S-20 & 21 June, 2017 AC after Circulars

DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY
CIRCULAR NO.SU/Engg./B.E.IInd Yr./03/2017

It is hereby informed to all concerned that, the syllabi prepared by the Committees & recommended by the Dean, Faulty of Science & Technology, the Academic Council at its meeting held on 20 & 21 June 2017 has accepted the following syllabi in accordance with Choice Based Credits & Grading System for all Branches Second Year Engineering & Master of Computer Application Third Year under the Faulty of Science & Technology as enclosed herewith.

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This is effective from the Academic Year 2017-2018 and onwards.

All concerned are requested to note the contents of this circular and bring the notice to the students, teachers and staff for their information and necessary action.

University Campus,
Aurangabad-431 004.
Ref.No.SU/B.E.IInd & MCA/
2017/2139-72.
Date:- 28-06-2017.

Copy forwarded with compliments to :-
1) The Principals, affiliated concerned Colleges,
Dr. Babasaheb Ambedkar Marathwada University.
2) The Director, University Network & Information Centre, UNIC, with a request to upload this Circular on University Website.

Copy to :-
1) The Director, Board of Examinations & Evaluation,
2) The Section Officer, [ Engineering Unit ] Examination Branch,
3) The Section officer, [Eligibility Unit],
4) The Programmer [Computer Unit-1] Examinations,
5) The Programmer [Computer Unit-2] Examinations,
6) The In-charge, [E-Suvidha Kendra],
7) The Public Relation Officer,
8) The Record Keeper,
SCHEME AND DETAILED SYLLABUS

of

SE (CSE/IT Engineering)

Under Choice Based Credit & Grading System

(w.e.f. academic year 2017-18 & onwards/-)

FOUR YEAR DEGREE COURSE IN SCIENCE & TECHNOLOGY

Dr. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY,
AURANGABAD
Faculty of Science and Technology
Curriculum Structure of SE (Computer Science and Engineering/Information Technology)
Effective from 2017-18 & onwards/

**PART-I**

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<tr>
<td>BSH201</td>
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<tr>
<td>CSE202</td>
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<tr>
<td>CSE203</td>
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<td>CSE205</td>
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<td>CSE221</td>
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<td>CSE222</td>
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<td>CSE223</td>
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<td>CSE224</td>
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<td>CSE225</td>
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**PART - II**

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<thead>
<tr>
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<th>Contact Hrs/Week</th>
<th>Examination Scheme</th>
<th>Duration of The Theory Examination</th>
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<td>Subject</td>
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<td>BSH251</td>
<td>Engineering Mathematics-IV</td>
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<td>CSE252</td>
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<td>CSE253</td>
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<tr>
<td>CSE254</td>
<td>Microprocessor &amp; Computer Organization</td>
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<td>CSE255</td>
<td>Computer Graphics</td>
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<tr>
<td>CSE271</td>
<td>Lab 6: Object Oriented Programming</td>
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<tr>
<td>CSE272</td>
<td>Lab 7: Microprocessor &amp; Computer Organization</td>
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<td>CSE273</td>
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<td>CSE274</td>
<td>Lab 9: Open Source Lab</td>
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<tr>
<td>BSH275</td>
<td>Lab 10: Communication Skills- I</td>
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<td>Total</td>
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<td>12</td>
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</tbody>
</table>

| Total of Semester I & II | 40 | 24 | 64 | 200 | 800 | 200 | 300 | 1500 | 52 |

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
Objective:

- TodevelopLogicalunderstandingofthesubject.
- Todevelopmathematical skill sothatstudentsareabletoapply mathematicalmethods&
  Principle’sinsolving problemsfrom Engineeringfields.
- Toproducegraduateswithmathematicalknowledge&computationalskill.

CONTENTS

SECTION-A

Unit 1: Linear Differential Equations  [8 hrs.]
Linear Differential Equations with constant coefficients General method, shortcut methods
tofindparticularintegral,
Homogenous Linear differential equations (Cauchy’s & Legendre’s form), method of variation
of parameters.

Unit 2: Application of Linear Differential Equations  [6 hrs.]
Application of Linear Differential Equations 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: Fourier Transform  [6 hrs.]
Fourier Transform, Fourier sine and cosine transform, Fourier integral, Fourier sine and cosine
integral.

SECTION-B

Unit 4: Statistics & Probability  [8 hrs.]
Measures of central Tendency and Measures of Dispersion (for grouped data only), Karl Pearson’s coefficient of skewness, Probability distribution
for random variables, Binomial and Normal Distributions, Regression and Correlation.
Unit 5: Vector Differentiation  [6hrs.] 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 6: Vector Calculus (Integral Calculus)  [6hrs.] The line integral, Surface integral, volume integral, Gauss Divergence theorem, Stoke’s theorem, Green’s theorem (All theorem without proof).

Text Books:

Reference Books:

Pattern of Question Paper:
The units in the syllabus shall be divided into two equal sections. Question papers 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 papers should cover the entire syllabus.

For 80 marks Paper:
1. Minimum ten questions.
2. Five questions in each section.
3. Questions no 1 and 6 shall be compulsory and should have at least EIGHT bits of two marks out of which FIVE bits 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  
Second Year Engineering (CSE/IT)  
Semester – I

Course Code: CSE202  
Title: Data Structures  
Teaching Scheme  
Credit: 4

Examination Scheme  
Theory Examination (Marks): 80 Marks  
Theory Examination (Duration): 03 Hours

Prerequisite:  
1. Computer Fundamental-1  
2. Computer Fundamental-2

Objectives:  
1. To impart basic concepts of Data Structures  
2. To understand and implement various linear and non-linear data structures  
3. To study applications of data structures  
4. To understand and implement various searching and sorting techniques

CONTENTS

SECTION-A

Unit 1: Introduction to Data Structure  
[ 6 Hours]  
Introduction to theory of data structure and its data types, Primitive and non-primitive data structure, Abstract data structure. Array: one dimensional and two dimensional arrays, Array as ADT, operations on Array. Structure and Union. Pointers: Basic concepts, Static and dynamic memory allocation. Algorithm and its characteristics.

