

University of Waterloo
SENATE EXECUTIVE COMMITTEE
Notice of Meeting

Date: Monday 5 June 2023
Time: 3 p.m. – 3:30 p.m.
Place: NH 3318

AGENDA	Action
1. Minutes of the 1 May 2023 Meeting	Decision
2. Business Arising from the Minutes	Information
3. Draft 19 June 2023 Senate Agenda	Decision
4. Territorial Acknowledgement and Deans' Participation	Discussion
5. Results of Senate Effectiveness Survey (<i>distributed separately</i>)	Discussion
6. Other Business	

Note to SEC members: the Chancellor Nominating Committee meeting will immediately follow this meeting.

29 May 2023

Mike Grivicic
Associate University Secretary

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University of Waterloo
SENATE EXECUTIVE COMMITTEE
Minutes of the 1 May 2023 Meeting
[in agenda order]

Present: Catherine Dong, Tim Weber-Kraljevski (secretary), Christiane Lemieux, Carol Ann MacGregor, Rory Norris, David Porreca, Luke Potwarka, Mary Robinson, James Rush (chair), Clarence Woudsma

Regrets: Jeff Casello, Joan Coutu, Laura Deakin, Vivek Goel (chair)

Guests: Rebecca Butler, Diana Gonçalves, Andrea Kelman

1. MINUTES OF THE 3 APRIL 2023 MEETING

Members requested the following revision:

- under item 4, combine the two sentences of the motion into a single sentence joined by a comma, and remove the ‘s’ from the end of the word ‘directs’;
- under item 5, in the motion remove the ‘s’ from the word ‘gives’;
- under item 8, correct the final sentence to read ‘The secretary will take these inquiries to Casello to provide an answer; and
- under item 8, correct the spelling of Coutu.

A motion was heard to approve the minutes as presented, with the noted revisions. Dong and Potwarka. Carried.

2. BUSINESS ARISING FROM THE MINUTES

There was no business arising.

3. APPROVAL OF MEMBERSHIP TO SENATE COMMITTEES AND COUNCILS ANT TO THE BOARD OF GOVERNORS

A motion was heard to approve the membership of Senate committees and councils and the Board of Governors where vacancies exist as provided on the list of nominees, with the following additions:

- Sharon Tucker, Senate Executive committee, Alumni;
- Vikas Gupta, Senate Finance Committee, Alumni;
- Acey Kaspar, Honorary Degree Committee, Alumni;
- Joseph Meleshko, Senate Graduate and Research Council, Graduate Student, Mathematics; and
- Greta Kroeker, University Committee on Student Appeals, Faculty, Faculty of Arts.

Woudsma and Porreca. Carried with two abstentions.

4. DRAFT 15 MAY 2023 SENATE AGENDA

Rush spoke to the agenda, highlighting that: a revised Senate Workplan will be created to reflect the reduction of meetings; the Policy 33 Amendment is a targeted revision in response to Bill 26 and that the Policy will still go through the more fulsome revision; the Bylaw 4 amendment will be going forward for its second reading; and the annual report from COU Academic Colleague is coming forward earlier than it traditionally does.

Members discussed the timing allotted for the Policy 33 Amendment. There was a motion to approve the 15 May 2023 Senate agenda, as presented. Dong and MacGregor. Carried.

5. OTHER BUSINESS

Rush informed members that in response to the Senate Governance Review in 2021, a Senate Orientation Module has been created. The module will be announced to Senators at the May 15th Senate meeting.

The secretary informed members that it is anticipated that the Committee will review Chancellor recommendations at the June meeting so the June meeting will be extended and held in person.

With no other business, the meeting was adjourned at 4:00 p.m.

2 May 2023

Tim Weber-Kraljevski
Governance Officer

SENATE
 MONDAY 19 June 2023
 3:30 P.M. EST
 NH 3407 / Zoom

[Governing Documents and Resources](#)

TIMING	AGENDA ITEM	PAGE	ACTION
	OPEN SESSION		
3:30 p.m.	1. Territorial Acknowledgement	Oral	
	2. Conflict of Interest	Oral	Declaration
	3. Approval of the Agenda	Oral	Decision
	4. Minutes of the 15 May 2023 Meeting	9	Decision
	5. Business Arising from the Minutes	Oral	Input
	6. Senate Work Plan	13	Information
3:35 p.m. (35 mins)	7. Report of the President a. President's Update b. PART Annual Update (Christopher Taylor)	Oral Oral	Information Information
4:10 p.m. (10 mins)	8. Report of the Vice-President, Academic and Provost a. Digital Learning Strategy (Rush, Johanna Wandel, Aldo Caputo)	15	Information
4:20 p.m. (5 mins)	b. Recommendation to Change the Name of the Department of Management Sciences to the Department of Management Science and Engineering Motion: To change the name of the Department of Management Sciences to the Department of Management Science and Engineering.	57	Decision
4:25 p.m. (20 mins)	9. Report – Associate Vice-President, Academic a. Teaching Assessment Report b. Digital Learning Principles and Guidelines Motion: [to be confirmed]	61	Information Decision

TIMING	AGENDA ITEM	PAGE	ACTION
4:45 p.m. (5 mins)	<p>Consent Agenda <i>Motion: To approve or receive for information the items on the consent agenda, listed as items 10-14 of the Senate agenda</i></p> <p>10. Report – Senate Graduate & Research Council</p> <p>11. Report – Senate Undergraduate Council</p> <p style="padding-left: 20px;">a. Academic Regulation Revision to Admission for the Faculty of Engineering <i>Motion: That Senate approve the proposed academic regulation revision to Admission for the Faculty of Engineering, effective 1 September 2024, as presented.</i></p> <p style="padding-left: 20px;">b. Academic Regulation for Admission Fraud <i>Motion: That Senate approve the proposed academic regulation revision for Admissions Fraud, effective 1 September 2023, as presented.</i></p> <p style="padding-left: 20px;">c. Academic Regulation Revision for Admission Requirements <i>Motion: That Senate approve the proposed academic regulation revisions of Admissions Requirement for Duolingo Component Scores, effective 1 September 2024, as presented.</i></p> <p>12. Report - Vice-President, Research & International</p> <p style="padding-left: 20px;">a. Awards, Distinctions, Grants, Waterloo International Engagements</p> <p>13. Report of the Provost – University Research Chairs</p> <p>14. Report of the Provost – Faculty Appointments, Leaves</p> <p>15. Other Business</p>	<p></p> <p>105</p> <p>107</p> <p>109</p> <p></p> <p>113</p> <p>115</p> <p></p> <p></p> <p>117</p> <p>Oral</p>	<p></p> <p>Information</p> <p>Information</p> <p>Decision</p> <p></p> <p>Decision</p> <p>Decision</p> <p></p> <p>Information</p> <p>Information</p> <p>Information</p> <p>Input</p>
4:50p.m.	<p>CONFIDENTIAL Senators, Vice-Presidents, Secretariat and Technical Staff as required</p> <p>16. Minutes of the 15 May 2023 Meeting</p> <p>17. Business Arising from the Minutes</p> <p>18. Report of the President</p> <p>19. Report of Vice-President, Advancement on Policy 7 (Nenone Donaldson)</p>	<p></p> <p>119</p> <p>Oral</p> <p>Oral</p> <p></p>	<p></p> <p>Decision</p> <p>Input</p> <p>Information</p> <p>Information</p>

