

COSC 1305: C++ Programming

<http://www.cs.uh.edu/~mirkovic/cosc1305>

LECTURES: TTH 2:30 - 4 PM IN 344 HOFFMAN HALL

OFFICE HOURS (TENTATIVE): TUESDAY AND THURSDAY 4-5

INSTRUCTOR: DRAGAN MIRKOVIC OFFICE: 221 PGH

Course Description

Development of any non-trivial software system is inherently complex. The object-oriented (OO) paradigm suggests abstraction and encapsulation of information in objects to manage the complexity. C++ is one of the most popular languages that support the OO paradigm. Being a descendant of C, the C++ language has several interesting features. Just learning the C++ language, however, will not make one a productive OO developer. To become productive, one has to learn the OO paradigm, and focus on those features of C++ that provide support for OO programming. The main objective of this course is to learn the efficient use of C++ as an OO programming language.

Prerequisites:

The class prerequisite is COSC 1304.

Texts

1. **Required:** *C++ and Object-Oriented Programming*, by Kip Irvine

Offers students an up-to-date tutorial on the basic differences between C and C++, the object model, design methods, and C++ programming. Utility classes and case studies are used to illustrate object-oriented programming

Evaluation

The homework assignments will not be graded. You will have to demonstrate your knowledge and understanding of these problems, though, by solving similar problems in quizzes (approx. 2/month).

Projects (4-5)	30%
Quizzes (5-6)	20%
Midterm Exam (around March 10)	20%
Final Exam	30%

Projects

There will be several coding projects designed as a support for understanding the important concepts in OO programming.

Topics covered

1. C++ Basics
2. Introducing Classes
3. Functions
4. Class Features
5. Designing Classes
6. Derived Classes
7. Pointers and Dynamic Memory Allocation
8. Polymorphism and Exceptions
9. Operator Overloading
10. Templates
11. Object-Oriented Containers

Academic Integrity

You are expected to maintain the utmost level of academic integrity in the course. Any violation of the code will be penalized severely. You are not allowed to collaborate on the homework assignments except for discussing the assignment with other students in the class. You are not allowed to share code or any other written material.