Unit 2: Stack and Queue  
[7 Hours]  
Stack, operations on stack, implementation of operations on stack using array, applications of stack: expressions conversion from infix, prefix to postfix, evaluation of postfix expression. Queue, operations on Queue, applications of queues, Implementation of queue using array, Circular Queue.

Unit 3: Linked List  
[7 Hours]  

SECTION-B
Unit 4: Trees [7 Hours]
Definition, Basic Terminology, Tree Representation and implementation, Binary tree and traversal techniques, Binary Search Tree, AVL tree.

Unit 5: Graphs [7 Hours]
Definition, Basic Terminology, Graph Representation and implementation, Graph traversal techniques: BFS, DFS, Application of graph: Shortest Path problem

Unit 6: Searching and Sorting [6 Hours]
Linear and Binary Search, Bubble sort, Insertion sort, Selection sort, Heap sort.

Text Books:

Reference Books:

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, 10 marks each, will be compulsory.
4. From the remaining questions in section A and B students are supposed to solve any two questions, 15 marks each.
Course Code: CSE203
Teaching Scheme
Theory: 4 Hours/Week
Credit: 4

Title: Computer Networks
Examination Scheme
Class Test: 20 Marks
Theory Examination (Marks): 80 Marks
Theory Examination (Duration): 03 Hours

Prerequisite:
1. Computer Fundamentals
2. Data Communication

Objectives:
1. To learn and understand various Networking Protocols & Layers.
2. To understand functioning of a complete network.
3. To study most widely used computer network technologies in detail: Ethernet, TCP/IP.

CONTENTS

SECTION-A

Unit 1: Introduction [06 Hours]

Unit 2: Physical Layer [06 Hours]
Data and signals, digital signals, transmission impairment, data rate limits, performance, Digital-to-Digital conversion (line coding, line coding schemes), Digital-to-Analog Conversion: ASK, FSK, PSK, Multiplexing, switching (Three Methods of Switching, Switching and TCP/IP Layers), Circuit-switched networks, Packet switching.

Unit 3: Data-Link Layer [08 Hours]
Nodes and links, services, two categories of links, two sublayers, link-layer addressing, DLC services: Framing, Flow control, Error detection and correction: types of errors, redundancy, detection versus correction, block coding, cyclic codes: Cyclic Redundancy Check (CRC), Media Access Control (MAC): Random access (ALOHA, CSMA, CSMA/CD, CSMA/CA), Ethernet Protocol, Standard Ethernet, Fast Ethernet (100 Mbps), Gigabit Ethernet.

SECTION-B
Unit 4: Network Layer [08 Hours]

Unit 5: Transport Layer [06 Hours]

Unit 6: Application Layer [06 Hours]
World Wide Web and HTTP, File Transfer Protocol (FTP), Electronic Mail, Domain Name System (DNS).

Text Books:

Reference Books:

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, 10 marks each, will be compulsory.
4. From the remaining questions in section A and B students are supposed to solve any two questions, 15 marks each.
Prerequisite:

1. Basics of analog and digital signals.
2. Basic semi-conductor devices operation.

Objectives:

1. To understand different methods used for the simplification of Boolean functions.
2. To design and implement combinational circuits.
3. To design and implement synchronous and asynchronous sequential circuits.
4. To understand working of Conversion Circuits.

CONTENTS

SECTION-A

Unit 1: Number System: [6 Hrs.] Binary number system, Signed binary numbers, Binary arithmetic, Decimal number system, Hexadecimal number system, Octal number system, Arithmetic operations using 1’s complement, 2’s complement, 9’s complement, 10’s complement.

Codes: Numeric codes, Weighted and non-weighted codes, Sequential codes, Self-complimenting codes, cyclic codes, Reflective codes, BCD code, Excess-3 code, Gray code.


Unit 3: Boolean Logic: [8 Hrs.] Boolean Algebra Rules, De Morgan’s theorem, Boolean algebra, Representation of logic functions using standard POS and SOP form, Minimization logic functions using - Karnaugh map (2,3,4 variable).
Combinational Circuit Design: Half and full adder, Half and full subtractor, Adder with Look ahead carry, BCD to 7-segment decoder, Binary to Gray code converter, Gray to Binary code converter.

SECTION-B

Unit 4: Data-Processing Circuits: [6 Hrs.]
Multiplexers, Demultiplexers, Decoders, Encoders, Exclusive-or Gates, Parity Generators and Checkers, Magnitude Comparator, Introduction to PLD, Realization of logic equation using Data Processing Circuits.

Unit 5: Clocks: [6 Hrs.]

Unit 6: Registers: [8 Hrs.]
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. Counters: Introduction to Counters, Types of Counters, Application of Counters, Designing of asynchronous and synchronous counters.

Text Books:

Reference Books:

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, 10 marks each, will be compulsory.
4. From the remaining questions in section A and B students are supposed to solve any two questions, 15 marks each.
Dr. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD  
Second Year Engineering (CSE/IT)  
Semester – I  
Course Code: CSE205       Title: Linux Operating System  

Teaching Scheme  
Theory: 04 Hours/Week  
Credit: 4  

Examination Scheme  
Class Test: 20 Marks  
Theory Examination (Marks): 80 Marks  
Theory Examination (Duration): 03 Hours  

Prerequisite:
1. Basic DOS command line operations & C programming 
2. Moderate knowledge of Operating System  

Objectives:
1. To understand basic of Linux Operating System.  
2. To understand command line interface.  
3. To get acquainted with Linux OS by understanding configuration and troubleshooting of Linux Operating System.  

