conducted for three hours under the supervision of external examiner. External examiner should evaluate student by practically and orally.

Note: In the examination each student picks one question from a lot of *all* the 10 question

DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY,

AURANGABAD

FACULTY OF ENGINEERING AND TECHNOLOGY

Second Year Engineering

Semester-II

BSH-252: Engineering Mathematics-IV

Teaching Scheme	**Examination Scheme**	
Lectures 4 Hrs/week	Theory	80 Marks
	Class Test	20 Marks
	Duration of Theory paper	3Hrs

Objectives:

1. To develop Logical understanding of the subject
2. To develop mathematical skill so that students are able to apply mathematical methods & Principal's in solving problems from Engineering fields
3. To produce graduates with mathematical knowledge & computational skill.

Unit-1: [7 Hours]

Function of complex variable (Differential calculus): Introduction, Analytic function Cauchy Riemann equations in Cartesian and Polar form, Harmonic function, Taylor's series & Laurent's series (without proof), Conformal mapping (geometrical representation of function of complex variable), bilinear transformation.

Unit 2: [7 Hours]

Function of complex variable: (Integral calculus): Line integral, contour integral: Cauchy's integral theorem, Cauchy's integral formula (without proof), Residues, Cauchy's residue theorem, Integration along unit circle and along upper half of semi circle.

Unit 3: [6 Hours]

Z Transform: Definition, Z transform of elementary functions, properties of Z transform, Inverse Z transform, Solution of difference equation by Z transform.

Unit 4: **[6 Hours]**

Laplace transform: Definition, Transforms of elementary functions,Properties & theorems of Laplace transforms(without proof), transforms of periodic function,Heaviside unit step function, displaced unit step function, Dirac delta function, error function,Bessel' function of zero order.

Unit 5: **[6 Hours]**

Inverse Laplace transform and its applications : Inverse Laplace transforms by using (i) properties, ii) partial fractions, iii) Convolution theorem, Applications to solve linear differential equations with constant coefficients (Initial value problems), Simultaneous Linear differential equations .

Unit 6: **[8 Hours]**

Fourier Transform and its applications: Fourier integral, Fourier sine and cosine integral, complex form of Fourier integral, Fourier transforms Fourier sine and cosine transform and inverse Fourier transforms Finite Fourier sine and cosine transforms. Solution of one dimensional heat equation by using Fourier transform.

Note: All Theorems are without proofs

Section A: Unit 1, 2, 3

Section B: Unit 4, 5, 6

Reference Books:

1. P. N. Wartikar and J. N. Wartikar, *A Text Book of Engineering Mathematics* (Volume-I, II,III), Pune Vidyarthi Griha Prakashan, Pune.
2. B. S. Grewal, "*Higher Engineering Mathematics,*" Khanna Publications, New Delhi
3. H.K. Das, "*Advanced Engineering Mathematics,*" S. Chand & Company.
4. B.V. Ramana, "*Higher Engineering Mathematics* ," (Tata McGraw-Hill).
5. Erwin Kreyszig, "*Advanced Engineering Mathematics,*" Wiley Eastern Ltd.
6. Ravish R Singh, Mukul Bhat, "*Engineering Mathematics A Tutorial Approach,*" by,Mc Graw Hill

Pattern of Question Paper:

The units in the syllabus shall be divided in two equal sections. Question paper shall be set having two sections A and B. Section A questions shall be set on first three units (1,2,3) and Section B questions on remaining three units (4,5,6) . Question paper should cover the entire syllabus.

For 80 marks Paper:

1. Minimum ten questions

2. Five questions in each section

3. Question no 1 and 6 be made compulsory and should have at least ten bits of two marks out of which FIVE to be solved.

4. Two questions from remaining questions from each section be asked to solve having weightage of 15 marks

DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD

FACULTY OF ENGINEERING AND TECHNOLOGY

Second Year Engineering

Semester-II

CSE-253: DISCRETE MATHEMATICS

Teaching Scheme		**Examination Scheme**	
Lectures	4 Hrs/week	Theory	80 Marks
		Class Test	20 Marks
		Duration of Theory paper	3Hrs

Course Objectives:

Students will learn the essential mathematic concepts and ideas in discrete mathematics, which are required for rigorous studies in most areas in computer science. After completing this course satisfactorily, a student will be:

1. Able to construct simple mathematical proofs and possess the ability to verify them
2. Able to understand logical arguments and logical constructs
3. Have a better understanding of sets, functions, and relations.
4. Acquire ability to describe computer programs in a formal mathematical manner.
5. Possess the mathematical knowledge and maturity that are required for upper level computer.

