CSC221 OBJECT-ORIENTED ANALYSIS, DESIGN AND PROGRAMMING

Learning Outcomes

- Demonstrate an in-depth understanding of Object Oriented paradigm and concepts
- Apply object oriented concepts using a selected language e.g. Java
- Develop object oriented programs using a selected OOP programming language
- Understand object oriented software development techniques from requirements gathering to implementation.
- Analyze application scenarios and design software systems using Object oriented analysis and design.

Content

Introduction to object technology; evolution of OOP languages; Concepts and terminology: Abstraction, Encapsulation, Inheritance, Polymorphism, Classes, Objects, Methods and Messages. Object Oriented Programming using a selected language: Abstract Data Types and Classes, Single and Multiple Inheritance, Overloading, Polymorphism, Dynamic Binding, Object class libraries, Associations and Aggregations. Object-Oriented Analysis and Design (OOAD): Overview of OOAD; UML Concepts: Notations, Meta-models, diagrams; OOA with UML: Requirements workflow, Use case analysis, analysis workflow, class identification, class relationship analysis, Object state analysis, object activity analysis; OOD with UML: design workflow, object design, system design; reuse; Design patterns.

Pre-requisites

- CSC121 Programming and problem solving
- CSC211 Data structures and algorithms

Delivery

Lectures, tutorials, and Labs.