

DETAILED SYLLABUS

Problem Solving and Program Design

Code: PPCCA101

Credit: 4

Total Hours: 48

Course Objectives:

1. To provide understanding of algorithmic approach to problem solving.
2. To provide knowledge on Procedural as well as Object Oriented Approaches to program design.
3. To provide elaborate knowledge on C language to write procedural programs.
4. To introduce relevant features of C++ language to write object oriented programs.

Course Outcomes:

On successful completion of the course, the students will be able to:

1. Develop skills to write computer programs to solve a variety of real-world problems.
2. Write programs using both procedural and object oriented approaches
3. Design programs using readable, reusable and cohesive modules.
4. Develop skills to use pointers and data files in programs.

Course Prerequisites:

1. This course does not require any prerequisite as such.

Detailed Syllabus:

Module I (10 Hours)

Introduction to Computer: Basic Organization of a Computer, Hardware and Software, Programming Languages, Number System, Conversion.

Program Development: Programming as Problem-Solving, Steps in Program Development, Algorithm, Flowchart, Pseudo code, Top-down and Bottom-up approaches, Characteristics of a good program, Structure of a C Program, Compiling, Linking and Executing Programs.

C Language Fundamentals: Language Elements, Data Types, Variables and Constants, Operators, Expressions, Type Conversions, Statements, Managing Console Input and Output Operations, Function.

Control Structures: Decision Making and Branching - If and Switch, Loop Structures - While, Do While and For, Unconditional Jumps - Continue, Break and Go To.

Module II (14 Hours)

Arrays and Strings: Concept, Declaration and Manipulation of Arrays, One Dimensional and Multidimensional Arrays, Sorting and Searching an Array, Concept of Strings, String Handling Functions, Array of Strings.

Pointers: Pointer Variable and its Importance, Dereferencing, Pointer Arithmetic and Scale Factor, Pointers and Arrays, Pointer and Strings, Array of Pointers, Pointers to Pointers.

Functions: Designing Structured Programs, User Defined and Standard Functions, Formal and Actual Arguments, Function Prototype, Parameter Passing, Functions Returning Multiple Values, Functions Returning Pointers, Pointers to Functions, Nesting of Functions, Recursion, Passing Arrays to Functions.

Scope and Extent: Scope Rules, Storage Classes - Auto, Extern, Register and Static.

Module III (10 Hours)

Structures, Unions and Enumerations: Declaration and Initialization of Structures, Structure as Function Parameters, Structure Pointers, Unions, Enumerations.

File I/O: Defining, Opening a File and Closing a File, Input/output Operations in Files, Random Access to Files, Error Handling. Command Line Arguments, Dynamic Memory Management, Pre-Processor Directives.

Module IV (14 Hours)

Introduction: Need of Object Orientation, Basic Concepts of Object Oriented Approach, Basic Program Construction in C++, Namespace, Data Types, Input and Output, Handling Exceptions.

Objects and Classes: Defining and Using Classes, Constructors and Destructors, Controlling Accessibility, Public and Private Class Members, Member Functions, *this* pointer, *static* class data and *const* Member Functions, Constructor and Function Overloading.

Inheritance: Base and Derived classes, Access Control Mechanisms, Types of Inheritance, Virtual Functions, Abstract Class and Pure Virtual Function, Virtual Base Class.

Text Book:

1. Jeri R. Hanly and Elliot B. Koffman, Problem Solving and Program Design in C, 8th Edition, Pearson Education, 2016. (Module-I, II, III)
2. The C++ Programming Language, Bjarne Stroustrup, Addison Wesley. (Module-IV)

Reference Books:

1. R. G. Dromey, How to Solve it by Computer. Prentice-Hall India EEE Series.
2. E. Balagurusamy, Programming in ANSI C, 4th edition, McGraw-Hill Publication, 2007.
3. Pradip Dey, Manas Ghosh, Programming in C, Second Edition, Oxford University Press, 2011.
4. Brian W. Kernighan, Dennis Ritchie, The C Programming Language, 2nd Edition, Prentice Hall, 1988.
5. Yashavant P. Kanetkar. Let Us C, BPB Publications, 2011.
6. Byron S Gottfried, Programming with C, Schaum's Outlines, Second Edition, Tata McGraw Hill, 2006.
7. Bruce Eckel, Thinking in C++, Vol. 1: Introduction to Standard C++, 2nd Edition,

Computer Organizations and Architecture

Code: PPCCA102

Credit: 3

Total Hours: 36

Course Objectives:

1. To study the basic *organization* and architecture of digital computers
2. To study design aspects of different subsystems of a computer system
3. To understand the instructions and instruction execution life cycle
4. To understand various data transfer techniques in digital computer.
5. To understand processor performance improvement using instruction level parallelism
6. To understand microprocessor and assembly language program

Course Outcomes:

On successful completion of the course, the students will be able to:

1. Understand basic structure of a computer.
2. Understand computer instruction and its execution
3. Understand ALU, design basic circuits and perform computer arithmetic operations.