UNIT-1 **4 Hours**

Set Theory: Sets and Subsets, Set Operations and the Laws of Set Theory, Counting and Venn Diagrams, A First Word on Probability, Countable and Uncountable Sets

UNIT – 2 **5 Hours**

Fundamentals of Logic: Basic Connectives and Truth Tables, Logic Equivalence – The Laws of Logic, Logical Implication – Rules of Inference

UNIT-3 **1 1 Hours**

Fundamentals of Logic *contd*.: The Use of Quantifiers, Quantifiers, Definitions and the Proofs of Theorems.

Properties of the Integers: Mathematical Induction, The Well Ordering Principle – Mathematical Induction, Recursive Definitions

UNIT–4 **1 0 Hours**

Relations and Functions: Cartesian Products and Relations, Functions – Plain and One-to-One, Onto Functions – Stirling Numbers of the Second Kind, Special Functions, The Pigeon-hole Principle, Function Composition and Inverse Functions

Relations *contd.*: Properties of Relations, Computer Recognition – Zero-One Matrices and Directed Graphs, Partial Orders – Hasse Diagrams, Equivalence Relations and Partitions

UNIT – 5 **5 Hours**

Groups: Definitions, Examples, and Elementary Properties, Homomorphisms, Isomorphisms, and Cyclic Groups, Cosets, and Lagrange'Theorem.

Coding Theory and Rings: Elements of Coding Theory, The Hamming Metric, The Parity Check, and Generator Matrices

Unit – 6 **5 Hours**

Group Codes: Decoding with Coset Leaders, Hamming Matrices

Rings and Modular Arithmetic: The Ring Structure – Definition and Examples, Ring Properties and Substructures, The Integers Modulo n

Text Book:

1. Ralph P. Grimaldi, "*Discrete and Combinatorial Mathematics*, " 5th Edition, Pearson Education, 2004.(Chapter 3.1, 3.2, 3.3, 3.4, Appendix 3, Chapter 2, Chapter 4.1, 4.2, Chapter 5.1 to 5.6, Chapter 7.1 to 7.4, Chapter 16.1, 16.2, 16.3, 16.5 to 16.9, and Chapter 14.1, 14.2, 14.3).

Reference Books:

1. Kenneth H. Rosen, "*Discrete Mathematics and its Applications*, " 7th Edition, McGraw Hill, 2010.
2. Jayant Ganguly, "*A Treatise on Discrete Mathematical Structures*," Sanguine-Pearson, 2010.
3. D.S. Malik and M.K. Sen, " *Discrete Mathematical Structures: Theory and Applications*," Cengage Learning, 2004.
4. Thomas Koshy. *Discrete Mathematics with Applications*," Elsevier,2005, Reprint 2008.

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FACULTY OF ENGINEERING AND TECHNOLOGY

Second Year Engineering

Semester-II

CSE-254: OBJECT ORIENTED PROGRAMMING USING C++

Teaching Scheme		**Examination Scheme**	
Lectures	4 Hrs/week	Theory	80 Marks
		Class Test	20 Marks
		Duration of Theory paper	03 Hrs

Unit-1: [5 Hours]

Introduction: Overview of C++, Sample C++ program, Different data types, operators, expressions, and statements, arrays and strings, pointers & user-defined types.

Function Components, argument passing, inline functions, function overloading, recursive functions.

Unit-2: [10 Hours]

Classes & Objects – I: Class Specification, Class Objects, Scope resolution operator, Access members, Defining member functions, Data hiding, Constructors, Destructors, Parameterized constructors, Static data members, Functions

Friend functions, passing objects as arguments, Returning objects, Arrays of objects, Dynamic objects, Pointers to objects, Copy constructors, Generic functions and classes, Applications

Operator overloading using friend functions such as +, - , pre-increment, post-increment, [ ] etc., overloading <<, >>.

