Course Outline for CSE-282

Part A

1. Course Code: CSE-282

2. Course Title: Object Oriented Programming

3. Course Type: Core Course

4.Level/ Term: Level: 2   Term: II

5. Academic Session: 2019-20

6. Course Teacher: Eftekhar Hossain, Lecturer, Dept. of ETE, CUET

7. Prerequisite(s): Basic C Programming and Data Structures

8. Credits: 1.5 (3 hours of lab work per week)

9. Contact Hours: 3 hours of lab work per week

10. Total Marks: 150

11. Rational of the Course:

This course introduces advanced programming skills and focuses on the core concepts of object-oriented programming and design using a high-level language, either C++ or Java. The course focuses on the understanding and practical mastery of object-oriented concepts such as classes, objects, data abstraction, methods, method overloading, inheritance and polymorphism. This a required course for all the students enrolling B. Sc. Engg. in ETE program. The catalogue description of the course is

Course Content:

Sessional based on the following topics:

Programming Using C++: Principles of Programming Languages and Structured Programming Concepts. Variables, Arithmetic Expressions, Data types, Operators and Expressions, Control Flow, Arrays, Pointers, Procedures and Functions, Structures and Unions, String Operations, Dynamic Memory Allocation, File Management System, Graphics, Writing, debugging and running Programs in C++.

Programming Using JAVA: Java foundation, control flow, abstract classes and packages, exception handling, applets, web-based java application, multithreading.

12. Course Objectives:

    (a) Introduce the principles of object-oriented programming in a higher-level programming language, such as C++.

    (b) Illustrate the object-oriented concepts and develop solutions using C++.

    (c) Analyze a problem statement to develop a mental model of objects necessary to create a software architecture.

13. Course Learning Outcomes (CLOs) and Mapping of CLOs with Program Learning Outcomes (PLOs)

    a) **CLOs**

No.	Course Learning Outcomes (CLOs)	Bloom's Level (Optional)
CLO1	Acquire knowledge of writing object-oriented programs that combine functions and data.	
CLO2	Interpret real world problems in terms of objects rather than procedure	
CLO3	Apply the object-oriented programming language to develop software, including programs utilizing multiple Class's	

    b) **Mapping of CLOs with PLOs**

No.	CLOs	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12
1	CLO1	X											
2	CLO2			X									
3	CLO3		X										

Part B

14. Course plan specifying content, CLOs, co-curricular activities (if any), teaching learning and assessment strategy mapped with CLOs

<div align="center">Course Plan</div>

`	Topic	Teaching-Learning Methodology	Assessment Method	Corresponding CLOs
Week-01	Introduction to Class and Objects in OOP	• Lecture on theatrical background • Code implementation	Lab Performance Report	• CLO-1
Week -02	Constructor and Destructor in C++	• Lecture on theatrical background • Code implementation	Lab Performance Report	• CLO-1

Week -03	Static Data Member, and Function Overloading in C++	• Lecture on theatrical background • Code implementation	Lab Performance Report	• CLO-1
Week -04	Inheritance in C++	• Lecture on theatrical background • Code implementation	Lab Performance Report	• CLO-2
Week -05	Hierarchical and Multiple Inheritance in C++	• Lecture on theatrical background • Code implementation	Lab Performance Report	• CLO-2
Week -06	Friend Function and Friend Class in C++	• Lecture on theatrical background • Code implementation	Lab Performance Report	• CLO-2
Week -07	Operator Overloading in C++	• Lecture on theatrical background • Code implementation	Lab Performance Report	• CLO-2
Week -08	Function Overriding in C++	• Lecture on theatrical background • Code implementation	Lab Performance Report	• CLO-2
Week -09	Exception Handling	• Lecture on theatrical background • Code implementation	Lab Performance Report	• CLO-3
Week -10	File Handling	• Lecture on theatrical background • Code implementation	Lab Performance Report	• CLO-3

Week -11	Templates in C++	• Lecture on theatrical background • Code implementation	Lab Performance Report	• CLO-3
Week -12	Lab Test			
Week -13	Viva-voce Quiz			

Part C

15. Assessment and Evaluation

l) Assessment Strategy

Quizzes	15%
Viva-voce	15%
Class performance including reports	60%
Attendance	10%
Total	100%

2) Marks distribution:
   a) Continuous Assessment: 70%
   b) Summative: 30%
3) Make-up Procedures:
   • Course teacher may arrange for makeup lab schedule if necessary.

Part D

16. Learning Materials

1) Recommended Readings

   • Object-Oriented Programming in C++ , Robert Lafore, Third Edition, The Waite's Group

2) Others
   • Laboratory Manuel for CSE-282