CONTENTS  

SECTION-A  

Unit 1: Introduction to Linux OS [06 Hours]  
Introduction & types of OS, Interfaces of OS: CLI, GUI, Brief history of Linux, Architecture of Linux, Features of Linux, Difference between Linux and other OS, Linux Distributions, Boot process & run levels, Major application areas of Linux.  

Unit 2: Linux Basics Usage[08 Hours]  
User & password management & Logging into the system, GNOME and KDE desktop environment, Basic desktop operations, Text editors: vi and gedit, File system, File system architecture, File types, File attributes, File naming conventions, Shell as interpreter, Types of shell, Command line, Command syntax, Running commands and getting help, Basic commands, File-directory handling commands, Locating Files, File access permissions  

Unit 3: Process Management in Linux  [06 Hours]  

SECTION-B  

12
Unit 4: Network Configuration [06 Hours]
Introduction, Computer Networks and TCP/IP, Network Services and Files, Obtaining IP Addresses, Configuring Basic Network Services and Settings, The Linux Firewall, Writing Your Own Network Scripts, Sharing and Accessing Network Storage with SMB.

Unit 5: Server Installations, Shell Scripting [06 Hours]

Unit 6: Maintaining and Troubleshooting Linux [08 Hours]
Introduction to various types of backup media, Backup and restoring data using dump, restore, cpio& tar commands, Generating reports on system utilization (processor, memory, disk, and network), Study of Log Files, Recovering the super user password, Recovering the boot loader (GRUB), Troubleshooting network related problems, Disaster Planning and Recovery.

Text Books:

Reference Books:

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, 10 marks each, will be compulsory.
4. From the remaining questions in section A and B students are supposed to solve any two questions, 15 marks each.
Dr. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD
Second Year Engineering (CSE/IT)
Semester – I

Course Code: CSE221
Teaching Scheme
Practical: 2 Hours/Week
Credit: 1

Title: LAB-I Data Structures
Examination Scheme
Practical /Oral Examination: 50 Marks
Practical /Oral Examination (Duration): 03 Hours

Suggestive List of Practical’s:

Design, develop and implement the following:

1. Perform arithmetic operations on two-dimensional Array using function.
2. Write a C program to maintain records of students using structure and pointers.
3. Write a C program to swap 2 values by using Call by value and Call by reference.
4. Write a C program to implement stack operation using dynamic array.
5. 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).
6. 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).
7. 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
8. Design, develop, and execute a program in C to implement a singly linked list/doubly linked list where each node consists of integers. The program should support the following operations:
a. Create a singly/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.
9. 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.

10. Write a C program to implement Graph Traversal Techniques (DFS or BFS).

11. Write a C program to construct binary tree & binary tree traversal.

12. Write a C program to implement Linear and Binary Search.

13. Write a C program to implement Bubble Sort, Insertion and Selection sort.

14. Write a C program to implement Heap sort.

**Practical Examination:**

Practical Examination should be conducted by internal examiner for three hours under the supervision of external examiner. External examiner should evaluate student by checking practical performance and conducting viva.
Suggestive List of Practical’s:

1. Fundamental components of data communication
2. Networking device: repeater, hub, switch, router and gateway
3. Transmission media: Guided and Unguided media
4. Creating Networking cable using crimping tool and study of RS232 standard
5. Case Study 1: Working of Physical Layer for a) Standard Ethernet, b) Fast Ethernet, c) Gigabit Ethernet, Understanding Encoding- Bit rate, modulation, topology, mode of communication (Simplex, Half Duplex, Full Duplex) for each of Ethernet generations.
7. Creating workgroup of computers and resource sharing (file & printer) (WindowsOS preferred)
10. Any one of the following
    a. Wireshark tool for capturing and analyzing network traffic
    b. tcpdump command (Linux command) along with various options for capturing and analyzing network traffic.


Term Work:
Term work shall consist 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 10 experiments.
Course Code: CSE223
Title: Lab 3: Digital Electronics

Teaching Scheme
Practical: 2 Hours/Week
Credit: 1

Examination Scheme:
Term Work: 50 Marks

Suggestive List of Practical’s:

Design, develop and implement following:

1. Study and analysis of basic gates (using hardware kit).
2. Study & verification of operation of half and full Adder (using hardware kit).
3. Study & verification of operation of 8:1 MUX (using hardware kit).
4. Introduction to HDL. Design and implement Gray code to Binary Code Convertor using HDL.
5. Given a 4-variable logic expression, simplify it using Entered Variable Map and realize the simplified logic expression using HDL.
6. Design and implement 4:16 decoder using HDL.
7. Design and develop the HDL code for D Flip-Flop with positive-edge triggering. Simulate and verify its working.
9. Design and implement a 4-bit shift register using HDL and demonstrate its working.
10. Design and implement decade counter using HDL.

Term Work:

Term work shall consist 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 10 experiments.
Dr. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD  
Second Year Engineering (CSE/IT)  
Semester – I

Course Code: CSE224                  Title: Lab 4: Linux Operating System  
Teaching Scheme  
Practical: 2 Hours/Week  
Credit: 1  
Examination Scheme  
Practical /Oral Examination: 50 Marks  
Practical /Oral Examination (Duration): 03 Hours

Suggestive List of Practical’s:

Design, develop and implement the following:

1. Installation of Linux operating system using CD/DVD/USB drive or PXE boot
2. Execution of various file & directory handling commands
3. Execution of simple C and C++ programs using CC and GCC compiler
4. Install and test any local & network printer on Linux OS
5. Create, mount & resize partition on disk
6. Create user, group and assign various permissions to access a directory
7. Share a directory in LAN using SMB
8. Write a shell script program input-output statements and loops
9. Write a shell script program using array & case statement
10. Install & configure a web server for hosting an intranet website
11. Use of various text processing tools: grep & sed
12. Write a program in AWK using loops

Practical Examination:
Practical Examination should be conducted by internal examiner for three hours under the supervision of external examiner. External examiner should evaluate student by checking practical performance and conducting viva.
Prerequisites:
1. You will need a text editor, such as Notepad and an Internet browser, such as Internet Explorer or Netscape.

