Software Engineering Program

Presentation to the Board
Patrick Lam

May 22, 2018

Faculty of Engineering
Faculty of Mathematics

UNIVERSITY OF
WATERLOO

Part I

Curriculum Committee Updates

Recent Changes

- New work report guidelines.
- Moved MATH 213 from 2B to 3A.
- Streamlined outcomes assessment process.

On the agenda:

- second-year databases course.

Part II

Student Survey Results

2018 Exit Survey: Expectations & Would Recommend

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

D = 3, d = 6, n = 9, a = 56, A = 22

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

D = 0, d = 1, n = 2, a = 12, A = 81

I would recommend my program to other prospective students:

D = 1, d = 2, n = 8, a = 35, A = 50

2018 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: 41
- 1: 6
- 2: 2
- 3+: 7

2018 Exit Survey: Next Steps

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

Entrepreneurial initiative	1
Full-time, non SE	3
Full-time, SE	84
Other/unknown	5
Grad school	3

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

- Yes: 15
- No: 78

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	3-10	10+
1B	6 (11%)	25 (46%)	23 (43%)
3A	8 (19%)	23 (53%)	12 (28%)
4B	3 (6%)	32 (64%)	15 (30%)

Social Connectedness Survey: Exhaustive poll

In general, are you satisfied with the quality and quantity of your social interactions?

- no = 21 (16%)
- yes = 111 (84%)

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

	0	1	2	3–9	10+
4B	1.5%	1.5%	6%	50	41

Workload Survey

term	nominal load	contact hrs	total workload (hrs/week)
1A	5.5	28.25	57.5
1B	5.0	28	51.5
2A	6.0	27.25	51.3
2B	6.0	28	57.1
3A	5.0	19.25	39.5*
3B	6.0	20.25	56.3
4A	5.0	17	49.1
4B	6.0	17	47.6

* exceptionally, there was no HW-based SE 350 lab in W18

Part III

Space

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Space Plan: Long-Term

SE admin space will move to DC 2523,
SE undergrad lounge to EIT 3143/3146.

Space Plan: Temporary

- currently occupying DC 2539 (director), 2538 (advisor), 2536 (assoc dir);
- using DC 2597 for flexible meeting space when available.
- not ideal: creates noise in faculty office corridor, no "program space".

Part IV

Succession Plan

Program Administration

| 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |

Director

| Jo Atlee | Bill Wilson | Charlie Clarke | Andrew Morton | Patrick Lam | Derek Rayside |

Associate Director

| Matt Armstrong | Norm Young | Andrew Morton | Patrick Lam | Mahesh Tripunitara | Derek Rayside | Victoria Sakhnini |

Assistant to Director / Ugrad Advisor & Coordinator

| Shaz Rahaman | Kate Andrey | Shaz Rahaman | Liz Skibicki | Shaz Rahaman |
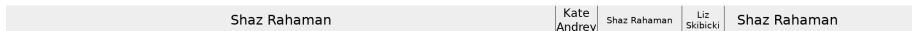
Part V

Admissions, Graduations, and Retention

Admissions Data

	2018	f	2017	f %	2016	f %	2015	f %	2014	f %
Applications	1555		1475	16	1340	17	1112	14	640	
Offers	184	23	190	26	195	21	185	20	202	
Accepts	n/a		135	26	130	18	123	20	134	19
OSS avg	96.8		95.9		96.5		96.0		94.1	
OSS 10th dec	95.0		93.2		94.3		92.5		90.4	

notes:

- admissions is gender-blind;
  data suggest that females who do apply have more competitive applications.
- SE Board meeting is early this year:
  no acceptance data yet (predicted class size 121, 23% female)

2018 Applications, Offers, & Predicted Count

2018 applications:

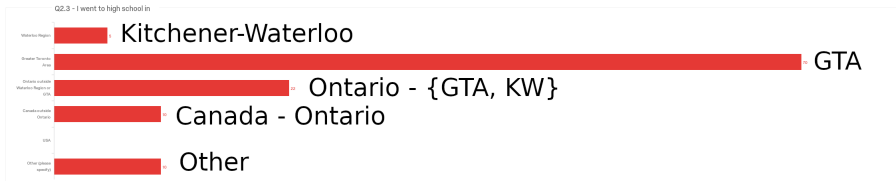|	OSS	NOSS	total
Domestic	782	292	1074
Visa	79	402	481

2018 offers:

- 184 total
- 149 domestic, 35 visa

Predicted November 1 count: 121.

Where do students come from?