Unit-3: [5 Hours]

Inheritance-I: Base Class, Inheritance and protected members, protected base class inheritance, inheriting multiple base classes,

Unit-4 [5 Hours]

Inheritance-II: Constructors, Destructors and Inheritance, Passing parameters to base class constructors, Granting access, Virtual base classes.

Unit-5: Virtual functions, Polymorphism: [5 Hours]

Virtual function, calling a Virtual function through a base class reference, Virtual attribute is inherited, Virtual functions are hierarchical, pure virtual functions, Abstract classes, Using virtual functions, Early and late binding.

Unit-6: System Basics, File I/0, Exception Handling, STL: [10 Hours]

C++ stream classes, Formatted I/O, I/O manipulators, fstream and the File classes, File operations Exception handling fundamentals, Exception handling options STL: An overview, containers, vectors, lists, maps.

Text Books:

1. Herbert Schildt: *The Complete Reference C++*, 4th Edition, Tata McGraw Hill, 2003.

Reference Books:

1. Stanley B.Lippmann, Josee Lajore: *C++ Primer*, 4th Edition, Pearson Education, 2005
2. Paul J Deitel, Harvey M Deitel: *C++ for Programmers*, Pearson Education, 2009.
3. K R Venugopal, Rajkumar Buyya, T Ravi Shankar: *Mastering C++*, TataMcGraw Hill, 1999.

Section A: Unit 1, 2, 3

Section B: Unit 4, 5, 6

PATTERN OF QUESTION PAPER:

Six units in the syllabus shall be divided in two equal parts i.e. 3 units in each part. Question paper shall be set having two sections A and B. Section A questions shall be set on first part and Section B questions on second part. Question paper should cover the entire syllabus.

For 80 marks Paper:

1. Minimum ten questions
2. Five questions in each section
3. Question no 1 from section A and Question no 6 from section B having weightage of 10 marks each be made compulsory and should have at least eight bits of two marks out of which five to be solved.
4. Two questions from remaining questions from each section A and B be asked to solve each having weightage of 15 marks.

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FACULTY OF ENGINEERING AND TECHNOLOGY

Second Year Engineering

Semester-II

CSE-255: MICROPROCESSORS

Teaching Scheme		**Examination Scheme**	
Lectures	4 Hrs/week	Theory	80 Marks
Tutorial	---	Class Test	20 Marks
		Duration of Theory paper	03 Hrs

Unit – I **[5 Hours]**

Introduction, Microprocessor Architecture – 1: A Historical Background, The Microprocessor-Based Personal Computer Systems. The Microprocessor and its Architecture: Internal Microprocessor Architecture, Real Mode Memory Addressing.

Unit – 2 **[5 Hours]**

Microprocessor Architecture – 2, Addressing Modes: Introduction to Protected Mode Memory Addressing, Memory Paging, Flat Mode Memory Addressing Modes: Data Addressing Modes, Program Memory Addressing Modes, Stack Memory Addressing Modes

Unit – 3 **[10 Hours]**

Programming –1: Data Movement Instructions: MOV Revisited, PUSH/POP, Load-Effective Address, String Data Transfers, Miscellaneous Data Transfer Instructions, Segment Override Prefix, Assembler Details. Arithmetic and Logic Instructions: Addition, Subtraction and Comparison, Multiplication and Division.

Programming – 2: Arithmetic and Logic Instructions (continued): BCD and ASCII Arithmetic, Basic Logic Instructions, Shift and Rotate, String Comparisons. Program Control Instructions: The Jump Group, Controlling the Flow of the Program, Procedures, Introduction to Interrupts, Machine Control and Miscellaneous Instructions.

Unit - 4 **[7 Hours]**

Hardware Specifications, Memory Interface – 1: Pin-Outs and the Pin Functions, Clock Generator, Bus Buffering and Latching, Bus Timings, Ready and Wait State, Minimum versus Maximum Mode. Memory Interfacing: Memory Devices

Unit – 5 **[6 Hours]**

Memory Interface – 2, I/O Interface – 1: Memory Interfacing (continued): Address Decoding, 8088 Memory Interface, 8086 Memory Interface. Basic I/O Interface: Introduction to I/O Interface, I/O Port Address Decoding.