4. Understand different memory and their performance issues
5. Understand cache mapping techniques.
6. Understand I/O organization and data transfer techniques.
7. Understand processor performance and instruction level parallelism.
8. Write basic assembly language programs

Course Prerequisites:

This course does not require any prerequisite as such.

Detailed Syllabus:**Module 1 (10 Hours)**

Introduction: Basic architecture of computer, Functional units, Operational concepts, Bus structures, Von Neumann Concept.

Basic Processing: Instruction code, Instruction set, Instruction sequencing, Instruction Cycle & Execution Cycle, Instruction format, Addressing modes, Micro instruction, Data path and control path design, Micro programmed vs. Hardwired controlled unit, RISC vs. CISC.

Arithmetic: Design of ALU, Binary arithmetic, Addition and Subtraction of signed number, Multiplication of Positive number, Signed operand multiplication, Division, Floating point number representation and arithmetic.

Digital Electronics: Boolean algebra, Digital Logic, Truth Tables, K map, Number system, Flip- Flop

Module 2 (10 Hours)

Memory: Memory Hierarchy, RAM, ROM, Cache memory organization, Mapping techniques, Virtual memory, Memory Interleaving, Secondary Storage, Flash drives.

Module 3(10 Hours)

Input/output: Accessing I/O devices, I/O mapped I/O, Programmed I/O, Memory Mapped I/O, Interrupt Driven I/O, Standard I/O interfaces, Synchronous and Asynchronous Data transfer, DMA data transfer.

Introduction to Parallel processing: Flynn's Classification, Pipelining, Super Scalar processors, Array processing, vector processing.

Module 4 (6 Hours)

8085 Microprocessor and Assembly level Programming using 8085 microprocessor

Text Books:

1. William Stalling, Computer Organization and Architecture, Pearson Education (Module I, II, III)
2. M. Mano, "Computer System and Architecture", PHI. (Module IV)

Reference Books:

1. J. P. Hayes, "Computer Architecture and Organization", MGH
2. A.S. Tananbaum, "Structured Computer Organization", Pearson Education
3. Alan Clements, Computer Organization and Architecture, Cengage.
4. C. Hamacher, Z. Vranesic, S. Zaky, "Computer Organization", McGraw-Hill Education India

Web Design and Development

Code: PPCCA103

Credit: 3

Total Hours: 36

Course Objectives:

1. To provide basic understanding of the Internet and World Wide Web.
2. To provide elaborate knowledge on how to use HTML, CSS and JavaScript to develop webpages.
3. To provide understanding on Front-End Libraries such as jQuery and Bootstrap to develop webpages.
4. To provide knowledge and skills on tools and techniques to develop and implement web projects.

Course Outcomes:

On successful completion of the course, the students will be able to:

1. Develop webpages using core front-end coding languages such as HTML, CSS and JavaScript.
2. Create Responsive Websites compatible with different devices and screen sizes.
3. Display ability to develop professional websites using Bootstrap and jQuery.
4. Create and maintain websites on the Internet.

Course Prerequisites:

Basic understanding of computer and programming.

Detailed Syllabus:

Module-I (12hrs):

Introduction to Internet and World Wide Web: Introduction to Internet, client- server model, IP address, protocols, Basic Services, the Internet verses the World Wide Web, Domain Name, URL, Evolution of World Wide Web, Web 2.0.

Page Structuring using HTML: Structure of a webpage, Basic formatting markups, Adding links, images, Table markup, Lists, Forms, Div and Span, Semantic markups in HTML 5.

Basics of Web Graphics: Image formats, Size and Resolution, Transparency, Scalable Vector Graphics, Image Optimization.

