[Computer Science & Engineering Syllabi](#) College of Engineering & Computer Science

Spring 2008

CEG 461/661-01: Object-Oriented Programming and Design

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CEG461/661 Object-Oriented programming and Design

Spring Quarter 2008

Wright State University

Course Description

Study of object-oriented design and programming. Programming topics emphasize the core concepts of encapsulation, inheritance, polymorphism, and dynamic binding. Additional topics include class organization, software maintenance, and design of reusable components. There is a project to be implemented in a modern object-oriented language such as Java or C++.

This course will introduce the essential aspects of software engineering from an object-oriented point of view. There will be considerable emphasis on analysis and design in addition to programming. We will use Unified Modeling Language (UML) for the analysis and design work.

Programming topics will emphasize the core concepts of encapsulation, inheritance, polymorphism, and dynamic binding. We will examine the realization of these concepts in the Java and C++ programming languages.

Professor

Dr. Thomas C. Hartrum
Office: 337 Russ Engineering Center
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Class Hours: T R 2:15 P.M. – 3:30 P.M., Russ, Room 153.

Text

Page-Jones, *Fundamentals of Object-Oriented Design in UML*, Addison Wesley, 2000.
Dattatri, *C++: Effective Object-Oriented Software Construction*, 2nd ed., Prentice Hall, 2000.

Prerequisites

CS 400 or CS 600
CEG 460 or CEG 660

Grading

Grading will be as follows:

Homework & programming exercises	10
Project	40
Midterm Exam	25
Final Exam	25

Course grades will be based on the total score as follows. A: 90-100, B: 80-89, C:70-79, D: 60-69, F: below 60. Grades may be further curved if appropriate.

Grading (cont'd)

- You may work with others on homework assignments, but you must turn in your own individual work. Homework that has obviously been copied will result in a grade of zero for both parties and will be reported to the Office of Judicial Affairs, as will any other form of cheating.
- Ten percent will be deducted for unexcused late homework.
- The project will be worked in teams. You may pick your partner(s) or I will pick them. More detail on the project will be handed out later.

Tentative Schedule

Topic	Page-Jones	Dattatri
1 T(4/01) Intro to Object-Oriented	Ch 1, 2	Ch 1, Ch2(pp.27-54)
R(4/03) Review of OOA and OOD	Ch 3-6, notes	Ch 2(pp.67-76), skim
2 T(4/08) Object-Oriented with C++		Ch 3
R(4/10) C++ Inheritance		Ch 5 (pp. 171-197)
3 T(4/15) Inheritance & Polymorphism	Notes	
R(4/17) C++ Polymorphism		Ch 5 (198-238, 254-255)
4 T(4/22) Perils of Polymorphism		Ch 5(238-255)
R(4/24) Data Abstraction Example	Notes	
5 T(4/29) Mastering Data Abstraction		Ch 11
R(5/01) Using Inheritance Effectively		Ch 12(617-645)
6 T(5/06) Catch up, review	Ch 1-6	Ch 1-3, 5, 11, 12
R(5/08) In class midterm	Ch 1-6	Ch 1-3, 5, 11, 12
7 T(5/13) Encapsulation & Connascence	Ch 8	
R(5/15) Domains, Encumbrance	Ch 9	
8 T(5/20) State-Space & Behavior	Ch 10	Ch 2(57-60)
R(2/22) Type Conformance	Ch 11	
9 T(5/27) Perils and Techniques	Ch 12, 13	
R(5/29) Class Cohesion	Ch 14	
10 T(6/03) Advanced Topics		
R(6/05) Catch up, review	All	All
F R(6/12) 3:15 to 5:15 PM Final Exam	All	All

NOTE: There will be *no* early final exam – plan your travel accordingly. In case of a legitimate conflict, a makeup final can be arranged.

Note: T = Tuesday, R = Thursday.