Unit -6 **[7 Hours]**

I/O Interface – 2, Interrupts, and DMA: I/O Interface (continued): The Programmable Peripheral Interface 82C55, Programmable Interval Timer 8254. Interrupts: Basic Interrupt Processing, Hardware Interrupts: INTR and INTA/; Direct Memory Access: Basic DMA Operation and Definition.

Text Book:

1. Barry B Brey: *The Intel Microprocessors*, 8th Edition, Pearson Education, 2009.(Listed topics only from the Chapters 1 to 13)

Reference Books:

1. Douglas V. Hall: *Microprocessors and Interfacing*, Revised 2nd Edition, TMH, 2006.
2. K. Udaya Kumar & B.S. Umashankar : *Advanced Microprocessors & IBM-PC Assembly Language Programming*, TMH 2003.
3. James L. Antonakos: *The Intel Microprocessor Family:* Hardware and Software Principles and Applications, Cengage Learning, 2007.

Section A: Unit 1, 2, 3

Section B: Unit 4, 5, 6

PATTERN OF QUESTION PAPER:

Six units in the syllabus shall be divided in two equal parts i.e. 3 units in each part. Question paper shall be set having two sections A and B. Section A questions shall be set on first part and Section B questions on second part. Question paper should cover the entire syllabus.

For 80 marks Paper:

1. Minimum ten questions

2. Five questions in each section

3. Question no 1 from section A and Question no 6 from section B having weightage of 10 marks each be made compulsory and should have at least eight bits of two marks out of which five to be solved.

4. Two questions from remaining questions from each section A and B be asked to solve each having weightage of 15 marks.

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FACULTY OF ENGINEERING AND TECHNOLOGY

Second Year Engineering

Semester-II

CSE-256: COMPUTER GRAPHICS

Teaching Scheme		**Examination Scheme**	
Lectures	4 Hrs/week	Theory	80 Marks
Tutorial	---	Class Test	20 Marks
		Duration of Theory paper	03 Hrs

Objectives:

After completing this course, students will be able to

- Identify and explain the core concepts of computer graphics.
- Apply graphics programming techniques to design, and create computer graphics scenes.

Unit 1: Introduction: 5 hours

Applications of computer graphics; A graphics system; Images: Physical and synthetic; Imaging Systems; The synthetic camera model; The programmer's interface; Graphics architectures; Programmable Pipelines; Performance Characteristics

Graphics Programming: The Sierpinski gasket; Programming Two Dimensional Applications.

Unit 2: The OpenGL: 4 hours

The OpenGL API; Primitives and attributes; Color; Viewing; Control functions; The Gasket program; Polygons and recursion; The three- dimensional gasket; Plotting Implicit Functions

Unit 3: Input and Interaction: 11 hours

Interaction; Input devices; Clients and Servers; Display Lists; Display Lists and Modeling; Programming Event Driven Input; Menus; Picking; A simple CAD program; Building Interactive Models; Animating Interactive Programs; Design of Interactive Programs; Logic Operations

Geometric Objects and Transformations-I:

Scalars, Points, and Vectors; Three-dimensional Primitives; Coordinate Systems and Frames; Modeling a Colored Cube; Affine Transformations; Rotation, Translation and Scaling;

Unit-4 4 hours

Geometric Objects and Transformations-II: Geometric Objects and Transformations; Transformation in Homogeneous Coordinates; Concatenation of

Transformations; OpenGL Transformation Matrices; Interfaces to three-dimensional applications; Quaternion's.

Unit 5: Viewing: 10 hours

Classical and computer viewing; Viewing with a Computer; Positioning of the camera; Simple projections; Projections in OpenGL; Hidden- surface removal; Interactive Mesh Displays; Parallel-projection matrices; Perspective-projection matrices; Projections and Shadows.

Hours Lighting and Shading: Light and Matter; Light Sources; The Phong Lighting model; Computation of vectors; Polygonal Shading; Approximation of a sphere by recursive subdivisions; Light sources in OpenGL; Specification of materials in OpenGL; Shading of the sphere model; Global Illumination.

