SYDE 556/750
Simulating Neurobiological Systems
Lecture 0: Administrative Remarks

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- Slide design: Andreas Stöckel
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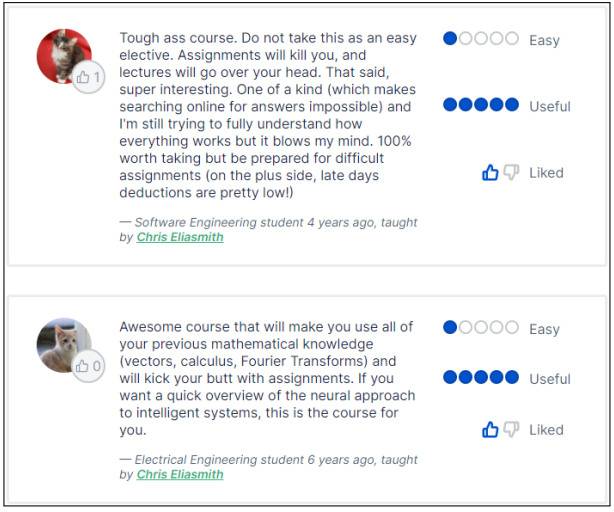
UNIVERSITY OF WATERLOO | FACULTY OF ENGINEERING

Warning



- The UWFlow reviews are accurate.
- This can be a challenging course.
- Be prepared to spend a lot of time on the assignments.
- We'll be making use of pretty much everything in undergrad engineering, and applying it to cognitive science and neuroscience.

Organization (I)

Instructor

Chris Eliasmith

Email `celiasmith@uwaterloo.ca`
Website `compneuro.uwaterloo.ca`

Course website

- Syllabus, project description, due dates:
  `http://compneuro.uwaterloo.ca/courses/syde-750.html`
- Assignments, slides, lecture notes:
  `https://github.com/celiasmith/syde556-f23`

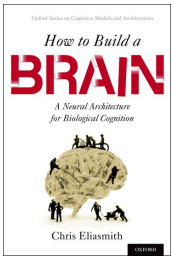
Organization (II)

Course times and logistics - All meetings in E7-4433 (nothing Friday)

- **Monday:**
  10:30-12:20 Lecture
- **Wednesday:**
  10:30-11:20 Lecture
- **Wednesday:**
  11:30-12:20 In person discussion (SYDE 750, optional for 556)

Textbooks and Readings

Main text:
Chris Eliasmith and Charles H. Anderson *Neural Engineering: Computation, Representation, and Dynamics in Neurobiological Systems*, MIT Press, 2003.



Optional:
Chris Eliasmith *How to Build a Brain*, Oxford University Press, 2013.

Coursework (SYDE 556 & SYDE 750)

Five Assignments

- 20%, 20%, 15%, 15%, 30%, respectively
- Roughly two weeks for each assignment
- Everyone must write their own code, generate their own graphs, and write their own answers.

Final Project (SYDE 750 only)

- Build a model of some neural system.
- Replicable science: report everything needed to recreate your model and analysis
- 20% of grade (assignments are rescaled to 80%)
- Have your project proposal approved via email by Oct 23rd (see template)

Coursework (SYDE 750 only)

Class Participation in the Seminar (SYDE 750 only; optional for SYDE 556)

- General discussion about Neuroscience, cognitive science, AI, etc.
- Each student is asked to submit questions or interesting observations pertaining to this week's reading, lecture notes, or the material referenced in the lecture (this should be about 100 words).
- Questions must be submitted via email to the instructor (`celiasmith@uwaterloo.ca`) by midnight (23:59 EST) on the Tuesday before.
- This is to ensure a lively discussion in the seminar — there are no marks for this part of the course.

Schedule

- See here: `http://compneuro.uwaterloo.ca/courses/syde-750/syde-556-course-outline.html`

To get started

- Get the textbook ("Neural Engineering", Chris Eliasmith and Charles Anderson, 2003)
- Be able to run `jupyter lab` or `jupyter notebook` with a Python 3 kernel. Install `numpy`, `scipy`, and `matplotlib`. Anaconda is a Python distribution that ships with these packets preinstalled, so (depending on your platform) this might be the easiest to use.
- Start thinking about a project... already.