2018 graduating class:

Q2.3 - I went to high school in

- Kitchener-Waterloo
- GTA
- Ontario - {GTA, KW}
- Canada - Ontario
- Other

Gender Counts

% female students in Software Engineering
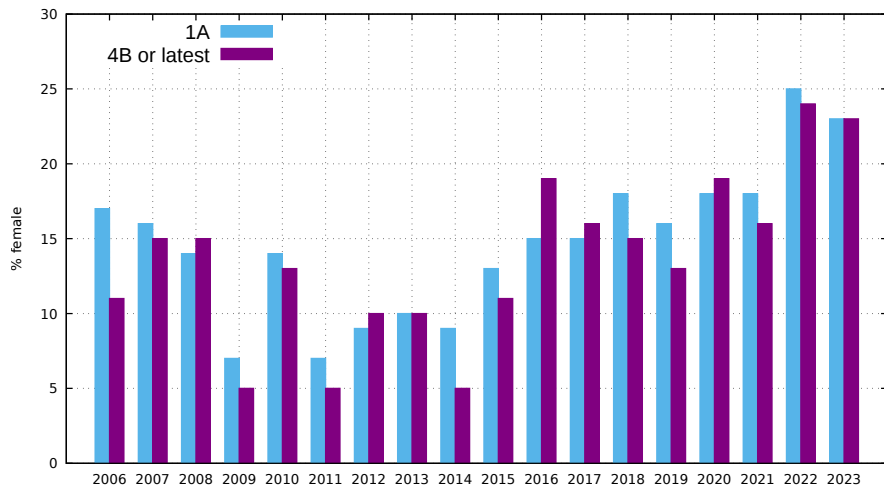
Failed Term Counts

Failed term: term average $< 59.5\%$.

	initial #	1A + 1B	% female	2A + 2B
2022	141	20	25%	–
2021	130	9	22%	4*
2020	125	10	30%	9
2019	135	18	22%	10
2018	151	18	33%	8

*: class of 2021 currently in 2B.

2A+2B failed terms % by females = 16%.

Cohort Sizes
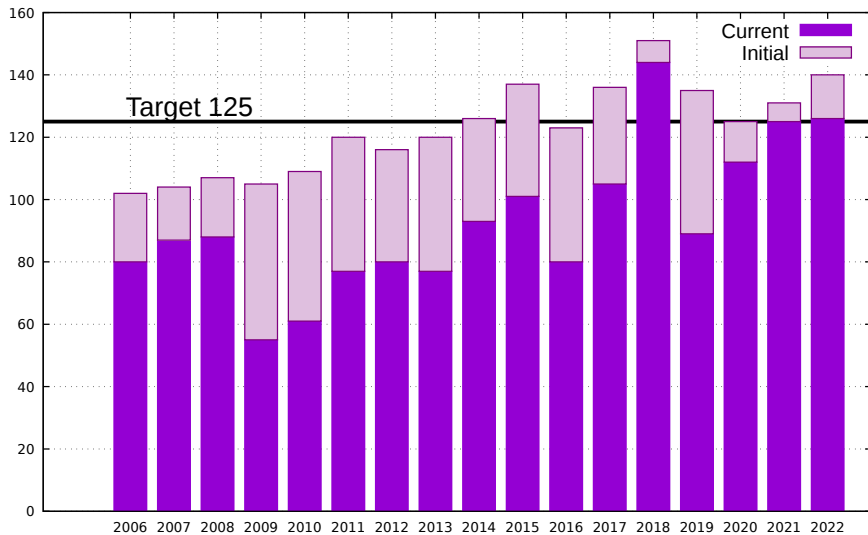
Graduation Rates

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	85	85

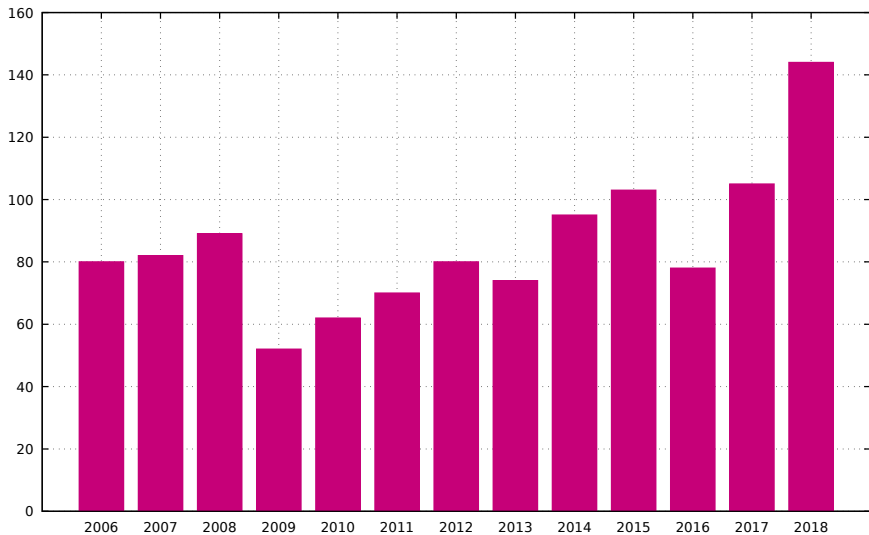in progress for class of 2018 = 91%

Record Number of BSEs Granted June 2018

144 BSEs to be granted
(max for the foreseeable future)

2018 BSE Graduates

- 84% of the 2018 graduates started with us in 2013.
- 12 students transferred into this class;
- 8 students originally from SE 2017 (LoA/repeats)

BSE Degrees Granted (total 2006–2018 = 1123)

Co-op Employment

Final co-op employment rates:

	all	1st	non-1st
W16	100	–	–
S16	99.6	99.1	100
F16	100	–	–
W17	100	–	–
S17	98.8	97.7	100
F17	99.6	–	–
W18	100	–	–
S18*	*90.5*	*83.9*	*98.2*

*: S18 interim numbers as of April 30, 2018.