CS 410: Senior Seminar — Fall 2025 — Syllabus

Technical Supervisors: Han Dong, Darren Strash, and Wenbo Wang

Meeting Time: MWF 9-9:50am

Course Resources:

- **EdStem:** All communications and materials are via EdStem: Look for your invitation
- **Gradescope:** Feedback on milestones and other assessments
- **Blackboard:** Your current grade

Course Summary and Goals

Congratulations! You are now a software developer. However, with great power comes great responsibility. Software engineering is fraught with challenges: you'll have to plan, problem solve, execute, and meet the needs of a client.

In this course you will complete a substantial software project for a deserving client from campus. Through this project, you will engage in standard software engineering practices, draw on your existing computer science knowledge, expand into new frontiers of computing, and complete a project of significance that may even stand the test of time.

This course is designed to follow as closely as possible the experience of a software engineering position in industry. The elements include:

- Working in small teams of 3–5 developers, with a rotating team lead and scribe
- Weekly meetings with a (non-technical) client
- Weekly stand-up meetings with the technical supervisor
- Four substantial milestones throughout the semester, where each team:
  - submits their milestone materials
  - gives a presentation to the class on their progress
  - completes design and code reviews with the technical supervisor
  - submits 360 feedback for all team members
- A launch party, where each team presents their software to the department and campus community

Projects and Teams

Clients from across campus have proposed projects, and each project will be pitched on day one. After ranking your project preferences, 3–5 developers will be assigned to each project. A group of developers working on the same project forms a *team*. Each team has two specified positions, which rotate throughout the semester: a *team lead* and *team scribe*.

Rotating Team Lead. At any given time, each team will have a *team lead*, who is in charge of driving the work for the current work period. This includes: setting agendas for meetings, leading meetings with the client, being the point of contact for the group, settling disputes, and breaking ties in group decision making. The team lead will rotate every two weeks. Everyone on the team will be the team lead at some point.

Rotating Team Scribe. At any given time, each team also has a *team scribe*, who is in charge of documenting and organizing all things related to the project. This includes taking minutes at the team meetings, tracking the changing needs of the client, documenting the advice of the technical supervisor, maintaining the project tasks, and keeping project materials organized for milestones. This person must keep things on track, should the team lead lose sight of goals. This position rotates with the team lead.

Weekly meetings with the client. Each team will meet with their client at least once weekly. The team drives these meetings, presenting the current state of the project, providing ideas to and seeking advice from the client. The client's needs come first, it is the team's job to meet those needs with the appropriate solution that is feasible both in terms of technology and time.

Semi-Weekly stand-up meetings with the technical supervisor. Each team will meet at least twice a week with the technical supervisor in addition to any developer-only meetings. The purpose of these stand-up meetings is to discuss: which tasks were accomplished since the last meeting, which will be taken up for the next meeting, and which obstacles are preventing progress. For obstacles persisting more than two days, further communication (in the form of a message on EdStem or second meeting) is required. Twice-weekly meetings will be instituted if needed. Teams are always able to request additional meetings with the technical supervisor.

Communication. EdStem is will be used for announcements, milestone descriptions and nontechnical discussion with the professor. Any technical questions should be asked during weekly meetings. Additional meetings can be schedule, reach out via email. For personal communication, the technical supervisor generally responds to emails between 8am–5pm on weekdays. Developers are encouraged to connect on a messaging service, such as Group.me, WhatsApp, Discord, etc. for dedicated communication with their group. Developers are also encouraged to set boundaries on communication and communicate those boundaries to their teammates.

Course Elements & Grading

Each team is working towards the same goal of making a successful solution to address its client's needs. Throughout the project development, there will be many checkpoints to ensure that the project stays on track. The semester is divided into 16 "work weeks", a standard term used at many software companies. The first full week of classes is work week 1 (WW1), Thanksgiving Recess is work week 13 (WW13), the last week of lectures is work week 15 (WW15), and finals week is work week 16 (WW16).

