SE491+CS494 Capstone Design Winter 2021

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Overview

SE491 Course Description

https://ucalendar.uwaterloo.ca/2021/COURSE/course-SE.html

Final implementation, testing, and communication of the design project started in SE390. Technical presentations by groups. Analysis of social, legal, and economic impacts. Final release of the project. Project retrospective.

CS494 Course Description

https://ucalendar.uwaterloo.ca/2021/COURSE/course-CS.html

Continuing from CS493, student teams continue development of their project, update project plans, explore design alternatives, perform testing, and analyze experimental results. Teams prepare and deliver technical presentations and demonstrations of their projects, and analyze ethical and legal aspects of their work.

LEARNING OBJECTIVES The capstone project is intended to embody essentially all of the learning objectives of the undergraduate degree. Learning objectives have been identified by the Canadian Engineering Accreditation Board (CEAB), the Canadian Information Processing Society (CIPS), and the UWaterloo Software Engineering Curriculum Committee. These are listed in the *Handbook* §1.

Handbook §1

URLs & Repositories

Course Website	https://ece.uwaterloo.ca/~se_capstone/
Project metadata	https://git.uwaterloo.ca/secapstone/se491-2021 *(you need to clone this)*
Course Discussion	MS Teams (same as last term)
Meetings	https://calendly.com/derek-rayside/30min *(when in the meeting, click on Participants and invite Derek or he won't know that you are in the meeting)*

Contribute Cover Art!

See past abstract booklets on the course website.

Calling all artists! Please contribute your artwork for the cover of our class abstract booklet. We have used student artwork on the cover for the last few years.

Project Evaluation

Project evaluation is aligned with the learning objectives and is discussed in *Handbook* §14. Generally speaking, capstone projects should, in all relevant ways:

- exemplify the learning objectives;
- demonstrate the skills expected of a graduate;
- make appropriate trade-offs and judgments; and
- not suffer serious oversights.

A central premise is that the software should perform its intended function properly and in a unified way.

GRADE WEIGHTS are organized as follows:

Facet	Weight
Reflection (learning outcomes, feedback, impact, IP, *etc.*)	15%
Requirements & Specifications	15%
Design, Implementation, & Deployment	25%
Verification & Validation (testing & results)	25%
Teamwork	10%
Communication (abstract, demo, presentation)	10%

Grades are generally assigned to teams rather than individuals. The *teamwork* grade may involve peer evaluation that produces some individual variation in final grades.

In extreme cases, the contributions of individual students might be assessed individually.

DEDUCTIONS FOR OVERSIGHTS are a possibility. Part of being a professional is knowing what needs attention, covering the bases appropriately, and not making serious oversights.

There will also be a list of some specific minor deductions for relatively small matters.

Three main strategies for avoiding oversights are *peer interactions*, *learning activities*, and *formative assessments*.

DEADLINES ARE ENFORCED BY DEDUCTIONS. All grades are assessed at the end of the term. But there are deadlines along the way. Because no grades are assessed at those intermediate deadlines, they are enforced by deductions. Deductions can be waived for extenuating circumstances or prior arrangements.

The deduction is 1% off the final grade for each day late.

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SMALL CAPS: Deliverables & Deadlines

Class reps can propose changes to the dates. The upload to the UW website is the only externally-imposed deadline.

Deliverable	Deadline	
Web blurb draft ($\leq$ 85 words)	January 31	
Abstract draft ($\sim$ 300 words)	January 31	
Initial status sheet	January 31	
Team picture(s) draft	January 31	
UW website upload (blurb + pics)	February 4	
Societal Impact Report draft	February 7	
Peer Activity #1	February 7	*probably a review or planning discussion*
Abstract revised ($\sim$ 300 words)	February 28	*must incorporate feedback*
Feedback to SE2022	February 28	
Peer Activity #2	February 28	
Peer Activity #3	week before video	*probably a practice talk*
Peer Activity #4	day before video	*probably a practice talk*
Video of Presentation + Demo	March 28? April 4?	
Final abstract	same as video	
Final status sheet	same as video	
Teamwork feedback	same as video	
Video viewing + Q&A	after video is submitted	

University Policies

Intellectual Property: UWaterloo has the (fairly unique) policy that intellectual property is owned by its creators (rather than by the university). The university has resources to help you commercialize your project (if desired), as well as local incubators such as Velocity.

https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policies/policy-73-intellectual-property-rights

https://uwaterloo.ca/secretariat-general-counsel/faculty-staff-and-students-entering-relationships-external

Academic Integrity: In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility.

http://uwaterloo.ca/academicintegrity/

AccessAbility: AccessAbility Services collaborates with all academic departments to arrange appropriate accommodations for students without compromising the academic integrity of the curriculum. If you require academic accommodations, please register with Access-Ability Services at the beginning of each academic term.

https://uwaterloo.ca/accessability-services/

Grievance: A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. When in doubt please be certain to contact the department's administrative assistant who will provide further assistance.

Policy 70, Student Petitions and Grievances, §4, http://secretariat.uwaterloo.ca/Policies/policy70.htm

Discipline: A student is expected to know what constitutes academic integrity to avoid committing an academic offence, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (*e.g.*, plagiarism, cheating) or about rules for group work/collaboration should seek guidance from the course instructor, academic advisor, or the undergraduate Associate Dean.

http://uwaterloo.ca/academicintegrity/

For information on categories of offences and types of penalties, students should refer to Policy 71, Student Discipline, http://secretariat.uwaterloo.ca/Policies/policy71.htm

For typical penalties check Guidelines for the Assessment of Penalties, http://secretariat.uwaterloo.ca/guidelines/penaltyguidelines.htm

Appeals: A decision made or penalty imposed under Policy 70 (Student Petitions and Grievances) (other than a petition) or Policy 71 (Student Discipline) may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72 (Student Appeals).

http://secretariat.uwaterloo.ca/Policies/policy70.htm

http://secretariat.uwaterloo.ca/Policies/policy71.htm

http://secretariat.uwaterloo.ca/Policies/policy72.htm

Reconciliation

We acknowledge that the University of Waterloo is on the traditional territory of the Neutral, Anishinaabeg and Haudenosaunee peoples. The University of Waterloo is situated on the Haldimand Tract, the land promised to the Six Nations that includes ten kilometres on each side of the Grand River.

https://uwaterloo.ca/arts/about-arts/territorial-acknowledgement

Figure 1: Contemporary map of the original Haldimand Tract and the remaining Six Nations Territory (red).