

COURSE CODE	COURSE TITLE	L	T	P	C
1154CS204	CODING TECHNIQUES – I	2	0	2	3

Course Category: University Elective (All branches except CSE and IT)

A.Course Content:

UNIT I FUNDAMENTALS OF PROGRAMMING

L-6, P-6

Fundamentals of programming through C – structure of a C program – compilation and linking processes – Constants, Variables – Tokens– Data Types – Format Specifiers, Input and Output statements –operators - Expression evaluation in C – Type qualifiers – Type Modifiers – Type def

Branching – if, if-else, else-if ladder, nested if, switch and goto statements - Loops – while, do-while, for statements.

Practice: problems on data formats, operator’s precedence and associativity, basic Conditional programs and Pattern display programs.

UNIT II ARRAYS, STRINGS, POINTERS

L-6, P-6

Arrays – Initialization – Declaration – One dimensional, Two dimensional and Multi-dimensional arrays. Strings –Operations on strings, string functions

Pointers – Introduction to Program Memory, storage of data, Runtime memory allocation – Pointer Arithmetic - Pointer to an Array – pointer to linear data, runtime array,pointer to 2D-array.

Practice: problems on RMO and CMO representations of an array, spiral display of a 2D array and matrix operations

UNIT III FUNCTIONS, RECURSIONS AND STORAGE CLASSES

L-6, P-6

Functions – Introduction to modular programming – Function Communication - Pass by value, Pass by reference – Function pointers – Recursions – Type casting – Storage classes

Practice: programs on passing an array and catching by a pointer, function returning data, comparison between recursive and Iterative solutions

UNIT VI STRUCTURES, UNIONS, ENUMERATIONS PRE-PROCESSOR DIRECTIVES L-6, P-6

Need for user-defined data type – structure definition – Structure declaration – Array within a Structure – Array of Structures – Nested Structures - Unions–Declaration of Union data type, Struct Vs Union - Enum– Pre-processor directives

Practice: Structure padding, user-defined data storage and retrieval programs

UNIT V FILE STORAGE AND OOP

L-6, P-6

Pre-Processor Directives, Introduction to Standard Storage, Types of Files, opening and closing a file, I/O operations on a File, File handling functions.

Procedure vs. object-oriented programming – Data types – control structures – Operator Overloading – Inheritance – Polymorphism and Virtual Functions, Function templates and class templates – Name spaces – Casting – Exception Handling, Stream classes – Formatted IO – File classes and File operations – Dynamic memory allocation – Standard Template Library

Practice: I/O through files, class and object, Implementation of OOP concepts.

TOTAL:30+30=60 PERIODS