Objectives - The student will be able to:
1. Define the basics in web design
2. Visualize and apply the basic concept of HTML.
3. Recognize the elements of HTML.
4. Define basics concept of JavaScript
5. Develop the web sites

Unit 1: Introduction to Web Design: [4 hours]

Unit 2: Tables and Forms [4 hours]
Tables: Creating Tables, Editing of rows and columns, rowspan, colspan, formatting tables using attributes border, Border colour, background, align, width, cell spacing and cell height.
Forms: Creating Forms, Forms controls: text controls, Password fields, Radio Buttons, Check boxes, Reset and Submit buttons.
Style sheets: Adding style sheet to document, Linking to a Style sheet, Embedding style sheet, Using inline Style sheet

Unit 3: JavaScript [4 hours]
JavaScript: Introduction, Variables, Operators, Arithmetic, Assignment, Data Types, Functions, Objects, Scope, Events, Strings, String Methods, Numbers, Number Methods, Math, Random, Dates, Date Formats, Date Methods, Arrays, Array Methods, Array Sort, Booleans, Comparisons, Conditions, Switch, Loop For, Loop While, Break, Type Conversion, Bitwise, Regular Expressions, Errors, Debugging.
Unit 4: JQuery and Bootstrap  
**JQuery:** Syntax, Events, Slide, Animate;  
**Bootstrap:** Framework Introduction, Forms, Buttons

Unit 5: AngularJS  
**AngularJS:** Expressions, Modules, Data Binding, Controllers, SQL, DOM, Events, Forms and validation

Unit 6: XML  
**XML:** embedding XML into HTML, DTD. Introduction to Content Management System: Wordpress, Joomla, Drupal overview, publish a website with any one CMS.

Text Books:  

Reference Books:  
1. Yong, “XML step by step”, PHI  
2. “WordPress 3 Complete - Create your own complete website or blog from scratch with WordPress” by April Hodge Silver, PACKT.  
3. “Web Development with jQuery” by Richard York, WROX publication  
4. “AngularJS” by Brad Green and ShyamSeshadri

Suggestive list of Practical’s  
- Design a home page which will display your information i.e Bio data.  
- Create Hyperlinks in home page for educational details, Hobbies, Achievement, My Ideals etc  
- Use table tag to format web page. Also display educational details in tabular format.  
- Implement a CSS programs for layers, inline, internal and external style sheets  
- Design signup form to validate username, password, phone numbers etc using JavaScript/AngularJS  
- Design a sign up form information in database. Perform change password/AngularJS  
- Develop and demonstrate a DHTML file that includes JavaScript for the following problems  
  Input: A number n obtained using prompt  
  Output: The factorial of a number n  
- Develop and demonstrate a DHTML file the includes JavaScript for using various menu items and sub menu items  
- Design a web page for your Department.  
- Design and Develop a shopping cart using HTML and JavaScript  
- Create a table to display time table of your class. ii) Use table tags to display library details iii) Use frames such that page is divided into 2 frames 40% on top to show contents of pages, 60% in bottom to show body of page. iv) use image tags also  
- Write a JavaScript program to find the area of a triangle where lengths of the three sides is given  
- Write a JavaScript program to determine whether a given year is a leap year in the Gregorian calendar.  
- Write a JavaScript program to convert temperatures to and from celsius, fahrenheit.  
- Write a javascript for handling events with jQuery.
• Use the animate() method to set the following CSS properties for <div>: opacity: 0.4, height: 400px, width: 400px.
• Use the animate() method to set the font-size of <div> to 100 pixels. The duration of the effect should be "slow".
• Implement a program, which takes User Id as an input and returns the user details by taking the user information from the XML document.
• Create an XML document, which contains 10 users information.
• Publish a website with Wordpress
• Publish a website with Joomla,

**Practical Examination:**
Practical Examination should be conducted by internal examiner for three hours under the supervision of external examiner. External examiner should evaluate student by checking practical performance and conducting viva.
Dr. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD
Second Year Engineering (CSE/IT)
Semester – II

Course Code: BSH 251                                                        Title: Engineering Mathematics-IV
Teaching scheme                                                        Examination scheme
Theory: 4 Hours/Week                                                   Class Test: 20 Marks
Credit: 4                                                             Theory Examination (Marks): 80 Marks

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

CONTENTS

SECTION-A

Unit1: Laplace Transform [6 hrs]
Definition, Transformsofelementaryfunctions, Properties& theorems of Laplace transforms
(without proof), transforms of periodic function, Heavisideunitstepfunction,displacedunitstepfunction,Diracdeltafunction,errorfunction,
Bessel'functionofzeroorder.

Unit2: Inverse Laplace Transform and its Applications [6 hrs]
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.

Unit3: Z Transform [8 hrs]
Definition, Ztransformofelementaryfunctions,propertiesofZ transform,InverseZtransform by
using partial fraction and residues theorem, Solution of difference equation by Ztransform.

SECTION-B

Unit4: Numerical Methods and Curve Fitting [8 hrs]
Solution of transcendental 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 Eular modified Method and Runge-Kutta IVth order method,
Curve fitting: Principle of least squares, Fitting of linear curve, parabola, exponential curve.
Unit-5: Function of Complex Variable (Differential Calculus): [6hrs]
Introduction, Analytic function, Cauchy Riemann equations in Cartesian and Polar form, Harmonic function, Laurent's series (without proof), Conformal mapping: Translation, Magnification, Rotation and inversion bilinear transformation.