Reflections and 360 Feedback

When submitting a milestone, each developer will submit an evaluation reflecting on the activity for that milestone. This survey includes three components:

1. An assessment of the project status.
2. A brief narrative of what went right, what went wrong, and what you (personally) would do differently in the future.
3. 360 feedback for team members.

360 Feedback to Developers

After each milestone, each developer will be assessed based on the feedback of their team members and the technical supervisor. 360 feedback will be given one of the following designations by the technical supervisor:

Exceeds Expectations: The developer contributed more than was expected by the team as a whole. (Equivalent to an 'A' grade.)

Meets Expectations: The developer contributed roughly what was expected by the team as a whole. (Equivalent to a 'B' grade.)

Below Expectations: The developer contributed "just below" what was expected by the team as a whole. (Equivalent to a 'C' grade.)

Needs Improvement: The developer contributed work that was significantly lower than needed in either quality or quantity. (Equivalent to a 'D' grade.)

At Risk: The developer contributed work that was significantly lower than needed in both quality and quantity. (Equivalent to an 'F' grade.)

When warranted, the technical supervisor may request a one-on-one 360 feedback meeting with a developer after milestones, discussing the feedback as well as concrete ideas for improvement. The technical supervisor will meet as soon as possible with any developer who is on track to receive the Needs Improvement or At Risk designation, as determined by 360 feedback.

Milestones

There are four milestones throughout the semester. For each milestone, each team submits their current code, gives a presentation to the class, and undergoes a review with their technical supervisor. Grading is partly based on team performance (for the current state of the project and whether it is meeting the needs of the client), and partly on individual performance (for their completed tasks, their portion of the presentation, their reflection, and 360 feedback from fellow developers.)

The milestones are due on Mondays. The four milestones are described as follows:

Draft Proposal: (Beginning of WW3) In this milestone, the team submits and presents their initial proposal for the work with buy-in from the client. They present their client-approved solution, a preliminary design, draft mock-ups of any user interface, discuss tools considered, and needs that might be met with software libraries. It is expected that the design and tools will change as the work progresses.

Alpha: (Beginning of WW6) In this milestone, the team submits and presents their initial software system. Each team has a version of the software that is "on its way": it may look rough, but has some necessary visual elements and functionality, with concrete plans for more. Teams demo their barebones software to classmates and present the design and trajectory.

Beta: (Beginning of WW11) In this milestone, the team submits and presents their functionally-complete software that has some bugs.

Release v1.0: (Beginning of WW15) The team submits and presents their completed software system.

After completing all the milestones, the department and entire campus is invited to a launch party in WW15.

Launch Party

After the final milestone, teams have a week to prepare for the campus-invited launch party. Each team will give a 20-minute presentation to present their work to the campus community. The presentation includes a demonstration of the full system; this demo is given either in real-time or via a video recording.

Notable Dates

Please note that this is subject to change. Students will be notified of changes in a timely fashion.

Week	Date	Event
WW0	Aug. 29	Introduction and Project Pitch
WW3	Sep. 15	Draft Proposal Milestone Due
WW6	Oct. 6	Alpha Milestone Due
WW7	Oct. 17	Fall Recess
WW12	Nov. 10	Beta Milestone Due
WW13	Nov. 24–28	Thanksgiving Recess
WW15	Dec. 8	Release v1.0 Milestone Due
WW15	Dec. 13	Launch Party, 10am–2pm

Grading

Your grade will be comprised of the following weighted components:

Category	Percentage
Project Ranking	*
Communication, Meeting, and Workshare Policy	†
Draft Proposal Milestone	15%
Alpha Milestone	20%
Beta Milestone	30%
Release v1.0 Milestone	25%
Launch Party	10%

* Timely completion of this step is crucial, as failure to meet the due date will lead to being dropped from the class.

† Every developer must agree to adhere to a communication, meeting and workshare policy. Violations of the policy may result in a reduced grade, or in egregious cases, failure of the class.

