

# Introduction to Methods of Software Engineering

## SE 101, Fall 2018

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Director, Software Engineering Program

## 1 Overview

This half-weight course introduces you to the Software Engineering programme and to engineering as a profession. The focus is more on soft skills (which are super important!) rather than hard technical skills, although you will still be writing software for the course project.

**Objectives.** By the end of this course, you will have demonstrated:

- discussing and summarizing engineering professionalism and ethics case studies, proposing a course of action;
- discussing and summarizing intellectual property as it applies to you as a student, employee and entrepreneur (differentiating different IP protection mechanisms), as well as revenue models associated with software companies;
- describing key software engineering activities, including requirements elicitation, design, and testing;
- writing meaningful paragraphs of English text;
- writing code to control a small computer (*e.g.*, Arduino or Raspberry Pi);
- using a source code version control system;
- enjoying software engineering!

### Calendar Description:

An introduction to some of the basic methods and principles used by software engineers, including fundamentals of technical communication, measurement, analysis, and design. Some aspects of the software engineering profession, including standards, safety and intellectual property. Professional development including résumé skills, interview skills, and preparation for co-op terms.

## 2 General Information

**Course Web Page/git repository.** The course notes are contained in the following repository (both URLs refer to the same repo, but via different protocols).

`https://github.com/patricklam/se101-f18.git`  
`git@github.com:patricklam/se101-f18.git`

You will also submit some of your work into a git repository. You will need to make an account on `git.uwaterloo.ca` to do so. We will teach you how to make an SSH key so that you can commit your work to the repo.

Course announcements will be made on LEARN.

## Course staff.

**Instructor** Patrick Lam, [patrick.lam@uwaterloo.ca](mailto:patrick.lam@uwaterloo.ca)  
Drop-in Hours: DC 2539; Wednesdays 12:30–1:30, or by appointment  
(make an appointment by chatting with me after class)  
What to call me: “Patrick,” or if you must: “Prof. Lam,” or “Dr. Lam.”  
What not to call me: “Mr. Lam”

**Teaching Assistant** James Cagalawan, [james.cagalawan@uwaterloo.ca](mailto:james.cagalawan@uwaterloo.ca)  
Drop-in Hours: DC 2577; Mondays and Fridays 12:30–1:30  
**Teaching Assistant (WEEF)** Xiao Zhou, [x258zhou@edu.uwaterloo.ca](mailto:x258zhou@edu.uwaterloo.ca)  
Drop-in Hours: DC 2577; weekdays 12:30–1:30; and,  
Oct 8 onwards: Mondays and Tuesdays 4:30–5:30

Both TAs are senior Software Engineering students here to help you with SE 101 and the transition to university.

## Slack.

TAs will monitor <https://uwse2023.slack.com> especially during lectures. Please ask questions in class, either orally or on Slack.

## Software Engineering program staff.

**Director** Patrick Lam, [se-direc@uwaterloo.ca](mailto:se-direc@uwaterloo.ca)  
**Associate Director** Derek Rayside, [se-assoc@uwaterloo.ca](mailto:se-assoc@uwaterloo.ca)  
**Undergraduate Advisor/Coordinator** Shaz Rahaman, [se-advisor@uwaterloo.ca](mailto:se-advisor@uwaterloo.ca)  
**Mentor** Rollen D’Souza (SE 2016), [rs2dsouz@uwaterloo.ca](mailto:rs2dsouz@uwaterloo.ca)

**Textbook.** None.

## 3 Grading Scheme

1. Team Project:	50%
• Proposal + Prototype Plan	5%
• Prototype	10%
• Final	35%
2. Individual Activities	35%
• Assignments (in class)	28%
• Quests	7%
3. Co-op	15%
• Fundamentals	10%
• Workplace Issues	5%
4. <b>Total:</b>	<div>100%</div>

The Co-op material is delivered by a representative of the Co-op office in class, and assessed by them online in LEARN. They communicate those grades back to the SE101 instructor.

There will be separate documents describing the Project deliverables and Quests.

**Lateness:**

- *Project:* Your team’s latest commit on the Git server at the time of the deadline. Commit early; commit often; remember to push!
- *Quests:* Quest deadlines are more elastic. The most important thing is that you complete the quest with honesty and integrity. The point is to demonstrate that you have the personal qualities required to be a professional. Grace is granted up to one week after the nominal deadline.

