

CSC 331 OBJECT-ORIENTED PROGRAMMING METHODS

CREDIT HOURS: 3

PREREQUISITES: CSC 202 and CSC 211 with a grade of C or better.

CATALOG DESCRIPTION

Use of a modern object-oriented programming language for industrial applications emphasizing contemporary development practices. Comprehensive programming assignments.

PURPOSE OF COURSE

To explore the use of a modern programming language in the context of an object-oriented development methodology, to familiarize students with modeling techniques used in object-oriented development, and to provide exposure to iterative software development.

EDUCATIONAL OBJECTIVES

Upon successful completion of the course, students should be able to:

1. Apply the features of a substantial subset of a modern object-oriented programming language, including the use of a library of software components.
2. Implement a variety of applications using a contemporary object-oriented programming language.
3. Use the Unified Modeling Language in application design and programming.
4. Demonstrate a basic understanding of file systems and structures.
5. Work as part of a team.

CONTENT

Hours

Introduction to the Programming Environment	1.5
Review of Object-Oriented Concepts	3
Classes, methods, and objects. Encapsulation, inheritance, and polymorphism.	
Features of an Object-Oriented Programming Language	9
Interfaces, abstract classes, exception handling, dynamic binding and static binding, dynamic memory allocation and deallocation.	
Location and use of reusable library components.	
Use of appropriate modeling techniques in Software Development	3
Computer Aided Software Engineering for Object-Oriented Development	1.5
Providing the User Interface	6

File Systems and Structures	9
Device considerations.	
Organizations.	
Access methods.	
File Control.	
Object-Oriented Programming (OOP) for Industrial Applications	9
Application of OO concepts and a modern OO programming language to solve problems and implement solutions.	
Exams (Plus Final)	3
	TOTAL 45

REFERENCES

Booch, G., Rumbaugh, J., and Jacobson, I., The Unified Modeling Language User Guide, Addison-Wesley, 1999.

Fold, M., and Doelhick, B., File Structures, 2nd Ed., Addison-Wesley, 1992.

Gaddis, T., et al, Starting Out with C++ - Early Objects, Addison-Wesley, 2006.

Savitch, W., Problem Solving with C++, 5th Ed., Addison-Wesley, 2005.

Weiss, M., C++ for Java Programmers, Prentice Hall, 2004.