

CPSC 4910 Seminar in Professional Issues II – Capstone

Fall 2020

Syllabus

1 Instructor

Dr. Alexander Herzog
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Phone: (864) 656-6562
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Office hours: Tuesday, 10:00–11:00am
Office hours location: Online via Zoom.

2 Class Meeting Times

Lecture Time: M/W from 11:15am–12:05pm

Location: Online via Zoom accessible via links posted to Canvas.

Lab (CPSC 4911): Fridays from 11:15am–1:05pm online via Zoom.

3 Course Workload Expectations

This is a 3 credit hours course. One credit hour is defined as one hour of classroom or direct faculty instruction and a minimum of two hours of out of class student work each week. You should therefore expect to spend a minimum of 9 hours per week on this class.

There is one lab session on Friday each week that is reserved for group project work and team meetings. Lab attendance is required. You are also expected to work outside of class on your project. **It is not possible to contribute the amount of work your team needs to be successful entirely within the scheduled lecture and lab time.**

It is expected that you will complete team work at a high level of rigor and professionalism that reflects this time commitment. You will work on a semester-long, team-based project with a *real-world sponsoring client*. This project is a chance to build your professional reputation and to make a good impression. If you do not contribute to your team, you will not only receive a poor grade in the course, but you will also let your team down and give a poor impression of your reliability and quality of work to your client and professional community.

4 Course Description

The goal of the Senior Design/Capstone course is to provide upper division Computer Science students a value-added capstone learning experience. Students work in teams of three to four individuals on a semester-long, team-based software development project with a real-world sponsoring client. A supervising faculty member will provide direction and teaching that enables students to develop project management, communication, and technical skills, experience with the implementation and testing phases of a realistic product design cycle, and an ordered transition from a classroom-oriented academic environment to a professional software development environment. Companies who sponsor senior design projects have the opportunity to meet and work with upper-division students who will be entering the work force—a great recruitment opportunity—as well as project results that student teams provide.

5 Prerequisites

CPSC 3720 and junior standing

6 Topical Outline

1. Effective teamwork
2. Agile Project Management
3. Software Testing
4. Professionalism including care, attention and discipline, fiduciary responsibility, time management, communication, and mentoring in the workplace
5. Professional ethics
6. Professional development and lifelong learning
7. Work-life balance
8. Special topics (e.g., entrepreneurship, comparing and negotiating job offers)

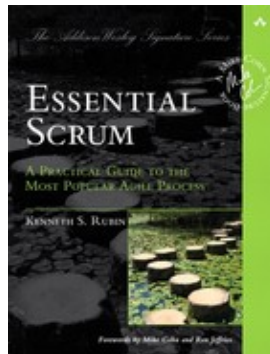
7 Learning Outcomes

At the end of the semester, students who successfully completed CPSC 4910 will be able to:

1. Discuss common behaviors that contribute to the effective functioning of a team.
2. Describe the mechanisms that typically exist for a professional to keep up-to-date.
3. Identify ethical issues that arise in software development.
4. Generate documentation for a team-based project that meets standards.
5. Describe ways to manage work-life balance.
6. Define and implement a software system based on specifications.

8 Materials

Our main textbook is Kenneth S. Rubin, *Essential Scrum: A practical guide to the most popular Agile process*. Addison-Wesley, 2012.



We will read most chapters from this book. Additional selected readings will be assigned throughout the course. Electronic versions of the textbook and additional readings are available *for free* via O'Reilly for Higher Education here: <https://clermson.libguides.com/ebooks> (look for the link under “General eBook Collections”). Make sure to login through Clemson University.

9 Professional Society Membership

There are two leading organizations for computer professionals:

- Institute of Electrical and Electronics Engineers (IEEE); <https://www.ieee.org/>
- Association for Computing Machinery (ACM); <https://www.acm.org/>

Both organizations offer student memberships and a large collection of publications and other resources to help you in your classes and future career. They support the professional growth of their members by providing opportunities for life-long learning, career development, and professional networking. It is strongly suggested that you have a membership in one of these organizations. As professionals in computing, you are expected to keep up to date with advancements in the field and engage in life-long learning; a membership in one (or both) of these organizations will help you.

10 Capstone Project

Students work in teams of 3–5 individuals on a semester-long, team-based software development project with a real-world sponsoring client. As part of this project, students will complete the following assignments and milestones:

Weeks	Activity
Weeks 1–4	<ul style="list-style-type: none">- Team selection- Preparation of first meeting with sponsor- First sponsor meeting- Project planning- Lectures on Agile Project Management and professional development
Weeks 5–15	<ul style="list-style-type: none">- Work in a team environment with minimal supervision- Plan, code and test using Agile Project Management- Weekly technical reviews during lectures- Weekly sprint planning and demos in lab- Weekly sponsor updates
Weeks 16–17	<ul style="list-style-type: none">- Final project report- Final project presentations

More detailed instructions will be posted on Canvas.

11 Grading

Number & Type of Assessment	Points	Total Points	% Final Grade
Participation	100 points	100	8.33%
Weekly Team Agile Planning (8-10)	10 points	100	8.33%
Weekly Team Agile Demo (8-10)	10 points	100	8.33%
Personal Agile Planning & Code (8-10)	10 points	100	8.33%
Quizzes & Assignment	5-20 points	100	8.33%
Midterm Project Presentation	100 points	100	8.33%
Team Project, Final Presentation, and Report	600 points	600	50%
Total Points		1200	100%

Letter grades are assigned according to the standard 10-point scale:

Points	Grade
90 – 100	A
80 – 89.999	B
70 – 79.999	C
60 – 69.999	D
Below 60	F

As a general rule, I do not round up grades. Extra credit opportunities may arise throughout the semester. No extra credit opportunities will be offered once the semester ends.

