



JECRC Foundation



**JAIPUR ENGINEERING COLLEGE
AND RESEARCH CENTRE**

JAIPUR ENGINEERING COLLEGE AND RESEARCH CENTRE

Year & Semester - B.Tech I year (I Semester)

Subject - Programming for Problem Solving

Subject Code - 1FY3-06

Department - Computer Science (First Year)

Ms. Yogita Punjabi/ Ms. Abhilasha /Mr. Gajendra Sharma

VISION OF INSTITUTE

To become a renowned centre of outcome based learning, and work towards academic, professional, cultural and social enrichment of the lives of individuals and communities

MISSION OF INSTITUTE

- ❖ **Focus on evaluation of learning outcomes and motivate students to inculcate research aptitude by project based learning.**
- ❖ **Identify, based on informed perception of Indian, regional and global needs, the areas of focus and provide platform to gain knowledge and solutions.**
- ❖ **Offer opportunities for interaction between academia and industry.**
- ❖ **Develop human potential to its fullest extent so that intellectually capable and imaginatively gifted leaders can emerge in a range of profession.**

1FY3-06/ 2FY3-06: Programming for Problem Solving

Credit: 2

Max. Marks: 100 (IA:20, ETE:80)

SN	CONTENTS	Hours
1	Fundamentals of Computer: Stored program architecture of computers, Storage device- Primary memory, and Secondary storage, Random, Direct, Sequential access methods, Concepts of High-level, Assembly and Low-level languages, Representing algorithms through flowchart and pseudo code.	
2	Number system: Data representations, Concepts of radix and representation of numbers in radix r with special cases of r=2, 8, 10 and 16 with conversion from radix r ₁ to r ₂ , r's and (r-1)'s complement, Binary addition, Binary subtraction, Representation of alphabets.	
3	C Programming: Problem specification, flow chart, data types, assignment statements, input output statements, developing simple C programs, If statement, for loops, while loops, do-while loops, switch statement, break statement, continue statement, development of C programs using above statements, Arrays, functions, parameter passing, recursion, Programming in C using these statements, Structures, files, pointers and multi file handling.	
TOTAL		28

Programming for Problem Solving : Course Outcomes

Students will be able to:

CO1: Understand concept of low-level and high-level languages, primary and secondary memory.

Represent algorithm through flowchart and pseudo code for problem solving.

CO2: Represent and convert numbers & alphabets in various notations.

CO3: Analyze and implement decision making statements and looping.

CO4: Apply array, function, recursion, structure, pointers, memory allocation and data handling through files in 'C' Programming Language.

Programming for Problem Solving : CO-PO Mapping

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	2	-	-	-	-	-	1	-	1
CO2	2	-	-	-	-	-	-	-	-	1	-	1
CO3	1	1	-	-	1	-	-	-	-	1	-	1
CO4	2	1	-	-	1	-	-	-	-	1	-	1
Avg.	1.75	1.33	0.5	0.5	0.5	-	-	-	-	1	-	1

Programming for Problem Solving : Lecture Plan

Lecture No	Topics planned for the session
UNIT 1: Fundamentals of Computer	
1	Stored Program Architecture of Computers
2	Storage Device- Primary Memory and Secondary Storage
3	Working Principle of Primary Storage Devices, Random, Direct, Sequential access Methods
4	Concept of High-Level, Assembly and Low Level programming Languages
5	Representation of algorithm through flow chart & pseudo code
UNIT 2: Number System	
6	Concept of radix and representation of numbers in radix r with special cases of r=2, 8, 10 and 16
7	Conversion from radix r1 to radix r2
8	Conversion from radix r1 to radix r2
9	r's and (r-1)'s Complement
10	Binary Arithmetic-Addition, Subtraction of Binary Numbers
11	Binary Arithmetic - Division & Multiplication of Binary Numbers
12	Representation of Alphabets

Programming for Problem Solving : Lecture Plan

Lecture No	Topics planned for the session
UNIT 3: C Programming	
13	Structure of Basic C Program
14	C- Tokens
15	Basic Data types, Assignment Statements and Input Output Statement
16	Decision Making Statements – Simple if , if-else(With Examples)
17	Decision Making Statements – Ladder & Nested if-else(With Examples)
18	Decision Making Statements –switch -case(With Examples)
19	While loops, do-while loops(With Examples)
20	For loops(With Examples)
21	Break Statement and Continue Statement(With Examples)
22	Arrays –1D (With Examples)
23	Arrays –2D (With Examples)
24	Functions and Parameter Passing Techniques (With Examples)
25	Recursion(With Examples)
26	Structures(With Examples)
27	Pointers(With Examples)
28	File Handling & Multi File Handling(With Examples)