TIMING	AGENDA ITEM	PAGE	ACTION
	20. Other Business	Oral	Input
	21. Adjournment	Oral	Input

Mike Grivicic
Associate University Secretary
Secretary to Senate

Important Dates

18 September 2023	Senate Meeting
9-13 October 2023	Fall Reading Week
20-21 October 2023	Convocation
23 October 2023	Senate Meeting

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University of Waterloo
SENATE
Minutes of the Monday 15 May 2023 Meeting
[in agenda order]

Present: John Abraham, Nasser Abukhdeir, Sheila Ager, Marc Aucoin, Lisa Aultman-Hall, Sandra Banks, Jeff Casello, Trevor Charles, Joan Coutu, Kristine Dalton, Laura Deakin, Charmaine Dean, David DeVidi, Nenone Donaldson, Mark Ferro, Mark Giesbrecht, Vivek Goel (chair), Kelly Grindrod, Vikas Gupta, David Ha, Peter Hall, Kevin Hare, Neela Hassan, Nadine Ibrahim, Martin Karsten, Acey Kaspar, Andrea Kelman (Secretary), Jennifer Kieffer, Veronica Kitchen, Scott Kline, Christiane Lemieux, Brad Lushman, Stephanie Maaz, Shana MacDonald, Ellen MacEachen, Carol Ann MacGregor, Blake Madill, Colleen Maxwell, Peter Meehan, Kristiina Montero, Cathy Newell Kelly, Chris Nielsen, Rory Norris, James Nugent, Erin O'Connell, Troy Osborne, David Porreca, Luke Potwarka, Jacinda Reitsma, Cynthia Richard, Mary Robinson, James Rush, Beth Sandore Namachchivaya, Rida Sayed, Asher Scaini, Marcus Shantz, Sivabal Sivaloganathan, Siva Sivoththaman, James Skidmore, Sharon Tucker, Graeme Turner, Dan Weber, Mary Wells, Clarence Woudsma

Guests: Jean Becker, Aldo Caputo, Michael Dorr, Donna Ellis, Anne Galang, Diana Goncalves, Paul Feiguth, Jenny Flagler-George, Barbara Forrest, Sarah Hadley, Michele Hollis, Ross Johnston, Nick Manning, Norah McRae, Ian Milligan, Fayaz Noormohamed, Chris Read, Ian Rowlands, Daniela Seskar-Hencic, Nadia Singh, Kathy Smidt, Sherri Sutherland, Brandon Sweet, Tim Weber-Kraljevski, Sarah Willey-Thomas, Caitlin Vaux, Katy Wong-Francq

Absent: Dominic Barton, Aubrey Basdeo, Judy Castaneda, Kim Cuddington, Jack DeGooyer, Catherine Dong, Aiman Fatima, Wendy Fletcher, Bruce Frayne, Murray Gamble, Rob Gorbet, Natalie Hutchings, Sonia Ismail, Narveen Jandu, Achim Kempf, Alysia Kolentsis, Robert Lemieux, Xianguo Li, Lili Liu, Jennifer Lynes Murray, Ceileigh McAllister, Richard Myers, Erin O'Connell, John Saabas, Labibah Salim J Ali, Diana Vangelisti, Stanley Woo, Changbao Wu, Annie Yang

*regrets

OPEN SESSION

CHAIR'S REMARKS

The chair welcomed new members whose terms began May 1, 2023, and announced that, following approval at the Special Senate and Board of Governors meetings in April 2023, Professor Chris Houser will join the University of Waterloo as Dean of the Faculty of Science for a five-year term commencing July 1, 2023.

The chair informed members that the Senate Self-Assessment Survey deadline has been extended to allow for greater participation, and encouraged those eligible senators to complete the survey, if they had not already done so. The chair also announced a Senate Orientation Module has been created to provide a general overview of governance at Waterloo, the roles and responsibilities of the Senate, and how to prepare for and what to expect at Senate meetings. All senators, and particularly new senators, were encouraged to complete the module. Finally, the chair reminded members that that nominations for honorary degree recipients are due May 31, 2023. Senators were encouraged to submit nominations and to encourage their colleagues to submit nominations as well.

1. CONFLICT OF INTEREST

Senators were asked to declare any conflicts they may have in relation to the items on the agenda. No conflicts were declared.

2. APPROVAL OF THE AGENDA

A motion was heard to approve the agenda as distributed. Skidmore and Porreca. Carried with one abstention.

3. MINUTES OF THE 17 APRIL 2023 MEETING

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A motion was heard to approve the minutes as distributed. Newel Kelly and Porreca. Carried.

4. BUSINESS ARISING FROM THE MINUTES

There was no business arising.

5. SENATE WORKPLAN

Goel noted that the workplan had been updated to reflect the reduction of meetings from ten to eight annually, that was approved with the amendment to Senate Bylaw 1 that received the second and final reading at the 17 April 2023 meeting. This item was received for information.

6. REPORT OF THE PRESIDENT

a. President's Update

Goel provided his report:

