This document summarizes my teaching evaluation results over the past four academic years (between F17 and W21), involving 2,251 Computer Science and Engineering students in courses ranging from the first to the fourth years.

Section 1 provides sample student comments across four broad categories. Two instances of anonymous eClass mid-term course evaluation were conducted during the reading weeks of F20 and W21, where response rates of 76% (276/363) and 60% (215/357), respectively, were reached. Section 1.4 includes their selected written comments, and Section 2.1 and Section 2.2 summarize the numerical results of two questions related to the effectiveness of my teaching innovation and classroom inclusiveness. Furthermore, Section 3.1 to Section 3.4 provide summarized numerical results from York's ONCE (Online Course Evaluations). The numerical results, all with high response rates, indicate that the selected comments are in fact broadly held views of students.

1 Selective Student Comments

1.1 Achieving Learning Outcomes and Fostering Intellectual Growth & Confidence

- "[The best things about the course are] The professor. I am extremely impressed by the level of difficulty and high expectations with such great teaching. It pushes the students *beyond their maximum potential*! I love it!"
- "Clearly stated the course outlines and followed accordingly. The instructor did his best for understanding the course materials. Specially, all of his *tutorial videos* were very helpful to me to fulfill *learning outcomes*."
- "... coming into the course knowing nothing about java, his *online tutorials* allowed me to understand the course material *to the best of my ability*. It was easy to follow, very in-depth with the explanations and most importantly, had relevance to the *lab* and *course syllabus*."
- "Great teacher, really good at explaining difficult concepts. Made the course understandable for everyone. *Labs* were designed well to work in unison with the youtube *tutorial videos*."
- "He clearly showed *passion* for the students that he was teaching. He was really focused on helping us *grow intellectually*."
- "... Him *recording the lectures* for us to view several times after class is a huge help. He is very approachable and I felt extremely *confident* in this course."
- "I find Jackie's teaching style very compatible with my learning style, introducing *motivating* problems to justify programming concepts and providing plenty of *intuitive examples*. I also find his *iPad notes* and exercises given in lecture helpful."
- "His teaching style is very good. He *explains slowly and doesn't rush* to complete concepts."
- "[The best things about this course are] The professor's ability to express complicated concepts in a simple manner such that all students where able to understand them."
- "the lectures in class were *clear* and *accurate*, progressing and a consistant pace, while answering any feedback and questions they had on the lectures."
- "He will *deliberately reiterate* information until it is embedded in the student's mind, no matter how many times asked. ..."

1.2 Diversity of Learning Support: Technology-Enhanced Lectures & Tutorials

- "[The best things about the course are] *Recorded lectures* posted online. I have trouble learning material in one lecture, *being able to rewatch lectures* might be critical to my success in learning the *course objectives*."

- "The online *videos of lectures* are really helpful because there are times where I had a hard time understanding the material in the first time so I *rewatch the video lectures* to understand them. It was also really great to have the *tutorial videos* for the labs, it really helped us to where we needed to start for the *lab*."
- "His *tutorial videos* made everything so easy and he would take the time to make 1 hour+ long videos outside of class for us and that just goes to show how much he cares about students learning Java for the first time. I would personally like to thank Professor Wang for his efforts. I have a *strong foundation* now."
- "The online recordings are one of the best things about this course, as it allows us to *review* them even after the lecture is over. This way we can *revise and take further notes* incase we missed any during the lecture."
- "The instructor is a fantastic teacher. He has a clear understanding of what it takes for students to succeed and he wants to *reinforce important topics* that will lead to your success. Additionally, he is very *organized* and *efficient* in his passing down of knowledge. He includes *a great array of resources* including recorded lectures, lecture slides, iPad notes, and many practice exercises/readings."
- "Professor Jackie puts an enormous amount of effort into making *examples* and *resources* available to the class to learn or improve. It is easily clear that he has put a huge amount of thought into each lecture that was made."
- "Prof Wang is the only good thing about this course. He works extremely hard to make videos that are related to material covered in the course. From *tutorial videos* to demos. He's incredible."
- "Jackie is a brilliant instructor and his *use of the technology* to facilitate the teaching is what makes him a unique professor. Outstanding work."
- "The instructor is very nice and his class have always been easy to follow, illustrating via ipad is a great way of *grabbing my attention*!"
- "Fantastic professor. He explains everything *to detail* and uses *visualization* to make us understand abstract concept better."
- "[The best things about this course are] The way he wrote and illustrated concepts, highlighting areas as he explained using *colour coordination*, made it easy to understand."
- "very knowledgeable about the course, teaching style (*using ipad to write notes* and go over problems) is superb"
- "the teaching style of instructor is awesome, he uses *an Ipad instead of black board* and *record every lecture*, which is very helpful . if this kind teaching style is used by other instructor then student will pay more attention to teacher then [than] copying notes from blackboard and doing multitasking."
- "[The best things about this course are] The *tutorial videos*. That has been the only (and best) way that I have learned any kind of programming. Any programmer that I have spoken with learns by watching tutorial videos and I am very glad that Jackie decided to recognize that and make those available to us."
- "[The best things about the course are] Just the way he explains everything in the *tutorial videos*. *Tracing code line by line* makes it so helpful and easy to understand Probably the best coding professor so far."
- "Prof. Wang has been an incredible asset to not only me learning Java, but more than 5+ friends. His youtube *video tutorials* on Java have been the best set of programming videos I have ever seen"

