

COURSE NAME, NUMBER CSCI 335: Software Development
SEMESTER, YEAR Fall 2007
INSTRUCTOR T. VanDrunen
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OFFICE HOURS MWF 3:10-4:10 pm; Tu 10:00-11:30 am, 1:00-3:30 pm.
COURSE WEBSITE <http://cs1ab.wheaton.edu/~tvandrun/cs335>

RESOURCES Bruegge and Dutoit, *Object-Oriented Software Engineering*, Prentice Hall, 2004.
 Gamma et al, *Design Patterns*, Addison-Wesley, 1994.
 Brooks, *The Mythical Man-Month*, Anniversary Edition, Addison-Wesley, 1995.

COURSE DESCRIPTION

Principles and practices of software development including design patterns, validation and testing, and coordination of team projects. Introduction to data bases and user interface design. Professional issues in computing.

INFORMAL COURSE DESCRIPTION

This course has two purposes: it covers the principles of software development (sometimes called *software engineering*), hence the name of the course; it also is a landing place for various topics that need to be covered in the CS core curriculum, but don't fit nicely in any other course. From the first purpose we have "textbook topics" (concepts and terms, UML, group dynamics, project and team management, methodology, software life cycle, etc); design patterns; professional and ethical issues; readings, including *The Mythical Man-Month* and "The Cathedral and the Bazaar"; tools such as Javadoc, JUnit, and makefiles; and some discussions about career path options. From the second purpose we have the basics of database use and design; user interface design, plus GUIs and event-driven programming; regular expressions, automata, and formal languages; and, time permitting, programming languages, distributed computing, web programming, scripting languages, and the history of the computing industry.

GOALS AND OBJECTIVES

1. Students will gain experience developing large software projects, including working on a software team.
2. Students will be able to understand and use the standard terminology and documentation tools for object-oriented software development.
3. Students will be able to articulate the fundamentals of database design and management, languages and automata, and language systems.
4. Students will be able to employ design patterns in their design of software systems.
5. Students will give thought to their career path and plan accordingly.

ASSESSMENT PROCEDURES

1. Projects will exercise students' abilities to work as a team and mark their progress in programming and design sophistication.
2. Short exercises, presentations, and oral group quizzes will measure students' participation.
3. The midterm and final will evaluate students' mastery of the comprehensive material.

Grading:

	<i>weight</i>
Project 1	15%
Project 2	20%
Project 3	30%
Participation	15%
Midterm	10%
Final	10%

SPECIAL EXPECTATIONS

Academic Integrity

Since all programming in this course will be group work, academic integrity concerns are not about code sharing among students. Instead, students must be careful to document and cite all ideas that come from outside sources. Failure to do so may result in point deduction or rejection of the project altogether.

Late assignments

If a programming project is running late, the group should negotiate with the instructor before the due date (ie, the negotiation should take place before the day on which it is due) to determine a revised due date and a point deduction.

Attendance

Since one of the goals of this course is to simulate a professional experience, our attendance policy will reflect what one might expect in the workplace.

You are allowed one sick (or family medical leave) day. You (or someone you are caring for) must actually be sick in order for you to take this. Any other sick days are taken “without pay”—that is, a loss of 5 percentage points of your final grade. Please make every effort to tell the instructor before class.

You are allowed one personal day. Personal days must be arranged in advance. Extra personal days are taken “without pay.” The days before and after a school break (Oct 19, Oct 26, Nov 19, Nov 26) are not available for allowed personal days (ie, if taken, they must be “without pay.”)

Non-attendance of class because of a company- (ie, school-) sponsored activity will not count as an absence if properly documented.

Unexcused absences (personal days that were not pre-arranged, except in an emergency) could result in “termination”—that is, failure of the course.

Special needs

Whenever possible, classroom activities and testing procedures will be adjusted to respond to requests for accommodation by students with disabilities who have documented their situation with the registrar and who have arranged to have the documentation forwarded to the course instructor. Computer Science students who need special adjustments made to computer hardware or software in order to facilitate their participation must also document their needs with the Registrar in advance before any accommodation will be attempted.

Projects. There will be three projects in this semester. The first will be done in groups of two, and will take about three weeks. The second will be done in groups of three, and will also take about three weeks. The third will be done as a group of six (that is, the entire class), and will take half a semester.

Readings. Students will read the textbooks in this course. For course days when we talk about a chapter from the main textbook (Bruegge and Dutoit), the chapter must be read prior to class. Class will involve a discussion of the chapter, informal quizzing of the topics, and presentations by the students; the instructor will not rehash the material as a lecture. Each student will present a summary of a chapter at least once during the semester. All this will count towards the participation grade. For course days when design patterns are talked about, the students may choose for themselves to read the textbook before class as a preparation or after class as a review. For course days when a reading is discussed (ie, *The Mythical Man Month* and other days coded green on the course website), students must read the chapters or handout before class and be prepared to discuss the reading.

Schedule. See the course website for schedule and content.

Presentations. A large portion of the participation grade will come from a presentation the student will make. Each student will choose one textbook (Bruegge and Dutoit) chapter day from the schedule on which to present. The presentation should take about half the class period and should include a summary of the chapter and the terminology, discussion questions for the group, an example (taken from the current project if at all possible), and a report on further reading on one of the topics in the chapter.