Presentation using CSS: Overview of CSS, benefits of CSS, Basic syntax of writing style rules, Selectors, Types of Style sheet, Inheritance and Cascading styles, Text and Font properties, Color and Background properties, Box Model, Page Layout, Floating and Positioning, Styling forms and tables, Basic responsive web design.

Module-II (12hrs):

Page Interaction using JavaScript: Introduction to JavaScript, Adding JavaScript to a page, Basics of JavaScript Language, variable, data types, operators, array, control structures, Browser objects, Events, Document Object Model, Accessing page contents using JavaScript, Form validation using JavaScript,

Introduction to XML and AJAX: Basics of XML document, DTD, Schema, XMLHttpRequest object, Sending request and receiving server response using AJAX.

Introduction to jQuery: Basics of jQuery, Selecting elements, Handling events, Applying effects and animations, Manipulating DOM, jQuery and AJAX.

Module-III (12hrs):

Introduction to Bootstrap: Overview of Bootstrap, Grid basics, Using Bootstrap Base CSS,

Typographic elements, Colors, Images, Buttons, Navs, Navbar, Carousel, Forms.

Website Design Principles: Understanding the web design environment, Designing for multiple screen resolutions, Crafting the look and feel of the site, Creating a unified site design, Designing for the user, Designing for accessibility.

Site Planning and Publishing: Understanding the web site development process, Creating a site specification, Identifying the content goal, Analyzing your audience, Creating conventions for filenames and URLs, Setting a directory structure, Creating a site storyboard, Publishing the web site, Testing the web site, Basic understanding of Search Engine Optimization.

Main Texts:

1. The Web Warrior Guide to Web Design Technologies, Don Gosselin, et. al, Cengage Learning

Recommended Texts:

1. Learning Web Design, Jennifer N. Robbins, O'Reilly Media
2. HTML & CSS: Design and Build Websites, Jon Duckett, John Wiley
3. jQuery IN ACTION, Bear Bibeault et.al., Dreamtech

Computational Mathematics

Code: PPCCA104

Credit: 4

Total Hours: 48

Course Objectives:

1. To understand various concepts in several areas of discrete mathematics.
2. To develop problem-solving techniques using those mathematical concepts.

Course Outcomes:

On successful completion of the course, the students will be able to:

1. Represent various real-world problems using mathematical concepts.
2. Use those mathematical concepts in practical applications.
3. Apply Graph theory in solving computer science problems

Course Prerequisites:

This course does not require any prerequisite as such.

Detailed Syllabus:

MODULE-I Logic, Sets & Counting (12 HOURS)

Logic: Propositions and logical operators - Truth table - Propositions generated by a set, Equivalence and implication - Basic laws- Some more connectives - Proofs in Propositional calculus - Predicate calculus.

Sets: Basic Definitions - Venn Diagrams and set operations - Laws of set theory - Principle of inclusion and exclusion – partitions.

Permutation and Combination

Relations: Properties of relations - Matrices of relations - Closure operations on relations - Recurrence relations Functions: injective, subjective and objective functions.

MODULE-II Matrices (12 HOURS)

Matrices, Rank of Matrix, Solving System of Equations- Gauss Elimination, Eigen Values and Eigen Vectors, Inverse of a Matrix

MODULE-III Graphs (12 HOURS)

Basic terminology, Eulerian paths and circuits, Hamiltonian paths and circuits, Graph coloring. Trees: definition and properties, tree traversals— preorder, inorder, postorder, binary trees, spanning trees, Graph traversals — BFS and DFS.

MODULE-IV Numerical Methods (12 HOURS)

Computing Arithmetic, errors, Significant Digits and Numerical Instability, Root finding methods: Bisection, Newton Raphson, Secant and RegulaFalsi. , Interpolation, Richardson's extrapolation principle.

Differentiation and Integration: First and second order ordinary differentiation, Trapezoidal and Simpsons method. Solving first order differential equation by Euler's method.