- With May as Asian Heritage month, Goel noted this offers the opportunity to pay special attention to the vital roles our community members of Asian heritage play in the success of our institution, while also recognizing the important work needed to eliminate anti-Asian racism, and all forms of racism, on our campuses.
- He highlighted the conflict in Sudan and its toll on life and peace adds to a growing list of humanitarian crises around the world, and informed members that Ian Rowlands and Waterloo International had issued a statement on behalf of the University expressing concern regarding the ongoing conflict in Sudan and sympathy for those impacted by events there.
- On May 8, 2023 the university welcomed 27 successful applicants for its second summer research program for students from Ukraine. This program runs from May to August 2023 and is designed for 4th year bachelor, master, and doctoral students from Ukrainian universities whose studies were affected by Russia's full-scale invasion of Ukraine.
- On April 24, 2023 the Globe and Mail reported on a memo sent to our research community and graduate students, and on May 3, 2023 the Toronto Star reported on Waterloo ending its partnerships with Huawei. The Office of the Vice-President, Research and International has developed a safeguarding research workplan and has identified activities to assist faculty with their research to enhance successful outcomes and to safeguard their work. As well, Vice-President Dean has been leading the sector-wide development of best practices around safeguarding research in line with the federal and Ontario provincial governments, and has been engaged in regular conversations with peer institutions in the U15 and with government agencies.
- Goel hosted a Queen's Park Reception with over 30 MPPs, including MCU Minister Jill Dunlop and several of their cabinet colleagues, in attendance. The focus on the event was how the University is driving innovation, from industry partnerships, research commercialization and entrepreneurialism.
- On May 5, 2023 Waterloo hosted, in partnership with Health Canada, Statistics Canada and Canadian Institute for Health Information, a conference in Ottawa entitled Cybersecurity, Privacy, and Artificial Intelligence in Health Data: Advancements and Challenges.
- A recent Financial Times article titled "Toronto capitalises on tech success," said, "few outside of Canada had heard of the University of Waterloo in sleepy south-west Ontario. Today, it is widely regarded to be a breeding-ground for world-class tech talent." and quoted Lauren Haw, chief executive of Toronto-based real estate platform Zoocasa, that "Waterloo is like saying you went to Harvard Law".
- As noted at last Senate, on April 21 the University of Waterloo, in partnership with MaRS Discovery District, hosted the Waterloo Innovation Submit which brought together some of the world's leading experts on sustainable aeronautics, electric and autonomous vehicles, clean energy and urban planning to reimagine the future of local and global transportation.
- On May 23, Prince Hussain Aga Khan will engage in a fireside conversation at Humanities Theatre, to share his work and photography on the devastating impact of plastic pollution and human activity on marine life and the environment.

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- Spring 2023 Convocation will be on June 13 to 17, 2023 and member were encouraged to take part and to encourage their colleagues to do so also.

Members discussed the university's approach to safeguarding research, steps being taken, concerns from researchers, and opportunities for consultation through an upcoming town hall and further discussion at future Senate meetings.

7. REPORT – SENATE GRADUATE & RESEARCH COUNCIL

a. Major Program Modification to the Master of Engineering (Meng) in Mechanical and Mechatronics Engineering – Co-operative Program

Casello provided an overview of the item, and a motion was heard that Senate approve adding a direct entry Co-operative program/option to the MEng in Mechanical and Mechatronics Engineering Program, effective 1 September 2023, as presented. Casello and Wells. Carried.

b. Major Program Modification to the Graduate Diploma (GDip) in Design Engineering and Graduate Diploma (GDip) in Design Engineering – Cooperative Program

Casello provided an overview of the item, and a motion was heard that Senate approve discontinuing the type 2 GDip in Design Engineering and the type 2 GDip in Design Engineering – Co-operative Program, effective 1 September 2023, as presented. Casello and Wells. Carried.

c. Major Program Modification to the Master of Mathematics (MMath) in Statistics

Casello provided an overview of the item, and a motion was heard that Senate approve discontinuing the coursework study option from the MMath in Statistics program, effective 1 September 2023, as presented. Casello and Giesbrecht. Carried.

8. REPORT – SENATE UNDERGRADUATE COUNCIL

a. Closure of Application to Part-Time On-Campus Three-Year General Science Program

Newel Kelly provided an overview of the item, and a motion was heard that Senate approve the closure of application to part-time oncampus Three-Year General Science program, effective 1 September 2023, as presented. Newel Kelly and Ager. Carried with one abstention.

9. AMENDMENTS TO POLICY 33 – ETHICAL BEHAVIOUR

Goel provided an overview of the item, and a motion was heard that Senate approve the amendments to Policy 33, as presented, and that Senate recommends the amendments to the Board of Governors for approval. Rush and Porreca.

Members discussed: the rationale for making the amendment to Policy 33 instead of Policy 42; the commitment to relook at the requirements within a year's time; and concerns with Bill 26 and government intervention in university policy.

The motion carried with one opposed and one abstention.

10. AMENDMENT TO BYLAW 4 – Ex-OFFICIO MEMBERSHIP

Goel provided an overview of the item and a motion was heard that Senate gives second and final reading to the amendments to Senate Bylaw4 as presented, with said amendments to effect:

- i. Removal of the Vice-President, Advancement, the Vice-President University Relations, and the Deputy Provost, Integrated Planning and Budgeting as ex-officio members of Senate
- ii. Addition of the Associate Vice-President, Equity, Diversity, Inclusion and Anti-Racism, the Associate Vice-President, Indigenous Relations, and the Associate Vice-President Academic Operations as ex-officio members of Senate

Newel Kelly and Casello. Carried with one abstention.

CONSENT AGENDA

A motion was heard to approve or receive for information the items on the consent agenda, listed as items 11-15 of the Senate agenda. Porreca and Skidmore. Carried.

11. REPORT – SENATE GRADUATE & RESEARCH COUNCIL

Received for information.

12. REPORT – SENATE UNDERGRADUATE COUNCIL

One item approved; remaining item received for information.

- a. That Senate approve the proposed academic regulation revision to the second degree and degree upgrades for the Faculty of Health, effective 1 September 2024, as presented.

13. REPORT – HONORARY DEGREE COMMITTEE

Received for information.

14. REPORT – COU ACADEMIC COLLEAGUE

Received for information.

15. REPORT – VICE-PRESIDENT, RESEARCH & INTERNATIONAL

Received for information.

16. REPORT OF THE PROVOST – FACULTY APPOINTMENTS, LEAVES

Received for information.

17. OTHER BUSINESS

There was no other business.

With no further business in open session, Senate convened in confidential session.

16 May 2023
AK/twk/dg

Andrea Kelman
University Secretary (Acting)
Secretary to Senate

Senate Agenda Items	15 May 2023	19 June 2023	18 September 2023	23 October 2023 <i>Strategic Plan Annual Update / Waterloo at 100</i>	27 November 2023	29 January 2024	4 March 2024	8 April 2024
▪ expected *as needed								
REGULAR AGENDA (including items for information and discussion)								
Minutes	▪	▪	▪	▪	▪	▪	▪	▪
Business Arising	▪	▪	▪	▪	▪	▪	▪	▪
LEADERSHIP UPDATES⁶								
Report of the Vice-President, Academic & Provost	*	*	*	*	*	*	*	*
Report of the Vice-President, Research and International	*	*	*	*	*	*	*	*
COMMITTEE/COUNCIL REPORTS								
Executive Committee	*	*	*	*	*	*	*	*
Graduate & Research Council (GRC)	▪	▪	▪	▪	▪	▪	▪	▪
Undergraduate Council (UC)	▪	▪	▪	▪	▪	▪	▪	▪
Long Range Planning Committee				▪		▪		▪
Joint Report of GRC & UC on Academic Calendar Dates ¹					▪			
University Committee on Student Appeals Annual Report ¹ (Policy 72)					▪			
University Appointment Review Committee Annual Report ¹ (Policy 76)								▪
Finance Committee - Budget Update ³							▪	
Finance Committee - Budget recommendation ^{2, 3}								▪
OTHER SENATE AGENDA ITEMS								
New Senator Orientations (before meeting)	▪							
Teaching Awards Committee							▪	
Delegation of Roster of Graduands								▪
Report of Roster of Graduands		▪		▪				
Undergraduate and Graduate Admissions Update					▪			
Conduct Self-Assessment Survey ¹							▪	
SENATE PRESENTATIONS								
Presentations from the Presidents of the Faculty Association, Waterloo Undergraduate Association and Graduate Student Association ¹							▪	
Strategic Plan Accountability Update ¹				▪				
PART Annual Update		▪						
Faculty Update (6x/year)			ENG	▪	▪			

