

The Maharaja Sayajirao University of Baroda Polytechnic Higher Payment Program Diploma in Computer Engineering		ACADEMIC YEAR		
Year - I	Structured Programming (CSE3202)	Lecture Hrs per week	4	
Semester - II		Max marks	100	
Pre-Requisite: Basic Knowledge of Computer System				
CO1	Explain the structure of a C program, data types, variables, constants, algorithms and flowcharts.			
CO2	Apply branching, looping, operators to implement programs in C.			
CO3	Implement arrays, functions and recursion to develop modular and efficient programs.			
CO4	Implement pointers, strings and storage classes to develop programs.			
CO5	Implement structures, unions, file handling, file I/O operations, and preprocessors for data organization.			
BT	1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation			
COURSE CONTENT/SYLLABUS				
Unit	Unit Name	Hrs	Weightage	CO
1	OVERVIEW OF ‘C’ , DATA TYPES Structure of C program, Flowchart, Algorithm, constants, variables, identifiers, data types, storage classes	06	10	CO1
2	OPERATORS, EXPRESSION, BRANCHING AND LOOPING Arithmetic, Logical, assignment, increment, decrement operators, conditional operators, bitwise operator, special operator, formatted and unformatted input and output, expression evaluation in C, Decision making statements: IF, IF...Else, Switch statement, Goto, Loops: For, While, Do...While, break and continue, goto statement.	10	18	CO1, CO2
3	FUNCTIONS & ARRAYS Introduction and Writing Functions, Declaration, Prototype, Types of functions, call by value and reference, Function with operators, function with decision statements, function with Loop statements, Function with Arrays and Pointers, Types of Storage Classes, Scope of Variables, Storage Classes, Pass by Value and reference, Recursion, Arrays Declaration and Initialization, Arrays – Definition, Initialization, characteristics, One, Two, Three and Multidimensional Arrays, scanf() and printf() functions, Working with Strings & Standard Functions.	12	22	CO1, CO2, CO3
4	POINTER Pointers – Introduction, features, Declaration, Arithmetic operations, pointers and Arrays, Array of pointers, pointers to pointers, pointers and strings, Void pointers. Functions – Declaration, Prototype, Types of functions, call by value and reference, Function with operators, function with decision statements, function with Loop statements, Function with Arrays and Pointers, Types of Storage Classes.	10	18	CO1, CO2, CO4
5	STRUCTURE UNION Structure and Union – Declaration, Initialization, structure within structure, Array of structure, Enumerated data types, Union of structure, Difference of structure and union, uses of structure.	10	18	CO1, CO2, CO3, CO5
6	FILE HANDLING IN C , PREPROCESSORS Files – Streams and file types, file operations, File I/O, Read, Write and Other file function, Features of C Preprocessors, Macros,	08	14	CO1, CO5
		56	100	

REFERENCE BOOKS:

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| 1. | “Programming In C ” By E. Balaguruswamy, TMH Publications |
| 2. | Let us C- Yashvant Kanetkar ; BPB |
| 3. | C made EASY - By Herbert Schildt - McGraw- Hill |
| 4. | The C Programming Language - Kernighan & Ritchie. |
| 5. | Programming in C – Al Kelley & Ira Pohl ; Addison Wesley |
| 6. | A structured programming Approach Using C.”, Behrouz A.Forouzan and Richard F.Gilberg,” third edition, Cengage learning, 2008 |