TEXT BOOKS:

1. Kenneth H. Rosen, " Discrete Mathematics and Its Applications", Tata McGraw Hill, Fourth Edition (Module- I,II & III).
2. S. S. SASTRY, " INTRODUCTORY METHODS OF NUMERICAL ANALYSIS", PHI Learning Pvt. Ltd. Fifth Edition, 2012 (Module- IV)

REFERENCE BOOKS:

1. Hopcroft and Ullman, "Introduction to Automata Theory, Languages and Computation", Narosa Publishing House, Delhi, 2002. (Unit 4, 5)
2. A.Tamilarasi&A.M.Natarajan, "Discrete Mathematics and its Application", Khanna Publishers, 2nd Edition 2005.
3. M.K.Venkataraman "Engineering Mathematics", Volume II, National Publishing Company, 2nd Edition, 1989.
4. JurajHromkovic, "Theoretical Computer Science", Springer Indian Reprint, 2010.
5. David Makinson, "Sets, Logic and Maths for Computing", Springer Indian Reprint, 2011.
6. K Atkinson. "An Introduction to Numerical Analysis", 2nd ed., John Wiley, 1989

Economics & Financial Accounting**Code: PMCMH105****Credit: 3****Total Hours: 36****Course Objectives:**

1. To develop better understanding of the concept of engineering economics including costing and financial accounting.
2. To provide knowledge on various approaches of economics, costing & accounting related to business.
3. To provide elaborate knowledge on the effect of various transactions on business functions.
4. To introduce relevant features of engineering economics & accounting as a language of business.

Course Outcomes:

On successful completion of the course, the students will be able to:

1. Develop skills to deal with a variety of real-world business problems.
2. Write accounting concepts as applicable to balance sheet & income statements
3. Know the importance of elements of cost in a business transaction.

Course Prerequisites:

This course does not require any prerequisite as such.

Detailed Syllabus:**Module-I (10 hours)**

Engineering economics- Nature and scope, The theory of demand, demand function, law of demand and its exceptions, Elasticity of demand, Law of supply and elasticity of supply. Determination of equilibrium price under perfect competition (Simple Numerical problems to be solved).

Theory of production and cost, Law of variable proportion, Law of returns to scale

Module- II (10 hours)

Time value of money and interest formulae, Nominal and effective rate of interest, Present, Annual and Future worth analysis, Cost-Benefit analysis in public sector projects, Depreciation Accounting

Module-III (8 hours)

Fundamentals of Accounting; Accounting as a business function and language of business, Functions and objective of Accounting, Users of Accounting information, Limitations of Accounting, Cyclical nature of business and Accounting cycles, Accounting equations, Accounting events and transactions, Classification of transaction and their effect on Accounting Equation, Statement showing the effect of transaction on assets, liabilities and capital, Accounting concepts – as applicable to Balance sheet and Income Statements, The rule of debit and credit.

Module-IV (8 hours)

Recording transaction: The journal, The ledger postings, Subsidiary Books and Accounts, Capital and revenue transactions, Fixed assets and depreciation policy

Preparation of Financial Statements: Trial balance, Trading Account, Manufacturing Account, Profit and Loss account, Balance sheet

Text Books:

1. Riggs, Bedworth and Randhwa , "Engineering Economics", McGraw Hill Education India
2. R Panneerselvam, "Engineering Economics", PHI
3. Jain and Narang , "Financial Accounting" Kalyani Publisher

Reference Books:

1. R. R. Paul , "Money banking and International Trade", kalyani publisher, New-Delhi
2. H.L. Ahuja , "Principle of Economics", S. Chand & Co
3. Bal and Sahoo , "Financial Accounting", S. Chand Publication
4. A. K. Bhattacharya , "Financial Accounting", Prentice Hall of India

Business Communication

Code: PMCMH106**Credit: 3****Total Hours: 36****Course Objectives:**

1. To introduce students to various building blocks of communication, both within and outside their formal articulations.
2. To train students in the basic science of writing and help them use the same in various sites such as report, paragraph etc.
3. To create conditions in the classroom that encourages students to engage in meaningful conversation.

Course Outcomes:

On successful completion of the course, the students will be able to:

1. Develop skills to communicate effectively in formal settings.
2. Develop skills to write CV, Report, Minutes, Business Letters etc.
3. Develop skills to present effectively on topical issues.

Course Prerequisites:

This course does not require any prerequisite as such.

Detail Syllabus**Module - I****Basics of Communication in Practice (4 hours)**

- 1.1 Types of Communication in an organization: Formal (internal and external) and Informal (grapevine) (1 Hour)
- 1.2 Communication Channels: Upward, Downward, Diagonal and Horizontal (1 Hour)
- 1.3 Introduction to cross-cultural communication. (2 Hour)
- 1.4 Bias-free communication & use of politically correct language in communication (1 Hour)
- 1.5 Importance of reading and ethics of writing (1Hour)
- 1.6 Negotiation Skills, Argumentation & Consensus building.

