

<b>Course Title</b>	<b>Computer Programming</b>
<b>Course Code</b>	<b>EE2302</b>
<b>No. of Credit Hrs (Lecture + Tutorial + Lab)</b>	<b>3 (2+0+1)</b>
<b>No. of Contact Hrs (Lecture + Tutorial + Lab)</b>	<b>4 (2+0+2)</b>
<b>Level-Year</b>	<b>4-2</b>
<b>Prerequisite (if any)</b>	

**1) Course Objectives:**

This course qualifies students to know the principles and basics of programming, which will be the focus of future studies. Students will learn programming terminology and will obtain a solid grasp of the basic mechanics of programming.

**2) Expected Learning Outcomes:**

After completing this course, the students should be able to:

1. Identify and describe programming fundamentals including data types, variables, operators, control statements, and functions. PLO1 [1]
2. Apply structured programming techniques to build and test C++ programs involving arrays, pointers, and control structures. PLO4
3. Solve practical problems using C++ by designing modular solutions with functions, classes, inheritance, and polymorphism. PLO3 [6]
4. Evaluate alternative code solutions and justify decisions based on programming efficiency and best practices. PLO2 [2]
5. Engage in self-directed learning to reinforce programming concepts and demonstrate responsible behavior in collaborative lab tasks. PLO9 [7]

**3) Course Contents**

1. Algorithmic Development: Techniques of Problem Solving
2. Algorithmic Development: Flowcharting, Decision Table.
3. Algorithmic Development: Structured Programming Concepts.
4. Basics of C++: Structure of C++ program, Keywords and Identifiers.
5. Basics of C++: Constants, Variables, Data Types and Type Conversion.
6. Basics of C++: Types of Operators and Expressions
7. Basics of C++: Input and Output Functions in C++.
8. Basics of C++: Decision Statement: IF-ELSE statement, break, continue, go-to, switch () case and nested IF statement.
9. Basics of C++: Loop Control Statements: For loop, While loop, Do-while loop and nested loops.
10. Functions, Arrays, Pointers and Data Structures.
11. Classes, Inheritance and Polymorphism.

**4) Lab Content**

1. Basic syntax, data types and variables
2. Control statements
3. Loop statements
4. Functions
5. Arrays
6. Pointers and Strings

7. Classes and Overloading

**5) Teaching Methods:**

- Lectures and Discussion
- Videos
- Self-learning
- Laboratory demonstrations

**6) Mode of Evaluation:**

**Course Assessment Methods**

- Quizzes , Assignment, Homeworks, Reports, Presentations etc.
- Lab Work
- Mid Exam
- Final Exam

**Evaluation**

No	Assessment Activities *	Percentage
1.	Assignments/Quizzes/HomeWorks/Mini-Projects/Presentations/Reports+Quizzes	15%
2.	Mid Exam	25%
3.	Lab/Tutorial (Lab Exam)	10%
4.	Lab/Tutorial (Lab Reports)	10%
5.	Final Exam	40%

**7) Textbook(s):**

1. C++ How to Program, Paul and Harvey Deitel, 7<sup>th</sup> Edition, 2010.
2. Programming and Problem Solving with C++, Nell Dale and Chip Weems. Jones & Bartlett Learning; 5<sup>th</sup> edition (February 27, 2009).

**8) References:**

1. [https://en.wikiversity.org/wiki/Introduction\\_to\\_Programming](https://en.wikiversity.org/wiki/Introduction_to_Programming).
2. <http://www.cplusplus.com/doc/tutorial/>