CS3450 – Introduction to Software Engineering

Location & Time:	Old Main 406 Section 2: MWF 10:30-11:20am Section 3: MWF 2:30-3:20pm
Instructor:	Dr. Amanda Hughes
Office:	Old Main 401F
Office Hours:	MF 11:30 - 1:00 pm, or by appointment
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Textbook:	Beginning Software Engineering, Rod Stephens, John Wiley & Sons, 2015

Course Overview

CS3450 is an introduction to the broad field of Software Engineering that gives students hands on experience with software engineering processes, development methods, best practices, conceptual models, development tools, patterns, and techniques. The course covers many of the traditional development activities, including: requirements capture and analysis, architectural design, user interface design, database design, detailed design, implementation, unit testing, and system testing. During the semester, students will work in teams to build a non-trivial software application. The instructor will evaluate each student's ability to work in a group environment, apply good software engineering principles and practices, and not simply on whether their code "works".

Prerequisites

CS2420 and either CS2610 or CS2612 are prerequisites for CS3450. This course is not available to CS majors in the pre-professional programs.

Course Objectives and Outcomes

CS3450 aims to help students achieve the following objectives:

- Learn and practice a range of software development activities, including: requirements capture and analysis, architectural design, detail design, implementation, testing, and deployment.
- Learn and practice software project-management skills, including: planning, estimating, scheduling, and process tracking.
- Gain hands-on experience by working in groups to develop a non-trivial software system.

At a high-level, the course supports the following Computer Science student outcomes:

C. An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs

D. An ability to function effectively in teams to accomplish a common goal

E. An understanding of professional, ethical, legal, security and social issues and responsibilities

F. An ability to communicate effectively with a range of audiences.

Course Components and Grading

This course requires you to complete reading assignments and participate in **daily participation activities,** build a non-trivial software system (**project assignments**), and a **midterm exam**. The focus of the first half of the semester will be on learning the material in the textbook and laying a strong software engineering foundation. These activities will culminate in the midterm exam, which will test your knowledge of the covered material. The team project will begin the first week of class. For the first half of the semester, teams will identify a project, develop requirements, and create high and low level designs for the system they plan to develop. Around the midterm, the focus of the course and the project will shift. Teams will shift to developing their projects through several SCRUM sprints. The course components and their weight on the final grade for the course are listed below.

Course Component	Grade Percentage
Project Assignments	60%
Daily Participation Activities	10%
Midterm Exam	30%

The instructor reserves the right to adjust your final grade to reward extraordinary performance or penalize for cheating or lack of effort.

Project Assignments (60% of grade)

Working in teams, students will work on a project of their choosing that will span the length of the whole semester. The aim of each project is to give students in-depth experience in applying the ideas, skills, and techniques from the course. We will be using a SCRUM development process. The Project Deliverables and their respective weight on the Project Assignment grade appear below.

Project Components	Grade Percentage
Project Charter	5%
Product Backlog (Requirements Document)	15%
Design Document	15%
Sprint 1 Planning Document	7%
Sprint 1 Review	10%
Sprint 1 Retrospective	3%
Sprint 2 Planning Document	7%
Sprint 2 Review	10%
Sprint 2 Retrospective	3%
Sprint 3 Planning Document	7%
Sprint 3 Review (Final Project Presentation and Demonstration)	15%

Sprint 3 Retrospective	3%
Total	**100%**

In addition, the score you earn on the project above will be subject to a multiplier based on peer evaluations from your team members. Team members will evaluate their team members twice throughout the semester.

Daily Participation Activities (10%)

Most days that the class meets there will be a daily participation activity (DPA). These activities are designed to assess your understanding of the readings and to give you hands-on experience with the topics, methods, and techniques we will be exploring this semester. Several formats will be used for these activities, including (but not limited to):

- Canvas Quizzes
- Canvas Discussions
- In-class Discussions and/or Activities

Each DPA is worth 10 points. In most cases, these assignments will either be due before class begins or they will take place during class time and be due by the end of class. I will drop the lowest 3 DPA scores at the end of the semester, which will let you make up for poor scores, or skip an activity if your schedule gets too hectic. There are NO LATE SUBMISSIONS OR MAKEUPS for missed Daily Participation Activities.

Midterm Exam (30%)

There will be one exam for the course, given in the middle of the semester. The exam will take place during regular class time. There will be no final exam for this course.

Grading Scheme

The following grading scheme will be used to assign letter grades at the end of the course:

Letter Grade	Range	
A	100%	to 93%
A-	< 93%	to 90%
B+	< 90%	to 87%
B	< 87%	to 83%
B-	< 83%	to 80%
C+	< 80%	to 77%
C	< 77%	to 73%
C-	< 73%	to 70%
D+	< 70%	to 67%
D	< 67%	to 63%
D-	< 63%	to 61%
F	< 61%	to 0%

Assignment Submission and Grading System

For each project deliverable, someone from your group will submit an archive file of your completed project assignments to Canvas. It is not necessary for every person in a group to submit a file for the project assignment. Feedback and grades for all components of the course will be provided through the Canvas system.

