

Software Design & Documentation CSCI-4440

Spring 2001

Course: CSCI-4440
Lectures: Monday, Thursday 2:00-3:50 Lally 102
Home Page: <http://www.cs.rpi.edu/~hollind/sdd/>
Email: sdd@cs.rpi.edu

Instructor: Dave Hollinger
Office: Amos Eaton 110
Phone: 276-6722
Email: hollind@cs.rpi.edu
Office Hours: Tues, Thurs 10:00AM-12:00

TA: Adam Goode
Email: goodea@cs.rpi.edu

Texts: Software Engineering, 6th edition. Ian Sommerville
Addison-Wesley

Using UML Software Engineering with Objects and Components
Stevens and Pooley
Addison Wesley

The Mythical Man-Month (Anniversary Edition)
Frederick Brooks
Addison Wesley

Grading: In-class Exercises: 15%
Individual Paper: 20%
Homework: 15%
Team reports, papers & presentations: 50%

Writing: This is a writing intensive course! Each student will be required to write one paper individually and participate in the writing of a number of team papers.

Course Home Page: The course home page will include course information including assignments, handouts, and links to various resources/case studies.

Class participation: You are required to participate in class discussions! Occasionally you will be required to present critical analysis of case studies (or other assigned material) to the class, you must be prepared for all such assignments. Every student in the class is expected to contribute to classroom activities.

Academic Integrity: Any work submitted must be your own (or the work of a team)! Plagiarism or allowing others to complete your work will result in failure of the course.

SD&D Spring 2001 Topics

We will explore topics in the design of large and small software systems (although the emphasis is on large systems, we won't ignore the special needs of small software systems). We will discuss various software design methodologies and become familiar with each through case studies and practical application. The case studies are an important part of the course, as they provide the opportunity to learn from the mistakes and successes of others.

Much of the course material will be from the Sommerville book, a tentative list of readings is included below. The Stevens/Pooley book provides more detail on the Unified Modeling Language, a topic of growing importance in software design. We will explore UML in some detail. The The Mythical Man-Month is an excellent introduction to some of the problems (and solutions) to management of large software systems – we will discuss this book in depth.

A large part of the course will involve a team project. The focus of this project will be the design of a non-trivial software system. The entire class will work on the same project, with each team providing the design for part of the project. The exact nature of this project will be determined by in-class discussions – we want the project to be interesting and a worthwhile. It would be nice to end up with something that is useful and worthy of implementation (not to mention something notable enough to be placed prominently on your resume!). Think big (and feel free to propose topics).

Tentative Topic List and Readings from the Sommerville book:

Overview of Software Engineering: Chapters 1-4

Requirements: Chapters 5, 7,8,9

Design: Chapter 12,14,15

Verification and Validation: Chapters 19,20

Management: Chapters 22,23

Legacy Systems: Chapter 26

Software Maintenance: Chapter 27