

CS 425.001: SENIOR PROJECT: SOFTWARE DESIGN

Spring 2006; TR 6:00-7:15 PM; Engineering Building 0011

I. Course Description and Goals

Description: First part of a two-semester sequence in which teams complete the design and planning stages of a software development project. Selected topics in software development, group dynamics, and project management.

Goals: This course supports the initial phase of the Computer Science Senior Project, providing students with practical experience in the team development of a software product and allowing them to put into practice the knowledge acquired in their previous CS courses. In addition, students in this course will gain a better understanding of software development methodologies, as well as selected topics in software engineering, including related social, legal, and ethical issues. By the end of this course, teams are expected to have completed the definition, planning, and design phases of their senior projects, as well as working prototypes of several major aspects of the projects.

II. Prerequisites

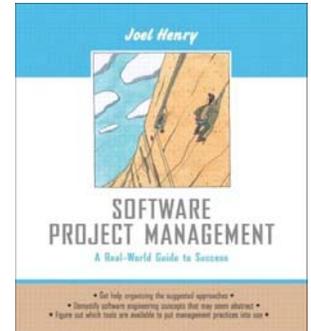
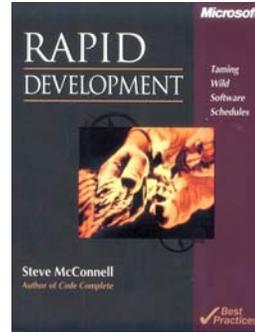
CS 312, CS 321, CS 325, and CS 340.

III. Instructor

Bill White Engineering Building 3041
 (618)650-3483 wwhite@siue.edu
 Office Hours: MW 8:00-12:00, and by appointment!

IV. Textbooks

Rapid Development, by Steve McConnell (Microsoft Press, 1996).
Software Project Management, by Joel Henry (Addison Wesley, 2004).



V. Class Policies

Academic Misconduct	Attendance	Late Assignments
Violations of academic standards such as cheating or plagiarism will <u>not</u> be tolerated. Those determined to have violated those standards will be assigned a failing grade. (Students wishing to dispute the case should follow normal student grievance channels.) The instructor will write letters to the Department Chair, the Engineering Dean, and the Dean of Students, explaining the circumstances.	Attendance is <u>strongly</u> encouraged, but not required. The material covered during lectures and class discussions shall form the basis for the exams and the projects.	There will be <u>no</u> work accepted late and <u>no</u> unexcused absences from exams or presentations. No makeup exams shall be given for unexcused absences. Exceptions are granted only for <u>documented medical problems</u> . Occasionally, students find that a couple of major exams fall on the same date. To reschedule an exam under such circumstances, arrangements must be made with the instructor <u>at least one week in advance</u> .

VI. Tentative Schedule: Dates, Topics, Reading Assignments, Deadlines

Tuesdays				Thursdays			
1/10	Introduction			1/12	Project Outlines		
1/17	Rapid Dev. & Classic Mistakes	McConnell 1-3	Résumé	1/19	Software Dev. Basics & Risks	McConnell 4-5	Topical Pres.
1/24	Tradeoffs & Lifecycle Planning	McConnell 6-7	Topical Pres.	1/26	Estimation & Scheduling	McConnell 8-9	Topical Pres.
1/31	Customers & Motivation	McConnell 10-11	Topical Pres.	2/2	Teamwork & Team Structure	McConnell 12-13	Topical Pres.
2/7	Feature Creep	McConnell 14	Topical Pres.	2/9	Productivity & Recovery	McConnell 15-16	Topical Pres.
2/14	EXAM #1 (McConnell Text)			2/16	Project: People & Processes	Henry 1-2	Project Def.
2/21	Project: Tools & Measurements	Henry 3-4	Def. Slides	2/23	Project Definition Presentations		
2/28	Project: Vision & Resources	Henry 5-6	Web Site Check	3/2	Project: Schedule & Plan	Henry 7-8	
3/7	SPRING BREAK - NO CLASSES			3/9	SPRING BREAK - NO CLASSES		
3/14	Project: Roles & Tasks	Henry 9-10	Project Plan	3/16	Project: Support & Status	Henry 11-12	Plan Slides
3/21	Project Plan Presentations			3/23	Project: Monitor & Reschedule	Henry 13-14	Web Site Check
3/28	Project: Quality & Testing	Henry 15		3/30	Project: Deliver & Assess	Henry 16-17	
4/4	EXAM #2 (Henry Text)			4/6	<u>Panel: Leading Software Teams</u>		Project Design
4/11	<u>Panel: Software Piracy</u>			4/13	<u>Panel: Diversity in CS</u>		Project Prototype
4/18	<u>Panel: SWE Licensing</u>		Design Slides	4/20	<u>Panel: Maintaining Vitality</u>		Web Site Check
4/25	Project Design Presentations			4/27	Project Design Presentations		
5/2	FINAL EXAM (6:30-8:10 PM)						

