Institute of Business and Information Technology

Faculty of Business, Economics and Administrative Sciences

University of the Punjab, Lahore

Course Outline

Program	BBIT	Course Code	IT-112	Credit Hours	3
Course Title	**Object Oriented Programming**				

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.

Learning Outcomes

CLO No.	Course Learning Outcomes	Bloom Taxonomy
CLO-1	Understand principles of object oriented paradigm.	C2 (Understand)
CLO-2	Identify the objects & their relationships to build object oriented solution	C3 (Identify)
CLO-3	Model a solution for a given problem using object oriented principles	C3 (Apply)
CLO-4	Examine an object oriented solution	C4 (Examine)

	Course Content	Assignments/Readings
Week 01	Introduction to Object Oriented Programming Object Orientation, What is a Model? Object evolution, What is an Object?	
Week 02	Basic Principles of Object Oriented Programming Abstraction, Information Hiding, Encapsulation	
Week 03	Classes and Objects Data & Operations, Public, private, Class, Class Scope and Accessing Class Members, Access functions & Utility functions, Accessing class methods from main( )	
Week 04	Constructors and Destructors Class Constructors, Types of Constructors, Destructors	
Week 05	Constants Const Objects, Const member functions, Objects as members of class	
Week 06	Pointers and Dynamic Memory Using this pointer, Accessing class members using this, Dynamic memory management using *new* and *delete,* Using new, Using delete	
Week 07	Reusability and Inheritance Inheritance, IS A or IS A KIND OF relationships, Reusability, Base & Derived classes, Protected Class members. Access in base and derived classes, Static members	
Week 08	Reusability and Inheritance Constructors in Derived classes, Order of Construction, Destructors in Derived classes, Order of Destruction, Single inheritance & Multiple inheritance, Public inheritance, Copy constructor, Protected inheritance, Private inheritance	
Week 09	**Mid Term Examination**	
Week 10	Polymorphism Polymorphism, Need & Importance, Implementing Polymorphism, Virtual methods, Abstract Base class, Pure Virtual functions, Abstract Data Types	
Week 11	Operator Overloading Fundamentals of Operator Overloading. Overloading unary operators, Overloading Binary Operators, Restrictions on Operator overloading	

Week 12	Introduction to Interfaces Interfaces, Difference between interfaces and abstract classes, implementation of interfaces	
Week 13	Class Templates Introduction, functions and class templates, standard template library	
Week 14	Introduction to delegates Object composition delegation, Constructor Delegation, function delegation	
Week 15	Object Streams Object streams, data and object serialization using object streams	
Week 16	File Handling	
Week 17	Exception Handling	
Week 18	**Final Term Examination**	

Textbooks and Reading Material*

Textbooks.

- **A.** C# 2012 for Programmers (5th Edition) (Deitel Developer Series)
- **B.** Starting Out with C++ from Control Structures to Objects, 9th Edition, Tony Gaddis
- **C.** C++ How to Program, 10th Edition, Deitel & Deitel.
- **D.** Object Oriented Programming in C++, 3rd Edition by Robert Lafore
- **E.** An Introduction to Object Oriented Programming with Java, 5th Edition by C. Thomas Wu

Teaching Learning Strategies

1. The students are expected to have studied the assigned reading, before coming to the class
2. Discussion is generated on key concepts, issues, problems, and solutions on assigned readings
3. Critical discussion on apparent solutions regarding issues pertaining to self, history, knowledge, economy, society, and the state are addressed through questions and arguments

Assignments: Types and Number with Calendar

1. Session assigned readings for all sessions – evaluation of class participation
2. Presentation, one from each student as part of a group
3. Group assignment – one per student per group
    - It is further divided into five sub assignments, all culminating into final report