Unit 6: Implementation: 6 hours

Basic Implementation Strategies; Four major tasks; Clipping; Line-segment clipping; Polygon clipping; Clipping of other primitives; Clipping in three dimensions; Rasterization; Bresenham's algorithm; Polygon Rasterization; Hidden-surface removal; Antialiasing; Display considerations.

Text Books:

1. Edward Angel, "*Interactive Computer Graphics A Top-Down Approach with OpenGL,*" 5th Edition, Pearson Education, 2008**. (Chapters 1 to 7)**

Reference Books:

1. Donald Hearn and Pauline Baker, "*Computer Graphics- OpenGL Version,*" 3rd Edition, Pearson Education, 2004.
2. F.S. Hill Jr, "*Computer Graphics Using OpenGL,*" 3rd Edition, PHI, 2009.
3. James D Foley, Andries Van Dam, Steven K Feiner, John F Hughes, "*Computer Graphics,*" Pearson Education 1997.

Section A: Unit 1, 2, 3

Section B: Unit 4, 5, 6

PATTERN OF QUESTION PAPER:

Six units in the syllabus shall be divided in two equal parts i.e. 3 units in each part. Question paper shall be set having two sections A and B. Section A questions shall be set on first part and Section B questions on second part. Question paper should cover the entire syllabus.

For 80 marks Paper:

1. Minimum ten questions
2. Five questions in each section
3. Question no 1 from section A and Question no 6 from section B having weightage of 10 marks each be made compulsory and should have at least eight bits of two marks out of which five to be solved.
4. Two questions from remaining questions from each section A and B be asked to solve each having weightage of 15 marks.

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AURANGABAD

FACULTY OF ENGINEERING AND TECHNOLOGY

Second Year Engineering

Semester-II

CSE-271: LAB-VI: OBJECT ORIENTED PROGRAMMING USING C++ LABORATORY

Teaching Scheme	**Examination Scheme**
Practical: 2 Hrs/week	Practical/Oral: 50 Marks

LIST OF EXPERIMENTS

1. Design, develop, and execute a program in C++ based on the following requirements:

   An EMPLOYEE class is to contain the following data members and member functions: Data members: Employee_Number (an integer), Employee_Name (a string of characters), Basic_Salary (an integer) , All_Allowances (an integer), IT (an integer), Net_Salary (an integer).

   Member functions: to read the data of an employee, to calculate Net_Salary and to print the values of all the data members. (All_Allowances = 123% of Basic; Income Tax (IT) = 30% of the gross salary (= basic_Salary _ All_Allowance);

   Net_Salary = Basic_Salary + All_Allowances – IT)

2. Design, develop, and execute a program in C++ to create a class called STRING and implement the following operations. Display the results after every operation by overloading the operator <<.
   i. STRING s1 = “BAMU”
   ii. STRING s2 = “AURANGABAD”
   iii. STIRNG s3 = s1 + s2; (Use copy constructor)

3. Design, develop, and execute a program in C++ to create a class called DATE with methods to accept two valid dates in the form dd/mm/yy and to implement the following operations by overloading the operators + and -. After every operation the results are to be displayed by overloading the operator <<.
   i. no_of_days = d1 – d2; where d1 and d2 are DATE objects, d1 >=d2 and no_of_days is an integer.
   ii. d2 = d1 + no_of_days; where d1 is a DATE object and no_of_days is an integer.

4. Design C++ classes with static members, methods with default arguments, friend functions. (For example, design matrix and vector classes with static allocation, and a friend function to do matrix-vector multiplication)

5. Implement complex number class with necessary operator overloading and type conversions such as integer to complex, double to complex, complex to double etc.

6. Implement Matrix class with dynamic memory allocation and necessary methods. Give proper constructor, destructor, copy constructor, and overloading of assignment operator.

7. Overload the new and delete operators to provide custom dynamic allocation of memory.

8. Develop a template of linked-list class and its methods.

9. Develop templates of standard sorting algorithms such as bubble sort, insertion sort; merge sort, and quick sort.

10. Design stack and queue classes with necessary exception handling.

11. Practical based on implementation of various types of inheritance

Practical Examination:

Practical Examination should be conducted for three hours under the supervision of external examiner. External examiner should evaluate student by practically and orally.

