

CS205

M/W/F 1-1:50PM

Olsson 009

Fall, 2007

COURSE TITLE: Engineering Software

2007.08.28

REQUIRED BACKGROUND: CS150, and ability to write and analyze short programs.

TEXTBOOKS: Barbara Liskov with John Guttag, [*Program Development in Java: Abstraction, Specification, and Object-Oriented Design*](#), Addison-Wesley, 2000, tenth printing, 2007. Also, you should acquire a good Java 2 reference. I recommend: <http://java.sun.com/docs/books/jls/> with support from: <http://www.digilife.be/quickreferences/QR/JAVA Quick Reference.pdf>.

COURSE OBJECTIVES: Appreciation for and proficiency in programming fundamentals, including abstraction, hierarchy, types, reuse and specification – all concepts that are crucial to design and representation in a broad range of disciplines and pursuits, including engineering good software. On exit, students should be prepared for exposure to large scale program design and development and the construction of correct, readable, and reusable software. Even students who do not intend to pursue further Computer Science education should benefit from the course's focus on concepts and tools for managing complexity.

You may not like this course if you don't like problem-oriented knowledge discovery and acquisition. On the other hand, many of you will find it quite refreshing.

COURSE WEB PAGE: <http://www.cs.virginia.edu/cs205>. Check this webpage daily. Everything about the course, including this syllabus, resides there. News and updates will be posted prominently, and it is assumed that you will read them regularly.

INSTRUCTOR: P. F. Reynolds (email: pfr@cs.virginia.edu)

OFFICE: Olsson Hall, 214.

HOURS: M/W 2:00 - 3:30, Tues 3:00 – 4:00 and by appointment. E-mail read regularly.

TAs: TBA **Hours:** TBA

ASSIGNMENTS: Reading; problem sets, project, discussion preparation.

EXAMS: Midterm (Friday 12 Oct), last day exam (Friday 07 Dec), and a 20 minute oral exit interview, scheduled on an individual basis during exam week. Exams are closed-books, notes, etc.

EVALUATION: Midterm: 15%, last day exam 20%, problem sets 20%, project 20%, class participation 10% and exit interview is 15% (you must pass it to pass the course). All categories are +/- 5% to account for individual strengths and weaknesses. Adjustments will be made to select the weighting best for you at the end of the semester. Problem sets include written questions and programming problems. The exit interview will be oral and video-recorded. Class discussion will include occasional questions asked of individuals selected randomly. The class project will be a six

week team effort on a topic appropriate for the course and focused on an application we can agree on.

HONOR:

We must all act honorably. As you agreed in writing upon matriculating at UVa, you will not lie, cheat or steal.

I believe strongly that student accountability and a high degree of interaction are very important to the learning process. My belief is reflected in the way we conduct this class. To provide the context for accountability, you will always have a clear understanding of what is expected of you. On many of your assignments (but never on your exams) you will be encouraged (but never required) to work together. Expectations for group interactions will always be presented clearly to you. If ever you have a question about any of these guidelines it is your responsibility to seek guidance from me beforehand.

You are required to sign and submit a course pledge in the first few days of class. No other pledging will be required because henceforth your honest and honorable conduct will be assumed.

PLANNED COURSE OUTLINE:

See the webpage: <http://www.cs.virginia.edu/cs205>. Click on “schedule and assignments.”

IMPORTANT PEDAGOGICAL MATTERS

The exit interview is designed to give you an opportunity to show me what you know, in a face-to-face, one-on-one meeting. If you do well throughout the semester, you should expect to do well in the exit interview. For the protection of all involved, exit interviews will be video-recorded. I have conducted close to 800 exit interviews over the last six years and good students invariably pass.

Group work is a double-edged sword. On the positive side it can increase your quality of learning significantly. On the negative side, it can get you through a short-term tight situation (e.g. letting someone else do the heavy lifting) in a way that threatens your long-term success (e.g. good performance in discussions, on exams or in the exit interview). Proceed carefully!

ADDITIONAL NOTES:

If you are going to miss an exam, you must notify me well beforehand. Emergency room visits are the standard acceptable excuse. Early flights to a vacation spot are not.

Generally, I will not accept assignments that were not completed before the established deadline. Assignments late due to good medical reasons or other extraordinary circumstances will be accepted.

I really enjoy teaching. If ever you doubt that, do arrange a time to talk with me. If you're shy about approaching me (please don't be) you can always use the anonymous feedback option found on the class webpage.