

COMPSCI 320- Introduction to Software Engineering

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Course Description: What you'll learn

In this class, you get to participate in the specification, design, creation, and testing of a software system for a customer. You will work as a member of a team under a project manager. You will gain the necessary background knowledge through the readings, in-class activities and homework assignments. You will gain practical skills by applying this knowledge to the development of the software system desired by the customer.

CS 320 is an integrative experience course. It focuses on developing communication, reflection, and learning-aware learning skills. You will be able to:

- engage in an in-class discussion at the start of the semester about what they will learn in CS 320 and how the skills they have acquired in their general education requirements will help them.
- engage in a reflective in-class discussion at the end of the semester about what they actually learned, and which learning activities were the most effective.
- work extensively in groups.
- present your work orally in class.
- participate in active-learning activities with significant reflection components (including one on design, system understanding, and security in software).

- reflect on submitted assignments and improve and resubmit the work, and
- be guided by CS 529 students and their experience having previously taken CS 320.

At the conclusion of the course you should be able to:

1. gain experience working in a software development team using agile methodology.
2. analyze a proposed system and produce a set of requirements.
3. produce an efficient, modular design for a proposed software system.
4. understand the process of building software to specification on a schedule.
5. be knowledgeable about the economics of software development (the estimation and measurement of resources expended in building a software product).
6. comprehend the discipline of software engineering and the problems of developing high-quality software with a limited amount of time and resources.

Course Structure: How you'll learn

The course meetings consist of two “lecture” periods of 75 minutes each, and one “discussion section” of 50 minutes per week. There is no prescribed text-book for this course. Relevant material will be posted on Moodle and presented in lecture. In class, you will participate in activities that are designed to reinforce the concepts and techniques presented in the material and in lecture.

This course has two main components: learning and applying software engineering concepts and techniques presented in class; the development of a software system for an outside customer. The project is carried out in teams using agile software development methodology with the scrum framework. Agile emphasizes teamwork, frequent deliveries of working software, close customer collaboration, and the ability to respond quickly to change.

The project involves a number of deliverables and a final project presentation.

Intended learning outcomes are:

- Demonstrate the application of an agile process to a project for a real customer;
- Design a system ensuring dependability, security, and software reuse.

COMPSCI 320 is a highly interactive course. This means it is important that you attend every class and discussion, are on time, and ready to engage actively with your peers. Attendance is counted as part of the participation requirement for the course. It is expected that teams will schedule meetings and other development related activities outside of class.

Course Grading: How you'll know you are learning

Your grade will consist of individual and group evaluations. Your individual grade consists of the scores for homework assignments, in-class presentations, peer evaluations, as well as class participation. Group work consists of project deliverables. See Moodle for more details of the project.

The breakdown of the evaluation components and your grade weight is as follows:

Intended Learning Outcome	Assessment Type/Deliverable	Individual Grade 50%	Project Grade 50%
Demonstrate participation in group meetings, responsiveness to and use of communication, as well as quality of individual contribution to the required project deliverables.	Scrum Coach's assessment of team member's work	10%	
Present orally with clarity and supported by visual material.	In-class presentations of project deliverables and presentations to team.	10%	
Show evidence of attendance and participation at group meetings, timeliness and availability, communicating, as well as contribution to the project.	Peer (team member) grade	10%	
Demonstrate skills that support the project development	Homework assignments	20%	
Show evidence of quality of design products, scrum artefacts, and teamwork processes (use of collaborative tools; team collaboration; evidence of problem solving, effort in adhering to scrum practices).	Project deliverables. Graded by customer, instructor, and Scrum Master (TA)		50%

Grades will be available through Moodle and you should check them regularly and review any provided feedback. If you encounter any issues with your grades, you have 1 week past the return of your grades to contact the course staff so we can investigate.

Final project grades are based on the quality of the product deliverables and on teamwork processes. Note that grades for project deliverables are shared by the team **weighted by your project manager/scrum coach evaluations of your individual performance.**

You may expect the following approximate grading range: 93 to 100 -> A- and A; 80 to 89 -> B- and B; 70 to 79 ->C- and C; 60 and above -> D. To ensure a fair grade adjustments may be made to the grading ranges listed in this document. A grade may also be assigned based on extenuating circumstances and/or judgment.

Accommodations: How learning is accessible to you

Accommodation for Disabilities

The University of Massachusetts Amherst is committed to making reasonable, effective and appropriate accommodations to meet the needs of students with disabilities and help create a barrier-free campus. If you have a disability and require accommodations, please register with Disability Services (161 Whitmore Administration building; phone 413-545-0892) to have an accommodation letter sent to me. Information on services and materials for registering are also available on their website www.umass.edu/disability. Please contact me if you have any questions or concerns about disabilities or any issue that may impact the quality of your learning. It is my goal to provide the best possible learning experience for all students.

Getting Extensions for Assignments

It is possible that you may need an extension for a submission. Contact me at least 24 hours before the assignment is due. Medical conditions, religious or funerary events, university-related event (athletic event, field trip, or performance), extenuating non-academic reasons (military obligation, family illness, jury duty, automobile collision) that need extension will be accommodated with written documentation. Do note that problems with computer or internet access, holiday, or family travel are not valid excuses.

Getting Excused for Attendance

Should you need to miss a class, please let us know in advance. If you miss more than two class/discussion sessions, we need to meet to figure out how you can still pass the course as attendance counts towards your grade. Medical conditions, religious or funerary events, university-related event (athletic event, field trip, or performance), extenuating non-academic reasons (military obligation, family illness, jury duty, automobile collision) will be accommodated with written documentation.

Academic Honesty: Why it matters what you do

UMass Amherst has a [Academic Honesty Policy](#) that includes cheating and plagiarism as forms of dishonesty. What is [plagiarism](#)? Generally speaking, it is any attempt to take credit for work done by another person. Yet, all scholars rely on the work of others to shape their own knowledge and interpretations.

If you have any questions about what may constitute plagiarism, please consult the [Academic Dishonesty Guide for Students](#).

Inclusive Learning: Why you are welcome

Your success in this class is important to me. We all learn differently and bring different strengths and needs to the class. If there are aspects of the course that prevent you from learning or make you feel excluded, please let me know as soon as possible. Together we'll develop strategies to meet both your needs and the requirements of the course. There are also a range of resources on campus, including:

- Writing Center - <http://www.umass.edu/writingcenter>
- Learning Resource Center - <http://www.umass.edu/lrc>
- Center for Counseling and Psychological Health (CCPH) - <http://www.umass.edu/counseling>
- English as a Second Language (ESL) Program - <http://www.umass.edu/esl>

Classroom conduct: Why you matter

In this course, each voice in the classroom is valued. We honor UMass's commitment to embrace diverse people, ideas, and perspectives to create a vibrant learning and working environment.

You are welcome regardless of age, background, citizenship, disability, sex, education, ethnicity, family status, gender, gender identity, geographical origin, language, military experience, political views, race, religion, sexual orientation, socioeconomic status, and work experience.

This course requires students to work in groups and to present material in class. As such, it is expected that all students will observe a "workplace" level of social decorum at all times when interacting with managers and peers. You are expected to treat your work in this class in a professional manner and to treat all individuals with dignity and respect. Please consult the UMass Guidelines for Classroom Civility and Respect: http://www.umass.edu/dean_students/codeofconduct/classroomcivility.