1.3 Creating Inclusive Classroom and Inspiring Passion

- "Helpful, friendly, and approachable professor. These three attributes are most important to me as an undergrad ... and the instructor has exceeded my expectations."
- "Professor Wang very clearly cares about his students success. The *lecture recordings* were immensely helpful and the *tutorial videos* for the most part were crucial to my success in this course. He was very available for help either through the *course forum*, *email*, or *his attendance to every lab section*. Overall Prof. Wang put a lot of effort into this course and it made the course significantly better and more educational"
- "easy to approach and ask questions and answered emails *almost instantly* most of the time"
- "I admire how *passionate* the instructor when he is teaching the course. Also, how dedicated the instructor in helping students to do well in this hard course by accommodating additional *review sessions* and online *video tutorials*."
- "He always approaches things from the *positive* angle. Has never shamed any students for their lack of understanding, even simple concepts. He doesn't shame students who haven't started studying early enough, rather taking an active approach to congratulate students who have put in the extra effort. This makes a HUGE difference to students. ..."
- "Jackie (which is what he prefers to go by) takes a lot of his time to explain things which is awesome for students. He is also really understanding and easy to talk to. It shows that when he lets students ... simply go with his first name he is a down to Earth professor. It also demonstrates *a better bond* between him and the students."

1.4 Online Delivery (EECS3311 Software Design, Fall 2020)

Anonymous Midterm Course Evaluation

- "*Depth* and *quality*, of all the [lecture and tutorial] videos are great"
- "I appreciate the instructor's effort in creating course content and *clear illustrations* that support remote learning."
- "I believe the videos and *annotations on the ipad* are really good in terms of digesting the material. He is pretty *thorough* in the videos and *annotations* provided in an attempt to make understanding the subject matter more accommodating."

ONCE

- "Very *organized*, the best remote experience"
- "The course resources (lecture, slides, tutorial) were high in quality with clear evidence of *tailoring*. They were clearly fine tuned and adjusted for the best learning experience."
- "The instructor did his very best with pre-recorded online lectures as well as Q&A sessions throughout the week. No question was unanswered, no idea insignificant. The instructor is amazing and the very embodiment of how a university professor should be be. He is a great teacher knowing and applying all the current and relevant teaching methods in his practice. Instructor went above and beyond of what is required of him, staying way over-time in his office hours, adding so many additional Q&A project sessions and useful resources. ..."
- "The instructor was the best I could have got in any course. Jackie has taught us all the concepts with *analogy* and *motivation* and he always felt me welcome outside the class when I needed extra help. He went beyond the regular hours to help students and I really appreciate his *passion* for teaching."
- "The professor has dedicated a lot of time and effort to get the material across to the students. He readily provided help and guidance throughout the course and was *always available* for discussions relative to the course material."

2 Numerical Summary of Mid-Term Course Evaluation

Starting from F20, during the reading week, online forms were released on eClass for students to submit their **anonymous** feedback. Here is the complete list of questions given to students:

Q1. The instructor has conveyed the subject matter in a clear and well-organized manner.
Q2. I find the instructor's **frequent usage of visual annotations** (by drawing using his iPad) particularly helpful for my learning, especially when the course is delivered entirely online.
Q3. The instructor has made students feel welcome to seek help or advice inside or outside of class.
Q4. The instructor's responsiveness to students (through Q&A in lectures and labs, office hours, emails, and online forums) creates an **inclusive** online learning environment.
Q5. Overall, the instructor has been an effective teacher in the remote delivery of this course.
Q6. What does your instructor do particularly **well** to support your **online** learning?
Q7. How could your instructor **do better** to support your **online** learning?