Module-II**Business Writing (10 hours)**

- 2.1 Skills of Writing: Coherence, Cohesion, Sentence Linkers, Clarity of Language and stylistic variation, process of writing.(3 Hour)
- 2.2 Paragraph writing: Topic Sentence, Supporting sentence & Concluding sentence, Logical structuring (Inductive approach and deductive approach) (2 Hour)
- 2.3 Letters, Applications (2 Hour)
- 2.4 Reports and Proposals (1 Hour)
- 2.5 Memos, Notices, Summaries, Abstracts& e-mails (1 Hour)
- 2.6 Writing a CV/Resume': Types of CV (2 Hour)
- 2.7 Writing a Cover letter (1 Hour)

Module -III**Speaking and Presentation (7 Hours)**

- 3.1 Oral Presentation: 4 P's of presentation, PPT (2 Hour)
- 3.2 Group Discussion: Structured and Un-structured, Various types of topics (abstract, absurd, contemporary etc.) (3 Hour)
- 3.3 Types of Interview: Preparing an Interview and techniques (2 Hour)
- 3.4 Grooming and dress code, Personality development (2 Hour)

Problem Solving and Program Design Laboratory**Code: PLCCA101****Credit: 2****Hours: 4/week**

Note: This course shares the objectives and outcomes of its associated theory course PPCCA101. Suitable execution environment preferably Linux will be used to carry out laboratory exercises. Exercises will primarily follow algorithmic approach as provided in reference book serial number 1. The programs will follow proper modeling either function-oriented or object-oriented as the case may be. The exercises suggested below are illustrative in nature. Additional exercises suitably may be suggested by the faculty concerned to meet the course objectives.

List of Exercises:

1. Write a program that will exchange the values of three variables a, b and c as follows: the variable b will hold value of a, c will hold the value of b and a will hold the value of the

- variable c .
2. Write a program which reads a set of marks in an examination, count the number of pass marks, number of fail marks, percentage of pass and fail.
 3. Write a program to find the harmonic mean of a set of n numbers.
 4. Write a program to count the number of digits in an integer.
 5. Write a menu based program to find LCM and GCD of a set of numbers
 6. Write a program to convert binary numbers to octal and binary numbers to decimal.
 7. Write a program to find the maximum, the minimum and how many times they both occur in an array of numbers.
 8. Write a program to find the k^{th} smallest element in an array of numbers.
 9. Write a menu based program to implement sorting algorithms.
 10. Write a program to perform operations such as multiplication and transpose on matrices.
 11. Write programs involving string manipulation (to be decided by faculty).
 12. Write programs involving pointer arithmetic (to be decided by the faculty)
 13. Write a program involving recursive function (to be decided by the faculty)
 14. Write programs involving structures and unions (to be decide by the faculty)
 15. Write programs involving data files (to be decided by the faculty)
 16. Write an Object Oriented Program to find the area and perimeter of a circle.
 17. Write a menu based Object Oriented Program to perform operations in a bank account.
 18. Write OO programs to implement overloading of function and constructor.
 19. Write an OO program to process student results in an examination. Model students and marks scored in an examination as classes using has-a relation. Print the grade sheet of a student.
 20. Write an OO program to find the area and perimeter of different shapes such as rectangles, triangles and squares. Use inheritance appropriately.

Computer Organizations and Architecture Laboratory

Code: PLCCA102

Credit: 1

Hours: 2/week

Part-I: Digital Logic Design Experiments:

Multiplexers & Decoders, Counters, Shift Registers, Binary Adders & Sub tractors, A L U

Part-II:

A: 8085 Assembly Language Programming:

8085 Assembly Language Programming using the 8085 μ P Trainer Kit:

- i. Write the working of 8085 μ P Trainer and basic architecture of 8085 along with small introduction.
- ii. Study the complete instruction set of 8085 and write the instructions in the instruction set of 8085 along with examples.
- iii. Write an assembly language code using 8085 μ P Trainer to implement data transfer instruction.
- iv. Write an assembly language code using 8085 μ P Trainer to store numbers in reverse order in memory location.
- v. Write an assembly language code using 8085 μ P Trainer to implement arithmetic instruction.
- vi. Write an assembly language code using 8085 μ P Trainer to add two numbers using lxi instruction.

