

**SES's L. S. RAHEJA COLLEGE OF ARTS AND COMMERCE
(AUTONOMOUS)**



**Syllabus of Introduction to Programming with C under NEP 2020
vertical - Major with effect from 2024-25**

Department of Information Technology and Data Science

HoD/Sr. Person of the Department: Prajakta Joshi

Date of approval by the BoS: 27/04/2024

Approved by the Academic Council: 29/04/2024

Ratified by the Governing Body on: 06/05/2024



Programme: B.Sc.(IT)			Semester : I		
Course : Introduction to Programming with C			Code: UGBSCITIMJ124		
Academic Year: 2024-2025			Batch: 2024-2027		
Teaching Scheme			Evaluation Scheme		
Lectures	Practical	Tutorials	Credits	Internal Continuous Assessment (ICA) (weightage)	Term End Examinations (TEE) (weightage)
45	Nil	Nil	3	40%	60%

Learning Objectives :	<ol style="list-style-type: none"> To develop the logical ability of the student. Different approach towards the problem. To handle the errors and find suitable solution. Debugging the code.
Learning Outcomes :	<ol style="list-style-type: none"> Define and Develop of logic using algorithm and flowchart. Understand the basic principles of programming. Application of input and output functions. Enhance advanced concepts using program
Pedagogy:	Experiential learning, problem-based learning, peer learning

Detailed Syllabus: (per session plan)

Session Outline For: Introduction to Programming with C

Each lecture session would be of one hour duration (45 sessions).

Module	Module Content	Module Wise Pedagogy Used	Module Wise Duration
I	<p>Introduction: Algorithms, History of C, Structure of C Program, Compiler, Linker and preprocessor, pseudo code statements and flowchart symbols, Program structure. Compilation and Execution of a Program, C Character Set, identifiers and keywords, data types and sizes , Character and character strings, typedef, typecasting</p> <p>Type of operators: Arithmetic operators, relational and logical operators, Increment and Decrement operators, assignment operators, the conditional operator, Assignment operators and expression, Precedence and order of Evaluation</p>	Experiential learning, problem-based learning, peer learning	15
II	<p>Control Flow: Statements and Blocks, If-Else, Else-If, Switch, Loops- While and For Loops- Do-while, Break and Continue, Goto and Labels</p> <p>Functions and Program Structure: Basics of functions. User defined and Library functions, Function parameters, Return values, Recursion</p> <p>External variables, Scope Rules, Standard Input and</p>	Experiential learning, problem-based learning, peer learning	15

	Output, Formatted Output-printf() and Formatted Input-scanf(), Line Input and Output, Error Handling- StdErr and Exit, Header Files		
III	Pointer and Arrays Pointer and Addresses, Pointer and Function Arguments, Pointer and Arrays, Character Pointers and Functions. Arrays: Multidimensional Array, Command-line Arguments, Pointers to Functions, Dynamic memory allocation Structures: Basics of structures, Structures and Functions, Arrays of Structures, Pointers to Structures, Unions, Bit-fields, File management in C: Defining and Opening file, Closing a file, Input / Output operations on file, Error handling in C, Random access to files, Command line arguments.	Experiential learning, problem-based learning, peer learning	15

REFERENCE BOOKS

1. Kernighan, B. W., & Ritchie, D. M. The C programming language.
2. Traister, R. J. Mastering C pointers: tools for programming power. Academic Press.
3. Kochan, S. G. (2011). Programming in objective-C. Addison-Wesley Professional.
4. Balagurusamy, E. (2016). Programming In ANSI C.
5. Dawson, R. (2021). Programming in ANSI C.