CS494 Software Engineering II
Spring 2017

Catalog Description

During this course, students will study the implementation and maintenance of a large software project. This includes the study of software development techniques, managing requirement and design changes during implementation, verification and validation, and defect management. In addition, students will participate in code reviews, study professionalism and job interview techniques. Prerequisite: CS 493 with a grade of "C" or better. 2 hours.

Student Learning Outcomes

Upon successful completion of this course students will be able to

- apply computer science principles and practices to a real-world problem; demonstrate in-depth knowledge in the area of the project they have undertaken; solve problems using required knowledge and skills; implement and test solutions/algorithms;
- identify potential solutions/algorithms for the project problem; see patterns and modularize the problem, recognize hidden meanings and identify components, show proficiency in software engineering principles;
- show evidence (group collaboration, regular meetings, email communications, significant knowledge and skills contributions, etc.) of working productively as an individual and in a team on a project that produces a significant software product;
- show evidence of competency in oral and written communications skills through oral presentations (project presentation, department seminar or conferences), technical reports and/or published research papers in conferences and/or journals;
- use modern techniques, skills and tools necessary for computer science practices relevant to the project they undertake; use techniques in recent research papers to solve problems.

Topics

SE/Software Verification/Validation

- Different kinds of testing – human computer interface, usability, reliability, security, conformance to specification
- Testing fundamentals, including test plan creation and test case generation black-box and white-box testing techniques
- Unit, integration, validation, and system testing
- Regression testing
- Inspections, reviews, audits

SE/Software Processes

- Software life-cycle and process models
- Software process capability maturity models
- Software process measurements

SE/Tools and Environments

- Testing tools including static and dynamic analysis tools
- Tools for source control, and their use in particular in team-work

- Configuration management and version control tools
- Tool integration mechanisms

SE/Software Evolution
- Software maintenance
- Characteristics of maintainable software
- Refactoring

SP/Professional Ethics
- Community values and the laws by which we live
- The nature of professionalism (including care, attention and discipline, fiduciary responsibility, and mentoring)
- Keeping up-to-date as a professional (in terms of knowledge, tools, skills, legal and professional framework as well as the ability to self-assess and computer fluency)
- Maintaining awareness of consequences
- Codes of ethics, conduct, and practice (IEEE, ACM, SE, AITP, and so forth)
- "Acceptable use" policies for computing in the workplace

Instructor Details

Professor:	Chadd Williams
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Office:	Strain 202
Phone:	(503) 352-3041
Office Hours:	MWF 1-3:00pm or by appointment

Course Details

Course Title:	CS494 Software Engineering II
Prerequisite:	CS493 with a grade of C or better
Required For:	Need a C or better for graduation
Meeting Times:	TTh 9:40am – 10:30am One on one meetings with your professor will also be required
Location:	Strain 101

Course Website

http://zeus.cs.pacificu.edu/chadd/cs494s17/

Course Assessment

Grade Distribution:

Project Management Utilization of ScrumDesk (20%) Sprint progress (6 sprints) (50%) Quality of role as scrum master (15%) Completeness of project as specified (15%)	40%
In-class discussions and activities Code reviews, design reviews, topic leads, etc (15%) Practice presentation (20%)	20%

Senior projects day presentation (20%) Beta testing (25%) Class participation (20%)	
Written reports Abstract (10%) Résumé (10%) Testing report (10%) Project manual (10%) Drafts of final report (35%) Final report (20%) Project Poster (5%)	40%

Percent Breakdown:

			92-100%	A		90-92%	A-
88-90%	B+		82-88%	B		80-82%	B-
78-80%	C+		72-78%	C		70-72%	C-
68-70%	D+		60-68%	D			
			0-60%	F			

Important Dates

Spring Break:
Monday, March 27, 2017 through Sunday, April 2, 2017 (No Classes)

Senior Projects Day:
Wednesday, April 26, 2017

Date of Final:
Thursday, May 11, 2017, 12:00pm - 2:30pm

Academic Calendar:
http://www.pacificu.edu/as/calendar/

Policies

1. The format of this class will not be a traditional lecture. I will expect you to participate and come to class on time (9:40am) prepared to talk about your project and the class topics. Any missed lecture is your responsibility to make up. Much of this class involves students leading lectures, peer-review of documents and code, and group exercises.

2. Assignments are to be turned in by 9:40am on the day they are due *unless specified otherwise*. Absolutely no late assignments will be accepted. Most assignments will need to be turned in electronically and as a hard copy.

3. Your project completeness grade will reflect how well you implemented your project as planned. Unnecessary modifications to your project (e.g. eliminations of elements due to time) will severely penalize your grade.

4. If you are scheduled to lead a discussion or make a presentation, you must be in class. No exceptions. If another student is scheduled for a presentation, you must attend to give feedback. Failure to attend a presentation without a valid excuse results in a zero on your presentation. Being late for a presentation counts as not attending.

5. Pacific University has no tolerance for academic dishonesty. It is university policy that all acts of academic dishonesty be reported to the Assistant/Associate Dean. Sanctions that may be imposed for academic dishonesty range from an "F" for the assignment, an "F" for the course, and suspension or dismissal from the university. Forms of academic dishonesty include, but are not limited to, plagiarism, fabrication, cheating, tampering with grades, forging signatures, and using electronic information resources in violation of acceptable use policies. Plagiarism is the use of someone else's words, ideas, or data without proper documentation or acknowledgment; it may entail self-plagiarism, i.e. reusing/resubmitting your own work without approval. A**ny use of third party libraries or code must be properly cited and receive prior approval from the instructor.** Quotations must be clearly marked, and sources of information must be clearly indicated in all student work. Please consult the Academic Conduct Policies in the A&S Catalog.

6. No project may be work for which you receive any restitution, whether it is money or credit for another class.

7. The project will become the intellectual property of Pacific University at the end of the course sequence. Therefore, the project cannot be tied to any particular company. You may not share this code with anyone without obtaining written permission from Pacific University.

8. Professionalism is a large part of this course. This includes writing skills, time management, self-motivation to research necessary topics on your own, and the ability to receive and provide constructive criticism, as well as personal appearance and hygiene. For any presentation you are required to make for this class, you are required to wear Business Casual attire.

9. I reserve the right to raise or lower your grade based on class participation and attendance. Specifically, I may lower your grade or may officially withdraw you from the course through the tenth week of the semester for poor attendance or participation. Further, your final grade may be lowered by 1/3 of a grade for each day (or portion thereof) of class missed. Please notify me PRIOR to class if you must miss class for any reason. Just sending an email prior to missing class does not guarantee you will be cleared to miss. Only legitimate reasons will be accepted as excuses for missing class.

10. No exams will be given in this class.

11. **Learning Support Services for Students with Disabilities:** If you have documented challenges that will impede your learning in any way, please contact our LSS office in Scott Hall (ext.2107). The Director will meet with students, review the documentation of their disabilities, and discuss the services that Pacific offers and any appropriate ADA accommodations for specific courses.

12. Neither computer failure, software failure, nor lack of computer access are accepted as excuses for late assignments; therefore, start work on the assignments as soon as they are assigned, and don't put them off until the last minute. Further, corruption of programs due to bad disk media is also not accepted as an excuse for late programs; therefore, always keep a current backup of all programs on a separate disk. Please note that the Computer Science lab machines are not backed up.