Options for **Q1** to **Q5** are identical to ONCE: "strongly agree", "agree", "somewhat agree", "neither agree nor disagree", "somewhat disagree", "disagree", and "strongly disagree". **Q6** and **Q7** are essay questions. Some written responses to **Q6** are listed in Section 1.4.

This section summarizes the numerical results for **Q2** (related to the effectiveness of my teaching innovation) and **Q4** (related to classroom inclusiveness).

2.1 EECS3311 Fall'20 (76%, 276/363)

Q2: I find the instructor's **frequent usage of visual annotations** (by drawing using his iPad) particularly helpful for my learning, especially when the course is delivered entirely online.
⟶ 90% positive (52% strongly agree, 29% agree, 9% somewhat agree); 10% neutral/negative

Q4: The instructor's responsiveness to students (through Q&A in lectures and labs, office hours, emails, and online forums) creates an **inclusive** online learning environment.
⟶ 89% positive (50% strongly agree, 30% agree, 9% somewhat agree); 11% neutral/negative

2.2 EECS1022 Winter'21 (60%, 215/357)

Q2: I find the instructor's **frequent usage of visual annotations** (by drawing using his iPad) particularly helpful for my learning, especially when the course is delivered entirely online.
⟶ 91% positive (50% strongly agree, 30% agree, 11% somewhat agree); 4% neutral/negative

Q4: The instructor's responsiveness to students (through Q&A in lectures and labs, office hours, emails, and online forums) creates an **inclusive** online learning environment.
⟶ 92% positive (55% strongly agree, 30% agree, 7% somewhat agree); 6% neutral/negative

3 Numerical Summary of Course Evaluation

The tables below summarise numerical results for the following six questions:

Q1: The instructor conveyed the subject matter in a clear and well-organized manner.
Q2: The instructor made students feel welcome to seek help/advice inside/outside of class.
Q3: The instructor helped me understand the importance/significance of the course content.
Q4: The course learning outcomes were clearly stated and achieved in the course.
Q5: The course helped me grow intellectually.
Q6: Overall, the instructor was an effective teacher in this course.

Theses questions address many of the criteria related to **student learning**. My teaching performance on all of the above aspects are (virtually) consistently higher than the EECS Departmental and Lassonde Faculty means and medians. In many cases, close to or larger than 90% of the responses were **positive**.

Each of the tables shows the percentage of responses that strongly agree, agree, or somewhat agree (i.e., that are **positive**), and the breakdown within this group of the percentage who **strongly agree** and the percentage who **agree or somewhat agree**. The mean and median are also included along with the Departmental and Faculty means. With a few exceptions, the "**Positive**" group amounts to close to or above 90% and hence the percentages for the other neutral or negative responses are not particularly relevant. A mean is marked in green if it is strictly above the Departmental and Faculty means.

3.1 Numerical Summary: First-Year Courses [1,117 students]

Course	Term	Responses		Q1	Q2	Q3	Q4	Q5	Q6
EECS1021	W19	75.39% (324/430)	Positive (%)	91.41	88.95	86.8	87.19	79.57	87.66
			Strongly Agree (%)	49.08	52.45	41.1	32.93	32.93	43.52
			(Somewhat) Agree (%)	42.33	36.5	45.7	54.26	46.64	44.14
			Mean	6.15	6.11	5.9	5.84	5.53	5.93
			Median	6	7	6	6	6	6
			Dept. Mean	5.49	5.75	5.34	5.47	5.13	5.38
			Faculty Mean	5.67	5.84	5.34	5.65	5.29	5.57
EECS1022	W21	63.87% (198/310)	Positive (%)	91.54	88.06	86.07	89.55	81.09	84.58
			Strongly Agree (%)	46.77	54.73	40.3	36.82	33.33	41.29
			(Somewhat) Agree (%)	44.78	33.33	45.77	52.74	47.76	43.28
			Mean	6.09	6.19	5.8	5.92	5.56	5.81
			Median	7	7	6	6	6	6
			Dept. Mean	5.72	5.87	5.62	5.74	5.53	5.66
			Faculty Mean	5.79	5.92	5.71	5.82	5.6	5.74
	W18	58.09% (219/377)	Positive (%)	n.a. (labour disruption)			90.6	82.33	
			Strongly Agree (%)				37.97	36.84	
			(Somewhat) Agree (%)				52.63	45.49	
			Mean				5.97	5.76	
			Median				6	6	
			Dept. Mean				5.48	5.3	
			Faculty Mean				5.65	5.48	