No grade bumping or extra credit is allowed. Your grade reflects mastery of course content and meeting or exceeding assignment/exam criteria. Effort isn't a grading factor. We'll use Gradescope for assignment submission and grade posting.

At semester's end, I'll calculate your average based on the stated weights.

Let x be your percentage in the class. Your letter grade is assigned as follows:

Letter Grade	**Percentage**
A	$93 \leq x$
A-	$90 \leq x < 93$
B+	$87 \leq x < 90$
B	$83 \leq x < 87$
B-	$80 \leq x < 83$
C+	$77 \leq x < 80$
C	$73 \leq x < 77$
C-	$70 \leq x < 73$
D+	$67 \leq x < 70$
D	$63 \leq x < 67$
D-	$60 \leq x < 63$
F	$0 \leq x < 60$

Course Policies

Communication

The preferred means of communication depend on the purpose of the discussion:

Personal requests should be sent via email or discussed one-on-one.

Questions and discussion of projects should happen during meetings. Extra meetings can be scheduled. Reach out via email.

Course announcements and assignments will be regularly posted through EdStem. It is the developer's responsibility to check EdStem and email for announcements. Missing an announcement, for example, due to absence or not checking EdStem, is not an acceptable excuse for incomplete or incorrect work or missing a deadline.

Academic Honesty

You are expected to abide by Hamilton College's honor code (which you can find at https://www.hamilton.edu/student-handbook/studentconduct/honor-code). All project code must be written by your group. However, exceptions are made for

1. starter code provided by the client
2. any necessary software libraries (necessity is at the sole discretion of the technical supervisor)
3. small code snippets found through StackOverflow or generated by AI programs such as ChatGPT and CoPilot.

All such code should be documented with its origin and its usage and is considered separate from the main body of the work. Any such code will not be considered in grading code and design elements of the project and must be cited appropriately. In milestone reports, specify what percent of the codebase belongs to each category (i.e., team-written, starter code, existing libraries, AI-generated). Respect copyright laws and appropriately license project code.

Citation

Always cite any external help in your projects to acknowledge their contribution, except class notes or professor discussions. This includes peers, TAs, tutors, and internet sources. Any non-self-written part must be cited. Code citations should appear in comments, documents, and when discussed, listing author and location. A mere acknowledgment isn't enough; citations must identify the source and help received. Here is an example of proper citations:

```
// CITE: Stephen Greenfield
// URL: http://www.math.rutgers.edu/~greenfie/gs2004/euclid.html
// HELP: Source of Euclid's method for determining GCD.
```

Cite all non-original images, facts, and information in documents or presentations using MLA, APA, Chicago, or IEEE styles (https://pitt.libguides.com/citationhelp)

Public Code Policy

All code written in this course must be provided to the client and may be posted publicly (e.g. GitHub, your blog, etc.) after the semester ends with written permission from the client.

Consequences for Academic Dishonesty

Academic integrity is important, and I will not tolerate violations. Any violation of these rules will result in a final grade of 'F' for the class.

Seeking Help

Position yourself for success: Use project management, time management, and productivity methods that work for you. This can include techniques such as Getting Things Done (GTD), Pomodoro, Bullet Journaling; software such as Todoist, Wunderlist, Google Calendar may also be helpful. If you start to struggle, procrastinate, or otherwise feel like you are falling behind, reach out right away. An ounce of prevention is worth a pound of cure.

Contact the Counseling Center: College life can sometimes get bumpy; if you are experiencing emotional or personal difficulties, seek help right away. The counseling center offers completely confidential and highly professional services, and can be contacted at 315-859-4340. If this seems like a difficult step, come find me. We can talk and call or walk to the Counseling Center together.

Request Accommodation: If you believe you may need accommodation for a disability, contact me privately within the first two weeks of the semester to discuss your specific needs. If you have not already done so, please contact Allen Harrison, Assistant Dean of Students for International Students and Accessibility at 315-859-4021, or via e-mail at aharriso@hamilton.edu. He is responsible for determining reasonable and appropriate accommodations for students with disabilities on a case-by-case basis.