¹ Annual item

² Board of Governors approval

³ Presented by the Vice-President Academic and Provost

⁴ Presented by the President and Vice-Chancellor, and Chair of Senate

⁵ Presented by the University Secretary

⁶ Leadership updates may include such topics as: Talent, We Accelerate Report, Communities (EDI, Sustainability), Waterloo International, etc.

Senate Agenda Items • expected *as needed	15 May 2023	19 June 2023	23 September 2023	23 October 2023 <i>Strategic Plan Annual Update / Waterloo at 100</i>	27 November 2023	29 January 2024	4 March 2024	8 April 2024
CONSENT AGENDA								
Reports from Faculties (e.g., appointments, administrative appointments, sabbaticals) ²	▪	▪	▪	▪	▪	▪	▪	▪
Tenure and Promotion Report ⁴			▪					
University Professor Designation ³							▪	
Call for Nominations for University Professor ³			▪					
Call for Nominations for Honorary Degree Recipients ⁴						▪		
Report of the COU Academic Colleague ¹	▪							
Senate Committee Appointments ⁵	*	*	▪	*	*	*	*	*
CLOSED AGENDA								
Minutes	▪	▪	▪	▪	▪	▪	▪	▪
Business Arising	▪	▪	▪	▪	▪	▪	▪	▪
Reports from Committees and Councils	*	*	*	*	*	*	*	*
Honorary Degree Recommendations	*	*	*	*	▪	▪	*	*
Reports from Search and Review Committees for Policy-based Senior Leadership Appointments and Reappointments	*	*	*	*	*	*	*	*
Report of VP Advancement on Policy ⁷		▪						
Joint SENATE/BOARD Strategic Plan Focus Sessions 3-4:30					Joint SENATE/BOARD Continuing Education Sessions 3-4:30			
<ul style="list-style-type: none"> To be determined 					<ul style="list-style-type: none"> To be determined 			

Special Topics for 2023-2024 to be Scheduled:

- President's Anti-racism Task Force Update (PART)

For more information: secretariat@uwaterloo.ca
uwaterloo.ca/secretariat, NH 3060

¹ Annual item

² Board of Governors approval

³ Presented by the Vice-President Academic and Provost

⁴ Presented by the President and Vice-Chancellor, and Chair of Senate

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⁶ Leadership updates may include such topics as: Talent, We Accelerate Report, Communities (EDI, Sustainability), Waterloo International, etc.

Intentional Shift:
Recommendations for
the University of Waterloo's
Digital Learning Strategy

Digital Learning Strategy Working Group
May 2023

Acknowledgements

The report drew on extensive consultations and thoughtful contributions completed by members of the Working Group (see Appendix A) – beyond what was originally expected. Similarly, we appreciate all those who took time to provide input and feedback. We found a significant level of interest and willingness to contribute. There were extensive consultations and dialogue with stakeholder groups to ensure that the report captured their input, as well as consultations with individuals with unique knowledge both within and outside the university.

This report was initiated by senior leadership at the University of Waterloo, and we are grateful for the support of the Provost and Associate Vice President Academic, including staff time their offices contributed to the project team and willingness to advise and provide feedback.

Everyone the group consulted with saw the value in developing a digital learning strategy. Although there were naturally many different perspectives on the benefits and outcomes they wished to see emerge, there was universal recognition that the pandemic was truly disruptive of the status quo and that the University as a whole needed to reflect and thoughtfully plan its next steps.

Co-chairs, Digital Learning Strategy Working Group

Aldo Caputo
Director
Centre for Extended Learning

Johanna Wandel
Associate Dean, Undergraduate Studies
Faculty of Environment

1. Introduction

1.1 Goals of the Digital Learning Strategy Project

Waterloo's educational offerings have used and will increasingly make use of digital resources. The University of Waterloo's 2020-2025 strategic plan, *Connecting Imagination with Impact 2020-2025*, calls on us to "continue to advance an agile, technology-enabled learning ecosystem that supports high-quality, open content and digital learning options." Despite our past accomplishments in digital teaching and learning and our recent extensive experience in digital education necessitated by the 2020-2022 COVID-19 pandemic, the University currently has no comprehensive strategic framework for guiding the development of digital instruction, program design, and the selection of digital teaching and learning tools to support the learning experience.

While the Terms of References did not explicitly define it, for the purposes of this report, digital teaching and learning very broadly encompasses any teaching that makes use of digital technology, software, systems, or tools to deliver, enhance or extend learning, including:

- any use of LEARN, Teams, or other platforms, and physical classroom technology,
- on-campus, blended or online courses, in either asynchronous or synchronous modes,
- materials and functions to support learning outside of courses and programs proper (e.g., from academic support units), and
- teaching and learning activity outside current credit structure (e.g., professional development and WatSPEED).

In response to this gap, the Provost initiated the Digital Learning Strategy Project in April 2022 with the goal of providing **summary information** and **recommendations** in the areas below.

- a. Alignment of projects and investments with one another and with strategic goals**
Several digital learning-related projects are already underway, and more are imminent. A decentralized university like Waterloo runs the risk of trying to advance the same goal simultaneously in different areas of the university, with each unaware that similar work is being done elsewhere. The result may be multiple solutions, each of which requires investment in different tools or strategies to accomplish the same or similar objectives. While some decisions, for example the implementation of digital learning in degree and non-degree learning experiences, are most appropriately made at the program or department level, there is an urgent need for overall coordination and consistency across the University, and to ensure that we work toward the Strategic Plan's goal to "prepare talent to lead in a future that promises great opportunity and waves of disruption."
- b. Decision-making processes that strike the right balance between operational efficiency, a suitable degree of experimentation, and finding local solutions when appropriate**
Waterloo's decentralized structure also has many strengths. In the digital teaching and learning space, it has resulted in a multitude of home-grown local solutions, some of which have seen widespread adoption by the broader university community. However, there is the risk that Faculties, departments, and instructors working in isolation miss the opportunity to leverage these solutions, as well as learn from one another's successes and failures. Waterloo's structure supports agility and cultivates experimentation, but we need to ensure that the resulting innovations are shared across the institution, rather than duplicated, and this commitment to innovation is balanced with consistency of the student experience across platforms and technologies and appropriate vetting for privacy, security, accessibility, and quality.

