

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
UNIVERSITY OF NOTRE DAME

CSE 20212: Fundamentals of Computing II
Spring 2008 Syllabus

Lecture: Monday, Wednesday & Friday, 9:35-10:25, 184 Nieuwland

Labs (CSE 21212):

- Section 1: Tuesday 3:30-5:00pm in Fitz 170
- Section 2: Wednesday 3:30-5:00pm in Fitz 177
- Section 3: Thursday 3:30-5:00pm in Fitz 177
- You are required to attend the lab section you are registered for.

Instructor:

- Dr. Scott Emrich
 - Contact: 351 Fitzpatrick Hall; 631-0353; semrich@nd.edu; IM: **semrichnd**
 - Scheduled office hours: Mon 4:30-6:00, Wed 8:00-9:00 and 4:30-6:00, Tues 1-2pm
 - If my office door is open, you are welcome to come in and ask questions.
 - Office visits also can be arranged via email or phone

Teaching Assistants:

Shannon Morrison - Mon 7-8:30pm and Thurs from 2-3pm; email: smorris3@nd.edu

Michael Olson – Mon 3:30-5pm and Tues 6-7:30pm; email: molson3@nd.edu

Cynthia Nikolai – Wed 2:00-3:30pm and Thur 12:30-2:00pm; email: cnikolai@nd.edu

Course Webpage: <http://www.cse.nd.edu/courses/cse20212/www/>

Communications: There is a spam-free class mailing list associated with the course. Because messages sent to the list are “official” communications, you are responsible all posts.

Textbook: Deitel, *C++ How to Program, 5th Ed.*, Pearson/Prentice-Hall, 2005.

Web: <http://www.deitel.com/books/cpphttp5/>.

Course Outcomes: At the end of the course, you will be able to:

1. Specify, design, implement and test programs of moderate size in C/C++. Assessed in programming assignments, and the semester project.
2. Demonstrate understanding of, and proficiency in use of basic data structures and class implementations of them, including templates and generics. Assessed via exam and programming assignments.
3. Be able to design classes competently, including data hiding and operator overloading features. Assessed in programming assignments.
4. Demonstrate the ability to understand and use design patterns. Assessed in exams and on programming assignments.
5. Demonstrate understanding of, and the ability to implement the vector, list, array, and tree data structures. Assessed in exams and in programming assignments.

Prerequisite: CSE 20210, CSE 20211, CSE 21211.

Major Topics:

1. Review of C, classes and object-oriented software development (2 hours)
2. Classes in depth (5 hours)
3. Object-oriented programming (overloading, inheritance, polymorphism) (5 hours)
4. Software Engineering: design patterns, UML, and other modeling topics (3 hours)
5. GUI design concepts (3 hours)
6. Templates (5 hours)
7. Data structure design (vector, list, tree, hash table, dictionary) (7 hours)
8. Case studies and special topics (8 hours)
9. Exam (1 hour)

Grading: Your letter grade will be computed from a course percentage that is a weighted sum of the fraction of points received in four groups of graded work plus participation as follows:

35%: laboratory assignments (including pre-lab assignment, see below)

25%: final project

15%: midterm exam (Wednesday, February 27)

20%: final exam (Thursday, May 8, 8:00am-10:00pm)

5%: class participation

Course percentage will be translated into letter grades as follows: A: 93% and up; A-: 90-93%; B+: 87-90%; B: 83-87%; B-: 80-83%; C+: 77-80%; C: 73-77%; C-: 70-73%; D: 63-70%; F: 0-63%. A failing course grade will be assigned, regardless of the percentage grade, if any lab assignment, pre-lab or final project is not submitted. Lab work will include a “pre-lab” (usually homework problems) that must be completed and turned in during the start of your lab section.

Absences from lab or lecture are only excused in accordance with University policy (see *du Lac*). Requests for regrading of any item must be communicated, **in writing** (including e-mail), to Prof. Emrich (not a TA), within one week of the day the items were returned to you.

Lecture outlines and/or lecture notes will be posted on the course web site.

Project: A programming project involving teams of students will be due at the end of the semester. Teams must consist of two to four students (solo projects won't be allowed). Two weeks of lab will be devoted to project support. Projects will be demonstrated at an end-of-semester pizza party. The coolest project determined by both the class and TAs/prof will receive some sort of tangible award.

Academic Code of Honor: you agreed to abide by the Academic Code of Honor when you arrived at Notre Dame. Please consult *du Lac* if you are unsure of your obligations under the Code. Any instance of academic dishonesty will be handled as required by University policy. If you are not sure of the definition of academic dishonesty or what actions in this class might constitute a violation of the Code of Honor, please see Prof. Flynn. You are encouraged to study together and even discuss project and lab work together. Writing code for another, or sharing code developed as a group, except when it involves people in a project group, is not allowed.

If you become concerned that something you have done, or allowed to happen, may be interpreted as a violation of the Code, it is in your best interest to speak to Prof. Flynn immediately.