

COP 3014L Foundation of Computer Science Lab

Credits: 1 credit

Text book, title, author, and year: Current COP 3014 textbook or any other textbook on the C++ language.

- a. **Supplemental materials:** Microsoft Visual Studio 2010. Laboratory descriptions and experiments provided on Blackboard.

Specific course information

- a. **Catalog description:** This is a classroom LAB course which gives students exercises and experiments that build on concepts that are taught in COP 3014 about C/C++ and programming in general. Students will learn how to use the UNIX computing environment used in later courses. The lab will also teach practical aspects of programming, such as program debugging and program maintenance.
- b. **Prerequisites:** grade of C or better in introductory course in programming with C. Co Requisite : COP 3014
- c. **Required, elective, or selected elective:** prerequisite for required course.

Specific goals for the course

- a. **Specific outcomes of instruction:**
 - Develop and solidify the basic skills of C and C++ programming;
 - Learn how to create, edit, compile and debug C++ programs in a Microsoft Windows environment using Microsoft Visual Studio 2010.
 - Enhance the understanding of the concepts taught in Foundation of Computer Science, COP 3014.

Brief list of topics to be covered:

- Microsoft Visual Studio 2010 Introduction
- Introduction to Classes and Inheritance
- Declarations of Simple Types, Pointers, References, Structures
- Function Declarations, Calls, Function Name Overloading
- Introduction to UNIX and to MSVS C++ debugger
- Scope of Variables, Scope of Functions
- Strings (C-style, C++)
- Arrays (Static, Dynamic)
- Recursion and Vectors
- Copy Constructor
- Linked Lists
- Operator Overloading
- Function and Class Templates