**CSE 102: COMPUTER PROGRAMMING**

1. **COURSE OUTLINE:**

This course provides an introduction to computer programming. It discusses low-level and high-level computer Languages and gives a revision of computer fundamentals. It outlines the essential features of C++ programming language: data types, arrays, strings, records and pointers. It also gives a detailed overview of essential programming features like control structures, repetition statements, arrays, file I/O and recursion. It will discuss pointers and its use in data manipulation.

1. **WEEKLY COURSE OUTLINE:**

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| **Week** | **Contents** |
| Week 1 | Introduction to Computer Languages Primitive Data Types |
| Week 2 | Sample C++ Program Input / Output, Arithmetic, Operators |
| Week 3 | Control Structures |
| Week 4 | Loops and Repetitions |
| Week 5,6 | Structures & Functions |
| Week 7 | Storage classes, Scope rules, Recursion |
| Week 8 | Revision |
|  | **Mid Term Examination** |
| Week 9 | Introduction to Arrays |
| Week 10 | Passing arrays to functions, Sorting arrays |
| Week 11 | Searching arrays |
| Week 12 | Characters and Strings |
| Week 13 | Pointers |
| Week 14 | Double Pointers and Function Pointers |
| Week 15 | File Handling |
| Week 16 | Revision |
|  | Final Term Examination |

1. **CLASS LEARNING OUTCOMES:**

After completing this course, students will be able to:

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| **CLO #** | **Description** | **Level of Learning** | **PLOs** |
| **1** | Investigate the storage classes and obtain the key difference between primitive and non-primitive data types | Cog-4 (Analysis) | PLO4 (Investigation) |
| **2** | Illustrate the use of control structures, iterations and functions in applications | Cog-3 (Application) | PLO1 (Engineering Knowledge) |
| **3** | Demonstrate the use of arrays, pointers and file handling in different applications | Cog-3 (Application) | PLO3 (Design/Development of Solutions) |

1. **RESOURCES**
   * TEXT BOOKS
     + Deitel & Deitel, C++ How to Program, 8th Edition
   * REFERENCE BOOKS
     + Robert Lafore, Object Oriented Programming in C++
   * Software Tools
     + GCC Compiler and debugger
     + Windows/Mac/Linux system
2. **MAPPING OF CLOs WITH COURSE ASSESSMENT TOOLS**

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| Course Assessment Tools | **CLOs** | | |
| **CLO-1** | **CLO-2** | **CLO-3** |
| Assignments | ✓ | ✓ | ✓ |
| Quizzes | ✓ | ✓ | ✓ |
| Midterm examination | ✓ | ✓ |  |
| Finalterm examination |  | ✓ | ✓ |