- c. How digital learning could disrupt the traditional educational marketplace and how Waterloo should prepare

The evolving educational marketplace, including the emergence of private online educational providers, the availability of online degrees at scale, changes in demographics and participation rate, the transformation of the learning resource publishing industry (i.e., what used to be the textbook industry), widespread interest in and availability of open educational resources, and the need for different types of credentials for lifelong learners, prompt us to reflect on how we might adapt. We need to be technologically agile and responsive to change without losing sight of our core mission and values. Key components of this reflection include revisiting credentials and considering our role in the lifelong learning space.

- d. New delivery models and pathways

The expansion of online offerings, either as standalone degrees or as part of a residential experience, will serve both current and future students. Flexibility in delivery allows students to complete part or all of their degree at a distance and will attract those who are not in a position to physically come to Waterloo for the length of a full degree program. This in turn would not only promote growth, internationalization, and global access, but also support traditional student success by providing more flexibility and accessibility in existing curricula.

- e. Developing a digital learning ecosystem

Intentional strategies would inform the identification and implementation of digital tools for teaching and learning and help avoid adoption of unnecessary tools. Work is already underway with the new [EDTECH governance](#) structure, which would provide a decision-making body for educational technology selection and support, and an [EDTECH Hub website](#), which would act as a central information resource for both current and potential future tools. Technology in classrooms should also be considered in this ecosystem, and both digital and physical need to work together to create a seamless teaching and learning experience.

- f. Position Waterloo as a leader in digital teaching and learning

Waterloo has long been a Canadian leader in distance and online education and is proud of its title as Canada's most innovative university. The University can strategically draw on its resources and align its focus to establish itself as a leader in the evolving area of digital teaching and learning, which is much broader than traditional online education.

1.2 Why Waterloo needs a Digital Learning Strategy

The *Waterloo at 100 Discussion Paper* offers that “Waterloo’s future will be one that thrives in the appropriate design, curation, sharing of and access to online and digital modes and resources for working, teaching, learning, and research.” A digital learning strategy is needed to guide these efforts. As an institution, we must avoid *drift* (i.e., a relapse to pre-pandemic practices and/or uninformed pursuit of scattered pandemic practices) and rather pursue an intentional *shift* (informed by institutional goals) in digital teaching and learning.

The use of digital learning was significant at Waterloo even before the COVID-19 pandemic, ranging from use of our learning management system and digital assets (e.g., course reading packs) to support campus courses, to blended courses that combine elements of face-to-face and online teaching, to

highly interactive digital assets and educational resources allowing experimentation, to purpose-built fully online courses.

The pandemic-necessitated shift to predominantly online teaching and learning in 2020 accelerated the adoption of digital tools and modes across the institution. This shift created new capacities and expectations in our instructors and learners, and digital assets created over the course of the pandemic represent significant potential to enhance teaching and learning. The 2020-2022 leaps in digital teaching were necessarily achieved in a rapidly evolving, insufficiently coordinated environment. However, the need for an intentional strategy to guide digital learning was evident before the pandemic; Waterloo has always had a mix of institutionally supported tools, platforms, and home-grown innovations adopted on an ad hoc basis by instructors in the absence of a digital learning strategy. While flexibility in tool choice and the development of home-grown solutions are desirable, they need to be balanced against efficiency, support, and consistency of the student experience. In the absence of a strategy, we run the risk of purchasing multiple tools that overlap in functionality, leading to inefficient allocation of resources and unnecessary friction for learners. Furthermore, currently no coordinated mechanism exists for the evaluation, sharing, and support of made-in-Waterloo solutions.

As noted in the Strategic Plan, “no industry or career pathway will be immune to the changes” and postsecondary education is no exception; indeed, our role is to lead in an environment of change. Our students’ needs have changed, and our teaching must adapt; to paraphrase one stakeholder, *we need to teach the learners we have, not the learners we were*. Students will expect greater flexibility in all aspects of their degrees, whether it be the ability to review content multiple times, to participate in learning opportunities at a distance, or to explore more flexible pathways through a degree itself.

Waterloo’s Strategic Plan reminds us that “learners will have to apply knowledge in contexts we cannot even imagine today.” In the coming decades, learners will develop their skills in ways both familiar and unfamiliar, using tools, strategies and approaches that draw on existing innovations and those not yet conceived. During work-integrated learning experiences and on graduation our students enter a world of work which has increasingly adopted remote and hybrid arrangements; they need to be prepared to effectively operate within a new professional digital culture.

Workplaces continue to shift and change as a result of multiple factors including globalization, demographics, and evolving technology. Our strategic plan sets a goal to “establish a unique Waterloo approach to support learning at various stages of individuals’ professional lives.” Through *WatSPEED*, Waterloo is positioning itself to better serve all learners, not just those in traditional degree-granting programs. Digital offerings are particularly important to compete with the private online providers that aim to compete with traditional post-secondary education to provide job-ready skills.

Increasingly, we are able to use digital learning to help meet multiple challenges, including physical distance and accommodating a range of disability and health concerns (e.g., the ability to catch up after illness or the ability to engage with peers in modes other than face-to-face to be more inclusive to those with social anxiety).

The Waterloo brand embraces innovation, and this must extend to teaching and learning. Failure to maintain our identity as leaders in the highly visible teaching space incurs reputational risk in an educational landscape that has changed dramatically. During the pandemic, many of our peers realized the necessity and benefits of digital learning and used the opportunity to leap ahead in both their institutional capacity and utilization, developing strategies of their own. Such capacity to employ digital

technology effectively is necessary to remain competitive as well as agile in the face of future challenges.

The residential, face-to-face experience is a key part of Waterloo's identity and needs to be maintained. None of the stakeholders consulted advocated that Waterloo shift to fully online as the predominant mode of teaching. However, they did identify opportunities to use online programming to extend our reach into markets we are unable to adequately serve with face-to-face learning.

The role of universities in society is changing, and an intentional approach to digital learning is a necessary component of managing this change. Our digital learning strategy needs to continue to evolve as society and the educational landscape do; just as "learners will have to apply knowledge in contexts we cannot even imagine today," our approach to digital learning will need to be agile and responsive to the complex future within which we will operate. Finally, while the reasons for a digital learning strategy are clear, some stakeholders and members of the working group noted challenges in developing a digital learning strategy in the absence of a general teaching and learning strategy. While this was outside the scope of this initiative, it is worth considering if situating the DLS within a broader Teaching and Learning Strategy would further amplify the rationale and benefits above.

