Object Oriented Programming - CS1004

General Information:

Course:
Credit Hours: 3-1 (Theory-Lab)
Prerequisite: Programming Fundamentals (CS1002)

Instructor:
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Course Description:

This course will offer students a thorough theoretical foundation of object-oriented programming as well as practical abilities. The major goal of the course is to prepare students to handle complicated programming challenges by utilizing the object-oriented programming paradigm to ease the design and implementation process.

Course Learning Outcomes:

At the end of the course the students will be able to:

1. Understand principles of object oriented paradigm.
2. Identify the objects & their relationships to build object oriented solution
3. Model a solution for a given problem using object oriented principles
4. Examine an object oriented solution

Reference Books:

- Object-Oriented Programming in C++, Fourth Edition by Robert Lafore
- C++ How to Program, 7th Edition by Paul Deitel and Harvey Deitel
- C++ Programming from Problem Analysis to Program Design, 5th Edition by D.S. Malik

Course Policies:

Grading: Absolute
Plagiarism: Zero-tolerance (Use of anti plagiarism softwares like Turnitin and MOSS)
Attendance: Strict 80% and above

Grade Distribution:

Evaluation	**Frequency**	**Weightage (%)**
Quizzes	Weekly	15
Assignments (Handwritten +	3	5

soft copy)		
Semester Project	Five deliverables: a. Project Proposal b. Class Diagram c. Mid progress report d. Final Report e. Presentation	Total: 10 1 2 2 2 3
Sessionals	2	20
Finals	1	50

Course Outline:

Week	**Topics**
1	Course Orientation, Programming Fundamentals revised using syntax of C++
2	User-defined simple data types, Namespaces, Arrays and Strings
3	Records
4	Introduction to Object Oriented Paradigm, Classes and Objects
5	Defining classes
6	Pointers with classes
7	Composition, Introduction to Inheritance
8	Types of Inheritance
9	Virtual Functions, Abstract Classes, Polymorphism
10	Operator Overloading
11	Templates
12	Exception Handling and Recursion
13	Linked List
14	Queue, Stack, Standard Templates Library
15	Project Presentations