- EECS1021:
  Object Oriented Programming
  ○ Second common 1st-year course taken by all engineering students in Lassonde.
- EECS1022:
  Programming for Mobile Computing
  ○ Second common 1st-year course taken by all Computer Science students.
- Means all **above** dept. means
- Virtually all who responded ($\geq$ **80%**) were **positive** about all questions.

3.2 Numerical Summary: Second-Year Courses [363 students]

Course	Term	Responses		Q1	Q2	Q3	Q4	Q5	Q6
EECS2030	F19	88.28% (113/128)	Positive (%)	97.37	96.49	96.49	96.49	94.73	96.49
			Strongly Agree (%)	78.95	80.7	61.4	51.75	57.89	75.44
			(Somewhat) Agree (%)	18.42	15.79	35.09	44.74	36.84	21.05
			Mean	6.69	6.73	6.47	6.38	6.34	6.66
			Median	7	7	7	7	7	7
			Dept. Mean	5.69	5.9	5.59	5.64	5.49	5.63
			Faculty Mean	5.73	5.93	5.66	5.73	5.49	5.69
	F18	69.40% (93/134)	Positive (%)	98.94	97.87	92.55	96.84	92.63	96.81
			Strongly Agree (%)	76.6	86.17	72.34	63.16	63.16	71.28
			(Somewhat) Agree (%)	22.34	11.7	20.21	33.68	29.47	25.53
			Mean	6.71	6.78	6.5	6.53	6.31	6.62
			Median	7	7	7	7	7	7
			Dept. Mean	5.72	5.86	5.59	5.68	5.56	5.66
			Faculty Mean	5.75	5.9	5.67	5.76	5.56	5.71
	F17	58.42% (59/101)	Positive (%)	100	96.6	98.3	98.3	91.53	96.61
			Strongly Agree (%)	79.31	72.88	66.1	54.24	57.63	67.8
			(Somewhat) Agree (%)	20.69	23.72	32.2	44.06	33.9	28.81
			Mean	6.74	6.61	6.59	6.34	6.32	6.51
			Median	7	7	7	7	7	7
			Dept. Mean	5.89	6.09	5.78	5.74	5.63	5.89
			Faculty Mean	5.87	6.05	5.82	5.8	5.66	5.89

- **Title**: *Advanced Object Oriented Programming*
- Taught three times: F19, F18, F17
- EECS2030 arguably the most challenging 2nd-year course to teach & learn:
  ○ It is the **prerequisite of all** subsequent 2nd-year courses.
  ○ It represents a **substantial jump** at both conceptual & technical levels from the first year.
- Means all **above** dept. & faculty means
- Virtually all who responded ($>$ **90%**) were **positive** about all questions.
- Vast majority (between 55% and 80%) responded with "**strongly agree**".

