# COURSE FILE
## (Aug-Dec 2026)

**Subject :** **ITPC201 (Computer Programming using C language)**

**Semester :** **3rd**

**Branch :** **Computer Engg. & IoT**

**Teacher :** **Pratibha Thakur**

| | Load per Week | Distribution of Marks | |
|---|---|---|---|
| | | Internal Assessment | External Assessment |
| **Theory** | 4 | 40 | 60 |
| **Practicals** | 4 | 40 | 60 |

हिमाचलस्य कौशलं भारतस्य गौरवम्

**Govt. Polytechnic Hamirpur**
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# Govt. Polytechnic Hamirpur (H.P.)

## Lecture Planning (Theory)

Branch : **Computer Engg. & IoT** Semester : **3rd**

Subject: **ITPC201** (Computer Programming using C language) Session : **Aug-Dec 2026**

Teacher : **Pratibha Thakur** Classroom : **CBLH1**

| Sr. No. | No. of Lectures Planned | Chapter/ Unit Description | Detail of Contents | Reference/ Resources |
|---|---|---|---|---|
| 1. | 8 | **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 |
| 2. | 10 | **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,R3 |
| 3. | 8 | **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 | **Operators** | Arithmetic Operators, Relational Operators, Logical Operators, Bitwise Operators, Assignment Operators, Conditional Operator, Special Operators, Expressions, Associativity and Order of Precedence of Operators | R1, R3, R4 |
| 5. | 12 | **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, R3, R4 |
| 6. | 10 | **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 - srtlen(), strrev(), strcmp(), srtcpy(), strcat(); Structures, Unions, Pointer - Declaration, Initialization, Assignment; Dynamic Memory Allocation: malloc(), calloc(), free() | R1, R3, R4 |
| 7. | 6 | **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, R3, R4 |

Course Outcomes:

After completing this course the 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.

Teaching Resources:

R1. Problem Solving and Programming in C, R.S. Salaria, Khanna Publications
R2. Programming in ANSI C, E. Balagurusamy, Tata McGraw-Hill
R3. The C Programming Language, Brian Kernighan and Dennis Ritchie, Pearson
R4. How to Solve it by Computer, R. G. Dromey, Pearson
R5. Outline of Programming with C, Byron Gottfried, Schaum, McGraw-Hill

01/08/2026

Signature of Teacher with Date

01/08/2026.

Signature of H.O.D.