1.3 Summary of Consultation Process

This report is the product of extensive consultations conducted by members of the Digital Learning Strategy Working Group, which includes representatives from all six faculties, undergraduate students, graduate students, and key Academic Support Unit staff (see Appendix A for Working Group membership).

a. Stakeholder consultations

The DLS Working Group spent April to June of 2022 reviewing existing data related to digital learning at Waterloo collected during the pandemic and designing consultation plans for their respective stakeholder groups (faculty, students and academic support units). While all consultation groups worked toward the same core questions, stakeholder engagement varied out of necessity. Undergraduate students and faculty were approached in the first instance via short surveys either in the Student Life Centre (students) or through an online survey distributed by faculty representatives (instructional faculty and staff). This was followed by small group discussions or individual consultations with those who indicated willingness to participate. Academic Support Units used a mix of small group discussions and individual consultations. Faculty and senior university leadership were invited to individual consultations with the Working Group co-chairs. A summary of completed consultations is provided in Appendix C. Consultations were conducted from late June to mid-October 2022.

The Working Group met throughout this time to share preliminary results and identify areas for further follow-up. In addition, the co-chairs presented an overview of the DLS work at governance and leadership meetings from September 2022 to January 2023, inviting input. The Working Group co-chairs synthesized consultations into the thematically focused strategic directions and associated recommendations. Working Group members reviewed and supplemented draft recommendations in November and December 2022.

b. Environmental Scan

Digital teaching and learning features in the strategic plans of many universities, but only a small number have completed standalone digital learning strategies. In response to a 2022 Educause survey, only 10% of Educause members (primarily U.S.) indicated that their institutions have completed a DLS,

with a further 14% currently in the process of creating one. Common themes across institutions which have, or are in the process of creating, a DLS include an emphasis on technological systems; the creation of a shared vision of digital learning for faculty, staff, students and administration; flexible and equitable pathways for student success; alignment of resources, workforce development, and cultural changes. The foci of this report are consistent with these themes, with additional emphasis on student success, work-integrated learning, and internationalization/global reach. A summary of the DLS status of our competitor institutions is included in Appendix C. Going forward, Waterloo should continue to monitor this space and stay abreast of other institutions' digital learning strategies.

2. Vision and Principles

The Working Group spent extensive amount of time discussing and synthesizing the stakeholder feedback, as well as their own views on digital learning, and developing from that what they believed to be strong strategies for the university. The **Vision** below is an attempt to describe an ideal future state for Waterloo, inspired by what we heard and reflecting the **Strategic Directions** and **Recommendations**. The **Principles** are a distillation of the beliefs shared by the university community that should underpin our plan.

2.1 Vision

The vision below imagines the realization of current goals – such the University's Strategic Plan *Connecting Imagination with Impact*, providing opportunities to “empower students to leverage diverse learning experiences by creating more flexible learning pathways and relevant, authentic experiences that prepare (learners) for a complex future” – as well as future goals, such as those emerging from **Waterloo at 100** - through digital learning.

Digital teaching and learning is, by definition, not distinct from teaching and learning but it does introduce new challenges and opportunities for us as instructors, learners, and leaders, and navigating this new landscape requires intentionality. Remaining true to our underlying principles is fundamental to this vision. Our commitment to quality teaching and learning should not be compromised but rather enhanced as we apply the recommendations in this report. **By intentionally applying digitally enabled strategies in an evidence-based manner, we will support quality and innovation in teaching and learning and enhance the Waterloo experience.**

A vision for digital teaching and learning at Waterloo

The future we envision is one in which Waterloo is characterized by consistent and familiar experiences for both instructors and students, regardless of the mode of learning. Faculty strategic learning plans enable and support program design decisions, while central administration provides institutional-level directions, goals, and key supports to foster innovation. Digital tools help create a welcoming, supportive learning community, where faculty, staff, students, and prospective students can engage in an environment that leverages human interaction strengthened by technology. Technology is a powerful tool used to help meet pedagogical objectives, but integration, intuitiveness, and support is such that it largely fades into the background and allows the focus to be on teaching and learning. With the help of digital teaching and learning, our curricula are more flexible and interdisciplinary, and we embrace and support greater equity and anti-racism, diversity, inclusion, indigenization, and accessibility. Instructors feel empowered, enabled, and well-supported, allowing them to easily employ digitally enabled teaching strategies that optimize teaching and learning, and experience what is best described as “joyful teaching.” Students have access to courses and programs that are designed with the appropriate flexibility in time, place, and modes of delivery to promote equity, engagement, and student success. Waterloo continues to place learners at the centre of everything we do and values community and human interaction in our teaching and learning experiences. By fostering an agile, technology-enabled learning ecosystem and a comprehensive, evolving strategy, Waterloo is well-regarded as a progressive, flexible learning institution, responsive to both current and emerging challenges and opportunities.

2.2 Core Principles

During consultations, participants were asked to identify characteristics and principles that define Waterloo, that should be preserved, and that should underpin a digital learning strategy. The following themes emerged and have been used to help generate and assess the strategic directions and recommendations below; their order of presentation is not meant to imply an order of priority as these principles overlap and interact with one another and underpin all the recommendations in this report.

1. **Put learner-centredness and student success first:** We clearly heard that the needs, interests, and abilities of learners should be the primary consideration and driver of DLS implementation. In a learner-centered environment, the focus is on creating an engaging and interactive learning experience using teaching and learning strategies that encourage students to take an active role in their own learning and to develop critical thinking, problem-solving, and other important skills. Students are more likely to be successful and motivated when they are actively involved in the learning process and when their needs and interests are considered.
2. **Value human interaction and community:** The Working Group heard clearly that Waterloo should not move in the direction of becoming a primarily digital or online institution, and that we should not engage in digital learning that is impersonal and predominantly independent or self-directed. Students should have the opportunity to engage with instructors, fellow students, and learning content activities regardless of the degree of digital learning involved. We also need to remember that humans are a social species and learning is a community-based endeavor, and design accordingly, regardless of the mode of instruction. Digital tools can be used to enhance and extend learning interaction as well as build community.

