

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

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. KLO1 [1]
2. Apply structured programming techniques to build and test C++ programs involving arrays, pointers, and control structures. KLO4
3. Solve practical problems using C++ by designing modular solutions with functions, classes, inheritance, and polymorphism. KLO3 [6]
4. Evaluate alternative code solutions and justify decisions based on programming efficiency and best practices. KLO2 [2]
5. Engage in self-directed learning to reinforce programming concepts and demonstrate responsible behavior in collaborative lab tasks. KLO9 [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 and assignment
- Major Exams
- Final Exam
- Lab Work

Evaluation

• **Semester Work**

Major Exams	30%
Quizzes	5%
Assignments	5%
Lab/Tutorial	20%

• **Final**

Paper work	40%
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7) Textbook(s):

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

8) References:

1. https://en.wikiversity.org/wiki/Introduction_to_Programming.
2. <http://www.cplusplus.com/doc/tutorial/>

