ECE 650 - Fall 2021
Methods and Tools for Software Engineering

When & where: **Lectures:** ███████████████████████
Lectures live and recorded via ███████
Slides shall be made available on LEARN
Link to videos provided on LEARN as well

Instructor: Professor Vijay Ganesh
https://ece.uwaterloo.ca/~vganesh
Email: vganesh@uwaterloo.ca
Office hours via Piazza or Skype: Upon request.

TAs: TBD

Course materials: All course material made available via LEARN.
Slides developed by various instructors at Waterloo,
including Arie Gurfinkel, Vijay Ganesh, and others.
There are no textbooks for this course.

Course Content: Software systems (40%), mathematical logic (15%), data structures (45%)
(**Detailed description of syllabus on next page.**)

Marking: Assignments: 40% (4 assignments worth 10% of total marks each)
Project: 10%
4 Tests + Final Exam: 50%

Late Submission: No late submissions accepted, unless authorized by instructor.

University regulations:
Academic integrity: http://uwaterloo.ca/academicintegrity/

Petition & Grievance: http://secretariat.uwaterloo.ca/Policies/policy70.htm

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

Penalties: http://secretariat.uwaterloo.ca/guidelines/penaltyguidelines.htm

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

Disability: http://www.studentservices.uwaterloo.ca/disabilities/

Main topics covered in ECE650

- This is an introductory graduate course. Its intent is to provide all students that are interested in software systems with a basic background that will help them succeed in subsequent endeavours (courses, research, and work in industry) related to software. The course is intended to be "hands-on" – there is a large project component that involves building a software system.

- The course is divided broadly into three components: software systems ($\sim$40%), mathematical logic ($\sim$15%), and data structures ($\sim$45%).

- Under software systems, we will cover topics such as systems programming and operating systems, scripting, system calls, libraries, compilers and interpreters. Under mathematical logic, we will cover topics such as propositional logic, syntax, semantics, entailment, deduction and the use of logic in software. Under data structures, we will cover topics such as stacks, heaps, trees, and graphs, and algorithms to manipulate them.