

ITC 3397 OBJECT ORIENTED PROGRAMMING WITH C++

(Previously CS 3397)

(Updated Spring 2015)

PREREQUISITES: CS 1070 Introduction to Information Systems
CS 2188 Introduction to Programming
ITC 2276 C Language Programming

CATALOG DESCRIPTION: C++ as a superset to the C language. Object oriented techniques to software problems using C++. Classes, encapsulation, overloading, inheritance. Small scale programs in C++.

RATIONALE: This course is intended for students with previous knowledge of the fundamentals of C language and with interest in learning further programming techniques based on contemporary concepts of object oriented programming and professional software development.

LEARNING OUTCOMES: As a result of taking this course, the student should be able to:

1. Identify basic C++ features that are built on top of the C language.
2. Design data structures using object oriented approaches.
3. Develop C++ programs that make use of pre-written and standard I/O classes.
4. Develop C++ programs that translate a traditional C library to a C++ class.
5. Develop integrated applications in C++.

METHOD OF TEACHING AND LEARNING: In congruence with the teaching and learning strategy of the college, the following tools are used:

Lectures, class discussions, and review of cases taken from the real world and applicable to specific theoretical concepts. Laboratory practical sessions involving training and practice on project management, data management, and data analysis tools.

Office hours: Students are encouraged to make full use of the office hours of their instructor, where they can ask questions and go over lecture material.

Use of the Blackboard Learning platform, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources.

ASSESSMENT:**Summative:**

Programming Project	40
Final Examination (2 hours comprehensive)	60

Formative:

In-class “diagnostic” tests and programming exercises	0
---	----------

The formative assessments aims to prepare students for the examination.

The project tests learning outcomes 2-5.

The final examination tests learning outcomes 1-4.

INDICATIVE READING:**REQUIRED READING:**

B. Eckel, *Thinking in C++*, Prentice-Hall, latest edition

RECOMMENDED READING:

Instructor's Notes

N. Graham, *Learning C++* McGraw-Hill , latest edition

R. Lafore, *The Waite Group's Object Oriented Programming in C*, latest edition

COMMUNICATION

Daily access to the course's site on the College's Blackboard CMS.

REQUIREMENTS:

Effective presentation skills using proper written and oral English.

SOFTWARE REQUIREMENTS:

Microsoft Visual C/C++ .

WWW RESOURCES:

www.jmis.com
www.acm.com

INDICATIVE CONTENT:

1. Introduction to objects
2. C++ program structure
3. A review of C language
4. The C in C++
5. Creating DLLs in C and calling from other languages
6. From structures to classes
7. Constants and inline functions
8. Function overloading
9. Constructors and Desructors
10. Operator overloading
11. References and pointers

- 12. Inheritance
- 13 Polymorphism
- 14 Templates
- 15 Container classes