Unit 6: Function of Complex Variable (Integral calculus): [6hrs]
Line integral, contour integral: Cauchy's integral theorem, Cauchy's integral formula, Residues, Cauchy's residue theorem (All theorems without proof).

Text Books:

Reference Books:

Pattern of Question Paper:
The units in the syllabus shall be divided into two equal sections. Question papers shall be set having two sections A and B. Section A questions shall be set on the first three units (1, 2, 3) and Section B questions on the remaining three units (4, 5, 6). Question papers 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 EIGHT bitsoftwo marks out of which FIVE should 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
Second Year Engineering (CSE/IT)
Semester – II

Course Code: CSE252  Title: Discrete Mathematics
Teaching Scheme
Theory: 04 Hours/Week  Credit: 4  Examination Scheme
Class Test: 20 Marks
Theory Examination (Marks): 80 Marks
Theory Examination (Duration): 03 Hours

Prerequisites:
1. Basic knowledge of set theory
2. Fundamentals of probability
3. Preliminary concepts of encoding, decoding

Objectives:
1. To construct simple mathematical proofs and possess the ability to verify them
2. To understand logical arguments and logical constructs
3. Have a better understanding of sets, functions, and relations.
4. Possess the mathematical knowledge and maturity that are required for upper level computer.

CONTENTS

SECTION-A

Unit 1: Set Theory [5 Hours]
Sets and Subsets, Set Operations and the Laws of Set Theory, Counting and Venn Diagrams, Probability, Conditional probability, Permutation and Combination

Unit 2: Fundamentals of Logic: [11 Hours]

Unit 3: Properties of the Integers: [4 Hours]
The Well Ordering Principle – Mathematical Induction, Recursive Definitions

SECTION-B

Unit 4: Relations and Functions:[10 Hours]
Cartesian Products and Relations, Properties of Relations, Computer Recognition – Zero-One Matrices and Directed Graphs, Partial Orders – Hasse Diagrams, Lattice, Equivalence Relations
and Partitions, 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

Unit 5: Groups and Rings: [5 Hours]
Definitions, Examples, and Elementary Properties, Homomorphisms and Cyclic Groups, Cosets and Lagrange’s Theorem, Rings and Modular Arithmetic: The Ring Structure – Definition and Examples, Ring Properties and Substructures

Unit 6: Coding Theory: [5 Hours]
Elements of Coding Theory, The Hamming Metric, The Parity Check, and Generator Matrices, Group Codes: Decoding with Coset Leaders, Hamming Matrices

Text Book:

Reference Books:

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, 10 marks each, will be compulsory. From the remaining questions in section A and B students are supposed to solve any two questions, 15 marks each.
Dr. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD
Second Year Engineering (CSE/IT)
Semester – II

Course Code: CSE 253 Title: Object Oriented Programming Using C++

Teaching Scheme
Theory: 04 Hours/Week

Examination Scheme
Class Test: 20 Marks
Credit: 4
Theory Examination (Marks): 80 Marks
Theory Examination (Duration): 03 Hours

Prerequisite:
1. Fundamental knowledge about computers.
2. Computing knowledge

Objectives:
1. To study and understand the object oriented programming concepts and methodology
2. Be able to build C++ classes using appropriate encapsulation and design principles.
3. Be able to solve computational problems using C++ features such as composition of objects, operator overloads, dynamic memory allocation, inheritance and polymorphism, file I/O, exception handling, etc.

CONTENTS

SECTION-A

Unit 1: Getting Started[06 Hours]
Need of Object-Oriented Programming (OOP), Object Oriented Programming Paradigm, Basic Concepts of Object-Oriented Programming, Benefits of OOP, C++ as object oriented programming language, 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: Classes and Objects[06 Hours]
Specifying a Class, Defining Member Functions, A C++ Program with Class, Making an Outside Function Inline, Nesting of Member Functions, Private Member Functions, Arrays within a class, Memory Allocation for Objects, Static Data Members, Static member functions, Arrays of Objects, Objects as Function Arguments, Friendly functions, Returning Objects.

Unit 3: Constructors and Destructors[08 Hours]
Introduction, Constructors, Parameterized Constructors, Multiple Constructors in a Class, Constructors with Default Arguments, Dynamic Initialization of Objects, Copy Constructor, Dynamic Constructors and Destructors.

Operator Overloading and Type Conversions: concept of overloading, Rules for Overloading Operators, Overloading Unary Operators, Overloading Binary Operators, Data Conversion, Type casting (implicit and explicit), Pitfalls of Operator Overloading and Conversion, Keywords explicit and mutable.
SECTION-B

Unit 4: Inheritance  [08 Hours]
Base Class and derived Class, Public and Private Inheritance, protected members, Constructors
Destructors and Inheritance -When Constructor and Destructor functions Are executed, Passing
Parameters to Base-Class Constructors. Overriding Member Functions, Class Hierarchies, Levels of
Inheritance, Multiple Inheritance, Ambiguity in Multiple Inheritance, Aggregation, Classes within
Classes. Virtual Base Classes.

Virtual functions and Polymorphism:
Introduction to Pointers, Pointer to objects, this pointer, Pointer to derived classes. Virtual
functions, Calling a Virtual Function Through a Base Class Reference .The Virtual Attribute Is
Inherited ,Virtual Functions Are Hierarchical ,Pure Virtual Functions ,Abstract Classes ,Early vs.
Late Binding .

Unit 5: Managing Console I/O Operations                                                               [06 Hours]
Introduction, C++ Streams, C++ Stream Classes, Unformatted I/O Operations, Formatted
Console I/O Operations, Managing Output with Manipulators

Working with Files:
Introduction, Classes for file stream operations, Opening and Closing of a File, File Modes, File
pointers and their Manipulations, Sequential Input and Output Operations, Error Handling during
file operations, Command line arguments

Unit 6: Templates                                                                                                           [06 Hours]
Introduction, Class templates, Class Templates with multiple parameters, Function templates,
Overloading of Template Functions, Member Function Templates.

