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.

COURSE CALENDAR

This course meets for a minimum of 37.5 lecture contact hours during the semester, including the final exam. Students have significant weekly reading assignments. Students are expected to complete 6-7 significant programming assignments, and 2-3 periodic exams in addition to the final exam. Students are expected to prepare for any class assignments or quizzes over the material covered in class or in the reading material. Successful completion of these activities requires at a minimum six additional hours of outside of classroom work each week.

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

Deitel, P., and Deitel, H., C++ How To Program, 9th. Ed., Prentice Hall, 2014.

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

Zak, D, An Introduction to Programming with C++, 8th Ed, Cengage Learning, 2016