Object Oriented Programming (CS1004)

COURSE INTRODUCTION

The course aims to focus on object-oriented concepts, analysis and software development. The basic concept of OOP is covered in this course.

COURSE CONTENT

Introduction to object oriented design, history and advantages of object oriented design, introduction to object oriented programming concepts, classes, objects, data encapsulation, constructors, destructors, access modifiers, const vs non-const functions, static data members & functions, function overloading, operator overloading, identification of classes and their relationships, composition, aggregation, inheritance, multiple inheritance, polymorphism, abstract classes and interfaces, generic programming concepts, function & class templates, standard template library, object streams, data and object serialization using object streams, exception handling.

TEXTBOOKS AND COURSE MATERIALS

BOOKS:

- Starting Out with C++ from Control Structures to Objects, 9th Edition, Tony Gaddis .
- C++ How to Program, 10th Edition, Deitel & Deitel. 6.
- Object Oriented Programming in C++, 3rd Edition by Robert Lafore

COURSE-LEVEL LEARNING OUTCOMES

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

CLASS POLICY & ETIQUETTE

- Zero tolerance plagiarism policy will be adopted; All involved will be penalized.
- Attendance will be marked in the first five minutes of class. A student must maintain at least 80% of attendance to appear in final exams.
- No chewing of bubble gums.
- Cell phones strictly prohibited during classes and labs. Electronic devices must be turned off and placed in your bags (not on the desk just in front of you).
- Headphones should be removed all the time.
- During lectures, students must turn off their monitors and take notes. Using the computer during lectures without authorization is strictly not allowed.
- Persistent talking, whispering or any disruptive attitude will not be tolerated.
- No disrespect at all.

MARKS DISTRIBUTION

Assessment Type	Weightage
Sessional I	10%
Sessional II	15%
Finals	50%
Assignments	5%
Project	10%
Quizzes	10%

TENTATIVE TOOLS AND TECHNOLOGIES

1. Dev , Codeblocks
2. PowerPoint Slides

TENTATIVE WEEK WISE COURSE CONTENT

WEEK NO	CONTENT
1	Introduction to Object Oriented Programming, History of OOP
2	Namespaces, Nested Namespaces, using, header files, string data type and built in functions related to it.
3	Programming Paradigms, How OOP is different, Classes, Objects
4	Constructors, Destructors
5	Encapsulation and how it works
6	Inheritance
7	Inheritance
8	Polymorphism

9	Polymorphism
10	Type Casting from OOP Perspective (static cast, dynamic cast, const cast)
11	Friend Functions and Operator Overloading
12	Problem solving with OOP
13	Templates
14	File Processing
15	Exception Handling
16	STL (Vectors)