



SYLLABUS: SOFTWARE ENGINEERING

COURSE & INSTRUCTOR INFORMATION

Course

Course Title, Prefix, Number, Section: Software Engineering, COSC 40943,
030 Semester and Year: Fall 20XX

Number of Credits: 3

Course Component Type: Lecture

Instructor

Final Evaluative Exercise & Important Dates

FINAL EXAM: FRIDAY, DECEMBER 12, 2025
11:00 AM - 1:30 PM ~ SCHAR 1008

Note for students: The syllabus is your first course reading. It provides an orientation to, overview of the flow, and expectations of the course. You should turn to the syllabus for details on assignments and course policies.

Student Resources & Policy Information

Scan QR code for resources to support you as a TCU student. Please note section on [Student Access and Accommodation](#), [Academic Conduct & Course Materials Policies](#), and [Emergency Response & TCU Alert](#).



COURSE DESCRIPTION

Catalog Description

Stages of the software development life cycle (requirements analysis, specification, design, implementation, testing), evolution, and quality assurance are covered. Classical and alternative process models are described. Project management issues, professional

responsibilities, and ethics of the profession are discussed. This course includes team projects.

Prerequisites & Concurrent Enrollment

Prerequisite: COSC 30603 or concurrent, senior standing in COSC or CITE or DASC (24 hours in the major.) All prerequisites need to be C- or better.

COURSE MATERIALS

Required Materials

None.

TEACHING PHILOSOPHY & METHODOLOGY

This course will teach you how to successfully guide the development of a software product from inception to delivery. The course will provide you with the processes and practices required to master software development. You will be taught how to identify important stakeholders, elicit, understand, and refine the requirements of a client, and how to communicate those requirements to a team of developers, designers, and testers. You will learn techniques for monitoring your projects to ensure they align to client needs, adhere to project plans, and achieve a desired level of quality. The emphasis of this course is to begin the development of a significant team project to be completed in COSC 40993: Senior Design. This course is approved for TCU Core: **Writing Emphasis**.

This course is where your Senior Design project starts. Besides learning the important knowledge of Software Engineering from lectures, you need to work in a team of 5 or 6 students on a real-world software project with a real client. During the project, you are taking an incremental approach to build the software and the project will be brought into the spring semester of 2025. The project will be officially due in April 2025, but you and your team do need to get started in the fall semester and have your first version of the working software up and running by the end of the fall semester.

LEARNING OUTCOMES

Course Learning Outcomes

Students completing this course are expected to be able to:

- 1) Evaluate product opportunities and write them down in a vision document
- 2) Describe and compare different software engineering process models
- 3) Develop a software development plan for a team project
- 4) Write comprehensive use cases for a given problem
- 5) Identify important domain abstractions and define them in a class diagram
- 6) Define interactions of important objects that implement a use case in a sequence diagram
- 7) Review software documents for completeness, ambiguity, and correctness
- 8) Develop a prototype for proposed software solution
- 9) List different testing techniques

- 10) List and explain 11 Software Quality Factors
- 11) List different quality assurance activities
- 12) Develop test cases for a software product
- 13) Explain different risks in software development

Assignments

Exams

Midterm and final exam.

Homework

There are two homework assignments.

Senior Design Project

Deliverables

The following deliverables are required and need to be uploaded to <https://seniordesign.cs.tcu.edu/>

1. Glossary
2. Vision and Scope Document
3. Use Cases
4. Software Prototype
5. API Document
6. Software Development Plan
7. Software Requirements Specification (SRS)
8. Source Code (on GitHub)

Presentation and Software Demo

Your team needs to demo the MVP software in the December presentation. A working software with limited features MUST be available for the client to test at the end of the fall semester. Failing to do so will result in a **letter grade reduction** for the entire team.

Weekly Evaluations

Your project related grade is NOT determined solely on the deliverables produced by the team but is ALSO determined by your individual contribution AND your collaboration with team members. Tardiness and absenteeism are considered unprofessional and CANNOT be tolerated. Your team needs you to be in class, in project meetings, on time, responsive, and to be a productive team member.

There will be 9 weekly evaluations. Each one is worth **2.2%** of your overall grade.

Once the project starts (week 6):

- **Weekly activity report (WAR) is due at the beginning of every Monday class** (Inflating time and activities reported in WAR is considered as academic dishonesty). Failure to submit the WAR by that time will result in a **zero** for your weekly evaluation of that week. Late WAR will NOT be accepted.