Exception handling:
Introduction, Basics of Exception Handling, Exception Handling Mechanism, Throwing
Mechanism, Catching Mechanism, Rethrowing an exception, Specifying exceptions

Text Books:

Reference Books:
**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, 10 marks each, will be compulsory.
4. From the remaining questions in section A and B students are supposed to solve any two questions, 15 marks each.
Dr. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD  
Second Year Engineering (CSE/IT)  
Semester – II

Course Code: CSE254  Title: Microprocessor and Computer Organization

Teaching Scheme
Theory: 04 Hours/Week  Credit: 4

Examination Scheme
Class Test: 20 Marks
Theory Examination (Marks): 80 Marks
Theory Examination (Duration): 03 Hours

Prerequisite:
1. Digital Electronics
2. Logic Design
3. Programming concept

Objectives:
1. To learn the architecture and assembly language programming of 8086 Microprocessor.
2. To provide in depth knowledge to the students about the design and organization of a digital computer, operation of various functional units, instruction set design and factors that influence the performance of a computer

CONTENTS

SECTION-A

Unit 1: Introduction to Microcomputers [08 Hours]
Introduction to 16-bit microprocessor, Architecture and Pin diagram of 8086/8088, Programming model of 8086/8088 (Registers), Minimum and Maximum mode, Segmentation, logical to physical address translation, even and odd memory banks, Read write cycle timing diagrams

Unit 2: 8086 Assembly Language Programming I [08 Hours]
Addressing modes, Instruction set of 8086 in detail, Instruction Formats, Stacks, Assembly Language Programming, Assembler, Linker, Debugger (Turbo debugger), Directives, Procedures (Near and Far), Macros, Loop constructs, 8086 Programming examples.

Unit 3: 8086 Assembly Language Programming II [04 Hours]
8086 Interrupt Structure, Interrupt Vector Table (IVT), ISR, Hardware and software Interrupts, BIOS and DOS Interrupts. Concepts of PSP, .EXE & .COM files, Concepts of TSR.

SECTION-B

Unit 4: Computing and Processor Basics [08 Hours]
A brief history of computers, Von Neumann Architecture, Generation of Computer, Classification of Computers, Functional components of a computer, Interconnection of components, Performance of a computer, CISC and RISC architectures.
Unit 5: Data Path and Control Design
Processing Unit: Organization of a processor - Registers, ALU and Control unit, Data path in a CPU, Instruction cycle, Organization of a control unit - Operations of a control unit.

Unit 6: Memory and System Organization
Computer Sub system: Memory Subsystem: Semiconductor memories, Memory cells - SRAM and DRAM cells, Organization of a memory unit, Access of I/O devices, I/O ports, Serial port, Parallel port, PCI bus, SCSI bus, USB bus, I/O peripherals - Input devices, Output devices, Secondary storage devices.

Text Books:

Reference Books:

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, 10 marks each, will be compulsory.
4. From the remaining questions in section A and B students are supposed to solve any two questions, 15 marks each.
Course Code: CSE255
Title: Computer Graphics

Teaching Scheme
Theory: 4 Hours/Week
Credit: 4

Examination Scheme
Class Test: 20 Marks
Theory Examination (Marks): 80 Marks
Theory Examination (Duration): 03 Hours

Prerequisite:
1. Computer programming skills in C programming language
2. Basic understanding of use of data structures
3. Basic Mathematical concepts related to matrices and geometry

Objectives:
1. Introduce the students to graphics fundamentals
2. Make them aware of 2-D and 3-D graphics primitives
3. Provide the programmer’s perspective of working of Computer Graphics using OpenGL
4. Know the basics of multimedia applications

CONTENTS

SECTION-A

Unit 1: Introduction to Computer graphics
Introduction to Computer Graphics, Applications of Computer Graphics, CRT, Flat panels, Graphics Primitives, Raster scan and Random scan displays, Display Processor, Display file structure, Graphical Input and output devices, Rasterization, Line drawing algorithms: DDA and Bresanham’s, Midpoint Circle Algorithm, Polygon filling -Scan converting polygons, Fill algorithms, Boundary fill algorithm, Flood fill algorithm

Unit 2: The OpenGL
The OpenGL API; Primitives and Attributes, Color, Viewing, Control Functions, The Gasket program, Polygons and Recursion, The 3 Dimensional gasket, Plotting implicit functions

Unit 3: Input and Interaction
Logical classification of input devices, Physical devices used for interaction – keyboard, mouse, trackball, spaceball, tablets, light pen, joy stick, touch panel, data glove; Keyboard, Mouse interaction in OpenGL, Display lists and Modeling, Programming event driven Input, Menus, Implementing GUI in OpenGL

SECTION-B
Unit 4: Geometric Objects and Transformations [8 Hours]
Scalars, Points and Vectors, Coordinate Systems and Frames, Affine Transformations, Translation, Rotation and Scaling, Transformations in Homogeneous Coordinates, Concatenation of Transformations, OpenGL Transformation Matrices, Interfaces to 3-Dientional applications.

