



Syllabus for Class Test, (CIA), FEBRUARY, 2025
FYBSc CS SEMESTER II

| Sr. No. | Name of the Course | Name of the Professor | Portion/ syllabus |
|---------|---------------------------------|-----------------------|---|
| 1 | Design & Analysis of Algorithms | Mr. Prathamesh Bhosle | Introduction to algorithms - What is algorithm, analysis of algorithm, Types of complexity, Running time analysis, How to Compare Algorithms, Rate of Growth, Types of Analysis, Asymptotic Notation, Big-O Notation, Omega-Ω Notation, Theta-Θ Notation, Asymptotic Analysis, Performance characteristics of algorithms, Estimating running time / number of steps of executions on paper, Idea of Computability Introduction to Data Structures - What is data structure, types, Introduction to Array(1-d & 2-d), Stack and List data structures, operations on these data structures, advantages disadvantages and applications of these data structures like solving linear equations, Polynomial Representation, Infix-to-Postfix conversion. Recursion - What is recursion, Recursion vs Iteration, recursion applications like Factorial of a number, Fibonacci series & their comparative analysis with respect to iterative version, Tower of Hanoi problem. Basic Sorting Techniques - Bubble, Selection and Insertion Sort & their comparative analysis |
| 2 | Object Oriented Programming | Ms. Sonia Pelagade | Introduction to Programming Concepts: Object oriented programming paradigm, basic concepts of object oriented programming, benefits of object oriented programming, object oriented languages, applications of object oriented programming. Tokens-keywords, identifiers, constants-integer, real, character and string constants, backslash constants, features of C++ and its basic structure, Data Types, Data Input Output and Operators: Basic data types, variables, rules for naming variables, programming constants, the type cast operator, implicit and explicit type casting, cout and cin statements, operators, precedence of operators. Decision Making, Loops, Arrays and Strings: Conditional statements-if,if...else, switch loops- while, do...while, for, types of arrays and string and string manipulations Classes, Abstraction & Encapsulation: Classes and objects, Dot Operator, data members, member functions, passing data to functions, scope and visibility of variables in function. Constructors and Destructors: Default constructor, parameterized constructor, copy constructor, private constructor, destructors. Working with objects: Accessor - mutator methods, static data and static function, access specifiers, array of objects. |
| 3 | DS_R Programming | Ms. Aditi Save | R - Variables, Operators, Conditional Statement, Looping Statement R- Objects : Vectors, Matirx, Array, List R - Environment R - Functions |
| 4 | HINDI | Ms. Renu Singh | 1. लेखन कौशल का अथाएवितवरूप 2. लेखन कौशल की उपयोगिता एविमहत्व 3. लेखन कौशल की हवहियाँ 4. लेखन कौशल केभदे एविहवशेषताएँ 5. वाचन कौशल का अथा, तवरूप एविहवशेषताएँ 6. वाचन कौशल की उपयोगिता 7. वाचन कौशल की हवहियाँएविहवशेषताएँ |
| 5 | Human Resource Management | Ms. Mona Sheth | Human Resource Management - Definition - Objectives - Functions - Scope - Importance - HRM in India - Evolution of HRM - Computer Application in Human Resource Management - Quality of a good Human Resource Managers - Human Resource Planning - Job Analysis, Job description and Job Specification |
| 6 | Introduction to Marketing | Dr. Sheetal Poojari | Introduction to Marketing: Concept of Marketing, Nature, Importance and Scope of marketing, Difference between marketing and selling, different concepts of marketing (exchange, production, product, societal, holistic etc.,) functions of marketing manager |

Aditi Save
Coordinator - BSc Computer Science

Prof. Subhashini Naikar
Vice Principal - SFC

Prof. (Dr.) Digambar N. Ganiewar
Principal