

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
UNIVERSITY OF NOTRE DAME

CSE 20212: Fundamentals of Computing II
Spring 2009 Syllabus

Lecture: Monday, Wednesday & Friday, 9:35-10:25, DeBartolo 120

Labs (CSE 21212):

- Section 1: Tuesday 3:30-5:00pm in Fitz 177
- 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
 - Office: 351 Fitzpatrick Hall; 631-0353 Cell: (574) 520-8150
 - Electronic contact: semrich@nd.edu; IM: [semrichnd](#); Google: [scott.emrich](#)
 - Tentative office hours: Mon 5:00-6:00, Wed 5:00-6:00, Tues 1-3pm, Thurs as needed
 - If my office door is open, you are welcome to come in and ask questions.
 - Office visits also can be arranged via email, electronic chat or phone.

Teaching Assistants:

Niaz Arifin, sarfin@nd.edu - Office Hours TBA

Phil MacCart, pmaccart@nd.edu
Office Hours: Mon 7-8:30; TBA

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

Course email: Because email messages sent to the listserv are “official” communications, you will be held responsible for this information.

Textbook: Deitel, *C++ How to Program, 6th Ed.*, Pearson/Prentice-Hall, 2008.
Web: <http://www.deitel.com/books/cpphtp6/>.

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++. 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 as classes. Assessed in exams and in programming assignments.

Major Topics:

1. Review of C, classes and object-oriented software (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 (6 hours)
7. Data structures / STL (vector, list, simple tree, hash table, dictionary) (5 hours)
8. Exception handling (1 hour)
9. Case studies and special topics (8 hours)
10. 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 homework, see below)

25%: final project

15%: midterm exam (Wednesday, February 25)

20%: final exam (Monday, May 4, 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 more than one lab assignment is not at least partially submitted (deemed by TAs) or the final project is not submitted. Lab work will include a “pre-lab” (homework problems) that must be completed and turned in prior to the start of your lab.

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.

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.

ADA statement: Any student who feels they may need an accommodation based on a disability on file with the University can contact Prof. Emrich privately to discuss their specific needs. Full accommodation will be provided.

Academic Code of Honor: When you arrived at Notre Dame you agreed to abide by the Academic Code of Honor. Because any instance of academic dishonesty will be handled as required by University policy, please see Prof. Emrich if you are not sure which actions might constitute a violation of the Code of Honor in this class and/or review *du Lac*. In general, you may study and discuss course-related work with classmates, but answers to graded assignments/programs must be written independently unless otherwise instructed