**Collaboration.** Different courses have different policies about collaboration: it is important to pay close attention. If you violate a course collaboration policy, it might be considered plagiarism, and might be reported to the Associate Dean.

In SE101, you are expected to collaborate within your team. Between teams, you may discuss ideas, design alternatives, and help each other debug small fragments of code. Each team must submit their own, independently-developed, code. A good heuristic is “look, but don’t write:” you can look at other teams’ code, but don’t do that anywhere that you might be writing your own code.

To be precise, teams are not permitted to share code electronically or in written form.

## 4 Schedule

<i>Week</i> (Sunday)	<i>Tuesday</i> MC1085 2:30pm–4:20pm	<i>Thursday</i> CPH1346 10:30am–12:20pm
Sep 9	[L01] PB&J Co-op Fundamentals 1	[T01] Git Set Up [L02] How to Student
Sep 16	Class Rep Elections [L03] Engineering Disasters Co-op Fundamentals 2	[L04] Intellectual Property [T02] Git Merges
Sep 23	MATH 115 lecture (2 hrs)	Spaceship Activity 1 10:30–4:30
Sep 30	Reflection on Spaceship Activity Co-op Fundamentals 3	Spaceship Activity 2 10:30–4:30
Oct 7	<i>No Class: Thanksgiving</i>	<i>Logical Tuesday</i> [L05] Prototyping [L06] Real-World Software Engineering
Oct 14	<i>No Class: Midterm Week</i>	<i>No Lab: Midterm Week</i>
Oct 21	[L07/L08] Written Communication	<i>Due: Prototype</i> Prototype Demos
Oct 28	[L09] Program Efficiency [L10] Abstraction	Prototype Demos
Nov 4	Midterm Results Review [L11] about Quest 3: Dynamic [L12] Ethics Case Study	Prototype Demos
Nov 11	[L13] Professional Responsibility / Whistleblowing [L14] Computation and SQL	Co-op: Workplace Issues
Nov 18	[L15] Bonus Material [L16] Summary	<i>Due: Project</i> Project Demos
Nov 25	Project Demos	Project Demos

## Project Deadlines

1. Thursday, October 4th: Groups formed + purchase orders placed
2. Thursday, October 11th:
  - 12:30pm: draft proposal + prototype plan
  - 9pm: revised proposal + prototype plan
3. Thursday, October 25th 11:30am: first prototype due (tagged in Git)
4. Thursday, November 22nd 11:30am: project due

## Quest Deadlines

1. Friday, Oct 5 9pm: Quest 1 Prep
2. Tuesday, Oct 9: Quest 1 Day 1
3. Monday, Oct 22, 8:30am: Quest 1 Complete
4. Tuesday, Oct 30, 4:30pm: Quest 2 deliverable to CPH1320 (office closes at 4:30pm)
5. Tuesday, Nov 20: Quest 3 complete

## Co-op Deadlines

1. Resume & Resume Quiz: September 17, 7pm
2. Pre-Course Survey: September 14, 7pm
3. Interview Quiz & Foundation Quiz: September 26, 7pm
4. Foundation for Co-op Success Quiz: October 12, 7pm
5. Post-CFE Module Survey: October 19, 7pm
6. Harrassment Quiz: November 22, 7pm

## 5 University Policies

Academic integrity:	<a href="http://uwaterloo.ca/academicintegrity/">http://uwaterloo.ca/academicintegrity/</a>
Petition & Grievance:	<a href="http://secretariat.uwaterloo.ca/Policies/policy70.htm">http://secretariat.uwaterloo.ca/Policies/policy70.htm</a>
Discipline:	<a href="http://secretariat.uwaterloo.ca/Policies/policy71.htm">http://secretariat.uwaterloo.ca/Policies/policy71.htm</a>
Penalties:	<a href="http://secretariat.uwaterloo.ca/guidelines/penaltyguidelines.htm">http://secretariat.uwaterloo.ca/guidelines/penaltyguidelines.htm</a>
Appeals:	<a href="http://secretariat.uwaterloo.ca/Policies/policy72.htm">http://secretariat.uwaterloo.ca/Policies/policy72.htm</a>
AccessAbility:	<a href="https://uwaterloo.ca/disability-services/">https://uwaterloo.ca/disability-services/</a>