- vii. Write an assembly language code using 8085 µP Trainer to add two 8 bit numbers stored in memory and also storing the carry.
- viii. Write an assembly language code using 8085 µP Trainer to implement logical instructions.
- ix. Write an assembly language code using 8085 µP Trainer to implement stack and branch instructions.

B: Computer Organization:

Pentium class PC architecture familiarization hardware & software parts demonstration, Troubleshooting of PC, Laptops, Server and Loading of Operating System, Antivirus and other software packages.

Web Design and Development Laboratory**Code: PLCCA103****Credit: 1****Hours: 2/week**

Note: This course shares the objectives and outcomes of its associated theory course PPCCA103. Suitable page authoring IDEs and development tools will be used to carry out laboratory exercises.

List of Exercises:

1. Develop a webpage to display your curriculum vitae. Use appropriate markups to structure the page.
2. Develop a user registration form. Use appropriate form controls for submitting user information.
3. Use CSS in the curriculum vitae developed earlier to enhance its presentation.
4. Use CSS in the registration form to enhance its appearance.
5. Use JavaScript to validate data of the registration form at the client-side.
6. Develop XML document for a list of Books in a library
7. Use AJAX to develop a webpage that fetches data from the server.
8. Use jQuery to display a list of students and their details in a table.
9. Use Bootstrap to develop a website for your department.
10. Publish the website on the Internet with basic search engine optimization for it.

Communication in Practice Lab**Code: PLCMH104****Credit: 1****Total Hours: 2/week****Course Objectives:**

- To enable the students engage in polite, negotiating and argumentative conversation.
- To train the learners in writing CV, Report, Minutes, Business Letters etc.
- To give students an opportunity of power point presentation relating to topical issues.

There will be 10 lab sessions of 2 hours each. Lab sessions will be used to give the students an in-hand experience of communication taking place in an organization. This will help the students to understand the requirement of communication in the workplace. Students will be encouraged to brush-up themselves in activities based on all the modules of theory taught in the class room. Special emphasis will be given to speaking and writing business correspondences.

Ist session:

Speaking: Greeting an acquaintance/ friend, introducing oneself, introducing a third person to a friend, breaking off a conversation politely, leave-taking, Describing people, objects, places, processes etc. (1 Hour), Writing an application (1 Hour)

IIInd session:

Speaking: making and responding to inquiries; expressing an opinion; expressing agreement/ disagreement, contradicting/ refuting an argument; expressing pleasure, sorrow, regret, anger, surprise, wonder, admiration, disappointment etc (1 Hour), Writing an informal letter/Business Letter (1 Hour)

IIIrd session:

Speaking: Narrating or reporting an event (1 Hour), Writing a Report (1 Hour)

IVth session:

Speaking: Ordering / directing someone to do something, Making requests; accepting / refusing a request, Expressing gratitude; responding to expressions of gratitude, Asking for or offering help; responding to a request for help, Asking for directions (e.g. how to reach a place, how to operate a device etc.) and giving directions, Speaking: asking for and granting/ refusing permission, prohibiting someone from doing something, suggesting, advising, persuading, dissuading, making a proposal, praising, complimenting, felicitating, expressing sympathy (e.g. condolence etc.), Complaining, criticizing, reprimanding etc., (1 Hour), Writing a proposal (1 Hour)

Vth Session:

Speaking: Understanding and interpreting graphs, flowcharts, pictograms, pictures, curves etc., (1 Hour), **Writing:** Describing, explaining and interpreting graphs, flowcharts, pictograms, pictures, curves etc.

VIth session:

Speaking: Group discussion (1 Hour), **Writing:** a memo, notice and circular (1 Hour)

VIIth session:

Speaking: Public speaking, in-house communication on work-related situations (1 Hour), **Writing:** a CV (1 Hour)

VIIIth session: Presentation 1 (Students will make and present a topic in power point on a pre-assigned topic) (1 Hour), **Writing:** an e-mail (1 Hour)

IXth session: Presentation 2 (Students will make and present a topic in power point on a pre-assigned topic) (1 Hour), **Writing:** an abstract (1 Hour)

Xth session: Presentation 3 (Students will make and present a topic in power point on a pre-assigned topic) (1 Hour), **Writing:** a summary (1 Hour)

Note: 70 marks will be devoted for sessions, 10 marks for record submission, 10 marks for viva-voce and 10 marks for project work.

End term assignment: Students are required to make a review report of at least 5 pages on a topic of their own choice (The topic should be pre-approved by teacher).