Note: In the examination each student picks one question from a lot of *all* the 11 question

DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY,

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FACULTY OF ENGINEERING AND TECHNOLOGY

Second Year Engineering

Semester-II

CSE-272: LAB-VII: MICROPROCESSORS LABORATORY

Teaching Scheme		**Examination Scheme**	
Practical:	2 Hrs/week	Practical/Oral:	50 Marks

LIST OF EXPERIMENTS

1. Study of MASM/TASM.
2. Write an assembly language program to perform 8 bit, 16 bit addition.
3. Write an assembly language program to perform 8 bit, 16 bit subtraction.
4. Write an assembly language program to perform negative result subtraction.
5. Write an assembly language program to perform 8 bit, 16 bit Multiplication.
6. Write an assembly language program to perform16 bit by 8 bit division
7. Write an assembly language program to check whether entered number is even or odd.
8. Write an assembly language program to calculate average of temperatures.
9. Write an assembly language program to perform sum of digits for 2, 3 digits numbers.
10. Write an assembly language program to perform conversion from two ASCII no's to packed BCD.
11. Write an assembly language program to perform conversion from BCD to Hex.
12. Write an assembly language program to interface stepper motor.(application)
13. Write an assembly language program to interface LED (application)

Practical Examination:

Practical Examination should be conducted for three hours under the supervision of external examiner. External examiner should evaluate student by practically and orally.

Note: In the examination each student picks one question from a lot of *all* the 13 question

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FACULTY OF ENGINEERING AND TECHNOLOGY

Second Year Engineering

Semester-II

CSE-273: LAB-VIII: COMPUTER GRAPHICS LABORATORY

Teaching Scheme		**Examination Scheme**	
Practical:	2 Hrs/week	Term Work:	50 Marks

Term Work:

Term work shall consists of record of the experiments carried out during the course, which should include appropriate explanation for the corresponding experiment indicating what is learnt from the experiment. The term work shall consist of at least 10 experiments

Assessment of term work should be done as follows:

* Continuous lab assessment: 40 %

* Actually performing practical in the laboratory: 40 %

* Oral Examination conducted (internally) at the time of submission: 20

LIST OF EXPERIMENTS

1. Study of basic graphics functions defined in “graphics.h”.
2. Study of graphics standards like CORE, GKS (Graphics Kernel System), GKS-3D(Graphics Kernel System -3 Dimensions), PHIGS (Programmer's Hierarchical Interactive Graphics Systems), CGM (Computer Graphics Metafile), CGI (Computer Graphics Interface).
3. Program for Line Drawing using DDA algorithm.
4. Program for Line Drawing using Bresenham’s algorithm.
5. Implement Polygon filling algorithms.
6. Programs using 2-D transformations.
7. Programs to study window to viewport transformations.
8. Program for Line clipping algorithm.
9. Programs to study 3-D transformations..
10. Program to create a simple and proper “User Interface” for a defined application.

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FACULTY OF ENGINEERING AND TECHNOLOGY

Second Year Engineering

Semester-II

CSE-274: LAB-IX: OPEN SOURCE LABORATORY

Teaching Scheme		**Examination Scheme**	
Lectures	2 Hrs/week	Practical & Oral :	50 Marks
Practical	2 Hrs/week		

Objectives:

This course is aimed to:

- Understand open source movement worldwide
- Use the fastest growing open source operating system, “Linux”, today
- Effectively install, use and perform basic configuration of Linux system
- Build user-level skills to perform Linux system administration in it profession
- Enable competency in industry-problem identification and resolution
- Develop application using lamp

Unit 1: Linux and Open Source — 3 hours

Linux Usage basics: Logging into the system, changing users and editing text files. Running Commands and Getting Help, Browsing the file system, Users, Groups and Permission

Unit 2: Linux Administration — 3 hours

Installation of Linux interactively, Perform, user and group administration, Administer the Linux printing subsystem, Automate tasks with at, cron, Install, update, query and remove software packages with RPM

Unit 3: Linux Application — 4 hours

Accessing and Running applications: cc complier, gee complier, Mozilla Firefox.