Add policy

The last day to add this class is Jan. 18, 2016. Attending this class beyond that date, without being officially registered, will not be approved by the Dean's Office. Students must be officially registered for this course. No assignments or tests of any kind will be graded for students whose names do not appear on the class list.

Drop policy

The last day to drop this class without notation is Jan. 18, 2016.

Withdrawal Policy and "I" Grade Policy

Students are required to complete all courses for which they are registered by the end of the semester. In some cases, a student may be unable to complete all of the coursework because of extenuating circumstances, but not due to poor performance or to retain financial aid. The term 'extenuating' circumstances includes: (1) incapacitating illness which prevents a student from attending classes for a minimum period of two weeks, (2) a death in the immediate family, (3) financial responsibilities requiring a student to alter a work schedule to secure employment, (4) change in work schedule as required by an employer, or (5) other emergencies deemed appropriate by the instructor.

Late policy

Unless prior arrangements were made with the instructor, assignments submitted must be turned in by their due date and time. An assignment that is turned in after that time, even just 1 second after, will be considered late. So, be wise and submit your assignments well in advance of the deadline. 10% will be deducted for every day for which the assignment is late. Since I will be dropping your lowest 3 scores for the Daily Participation Activities, NO LATE SUBMISSIONS will be accepted (this only applies to daily participation activities).

The midterm exam can be taken on an alternate day ONLY when prior arrangements are made with the instructor. Otherwise, a missed exam cannot be made up.

Class Fees

There are no class fees associated with this course.

Department Cheating policy

All forms of cheating are absolutely prohibited. Please read the department's policy (http://digital.cs.usu.edu/cheating_policy.html). Anyone caught cheating will receive negative points equal in magnitude to the possible points on the assignment or test. Repeated offenses will result in an automatic F.

Academic Integrity - "The Honor System"

Each student has the right and duty to pursue his or her academic experience free of dishonesty. The Honor System is designed to establish the higher level of conduct expected and required of all Utah State University students.

The Honor Pledge: To enhance the learning environment at Utah State University and to develop student academic integrity, each student agrees to the following Honor Pledge: "I pledge, on my honor, to conduct myself with the foremost level of academic integrity." A student who lives by the Honor Pledge is a student who does more than not cheat, falsify, or plagiarize. A student who lives by the Honor Pledge:

- Espouses academic integrity as an underlying and essential principle of the Utah State University community
- Understands that each act of academic dishonesty devalues every degree that is awarded by this institution
- Is a welcomed and valued member of Utah State University.

Plagiarism

Plagiarism includes knowingly "representing, by paraphrase or direct quotation, the published or unpublished work of another person as one's own in any academic exercise or activity without full and clear acknowledgment. It also includes the unacknowledged used of materials prepared by another person or agency engaged in the selling of term papers or other academic materials." The penalties for plagiarism are severe. They include warning or reprimand, grade adjustment, probation, suspension, expulsion, withholding of transcripts, denial or revocation of degrees, and referral to psychological counseling.

Learning Aids

Lecture notes and other useful information will be available in electronic form on the class's section of the Canvas system. Please check the class's news and notes sections on a regular basis.

The Computer Science Department is a member of the Microsoft's DreamSpark program. Through this program, students in CS courses can obtain and use a number of Microsoft's operating and software packages. If you are interesting in downloading any of this software for your use, please follow the directions found on the department's website.

Students with Disabilities

The Americans with Disabilities Act states: "Reasonable accommodation will be provided for all persons with disabilities in order to ensure equal participation within the program. If a student has a disability that will likely require some accommodation by the instructor, the student must contact the instructor and document the disability through the Disability Resource Center (797-2444), preferably during the first week of the course. Any request for special consideration relating to attendance, pedagogy, taking of examinations, etc., must be discussed with and approved by the instructor. In cooperation with the Disability Resource Center, course materials can be provided in alternative format, large print, audio, diskette, or Braille."

Sexual Harassment

Sexual harassment is defined by the Affirmative Action/Equal Employment Opportunity Commission as any "unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature." If you feel you are a victim of sexual harassment, you may talk to or file a complaint with the Affirmative Action/Equal Employment Opportunity Office located in Old Main, Room 161, or call the AA/EEO Office at 797-1266.

Academic Freedom and Professional Responsibilities (Faculty Code)

Academic freedom is the right to teach, study, discuss, investigate, discover, create, and publish freely. Academic freedom protects the rights of faculty members in teaching and of students in learning. Freedom in research is fundamental to the advancement of truth. Faculty members are entitled to full freedom in teaching, research, and creative activities, subject to the limitations imposed by professional responsibility. Faculty Code Policy #403 further defines academic freedom and professional responsibilities: USU Policies Section 403

Grievance Process (Student Code)

Students who feel they have been unfairly treated [in matters other than (i) discipline or (ii) admission, residency, employment, traffic, and parking - which are addressed by procedures separate and independent from the Student Code] may file a grievance through the channels and procedures described in the Student Code: Article VII Grievances