VII. Evaluation

The course grade will be based upon performance on the following assignments:

Individual Assignment: Résumé (Due 1/17)	50
To help assign the “right” people to the “right” project, each student is required to submit an application form for <u>each</u> planned project, and an up-to-date résumé stressing the student’s education, skills, and experience.	
Individual Assignment: Topical Presentation (1/19-2/9)	50
To assist in the development of presentation skills, each student will be assigned a class reading from the McConnell text to prepare as an in-class presentation, using PowerPoint slides. While every class member is expected to read every assigned reading, the presenter is required to become an “expert” on the associated software development/team management topic, giving a professional presentation of the cogent material and prepared to field relevant questions from classmates and the instructor.	
Individual Assignment: Exam #1 (2/14)	75
A short-answer/essay exam covering the material covered in class from the McConnell text.	
Team Assignment: Project Definition (Due 2/16)	50
A “problem specification document” must be produced by each team. This document will define the customer’s problem, identify the intended users, specify system requirements, present appropriate modeling information, and present paper prototypes of the project’s intended functionality.	
Team Assignment: Project Definition Presentation (Slides due 2/21; presentations on 2/23)	50
Each team will present a PowerPoint version of the project definition, fielding questions from the instructor and the other teams.	
Team Assignment: Project Web Site (Checks on 2/28, 3/23, and 4/20)	100
Each project team will design and maintain a Web site about their team and its project. Graded on both design and content, the site will serve as advertising for the project, as well as an archive for all project documentation.	
Team Assignment: Project Plan (Due 3/14)	100
A “project plan document” must be produced by each team. This document will specify scheduling, individual responsibilities, foreseeable risks, and platforms, as well as tentative test, review, documentation, and installation plans.	
Team Assignment: Project Plan Presentation (Slides due 3/16; presentations on 3/21)	50
Each team will present a PowerPoint version of the project plan, fielding questions from the instructor and the other teams.	
Individual Assignment: Exam #2 (4/4)	75
A short-answer/essay exam covering the material covered in class from the Henry text.	
Individual Assignment: Panel Discussion (4/6-4/20)	50
Several social, legal, and ethical issues will be discussed in this course. To enhance these discussions, each student will be assigned particular topics with which the student will become particularly familiar (via specified readings and outside research). On each topic’s scheduled discussion date, a panel of students who have been assigned that issue will lead the class discussion of it, beginning with individual 10-minute statements, followed by an open forum of questions and answers involving the panel, the instructor, and the rest of the class.	
Team Assignment: Project Design (Due 4/6)	100
A “design specification document” must be produced by each team. This document will specify the project’s main user interfaces, as well as the principal modules, class structures, database relationships, etc., being used by the project software. Emphasis should be placed on how well the design meets the customer’s requirements.	
Team Assignment: Project Prototype (Due 4/13)	100
Each team must produce a working prototype that implements a significant portion of the project, serving as a “reality check” for the team’s plan and design, to illustrate the full functionality that will be implemented in CS 499.	
Team Assignment: Project Design Presentation (Slides due 4/18; presentations on 4/25-4/27)	50
Each team will present a PowerPoint version of the project design and prototype, fielding questions from the instructor and the other teams, in preparation for the “big” faculty review at the end of the semester.	
Team Assignment: Final Exam - Faculty Review of Project (5/2)	100
During the scheduled time for the course’s final exam at the end of the semester, each team will present its project definition, plan, and design to the CS faculty, to be evaluated on clarity, creativity, and completeness.	

Total points for course

1000