3. **Focus on quality:** Quality should factor into all pedagogical and design decisions as we pursue digital means of teaching and learning. While there are digital-specific strategies and application knowledge that are required, many principles of good teaching are universal, and thus apply equally to digitally enabled or enhanced teaching. Technology should be regarded as a tool to achieve teaching and learning outcomes, and ideally fade into the background.
4. **Foster equity, diversity, and inclusion, and increase access:** The Working Group heard about opportunities and challenges associated with digital learning and equity, diversity, and inclusion, including various difficulties students and instructors had in accessing technology and participating in remote learning. While many of these issues were precipitated by the pace at which implementation happened in recent years, it is important that we keep all users in mind when implementing digital learning strategies. Digital learning offers opportunities to increase representation and reach traditionally underserved students by making learning more flexible and available beyond the campus, as well as more accessible to many neurodiverse students and/or students with disabilities by providing learning materials in multiple formats.
5. **Develop agility and resilience:** During the pandemic, the rapid shift to remote learning tested our digital limits and demonstrated where and how we could establish more robust infrastructure, capacity, and capabilities with respect to digital learning. Doing so should help to better position the University to respond to future challenges, both known and unknown, large, and small.
6. **Strive for flexibility:** Flexibility for students, instructors (course delivery, pedagogy), programs (scheduling, program outcomes, coordination), and the institution is one of the main desired outcomes of defining a strategic approach to digital learning.
7. **Be intentional:** intentionality is woven into many of the findings in this report, including the overarching goal of the DLS which is to *shift* teaching and learning in an informed, coordinated manner rather than allowing it to drift in a multitude of directions (including regressing to pre-pandemic norms). The pandemic and remote teaching experience led us to re-examine many of the preconceptions and assumptions we held toward digital learning and provided an opportunity to assess the relative strengths of various forms of teaching and learning. The university should clearly articulate the value of the campus experience, and programs should thoughtfully implement (and ideally combine) the inherent strengths of face-to-face and other modes in designing programs and learner experiences.

3. Strategic Directions and Recommendations

This report presents 12 top-level strategic directions, with associated recommendations to achieve them. These strategic directions and recommendations build on one another and, in some cases, must be achieved in a stepwise fashion, but the ordering is not meant to imply either sequential action or priority.

3.1 Strategic Direction 1: The University should be intentional and evidence-based about the design and application of digital learning across curricula and programs.

In-person teaching and learning has been a core characteristic of most University of Waterloo degrees. Although correspondence, distance and, more recently, online courses have been offered for decades, the COVID-19 pandemic that resulted in near universal remote teaching has indelibly shifted student

expectations and instructor capacity. This experience, coupled with the continued evolution of digital tools and pedagogical practices, requires that we consider digital learning beyond the binary of in-person and online modes.

Waterloo's commitment to advancing an agile, technology-enabled ecosystem that enables high quality digital learning pre-dates the COVID-19 pandemic. With the return to face-to-face instructional modes, we have an opportunity to apply digital teaching approaches to enhance the student experience, create flexible learning pathways, and optimize learning environments. Options range from the inclusion of digital assets in traditional face-to-face courses, through blended course design and online courses in traditional in-person programs, to fully online programs. Historically, decisions on the mode of delivery and the incorporation of digital components have often been made at the course level by instructors on an ad hoc basis. There is a need and opportunity to be more intentional in our application of learning at the course, program, and institutional level to best serve our students and intended program outcomes. More intentionality can ensure that learning is the primary factor when considering delivery modes, while leading to more consistency in approaches and awareness of expectations amongst learners.

Our consultations revealed a broad consensus that decisions on delivery modes are best made at the program level. Pedagogical considerations include a host of factors, including but not limited to the needs of students at different year levels and maturity, balancing offerings across student cohorts, opportunities and constraints related to work-integrated learning/co-op, and professional accreditation requirements. While considerations are best understood at the department and program level, the University plays an important role in setting the overall institutional goals and strategic directions which guide these decisions and providing a supportive environment.

The following recommendations are based on a strategy in which Faculties and institutional priorities are aligned regarding digital teaching learning. Programs should integrate digital strategies where they make sense within their plans, considering discipline-specific (and interdisciplinary) opportunities and constraints. These decisions should align with strategic guidance from the relevant Faculty and curriculum design committees, which in turn should align with university-level strategic plans and considerations.

Degree requirements, programs, majors, and plans

The University of Waterloo's Undergraduate Academic Calendar includes various specialized terms to reflect credentials and the academic requirements to achieve these. All six faculties and Renison University offer University of Waterloo graduate and undergraduate degrees. Academic programs are considered synonymous with academic plans and are "a defined set of requirements that leads to a particular credential", whereas an undergraduate major is "an academic plan that is the primary area of study in a student's baccalaureate degree." Undergraduate academic plans in turn can include credentials smaller than the major (e.g., minors, options, diplomas, certificates) and specify a system of study (regular, co-operative). Students may apply directly into an academic program ("direct entry"), or into an academic program where they will select a major. Programs/plans often align with particular academic units but may be shared among units and even faculties. At the graduate level, program and academic plan are synonymous. In this report, we use the generic term "program" as a shorthand to refer to the combination of primary academic plan and system a group or cohort of students follows. This use can be considered synonymous with a major or direct-entry program as well the curriculum committees or other administrative structures responsible for designing and delivering these primary academic plans.

Recommendations:

- a. Faculties should incorporate digital learning into their Academic Program Plans in a manner that reflects the Digital Learning Strategy recommendations.
- b. Program-level planning decisions should support flexible pathways for students and consider how to employ digital strategies appropriately to enhance flexibility.
- c. Curriculum committees should review programs and map course modalities to optimize the student experience and progression through the program (e.g., the balance of online, blended and in-person offerings; the ideal fit of modes of delivery to courses) and periodically revisit this through the curricular review process. Course delivery modes should be determined by this plan and remain consistent, visible to students, and predictable from term to term, year to year.
- d. The University should consider how digital competencies can be reflected in institutional degree-level expectations, and these in turn would be reflected in program-level learning outcomes.
- e. Curricular design support for Faculties should be expanded as necessary.

3.2 Strategic Direction 2: Develop and provide students with flexible pathways through curricula.

Waterloo’s current Strategic Plan commits us to “empowering students to leverage diverse learning experiences by creating more flexible learning pathways” aligned with the future of work and learning. In this context, the intentional design and application of digital learning has the potential to increase flexible pathways and can play a role in fostering interdisciplinarity and internationalization. Flexible pathways can include opportunities to take courses in different modalities with the ability to choose modality where possible, to repeat core courses in a timely fashion, to take a reduced course load where needed, and to be permitted to work toward the academic requirements of a degree during co-op work terms.

Digital tools and strategies enable a variety of flexible learning options, such as the availability of both online and in-person formats, blended learning, and digital assets incorporated into in-person courses. Asynchronous online learning frees students and instructors from scheduling constraints, which in turn facilitates greater interdisciplinary experiences and allows students to complete some academic requirements while on a co-op work term. Waterloo should also make greater use of formats beyond the typical course structures to promote flexibility.

