Course Outline

# Object-Oriented Programming Design

**Instructor: Jun Albert Pardillo**

**Credit Units: 3**

**Target Students: 2nd Year Electronic Engineering Students**

**Total Hours: 54**

**Class Hours per Week: 3**

## Course Description

Object-Oriented Programming Design is a course designed for 2nd Year Electronic Engineering students who want to learn the fundamentals of object-oriented programming and design. This course will provide students with a comprehensive understanding of the principles of object-oriented programming, including encapsulation, inheritance, and polymorphism.  
  
The course will cover the basics of programming in Java, including data types, control structures, and object-oriented programming concepts. Students will learn how to design and implement object-oriented programs using Java, and will gain hands-on experience in developing software applications using object-oriented programming techniques.  
  
Throughout the course, students will work on a series of programming assignments and projects that will help them develop their programming skills and apply the concepts they have learned. They will also learn how to use software development tools such as Eclipse and Git, which are commonly used in the industry.  
  
By the end of the course, students will have a solid understanding of object-oriented programming and design, and will be able to apply these concepts to develop software applications in a variety of domains. They will also be well-prepared for more advanced courses in software engineering and computer science.  
  
Overall, Object-Oriented Programming Design is an essential course for any 2nd Year Electronic Engineering student who wants to develop their programming skills and gain a deeper understanding of object-oriented programming and design.

## Course Topics

### Introduction to Object-Oriented Programming

Hours: 10.8

Overview of programming paradigms; Introduction to Java; Basic syntax and programming constructs; Introduction to Eclipse and Git.

### Object-Oriented Programming Basics

Hours: 10.8

Classes and objects; Data types; Control structures; Methods and encapsulation.

### Inheritance and Polymorphism

Hours: 10.8

Concepts of inheritance; Types of inheritance; Overriding methods; Polymorphism; Abstract classes and interfaces.

### Advanced Object-Oriented Concepts

Hours: 10.8

Exception handling; Collections framework; Generics; Annotations.

### Project and Advanced Tools

Hours: 10.8

Design patterns; Software development tools in depth (Eclipse, Git); Final project: Design and implementation of an object-oriented application.