

**GOVT. POLYTECHNIC, HAMIRPUR (H.P.)**  
**Lesson Planning**

**Branch:** Computer Engineering

**Semester:** 3<sup>rd</sup>

**Subject:** CPUC

**Course Code:** ITPC201

**Session:** August 2026

**Teacher:** Indu Bala

**Laboratory:** Yes

| Sr. No. | No of Lectures | Chapter/Unit Description                        | Detailed contents                                                                                                                                                                                                                                                                                                             | Reference Resources | Remarks |
|---------|----------------|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------|
| 1       | 8              | Unit 1:<br>Introduction to Programming          | Program Design Tools - Algorithm, Flowchart, Pseudocode; Evolution of Programming Languages, Programming Terminology - Program, Compiler, Interpreter, Linker, Source Code, Libraries, Syntax and Semantic Errors, Bugs.                                                                                                      | R1,R2,R3            |         |
| 2       | 10             | Unit 2:<br>Introduction to C Language           | Brief History of C Language, Features of C Language, Character Set, Identifier, Keywords, Literals, Variables, Constants, Structure of a 'C' Program, Comments, Preprocessor Directives, Data Types, Type Casting, Storage Classes                                                                                            | R1,R2,R3            |         |
| 3       | 8              | Unit 3: Input/ Output                           | Standard Input, Standard Output, Standard Error, I/O Redirection, Unformatted I/O Functions - getchar(), putchar(), gets(), puts(); Formatted I/O Functions - printf(), scanf(), Format Specifier                                                                                                                             | R1,R2,R3            |         |
| 4       | 10             | Unit 4:<br>Operators                            | Arithmetic Operators, Relational Operators, Logical Operators, Bitwise Operators, Assignment Operators, Conditional Operator, Special Operators, Expressions, Associativity and Order of Precedence of Operators                                                                                                              | R1,R2,R3            |         |
| 5       | 12             | Unit 5: Flow Control Statements                 | Selection Statements: if, if...else, Nested if, if...else if Ladder, switch...case; Loops - while, do...while, for; Jump Statements - goto, break, continue, return; Nested Loops, Infinite Loops                                                                                                                             | R1,R2,R3            |         |
| 6       | 10             | Unit 6: Arrays, Structures, Unions and Pointers | Array, Memory Representation, One-Dimensional Arrays and Two-Dimensional Arrays: Declaration and Initialization; Enumeration, Strings, String Constants, Escape Sequences, Standard String Functions - strlen(), strcmp(), strcpy(), strcat(); Structures, Unions, Pointer - Declaration, Initialization, Assignment; Dynamic | R1,R2,R3            |         |

|   |   |                      |                                                                                                                                                                       |          |  |
|---|---|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--|
|   |   |                      | Memory Allocation: malloc(), calloc(), free()                                                                                                                         |          |  |
| 7 | 6 | Unit 7:<br>Functions | Definition of Function, Function Prototype, Formal and Actual Parameters, Function Call, Call by Value and Call by Reference, Arrays as Function Arguments, Recursion | R1,R2,R3 |  |

### References:

1. Problem Solving and Programming in C, R.S. Salaria, Khanna Publications
2. Programming in ANSI C, E. Balagurusamy, Tata McGraw-Hill
3. The C Programming Language, Brian Kernighan and Dennis Ritchie, Pearson

### COURSE OUTCOMES:

**After completing this course students will be able to:**

- CO-1. Understand the basic terminology of computer programming.
- CO-2. Write algorithms and draw flowcharts for simple computational problems.
- CO-3. Write, edit, compile, debug, run simple programs in 'C'.
- CO-4. Make use of flow control structures in programs.
- CO-5. Organize complex programs around a set of functions.

**Signature of Teacher with Date**

**Signature of HOD**

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| Sr. No. | No of Practical hours planned | Aim of the Practical                                                                    | Reference for Procedure/Writeup | Remarks |
|---------|-------------------------------|-----------------------------------------------------------------------------------------|---------------------------------|---------|
| 1       | 4                             | To set up and get familiar with the programming environment (Editor, Compiler, Linker)  | R1,R2                           |         |
| 2       | 4                             | 2. To declare, initialize and use variables of various data types in 'C'                | R1,R2                           |         |
| 3       | 4                             | . To demonstrate printf() and scanf() functions with different format specifiers        | R1,R2                           |         |
| 4       | 4                             | To demonstrate various arithmetic operators and arithmetic expressions                  | R1,R2                           |         |
| 5       | 2                             | To demonstrate various bitwise operators                                                | R1,R2                           |         |
| 6       | 2                             | To use if...else statement to check whether a given year is a leap year                 | R1,R2                           |         |
| 7       | 2                             | To use switch...case statement to print the numbers entered by the user (1-10) in words | R1,R2                           |         |
| 8       | 2                             | . To use while statement to reverse the digits of a given number                        | R1,R2                           |         |
| 9       | 4                             | . To use for statement to print the multiplication table of a given number.             | R1,R2                           |         |
| 10      | 4                             | To implement a menu driven arithmetic calculator using do while loop                    | R1,R2                           |         |
| 11      | 2                             | To read the marks of 10 students in an array and calculate their average.               | R1,R2                           |         |
| 12      | 4                             | To read two matrices and compute their sum using 2-Dimensional arrays.                  | R1,R2                           |         |
| 13      | 2                             | To reverse the characters of a given string                                             | R1,R2                           |         |
| 14      | 2                             | . To demonstrate strlen(), strcat(), strcmp() functions                                 | R1,R2                           |         |
| 15      | 4                             | To swap values of two variables using a function                                        | R1,R2                           |         |
| 16      | 2                             | To compute the factorial of a given number using recursion                              | R1,R2                           |         |
| 17      | 2                             | To read the data of a student in a structure and print it.                              | R1,R2                           |         |
| 18      | 2                             | . To count the number of vowels in a given string using a pointer                       | R1,R2                           |         |

**References:**

R1: Lab Manual

R2: /www.w3schools.com/java

**Signature of Teacher with Date**  
**(Indu Bala)**

**Signature of HOD**  
**(Sameer Bharti)**