Unit 5: Viewing [6 Hours]
Classical and Computer Viewing, Viewing with a computer, Positioning of the Camera, Simple Projections, Projections in OpenGL, Parallel and Perspective projections, Window to Viewport transformation, Setting window and viewport in OpenGL, Hidden surface removal: Depth comparison, Z-buffer algorithm, Back face detection, Area-subdivision algorithm

Unit 6: Clipping [6 Hours]
Clipping operations, Point clipping, Line clipping; Cohen Sutherland algorithm, Midpoint subdivision algorithm, Cyrus Beck algorithm; Polygon clipping: Sutherland Hodgman algorithm, Exterior clipping and text clipping

Text Books:

Reference Books:
2. David F. Rogers - Procedural Elements of Computer Graphics, Tata McGRAW Hill

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, 10 marks each, will be compulsory.
4. From the remaining questions in section A and B students are supposed to solve any two questions, 15 marks each.
Suggestive List of Practical’s:
Design, develop and implement the following:

1. Develop programs to implement the concepts of classes and object, accessing members: e.g.
   a. Design an EMPLOYEE class to contain
      Data members: Employee_Number, Employee_Name, Basic_Salary, All_Allowances, IT, Net_Salary.
      Member functions: to read the data of an employee, to calculate Net_Salary and to print the values of all the data members.
   b. Design a STUDENT class
   c. Design Bank Account class.

2. Design a program to Demonstrate concept of
   a. Arrays within a class, Arrays of Objects (e.g. Develop program to calculate best of two class Test marks of six subjects of a student)
   b. Objects as Function Arguments, Returning Objects. (e.g. Complex number arithmetic)

3. Design a C++ program for static members
   a. Design a class having static member function which has capability to display number of objects created.
   b. Design matrix and vector classes with static allocation and a friend function to do matrix-vector multiplication.

4. Design a program to Demonstrate concept of constructor. Create a class called 'TIME' that has:
   a. three integer data members for hours, minutes and seconds
   b. constructor to initialize the object to zero
   c. constructor to initialize the object to some constant value
   d. member function to add two TIME objects
   e. member function to display time in HH:MM:SS format
   Write a main function to create two TIME objects, add them and display the result in HH:MM:SS format.

5. Design a program to demonstrate operator overloading for unary as well as binary operation.
   a. 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.

b. Design a class Complex which represents the Complex Number data type. Implement the following operations:

i. Constructor (including a default constructor which creates the complex number 0+0i).

ii. Overloaded operator+ to add two complex numbers.

iii. Overloaded operator* to multiply two complex numbers.

iv. Overloaded << and >> to print and read Complex Numbers.

6. Design a program to demonstrate Single, multiple, multilevel, hybrid, hierarchical inheritance and Virtual base classes.

7. Design a program to implement Array of pointers, pointer to functions, pointer to objects.

8. Design a program to implement concept of Virtual functions:

a. Create a class called LIST with two pure virtual function store() and retrieve(). To store a value call store and to retrieve call retrieve function. Derive two classes stack and queue from it and override store and retrieve.

b. Create a base class called SHAPE having:

i. two data members of type double

ii. member function get-data( ) to initialize base class data members

iii. pure virtual member function display-area( ) to compute and display the area of the geometrical object. Derive two specific classes 'TRIANGLE' and 'RECTANGLE' from the base class. Using these three classes design a program that will accept dimension of a triangle / rectangle interactively and display the area.

9. File Handling

a. Develop a program to demonstrate Opening and Closing of file using constructors and open( ) function.

b. Write a program to read the class object of student info such as name, age, gender, height and weight from the keyboard and to store them on a specified file using read() and write() functions. Again the same file is opened for reading and displaying the contents of the file on the screen.

10. Develop a program to implement class and function template for stack and queue.

11. Design a program to demonstrate the concepts of catching and throwing of an exception.

Practical Examination:

Practical Examination should be conducted by internal examiner for three hours under the supervision of external examiner. External examiner should evaluate student by checking practical performance and conducting viva.
Course Code: CSE272  
Title: Lab 7: Microprocessor & Computer Organization

Teaching Scheme
Practical: 02 Hours/Week  
Examination Scheme
Practical /Oral Examination: 50 Marks
Credit: 1  
Practical /Oral Examination (Duration): 03 Hours

Suggestive List of Practical’s:
Design, develop and implement the following:

1. Arithmetic operations using 8086 instructions.
2. Study of BIOS and DOS interrupts.
3. BCD to HEX Conversion.
4. HEX to BCD Conversion.
5. String Operations.
6. Programs using Macros and Procedures.
7. Serial Communication using assembly language programming.
9. Reading and Writing disk sectors.
10. Assembly language programming using C programming language.
11. Study and implement TSR programming.

Practical Examination:
Practical Examination should be conducted by internal examiner for three hours under the supervision of external examiner. External examiner should evaluate student by checking practical performance and conducting viva.
Dr. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD  
Second Year Engineering (CSE/IT)  
Semester – II

Course Code: CSE273      Title: LAB-8: Computer Graphics
Teaching Scheme
Practical: 2 Hours/Week
Credit: 1

Examination Scheme
Term Work: 50 Marks

Suggestive List of Practical’s:

Design, develop and implement following:

1. Study & implement of basic graphics functions defined in graphics.h
2. Program for Line Drawing using DDA algorithm in C
3. Program for Line Drawing using Bresenham’s algorithm in C
4. Program for Mid-Point Circle generation algorithm in C
5. Study and implementation of Basic Graphics Primitives in ‘OpenGL’
6. Interactive program using Keyboard/Mouse in OpenGL
7. Interactive Program using Menu/ Submenu in OpenGL
8. Study and implementation of Display Lists in OpenGL
9. Program for 2-D transformations in OpenGL
10. Window to Viewport transformation in OpenGL
11. Implementation of Line Clipping Algorithm
12. Implementation of Polygon Filling Algorithm
13. Design an application in OpenGL.

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.
Course Code: CSE-274  Title: LAB-IX Open Source Laboratory

Teaching Scheme  Examination Scheme
Practical: 02 Hours/Week                                      Practical /Oral Examination (Duration): 03 Hours
Credit: 1 Practical Examination (Marks): 50 Marks

Prerequisite:
- Basic Knowledge of HTML, CSS, JS.
- Knowledge of programming constructs

Objectives:
This course is aimed to:
- Understand open source movement worldwide
- Enable competency in industry-problem identification and resolution
- Develop application using lampp/xampp

Unit 1: Apache and PHP
Introduction to Open source, 3-Tier architecture, Apache webserver, XAMPP/LAMPP, Basic syntax, Variables, Data Types, Operators and expressions, Constants. Flow Control: Switch flow, Loops, Code Block, Sending data to the browser. Working with Arrays: Arrays, Creating array, Array related Functions. Working with Function: Function, Calling Function, Defining Function, Returning the Values from user defined function, Variable Scope, Argument. Working with Strings, Date and Time Functions: Formatting String with PHP.

