



# GAYATRI VIDYA PARISHAD INSTITUTE OF HIGHER LEARNING AND RESEARCH

(Deemed to be University under Distinct Category under Section 3 of the UGC Act, 1956)

Kommadi, Madhurawada, Visakhapatnam – 530 048, Andhra Pradesh | website: [www.gvpihlr.in](http://www.gvpihlr.in)

## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

**Name of the Subject : Programming for Problem Solving through 'C'**

**Branch: Common to all Branches**

**Year: I Year I Semester**

### Lecture Schedule

| Unit No | Unit Name                                   | Topic Details                                                             | Number of Hours |
|---------|---------------------------------------------|---------------------------------------------------------------------------|-----------------|
| I       | Problem Solving and Introduction to C       | Language Development, Structured Programming, Problem Solving Methodology | 2               |
|         |                                             | Algorithms, List of C Standards                                           | 1               |
|         |                                             | Introduction to C, C Character Set                                        | 1               |
|         |                                             | Identifiers and Keywords,                                                 | 1               |
|         |                                             | Variables and Constants                                                   | 1               |
|         |                                             | Data Types                                                                | 1               |
|         |                                             | Expressions, Statements, Compilation and Execution of C programs          | 2               |
|         |                                             | <b>No. of hours</b>                                                       | <b>9</b>        |
| II      | Operators, Input/output and Decision Making | Arithmetic Operators, Unary Operators, Assignment Operators               | 1               |
|         |                                             | Relational Operators, Logical Operators                                   | 1               |
|         |                                             | Conditional Operator, getchar(), putchar()                                | 1               |
|         |                                             | scanf(), printf()                                                         | 1               |
|         |                                             | if, if-else, Nested if-else                                               | 1               |
|         |                                             | switch statement, while statement                                         | 1               |
|         |                                             | While and do- while loops                                                 | 1               |
|         |                                             | For, break, continue statements                                           | 1               |
|         |                                             | goto, Comma Operator and Debugging                                        | 1               |
|         |                                             | <b>No. of hours</b>                                                       | <b>9</b>        |
| III     | Arrays, Strings and Pointers                | Defining and Processing an Array                                          | 1               |
|         |                                             | One-Dimensional Arrays                                                    | 1               |
|         |                                             | Two-Dimensional Arrays                                                    | 1               |
|         |                                             | Character Arrays                                                          | 1               |
|         |                                             | Defining Strings, Initialization of Strings                               | 1               |
|         |                                             | Reading and Writing Strings                                               | 1               |
|         |                                             | String Library Functions                                                  | 1               |
|         |                                             | Pointer Basics                                                            | 1               |
|         |                                             | Pointer Arithmetic                                                        | 1               |
|         |                                             | Pointers and Arrays, Arrays of Pointers                                   | 1               |
|         |                                             | Dynamic Memory Allocation                                                 | 2               |
|         |                                             | <b>No. of hours</b>                                                       | <b>12</b>       |

|    |                                                                 |                                                         |           |
|----|-----------------------------------------------------------------|---------------------------------------------------------|-----------|
| IV | Functions and Program Organization / Structures and Unions      | Defining a Function, Accessing a Function               | 1         |
|    |                                                                 | Function Prototypes, Function Calls                     | 2         |
|    |                                                                 | Parameter Passing                                       | 1         |
|    |                                                                 | Recursion                                               | 1         |
|    |                                                                 | Storage Classes, Scope and Lifetime of Variables        | 1         |
|    |                                                                 | Static Variables, Global Variables                      | 1         |
|    |                                                                 | Defining a Structure, Processing a Structure            | 1         |
|    |                                                                 | Arrays of Structures, Nested Structures                 | 1         |
|    |                                                                 | Typedef, Structures and Functions                       | 1         |
|    |                                                                 | Structures and Pointers                                 | 1         |
|    |                                                                 | Self-Referential Structures                             | 1         |
|    |                                                                 | Unions                                                  | 1         |
|    |                                                                 | <b>No. of hours</b>                                     | <b>12</b> |
| V  | File Handling, Low Level Programming & Additional Features of C | Why Files, Opening and Closing a Data File              | 1         |
|    |                                                                 | Reading and Writing a Data File, Processing a Data File | 2         |
|    |                                                                 | Register Variables, Bit Fields                          | 1         |
|    |                                                                 | Bitwise Operations                                      | 1         |
|    |                                                                 | Enumerations, Command Line Arguments                    | 1         |
|    |                                                                 | More about Library Functions                            | 1         |
|    |                                                                 | Macros, The C Preprocessor                              | 1         |
|    |                                                                 | <b>No. of hours</b>                                     | <b>8</b>  |
|    |                                                                 | <b>Total No. of Hours</b>                               | <b>50</b> |