

Csci 135 Course Content

Prerequisites

A student must complete Csci127 (or an equivalent) before taking Csci135.

Course Content and Objectives

This course is an intensive introduction to problem solving and programming. It is not specifically a course in the C++ programming language. It uses C++ to implement the concepts presented in class since one cannot learn how to program without learning a programming language! The details of C++ will sometimes be a distraction from learning important concepts, but the only way to learn programming is to program. The main objective of this course is to learn how to analyze problems, develop, and implement their solutions. This course partially fulfills learning goals 2A, 2B and 2C (<http://www.hunter.cuny.edu/csci/for-students/learning-goals-for-hunter-college-students>).

Resources

Textbook: Walter Savitch. *Absolute C++, Fifth Edition*. Pearson, 2012. ISBN-13: 978-0-13-283071-3; ISBN-10: 0-13-283071-X.

Computing Facili- ties: All registered students will be given user accounts on the Computer Science UNIX network if they do not already have one. These accounts provide access to all UNIX hosts in the network, including those in the 1000G lab on the tenth floor of Hunter North. This lab is available 24 hours a day, 7 days a week, to students enrolled in selected courses. The accounts also enable students to remotely login to the network using an *ssh client* by connecting to the gateway host `eniac.geo.hunter.cuny.edu`, and then *ssh-ing* to a lab host from eniac.

Publisher's Website: The publisher of the textbook has many useful resources on their website, which is <http://www.pearsonhighered.com/savitch/>
If you have purchased a new copy of the textbook, then you will have access to the publisher's "companion website," which contains video notes tied to the chapters of the book. Visit the URL http://wps.pearsoned.com/ecs_savitch_cpp_5/ and register your student access code, after which you can login to watch these online videos.

Material Covered

The course covers the material in the textbook pretty closely, but there is not enough time to cover the whole text. Below is the rough list of topics listed by chapter. See the Reading List section on the website for information on what you should be reading for each class:



Chapter 1: C++ Basics,

- Introduction to C++
- Variables, Expressions, and Assignment Statements
- Console Input/Output
- Program Style
- Libraries and Namespaces

Chapter 2: Flow of Control

- Boolean Expressions
- Branching Mechanisms
- Loops

Chapter 3: Function Basics

- Predefined Functions
- Programmer-Defined Functions
- Scope Rules

Chapter 4: Parameters and Overloading

- Parameters
- Overloading and Default Arguments
- Testing and Debugging Functions

Chapter 5: Arrays

- Introduction to Arrays
- Arrays in Functions
- Programming with Arrays
- Multidimensional Arrays

Chapter 6: Structures and Classes

- Structures
- Classes

Chapter 7: Constructors and Other Tools

- Constructors
- More Tools
- Vectors—A Preview of the Standard Template Library

Chapter 8: Operator Overloading, Friends, and References

- Friend Functions

Chapter 9: Strings

- An Array Type for Strings
- Character Manipulation Tools
- The Standard Class string

Chapter 10: Pointers and Dynamic Arrays

- Pointers
- Dynamic Arrays
- Classes, Pointers, and Dynamic Arrays

Chapter 11: Separate Compilation and Namespaces

- Separate Compilation

Chapter 12: Streams and File I/O

- I/O Streams
- Tools for Stream I/O