Unit 2: Forms and Session Handling
Working with Forms: Creating form, Handling form, Validating form data, Accessing form data, use of Hidden fields to save State, Redirecting user, file Upload and Sending Mail on Form Submission, Working with Cookies and User Session: Introduction of Cookie, Setting a Cookie with PHP, Introduction of Session and Improving Session Security, Starting a Session, Working with Session Variables, Passing Session Id in the query String, Destroying Session and Unsetting Variables. Error Handling and Debugging: General error types and debugging, displaying PHP errors, Adjusting Error Reporting, Creating Custom error handler, PHP debugging techniques

Unit 3: MySQLi.
Understanding the Database Design Process: The importance of good database design, Basic SQL Command: Table Creation, Insert row, Select Command Using Where Clause, Update and Delete Command, String Function, Date and Time Functions, Using MySQL with PHP: Connecting to MySQLi and selecting the database, executing simple queries, retrieving query results, counting return Records, updating, Record Addition, Viewing Record, and Deletion Record with PHP.
MySQL Error Handling: SQL and MySQL debugging techniques.
Unit 4: PHP Data Object (PDO) functions.
Why PDO?, Connections and Connection management, Running Queries, Running SELECT INSERT, UPDATE, or DELETE statements, Getting data out of statement- foreach(). Getting data out of statement-fetch(). Error Handling.

Unit 5: AJAX
Introduction to Ajax, Pre-Ajax JavaScript Communication Techniques, Defining Ajax, The Ajax Toolkit, XMLHttpRequest Object, Data Formats, Developing an Ajax library, Networking considerations, user interface design for Ajax. Develop a dynamic website with PHP, MYSQLi, Ajax (login, registration, feedback, file uploading).

Reference Books:

Internet Resources:
Suggestive List of Practical’s:

1. Demonstration of Open source software’s installation i.e. xampp, lamp, etc.
2. Design HTML form and retrieve the values in PHP script.
3. PHP variables, arrays (array multiplication, addition ...etc).
4. PHP Functions: array, string, date-time, and calendar.
5. MySQLi connectivity, INSERT, SELECT, DELETE with PHP
6. PHP script using PDO for MySQLi connectivity, data storing and retrieval.
7. PHP Mysqli connectivity using OOP method.
8. PHP script for File uploading.
9. PHP script for Session Management (login form).
10. AJAX Script using XMLHttpRequest, Data Formats, PHP.
11. PHP script to update and retrieve data stored in database from user using Ajax.
12. Chat Application using PHP, MYSQLI, and AJAX.
13. Miniproject: Design of website using PHP – MYSQLI, AJAX.

Practical Examination:
Practical Examination should be conducted by internal examiner for three hours under the supervision of external examiner. External examiner should evaluate student by checking practical performance and conducting viva.
DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD
Second Year Engineering
Semester-II

Course Code: BSH 275
Title: Communication Skills-I
Teaching scheme
Practical: 04 hrs /week
Credit: 2
Examination scheme
Term work /Oral Exam: 50 Marks

The teacher shall explain in detail, the gist and techniques involved in the following work units to the students. The teacher shall subsequently formulate the exercises to adjudge the skill sets acquired by the students.

Unit 1 Time Management [04 Hrs]
Value of time, Diagnosing Time Management, Weekly Planner to do list and Prioritizing work.

Unit 2: Grammar and Usage [08 Hrs]
Overview of basic Mid-level English Grammar, Parts of speech, Preparations and Conditions, Tense and Concept of time, Sentence Construction (Concord), Vocabulary: Words, Idioms, Phrases, Antonyms and Synonyms

Unit 3: Speaking Skills [08 Hrs]
Training in Sound Recognition, the speech process, message, audience, speech style, feedback, conversation and oral skills, fluency and self-expression body language phonetics and spoken English, speaking techniques, word stress, correct stress patterns, voice quality, correct tone, types of tones, Presentation skills-planning, preparation, organization, Stress and Intonation pattern in spoken communication, Sound Recording Exercise (Language Lab Exercise), Communication Errors in English.

Unit 4: Listening and Reading Skills [08 Hrs]
Active and Passive Listening, the reading process, purpose, different kinds of texts, reference material, scientific and technical texts, active and passive reading, strategies-vocabulary skills, eye reading and visual perception, Skimming and scanning reading, drawing inferences and conclusions, comprehension of technical material- scientific and technical texts, instructions and technical manuals, graphic information. Note making- tool for study skills.

Unit 5: Writing Skills [06 Hrs]
Identification of different writing styles (Four Writing Style), Types of reports, information and analytical reports, oral and written reports, formal and non-formal reports, printed forms, letter and memo format, manuscript format, proposals, technical articles, journal articles and conference papers, Drafting: Memo, Circulars, Notices, agendas etc. E-mails, Business Memos / Letters, Employment Communication- resume design, resume style.

**Unit 6 Developing Skills and Presentations**

Developing key traits 1: creativity, critical thinking and problem solving. Effective Presentations- Gathering Information and Building Presentation. Presentation by students in team.

**Text Books:**
3. ‘Developing Communication Skills’ Krishna Mohan, Meera Banerji, McMillan India Ltd.
4. ‘Skills’ Krishna Mohan, Meera Banerji, McMillan India Ltd.

**Term Work:**
Term work marks should be given on the basis of online test conducted internally at college level.