Multimedia in Linux: Listening to audio, Playing video, Using digital camera, Recording musics / video CDs.

Unit 4: Apache and PHP — 4 hours

Introduction to the web server .installing Apache on Linux: httpd service.

PHP: testing installation basics of PHP scripts, variables Data types, Operators and – Constants, flow control functions, if statement, loops arrays, strings, Dates and times-

Unit 5: MySQL, server, and Application **3 hours**

MySQL: configuration MySQL server, working with MySQL Databases, MySQL Tables,

Commands – INSERT, SELECT, UPDATE, REPLACE, DELETE. Date and Time function MySQL.

Unit 6: PHP **3 hours**

MySQL Application Developemnent: Connecting to MySQL with PHP, Inserting data with PHP,retrieving data with PHP, Developing PHP scripts for dynamic web page like Feedback form, online admission form, online test.

Reference Books:

	Title	**Author**	**Pub**
1	Red Hat Linux Bible	Christopher Negus	Wiley Publishing ISBN : 0-7645-4333-4
2	PHP, MySQL and Apache	Julie C Meloni	Pearson Education ISBN : 81-297-0443-9
3	The Complete Reference Linux	Peterson	Tata McGRAW HILL ISBN : 0-07-044489-7
4	UNIX using Linux	Jack Dent, Tony Gaddis	Course Technology (Thomson Learning) ISBN : 981-240-218-7

Internet Resources:

Sn	Title	URL
1	Open Source Phenomenon	http://opensource.org/
2	Open Source Technology :	http://www-
3	Open Source : Benefits	http://www.sun.com/software/opensource/
4	Beginner's Guide to Linux - Michael Jordan	http://www.linux.org/lessons/beginner/
5	Linux Course for Intermediate Level Users	http://www.linux.org/lessons/interm/index.html
6	PHP Manual	http://www.php.net/tut.php

LIST OF EXPERIMENTS.

1. Installation of Linux
2. Use of various commands
3. Use of Text Processing Tools: grep, cut,
4. User and Group Creation
5. Back up using tar
6. Installation using RPM
7. C/C++ program using cc / gcc
8. Configuring Apache
9. PHP script for sorting the marks
10. PHP scripts for other tasks
11. MySQL Installation, Configuration and Testing
12. Design of admission form using PHP – MYSQL

Practical Examination:

Practical Examination should be conducted for three hours under the supervision of external examiner. External examiner should evaluate student by practically and orally.

Note: In the examination each student picks one experiment based on above Concept.

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AURANGABAD

FACULTY OF ENGINEERING AND TECHNOLOGY

Second Year Engineering

Semester-II

BSH 275: Communication Skills

Teaching Scheme		**Examination Scheme**
Practical:	2 Hrs/week	Term work: 50 Marks
Theory:	2 Hrs/week	

BOS in Computer Science & Engineering/Information Technology

Equivalent subjects at SE (CSE/IT) – I & II Pre-revised course to the Revised Course of S. E. (CSE/IT) Sem – III & IV.

SE (CSE) Part – I

	SE (CSE) –I (Pre-Revised)	Equivalent / Replacement subject
1	Engineering Mathematics-III	Engineering Mathematics-III
2	Discrete Mathematics	Discrete Mathematics of S.E(CSE) Sem-IV (Revised)
3	Data Structures using C	Data Structures using C
4	Data communication	Computer Networks-I of S.E.(CSE) Sem-III (Revised)
5	Digital Electronics	Digital Electronics
6	Advance C Programming Lab	LAB-V Introduction to web programming of S.E.(CSE) Sem-III (Revised)
7	Communication Skills	Communication Skills of S.E(CSE) Sem-IV (Revised)

SE (CSE) Part – II

	SE (CSE) –I (Pre-Revised)	Equivalent / Replacement subject
1	Engineering Mathematics-IV	Engineering Mathematics-III
2	Open Source Software Technology	Unix and Shell Programming of S.E(CSE) Sem-III (Revised)
3	Computer graphics	Computer graphics
4	Micro processors and Computer organization	Micro processors
5	Object Oriented Programming(using c++)	Object Oriented Programming with C++ Lab
6	Mini Project	LAB-IX Open Source Lab
7	Communication Skills	Communication Skills