

# Software Engineering

## Course Syllabus

### Course & Instructor Information

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Course:	Lewis University, Software Engineering, Spring 2018, SP18-CPSC-44000-001
Dates:	Tuesday, 16 January 2018 through 12 May 2018 per Academic Calendar <a href="#">[link]</a>
Times:	TTh 11:00 to 12:15pm CST
Location:	AS 106A
Final:	Tuesday, 8 May 2018 from 10:30am to 12:30pm in our normal location (AS106A)
Instructor:	Eric Pogue
Email:	<a href="mailto:epogue@lewisu.edu">epogue@lewisu.edu</a>
Phone:	563-209-7280 (personal mobile)

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### Software Engineering (CPSC-44000) Course Description

Methods, strategies, and tools for implementing software systems, particularly as part of a development team. Topics include the software development life cycle, Unified Modeling Language, software testing techniques, software security, open-source development, requirements gathering and documentation, maintenance, and basic software project management.

Prerequisites: Object-Oriented Programming (CPSC-24500)

Credits: 3

### Course Rationale

Working as software developer requires much more than programming skills. And as a team grows, product releases become exponentially more difficult to deliver. In this course students will learn the industry proven processes and tools that are used in delivering software products with teams of diverse sizes.

### Student Learning Outcomes

On the successful completion of this course you will be able to:

- Compare and contrast various software delivery models including Waterfall, Iterative, and Agile
- Understand how Agile delivery techniques can be effectively utilized with teams of various sizes
- Understand Scrum and the basics of Scaled Agile
- Participate as a valuable and engaged team member of a (self-organizing) Scrum team
- Play a Scrum Master and/or Product Owner role within a Scrum team
- Participate and/or Lead key Scrum rituals including Daily Standup, Sprint Planning, Backlog Development/Grooming, and Sprint Retrospectives
- Play a Scaled Agile role of Product Manager, Project Manager, Architect, and/or User Experience (UI) Designer role across multiple Scrum teams

- Elicit and analyze requirements for a proposed application and turn them into effective Epics, Features, and User Stories
- Utilize industry standard development tools and techniques for Source Code Control (Git & GitHub), Configuration Management, and Cloud Based hosting services (Microsoft Azure) to deliver a product
- Understand and participate in unit, integration, and user acceptance
- Understand diagrams to model class and Web Service Application Programming Interfaces (APIs)
- Use techniques to produce self-documenting code and Web Services APIs
- Understand the techniques used to test non-functional requirements such as performance, scalability, and security
- Understand software licenses and open-source
- Develop and execute an Agile software delivery project schedule
- Deliver two product releases utilizing an Agile delivery model

## Course Materials

Reference materials for this course will focus on class slides, notes, and online sources.

Textbook:	Engineering Software as a Service: An Agile Approach Using Cloud Computing (ISBN: 978-0984881246) <a href="#">[link]</a>
Reference Materials:	Class slides, notes, and online sources will also serve as your primary class materials. These will be posted online and linked via Blackboard. New materials will be made available as the class progresses.
Initial Required Tools:	Git Client GitHub Account Free or “Imagine” Microsoft Azure Account ... or (with instructor permission) alternatively a free Cloud9 account
Recordings:	Lecture sessions and important topics will be recorded and posted online... <u>as long as this practice does not have a negative impact on class attendance or participation.</u>

## Class Assignments

Assignments for this course will take the form of tests, quizzes, labs, and projects. Our projects and labs are intended to be the most important part of this class.

Tests:	There will be two tests during the semester.
Quizzes:	Quizzes will be assigned at the end of one or two-week intervals.
Labs:	Labs will be assigned to be delivered in one or two-week intervals.
Projects:	There will be at least two projects during the semester. Each will be group and/or multi-group projects.

## Late Assignments

Don't be late. Late assignments will not be excepted except under extreme circumstances. It is vastly preferable to turn in a partially complete assignment than to turn in a late one.

Similarly, it is vastly more beneficially to turn in an assignment that has 70% of the features working 100% than to turn in an assignment that has 100% of the features working 70%.

Although it is not necessarily intuitive, Agile methodologies have found remarkable success by focusing on meeting delivery dates even when that means changing the scope of what is delivered. We will embrace that philosophy.

## Demos and Presentations

A demo is intended to be a positive experienced where you will have a 3 to 5 minute opportunity to show your work with very limited required/expected preparation... and a guaranteed positive response.

Presentations will be larger more formal undertaking that will be discussed in greater detail later.

Agile development methodologies place a high priority on demoing working software as a key criterion for being “done”. As such we will regularly demo our work within our smaller (Scrum) teams and to the class as a whole at least once during the semester.

## Engagement

Positive engagement and a general sense of optimism are an important part every software delivery team. You can create and demonstrate engagement in many ways including class discussions, group and multi-group activities, asking appropriate questions during demos, and in many other ways. Be yourself, be sincere, and take responsibility for your own engagement. Don’t just make yourself better, make those around you better as well.