12 Attendance and Participation

Attendance during lectures and lab sessions is required. Studies have found that the single most important factor that contributes to success in a course is class attendance. With this class, like others, each lecture builds upon preceding lectures. Missing even a single class can make it difficult to keep up with the course material.

After week four, your team will work as a scrum team on weekly scrums, with work divided between team members. Your work will be supported by weekly technical reviews during lecture time, and weekly sprint planning and demos during lab. Participation in these weekly activities is crucial to make your project successful. Missing these activities and not completing your work will not only let your team down, but also give a poor impression of your reliability and quality of work to your client.

Participation measures whether you have made an effort to make your capstone project successful, your manner of interacting with others in your group, and the quantity and quality of your contributions to the project. This participation grade will not be given until the end of the semester and will be informed by a review of your activity on the group project's GitHub repository and a peer evaluation adapted from the [AACU Teamwork rubric](#). Extra points for participation may be given as per the instructor's discretion.

Please be aware, if there are significant and serious issues within a team, then you may be removed from the team and the class.

13 Notification of Absence

If you have to miss class, please use the "[Notification of Absence](#)" form link in Canvas to notify the instructor and TA before class. This will help us to adjust in-class exercises and group work we have planned for a lecture. We also *highly encourage you to email us about any planned or unplanned absences* so that we can make sure you have all materials and support you need to review the missed material (please send a single email to both Dr. Herzog and the lab instructor.) We are here to help you, so please communicate with us if you have to miss class.

14 Class Cancellation

Students are expected to wait for 15 minutes after the beginning of a lecture before leaving the Zoom meeting if the instructor is late and no announcement has been posted on Canvas.

15 Communication

We will use Canvas for class announcements and to post the weekly course schedule. It is your responsibility to check Canvas and your Clemson email at least once a day. All email to the instructor must come from your Clemson email address. Please allow 24 hours for instructor and TA to respond to your email on weekdays. I will not correspond with your parents or guardians about your grades.

16 Technology

You are required to have a **functioning laptop computer with webcam and microphone** for this course. You are also strongly encouraged to have a working set of headphones with microphone for engaging via remote technologies, especially in situations where privacy may be warranted (such as discussing course grades with your instructor).

A **reliable broadband internet connection** is required for students engaging in the remote delivery components for this course. If your internet is unreliable, you should email ithelp@clemson.edu and ask for assistance.

17 Technology Recovery

Lecture slides will be uploaded to Canvas before class.

If the instructor has technical difficulties during the Zoom lecture, students should use the available class time to review the lecture slides. The instructor will then try to make a recording of the missed lecture available on Canvas within two days of the lecture.

If a student has technical difficulties to join the Zoom video lecture:

- the student should use the call-in number posted for the Zoom meeting to listen to the audio of class,
- follow along with the lecture slides that are posted on Canvas,
- inform the instructor and TA via Canvas or email.

18 Academic Integrity Statement

As members of the Clemson University community, we have inherited Thomas Green Clemson's vision of this institution as a "high seminary of learning." Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form.

19 Accessibility Statement

Clemson University values the diversity of our student body as a strength and a critical component of our dynamic community. Students with disabilities or temporary injuries/conditions may require accommodations due to barriers in the structure of facilities, course design, technology used for curricular purposes, or other campus resources. Students who experience a barrier to full access to a class should let the professor know, and make an appointment to meet with a staff member in Student Accessibility Services as soon as possible. You can make an appointment by calling 864-656-6848 or by emailing studentaccess@lists.clemson.edu. Students who receive Academic Access Letters are strongly encouraged to request, obtain and present these to their professors as early in the semester as possible so that accommodations can be made in a timely manner. It is the student's responsibility to follow this process each semester. You can access further information here: <http://www.clemson.edu/campus-life/campus-services/sds/>.

20 Title IX (Sexual Harassment) Statement

Title IX Policy: Clemson University is committed to a policy of equal opportunity for all persons and does not discriminate on the basis of race, color, religion, sex, sexual orientation, gender, pregnancy, national origin, age, disability, veteran's status, genetic information or protected activity (e.g., opposition to prohibited discrimination or participation in any complaint process, etc.) in employment, educational programs and activities, admissions and financial aid. This includes a prohibition against sexual harassment and sexual violence as mandated by Title IX of the Education Amendments of 1972. The University is committed to combatting sexual harassment and sexual violence. As a result, you should know that University faculty and staff members who work directly with students are required to report any instances of sexual harassment and sexual violence, to the University's Title IX Coordinator. What this means is that as your professor, I am required to report any incidents of sexual harassment, sexual violence or misconduct, stalking, domestic and/or relationship violence that are directly reported to me, or of which I am somehow made aware.

There are two important exceptions to this requirement about which you should be aware:

- Confidential Resources and facilitators of sexual awareness programs such as "Take Back the Night and Aspire to be Well" when acting in those capacities, are not required to report incidents of sexual discrimination.
- Another important exception to the reporting requirement exists for academic work. Disclosures about sexual harassment, sexual violence, stalking, domestic and/or relationship violence that are shared as part of an academic project, a research project, classroom discussion, or course assignment, are not required to be disclosed to the University's Title IX Coordinator.

This policy is located at <http://www.clemson.edu/campus-life/campus-services/access/title-ix/>. Ms. Alesia Smith is the Executive Director for Equity Compliance and the Title IX Coordinator. Her office is located at 223 Holtzendorff Hall, phone number is 864.656.3181, and email address is alesias@clemson.edu.

21 Changes to Syllabus

Lecture topics and assignments are subject to change. The course syllabus is a general plan for the course; deviations to the class may be necessary and will be announced to the class by the instructor.