- The team must meet regularly outside the classroom to work on the project together. Feedback from the software industry indicates that the most effective software development happens when the team works together at the same location.
- The team must meet with your client regularly to report progress and clarify questions. Please advise me well in advance of client meetings so I can plan to attend as many as my schedule allows. Remember that the client evaluation is part of your overall grade.
- Meeting minutes for both team meetings and client meetings must be submitted every Monday before class time. Team members must take turns preparing the minutes based on the provided template. Failure to submit meeting minutes will result in **2.2% grade reduction** for the team member preparing the minutes that week.
- Prompt attendance is REQUIRED. Absence to lectures, weekly team meetings, presentation practice, and client meetings is a serious problem (if without official documents). Each absence causes **1% grade reduction**.

Peer Evaluations

There will be 9 peer evaluations. Each one is worth **2.2%** of your overall grade. Once the project starts:

- Peer evaluations for your teammates (including yourself) on their performance during the past week are due every Tuesday at 10 AM. Your evaluation should be based on your observation of your teammates and their submitted WARs. Failure to submit peer evaluations by that time will result in a **zero** for your peer evaluation in that week. Late peer evaluations will NOT be accepted.

Client Evaluations

- There will be two evaluations provided by your senior design client on your performance. So be active and get involved during team meetings.

Project Contribution

- Every team member must contribute to the document writing. Please keep track of your contribution to the documents in WAR. E.g., each section in a document should have only one main author, but many people can review and comment on it. Only the main author can choose to accept or reject the suggestions.
- Every team member must contribute to the coding part of the project. Code commits history (e.g., GitHub contributor activities) will be monitored by the instructor periodically.

Grading Philosophy & Policy

Late Work

Homework must be uploaded to TCU Online no later than the beginning of class on the due day. Late homework incurs a 15% penalty for each late day, including weekend and holidays. Homework that is late more than TWO days will **NOT** be accepted (except for Official University Absences or medical reasons).

Students are responsible for making sure the homework is uploaded properly. Failing to do so results in a **ZERO** for that homework.

Questions on Grading

Requests for re-evaluation of points on exams, homework, weekly evaluations, and projects must be made to the instructor **within one week of receiving your grade** and accompanied by a brief written description of the grading error you believe was made. After this time, grades are final. Resubmission for re-evaluation subjects the entire assignment for review. This means that if an error was made in your favor, you may lose points when re-submitting.

Participation, Engagement & Attendance

Each absence (lectures, weekly team meetings, presentation practice, and client meetings) causes **1% grade reduction**.

Course Assignments & Final Grade

Assignments	Percentage or Points
Midterm	15
Final	15
Homework (2)	20
Senior Design Project – Weekly Evaluations	20
Senior Design Project – Peer Evaluations	20
Senior Design Project – Client Evaluations	10
Total	100

Grading Scale(s)

Grade	Score
A	90–100
B	80–89
C	70–79
D	60–69
F	0–59

COURSE SCHEDULE

This calendar represents my current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunities. Such changes will be clearly communicated.

Project deliverables are due on **Friday**. WARs are due on Monday. Purple means senior design related assignments.

Week	Date	Topic	Senior Design Project
1	08/18	Intro to Software Engineering; Requirements Engineering	
2	08/25	No topics	Project Pitch
3	09/01	No topics	Project Pitch
4	09/08	Requirements Engineering (cont.)	Team Up
5	09/15	Agile; Project Management and Planning	Meet with Client; Riogrande Website Up
6	09/22	System Modeling	Vision and Scope Due
7	09/29	Architectural Design	Use Cases and Glossary Due
8	10/06	Work on Prototyping	Prototyping Due
	10/13	Midterm	
9	10/15	Work on API Document and Development Plan	API Document Due; Software Development Plan Due; First Iteration Starts on Oct 21
10	10/20	Software Quality	Work on First Iteration
11	10/27	Work on Project	Work on First Iteration
12	11/03	Work on Project	Work on First Iteration
13	11/10	Work on Project	Work on First Iteration
14	11/17	Demo to Clients and COSC Faculty (Iteration #1 demo)	Project Presentation
15	11/24	Thanksgiving Holiday	
16	12/01	Demo to Clients and COSC Faculty (Iteration #1 demo) Last Day of Class (12/04)	Project Presentation
17	Final exam: 11am-1:30pm Friday, December 12		