Software Engineering Program

Presentation to the Board
prepared by Patrick Lam

April 11, 2022

Faculty of Engineering
Faculty of Mathematics

UNIVERSITY OF
WATERLOO

Part I

Curriculum Committee Updates

Since 2020...

- Added communications courses taken by CS and ECE & advanced communication electives.
- Added Advanced Technical Electives from CS and ECE.
- New Feedback Control labs:
  video game implementation.
- Changed one PD elective into a required PD course,
  PD11 Technical Writing.
- Removed work-term report requirements.

New Science Electives

- Science electives from ECE list;
- Cognitive science PSYCH courses;
- Engineering Biology (taught by CHE);
- SCI 201 Global Warming and Climate Change;
- PHYS 233 Intro to Quantum Mechanics
      (for engineers).

Part II

Student Survey Results

2022 Exit Survey (N=33): Expectations & Would Recommend

The on-campus portion of my engineering undergraduate program has met my expectations:

D = 0, d = 0, n = 1, a = 18, A = 8

The co-op portion of my engineering undergraduate program has met my expectations:

D = 0, d = 0, n = 1, a = 6, A = 20

I would best describe the communication and services of the SE advisors and SE administration as

t = 0, p = 0, a = 2, g = 10, E = 15

I would recommend my program to prospective students:

D = 0, d = 0, n = 2, a = 3, A = 22

2022 Exit Survey: Cannot Program

Do you know of any classmates who cannot program (to a level that one would expect of an SE grad)? How many?

- 0: 8
- 1: 2
- 8: 1

2022 Exit Survey: Next Steps

In the year after graduation my next career step will be:

> Employment 25
> Grad school (CS/ECE) 2
> (grad school: 1 at Waterloo ECE)

Do you plan to work on getting a professional engineering license in the next 5 years?

- Yes: 4
- No: 22

2022 Exit Survey: Selected Comments

- "Co-op gave me the most relevant experience in my field, helped build my sense of independence and helped me finish school with student loans paid off."
- "Cohort! I really enjoyed how small and tight knit the program is. Everyone knows your name, including professors, and program directors."
- "The level of stress is high, and the workload is high. Students are constantly juggling full-time school, co-op job search, and full-time work."
- "I was always super stressed during the school semester and struggled a lot with mental health when trying to balance the work load."
- Least satisfied: "Cohort culture."

Social Connectedness Survey

Poll broadcast to students:

How many people have you had an in-person social conversation with for more than 15 minutes last week?

term	0–2	3–9	10+
1B	6 (15%)	22 (55%)	12 (30%)
3A	8 (35%)	9 (39%)	6 (26%)
4B	0 (0%)	8 (42%)	11 (58%)

More students in SE26, SE22 fall into the middle group (3–9) than last time. SE24 has much more 0–2. SE22 consistent with previous polling in 2018.

Workload Survey

term	nominal load	contact hrs	total workload (hrs/week) (2019)
1B	5.0	28	57.3 (57.8)
3A	5.0/6.0*	19.25	50.0 (47.0)
4B	6.0	17	30.3 (35.0)

* Students take 11 courses over 3A/3B in 2022, was 5 in 3A in 2019.

SE Society
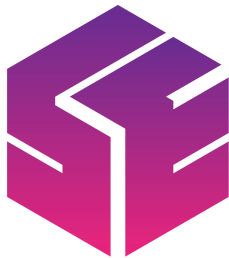
On-Stream President:
Aaron Abraham (SE 2024).

Part III

## **Admissions, Graduations, and Retention**

Admissions Data

	2021	f %	2020	f %	2019	f %
Applications	1844	19	1548	18	1487	19
Offers	251	42	258	22	210	23
Confirmations	147	39	152	20	130	23
Registrations	145	38	140	19		
OSS avg	98.1	96.4				
OSS 10th dec	96.8	94.2				

2021: Domestic or Visa?

	apps	offers	confirms	regs
Domestic	1372	194	121	120
Visa	472	57	26	25

Gender Counts

% female/U students in Software Engineering
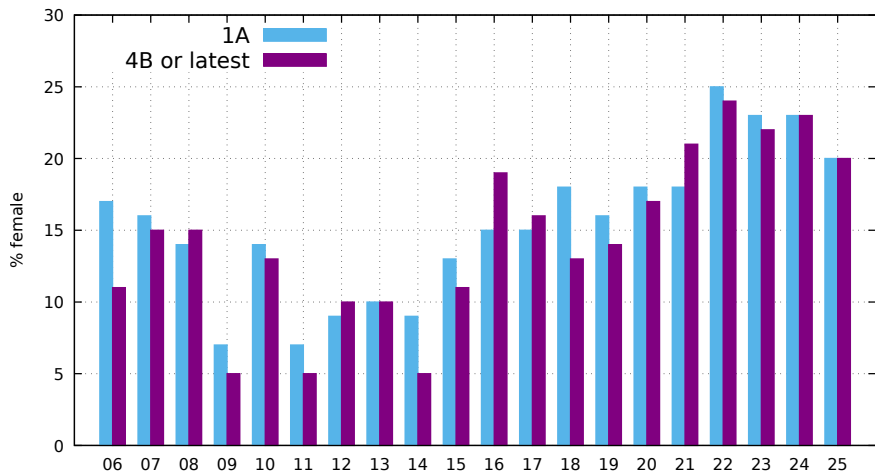
Cohort Sizes
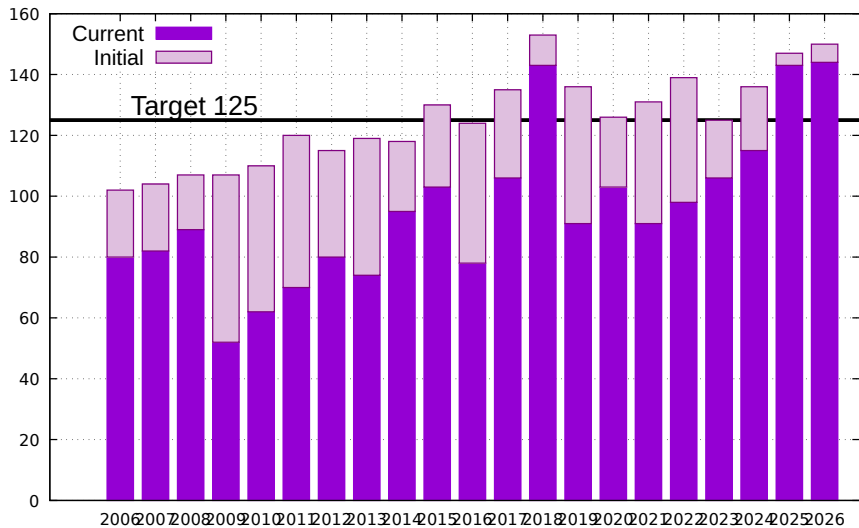
Graduation Rates

Tracking each of the students that initially enrolled in the BSE:

class of	# initial	% BSE	% BSE or BCS	% B.any
2014	115	65	77	82
2015	131	67	75	82
2016	122	63	71	75
2017	137	73	86	88
2018	151	81	89	90
2019	136	65	88	91
2020	121	76	85	88
2021	127	60	87	90

BSE Degrees Granted (total 2006–2021 = 1403)