## Grading & Anticipated Weights

Grading will be on a percentage of total points possible during the semester. In general, a “best effort” will be made to keep the weighting distributed approximately:

Tests:	30% (two tests of approximately 15% each)
Quizzes:	10%
Labs/Demos:	20%
Projects/ Presentations:	30%
Engagement:	10%

## Grading Policies

Final course letter grade will be determined using the following approximate scale:

A	>= 90	C-	70-72.99
B+	87-89.99	D+	67-69.99
B	83-86.99	D	63-66.99
B-	80-82.99	D-	60-62.99
C+	77-79.99	F	< 60
C	73-76.99		

## Closing Comments

This is your class. We all have a responsibility to make it valuable and enjoyable. Let's build something that we can be proud of and proud of how we built it.

Please make sure you let me know when you're struggling so that I can help you be successful. Finally, be sure to take a moment and enjoy the journey.

## Plagiarism:

Copying work from each other or from the Internet will be punished harshly and appropriately. This includes viewing test, quiz, or assignments from current or previous class sessions. Measure of Software Similarity (MOSS) or similar software may be utilized to detect copied work. If it is determined that you have copied/plagiarized your work, you will fail the assignment and may have addition points deducted from your grade equal to the assignment maximum. If you do this twice, you will fail the course and potentially face additional disciplinary action. Integrity is expected and required.

Also see "Academic Honesty" below.

## Connection to Mission:

The Mission of Lewis University is to prepare lifelong learners who will use their knowledge, faith, wisdom, and talents to improve the lives of others. The Lewis University Mission Statement can be found online [\[link\]](#).

In our modern, digital world, there is no field that can as profoundly improve the lot of others than Computer Science. By taking this third course in the major, you will be moving much closer to your goal of becoming a world-improving computer scientist, one who can write efficient data-aware applications that inform.

## Class Attendance Policy

Students are expected to attend all classes as part of the normal learning process. Students bear the ultimate responsibility for all missed class material as the result of an absence and can be required to make up any work missed.

Students must be especially consistent in attendance, both on-ground and online, during the first two weeks of the class to confirm registration and to be listed on the official course roster. Students who fail to attend the first two weeks and who have not received prior approval from the instructor for absences will be withdrawn from the courses in question by certification of the instructor on the official class lists.

Additional information relating to Class Attendance Policy is available online [\[link\]](#).

## Academic Honesty

Scholastic integrity lies at the heart of Lewis University. Plagiarism, collusion and other forms of cheating or scholastic dishonesty are incompatible with the principles of the University. Students engaging in such activities are subject to loss of credit and expulsion from the University. Cases involving academic dishonesty are initially considered and determined at the instructor level. If the student is not satisfied with the instructor's explanation, the student may appeal at the department/program level. Appeal of

the department /program decision must be made to the Dean of the college/school. The Dean reviews the appeal and makes the final decision in all cases except those in which suspension or expulsion is recommended, and in these cases the Provost makes the final decision.

- Policies regarding make-up examinations and late submission of assignments
- Drop and withdrawal deadlines (see semester Course Schedule)
- Classroom behavior expectations (consistent with “Classroom Decorum” statement from Student Handbook on page 14 [\[link\]](#))

## Classroom Decorum

In order to maintain an environment conducive to learning and student development, it is expected that classroom discourse is respectful and non-disruptive. The primary responsibility for managing the classroom environment rests with the faculty. Students who engage in any prohibited or unlawful acts that result in disruption of a class may be directed by the faculty member to leave class for the remainder of the class period. Students considered to be a disruption or who present a threat of potential harm to self or others may be referred for action to the Dean of Student Services.

Additional information relating to Classroom Decorum is available online in the Student Handbook [\[link\]](#).

## Sanctified Zone

This learning space is an extension of Lewis University’s Sanctified Zone, a place where people are committed to working to end racism, bias and prejudice by valuing diversity in a safe and nurturing environment. This active promotion of diversity and the opposition to all forms of prejudice and bias are a powerful and healing expression of our desire to be Signum Fidei, “Signs of Faith,” in accordance with the Lewis Mission Statement. To learn more about the Sanctified Zone, please visit online [\[link\]](#).

## Students Requiring Special Accommodations

Lewis University is committed to providing equal access and opportunity for participation in all programs, services and activities. If you are a student with a disability who would like to request a reasonable accommodation, please speak with the Learning Access Coordinator, Angelia Martinez, at the **Center for Academic Success and Enrichment (CASE)**. Please make an appointment by calling **815-836-5593** or emailing [learningaccess@lewisu.edu](mailto:learningaccess@lewisu.edu). For more information about academic support services, visit the website at: [www.lewisu.edu/CASE](http://www.lewisu.edu/CASE). Since accommodations require early planning and are not provided retroactively, it is recommended that you make your request prior to or during the first week of class. It is not necessary to disclose the nature of your disability to your instructor.

## Additional Policy & Guideline Resources

Additional policy and resources can be found at the links provided below.

University Student Complaint Policy [\[link\]](#)

University Grade Appeal Policy [\[link\]](#)

University Copyright and Intellectual Property Guidelines [\[link\]](#)