हिमाचल प्रदेश केंद्रीय विश्वविद्यालय

Central University of Himachal Pradesh

(Established under Central Universities Act 2009)

शाहपुर परिसर, शाहपुर, ज़िला काँगड़ा (हि.प्र.) - 176206

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File No.: MCA(2Y)/1-1/PG/CUHP/22/ **Dated:**

List of Interdisciplinary Courses offered by the Department of Computer Science and Informatics, University-wide for Monsoon Semester 2022:-

Sr. No.	Course Name	Course Code	Credits	Name of the Faculty Member
1.	Fundamentals of ICT	MCA538	02	Mr. Ajay Kumar
2.	Problem Solving using C	MCA 539	02	Dr. Keshav Singh Rawat/ Mr. Dheeraj Kumar

Head,
Department of Computer Science and Informatics

Copy to:

1. Notice Board.
2. The Dean, School of Mathematics, Computers and Information Sciences, CUHP, Shahpur Parisar, for information.
3. The Controller of Examinations, Central University of Himachal Pradesh, Dharamshala, for information.
4. The Chairman, National Education Policy 2020, Central University of Himachal Pradesh, for information and necessary action.

Head,
Department of Computer Science and Informatics

COURSE CONTENTS

MCA 538
Problem Solving Using C

Course Objectives:

The course is designed to provide knowledge of C language. Students will be able to develop logics which will help them to create programs, applications in C. Also by learning the basic programming constructs they can easily switch over to any other language in future. Student will learn the fundamental programming concepts and methodologies

Course Level Learning Outcomes:

Upon successful completion of the course students will be able to:

- Design programs connecting decision structures, loops and functions.
- Explain the difference between call by value and call by address.
- Understand the dynamic behavior of memory by the use of pointers.
- Understand the concepts like arrays, strings, structure, and union.
- Understand the concept of files handling in C.

UNIT-I

Overview of C- General Structure of C Program, C compilers, Editing, Compiling & , Running of a C program Data types, Constants and Variables, Operators and expressions, Storage Classes, Different types of expressions and their Evaluation, Conditional Expression, Assignment statement,

Enumerated data type, Redefining/ Creating data types, Library functions, Type casting. Input/Output- Unformatted and formatted I/O Functions.

UNIT-II

Control Statements- Decision making using if, if-else, else if and switch statements, Looping using for, while and do-while statements, Transferring Program controlling break and continue statements, Programming examples to illustrate the use of these control statements.

Functions- Defining a function, Local variables, return statement, invoking a Function, specifying and passing arguments to a function, Functions returning non Integer, External, static, and register variable, block structure, initialization and recursion.

UNIT-III

Array & strings- Introduction to arrays, Declaring arrays, Initializing, arrays, Processing arrays, Pointers to arrays, Passing arrays as arguments to functions, Introduction to strings, Pointers to strings, Passing strings and Arrays of strings as arguments to a function, Programming examples to illustrate the use of arrays and strings.

Pointers- Definition, Need of pointers, declaring Pointers, Accessing Values via Pointers, Pointer arithmetic, Types of pointers, Programming examples to illustrate the use of pointers.

UNIT-IV

Structures- Declaring a structure type, Declaring Variables of structure type, Initializing Structures,

Accessing Elements of structures, arrays of structures, nested structures, Pointers to structures Programming examples to illustrate the use of Structures.

Text Books:

1. E. Balagurusamy, "Programming in ANSI C", 8E ,Tata McGraw Hill.

Reference Books:

1. R S Salaria, Application in C, Khanna book publishing.
2. YashwantKanetakar, "Let us C" BPB.
3. Kerninghan B.W. & Ritchie D.M. "The C Programming Language" Prentice-Hall.
4. Mullish Cooper, "The Spirit of C" Jaico Publishing House.
5. Byron Gottfried, "Programming with C", Schaum's Outlines, Tata McGraw Hill.
6. Herbert Schildt, C: The complete reference, Tata mcCgraw hill.