3.3 Numerical Summary: Third-Year Courses [751 students]

Course	Term	Responses		Q1	Q2	Q3	Q4	Q5	Q6
EECS3311	F20	80.50% (227/282)	Positive (%)	88.07	91.7	76.76	81.74	68.46	75.1
			Strongly Agree (%)	51.85	63.49	42.32	36.51	35.68	44.4
			(Somewhat) Agree (%)	36.21	28.22	34.44	45.23	32.78	30.71
			Mean	6.05	6.35	5.51	5.61	4.99	5.56
			Median	7	7	6	6	6	6
			Dept. Mean	5.74	5.83	5.56	5.73	5.49	5.64
			Faculty Mean	5.69	5.81	5.56	5.75	5.48	5.81
	W20	87.13% (88/101)	Positive (%)	88.83	92.86	87.76	78.36	54.09	89.79
			Strongly Agree (%)	55.1	69.39	44.9	27.84	21.43	56.12
			(Somewhat) Agree (%)	33.73	23.47	42.86	50.52	32.66	33.67
			Mean	6.16	6.38	5.84	5.36	4.4	6.09
			Median	7	7	6	6	5	7
			Dept. Mean	5.66	5.91	5.57	5.58	5.37	5.58
			Faculty Mean	5.71	5.92	5.64	5.58	5.4	5.63
	F19	86.96% (100/115)	Positive (%)	90	94	88	87	77	85
			Strongly Agree (%)	56	68	48	34	31	49
			(Somewhat) Agree (%)	34	26	40	53	46	36
			Mean	6.1	6.43	5.95	5.62	5.29	5.93
			Median	7	7	6	6	6	6
			Dept. Mean	5.69	5.9	5.59	5.64	5.49	5.63
			Faculty Mean	5.73	5.93	5.66	5.73	5.49	5.69
	W19	71.08% (59/83)	Positive (%)	99.99	100	96.6	88.14	81.35	96.61
			Strongly Agree (%)	69.49	67.8	62.71	40.68	44.07	69.49
			(Somewhat) Agree (%)	30.5	32.2	33.89	47.46	37.28	27.12
			Mean	6.64	6.63	6.41	5.76	5.72	6.51
			Median	7	7	7	6	6	7
			Dept. Mean	5.49	5.75	5.34	5.47	5.13	5.38
			Faculty Mean	5.67	5.84	5.34	5.65	5.29	5.57
	F18	61.36% (54/88)	Positive (%)	96.3	96.29	90.74	92.6	92.59	98.15
			Strongly Agree (%)	68.52	81.48	64.81	48.15	44.44	68.52
			(Somewhat) Agree (%)	27.78	14.81	25.93	44.45	48.15	29.63
			Mean	6.54	6.67	6.37	6.2	5.7	6.61
			Median	7	7	7	6	6	7
			Dept. Mean	5.72	5.86	5.59	5.68	5.56	5.66
			Faculty Mean	5.75	5.9	5.67	5.76	5.56	5.71
	F17	85.73% (70/82)	Positive (%)	94.28	92.86	90	80	80	90
			Strongly Agree (%)	61.43	72.86	62.86	34.29	40	62.86
			(Somewhat) Agree (%)	32.85	20	27.14	45.71	40	27.14
			Mean	6.39	6.47	6.1	5.67	5.41	6.23
			Median	7	7	7	6	6	7
			Dept. Mean	5.89	6.09	5.78	5.74	5.63	5.89
			Faculty Mean	5.87	6.05	5.82	5.8	5.66	5.89

- **Title**: *Software Design*
- Taught six times
- Means of **Q6** always **above** dept/faculty means (except in F20)
- Unlike many other EECS courses, EECS3311 requires students to learn a **new** design language (appropriate for the teaching & learning compared with alternatives) in the very first few weeks.
- The main teaching challenges are: **1)** Justify to students the need to learn a new language; and **2)** Create comprehensive tutorials to facilitate learning.
- Despite heavy workload and pandemic, the majority of class (more than $\frac{2}{3}$) agreed on their intellectual growth (reflected on **Q4** and **Q5**).
- Prior to the current pandemic:
  - Virtually all questions responded **positively** by vast majority
  - **Q1** and **Q2** means **substantially above** dept/faculty means
- For **F20**:
  - Weekly pre-recorded lectures (3 hours), live Q&A (3 hours), office hours (4.5 hours) made available to students
  - Compared with W20:
    - More complained about the new online format (14% drop on **Q6**).
    - Equally more students **strongly agreed** they grew intellectually (14% increase on **Q5**).
- Overall students perceive their instructor's teaching being **effective** and the learning environment being **inclusive**.

3.4 Numerical Summary: Fourth-Year Courses [20 students]

Course	Term	Responses		Q1	Q2	Q3	Q4	Q5	Q6
EECS4302	W20	95.00% (19/20)	Positive (%)	100	100	100	89.47	89.48	94.73
			Strongly Agree (%)	89.47	100	68.42	36.84	63.16	68.42
			(Somewhat) Agree (%)	10.53	0	31.58	52.63	26.32	26.31
			Mean	6.89	7	6.58	5.89	6.37	6.37
			Median	7	7	7	6	7	7
			Dept. Mean	5.66	5.91	5.57	5.48	5.37	5.58
			Faculty Mean	5.71	5.92	5.64	5.58	5.4	5.63

- **Title**: *Compilers and Interpreters*
- Taught one time: W20
- Means for all questions are **substantially above** dept. and faculty means.
- Virtually all who responded ($\approx$ **90%**) were **positive** about all questions.