Flexible pathways. Flexible pathways can support student success by providing multiple pathways through the curriculum, allowing for more choice in course sequencing and credit load in a particular term. For example, GEOG 181 Designing Effective Maps is a required course for Geography and Environmental Management and Geomatics Plans. Geomatics students are required to complete GEOG 181, GEOG 281 Introduction to Geographic Information Systems, GEOG 381 Advanced Geographic Information Systems, and GEOG 481 Geographic Information Systems Project. Each course in the series serves as a pre-requisite for the next. Offering GEOG 181 in person in the 1A (Fall) term and online in Winter and Spring terms gives students who struggle with this technical course options to repeat it in the 1B term or complete it during a non-academic term in Spring, and thus stay on track with the sequence. This also allows a reduced course load in the 1A term with an option to catch up during the spring (non-academic) term and gives students a choice of course modality.

Flexible pathways can also foster interdisciplinarity. All six faculties offer courses which have broad appeal to both in-faculty and out-of-faculty students. Offering these courses online has made the courses available to more students as this has removed scheduling conflicts.

Course Structures

The University of Waterloo curriculum relies on a credit system in which most courses assessed at 0.5 units. We have no formal definition of workload expectations per 0.5 unit course; in common practice, 0.5 units translates to approximately 3 weekly class (“contact”) hours over a 12 week term, plus time spent on preparation, assignments and exams. The introduction of blended and asynchronous online learning has further challenged workload expectations. We can and do have heavier and lighter credit weights for courses ranging from 0.13 units to 1.5 for a single “course” and include required curriculum elements valued at 0 units. An alternative may be to move to a modular credit system based on workload, similar to the European Credit Transfer and Accumulation System (ECTS). One credit “point” in the ECT is equivalent to 25-30 hours of learning regardless of mode and considered approximately one sixth of a standard Waterloo 0.5 credit course.

Recommendations:

- a. Continue to develop blended and online courses to intentionally develop flexible pathways.
- b. Make flexible pathways consistently available and easily identifiable to students.
- c. Create course and scheduling options that allow for more flexibility, such as decreased in-person contact time, and alternate course structures beyond the traditional 0.5 credit weight course (e.g., block courses, non-standard credit-weight courses).
- d. Implement a system of open enrolment that allows non-degree learners to enrol in selected courses (e.g., those without or with few prerequisites, likely to be of general interest, that can perhaps be bundled into a credential or that serve as an alternative pathway to admission), providing expanded opportunity for access, especially to fully online courses.

3.3 Strategic Direction 3: Learner-centredness and student success should guide the application of digital learning.

Student success and enhanced learning experiences must be at the center of this DLS. Digital strategies should be evidence-based and focused on pedagogical practices that have a demonstrated ability to improve learning. For example, blended learning, and specifically “flipped classroom” approaches that provide foundational learning online and allow for more application and active learning in the classroom, have demonstrated positive impacts on students’ academic performance, motivation, engagement, and learning management skills. Digital learning provides a means to achieve learning competencies such as those articulated in the recently released [WatSEE framework](#). For example, digital learning communities would allow learners to stay engaged with other learners and learning supports, whether they are on campus, studying remotely, on a co-op work term (the **build relationships** component of the WatSEE framework), and introduction of digital experiences and interaction would also prepare students for the digital workplaces they will encounter in the digital, distributed workplace (*expand expertise*). Digital learning can also enhance the graduate student experience through the facilitation of graduate research group meetings even when participants are in various locations. Finally, flexible pathways and access to lifelong learning further help students to achieve the **develop self** component of WatSEE.

The broader application of digital learning, whether it is within traditional, primarily residential curricula, fully online, or blended programs, also introduces new challenges for students. As students learn online, services provided by academic support units need to be available for learners not physically on campus and with diverse learning needs. At the same time, the integration of digital teaching through blended learning and combining in-person with online offerings in the same term means that some learning occurs online while students are physically on campus, which requires different types of study spaces.

Waterloo's Blended Learning Initiative

The Centre for Teaching Excellence (CTE) defines *blended learning* as the purposeful integration and alignment of online and in person components. The structure of blended learning offerings varies, with some instructors choosing to move lectures to asynchronous online formats and using face-to-face time for active learning, though others build interactive content into online platforms through discussion forums and lab simulations. Since 2021, the Teaching Fellows have been leading an “institution-wide (but faculty specific)” project, the Blended Learning Initiative, focused on the flipped classroom style of blended learning: content is delivered asynchronously online, and in-class time is used for active, face-to-face learning. The Blended Learning Initiative is an example of thoughtfully and intentionally approaching the implementation of one particular style of digital learning. To date, decisions on the adoption of blended learning have largely been left to individual instructors, with little cohort or curriculum/plan coordination in most cases.

Recommendations:

- a. Inform the application of digital learning with evidence, research and established best practices. Strategies should focus on promoting active learning and other high impact practices, achievement of institutional goals (e.g., retention, access, and engagement), and achieving key learner competencies (e.g., as articulated in [WatSEE](#) and the [Future Ready Talent Framework](#)).
- b. Continue to develop self-efficacy and a digital learning culture among students, including best practices for time management, collaboration, interaction, academic integrity, and respectful and ethical behaviour in digital environments. Faculties and student-facing ASUs should collaborate on developing support materials which foster student readiness and preparation for digital learning.
- c. Continue to encourage and support the increased use of evidenced-based blended and flipped modes of learning, supported through the Blended Learning Initiative and other projects, with the goal of utilizing in person time more effectively and increasing active learning in the classroom.
- d. Ensure students have access to the academic and non-academic supports, training, learning tools and technologies required for their success as digitally enabled learning becomes more ubiquitous (e.g., institutional site licenses for core educational software, remote access to labs and specialized technology; spaces on campus that allow students to participate in virtual classes or access virtual supports while on campus; remote access to mental health and student success supports).
- e. Develop institutionally supported digital communities that provide opportunities for students to safely communicate and connect locally and globally for learning and communication, and to enhance and expand the on-campus experience.

3.4 Strategic Direction 4: Ensure a consistently high quality of learning experience across the institution regardless of the mode of delivery.

The underlying principles and aims of good teaching are constant regardless of modality. A digital learning strategy should be firmly rooted in evidence-based, effective pedagogical approaches that can

be adapted depending on the strengths and opportunities inherent in each mode, and that is responsive to program context and the needs of specific student cohorts. Ideally, technology should ultimately fade into the background for both students and instructors, as more mature technology does with in-person courses. There should be definitions regarding modes of delivery to ensure a common understanding. Finally, all modes of digital learning, including those created by academic support units providing resources to learners, should have access to appropriate levels of digital learning design and development support.

Course Modalities

The University of Waterloo is in the process of defining modes of learning including fully online and blended which includes reduced classroom hours. In the proposed Digital Learning Principles and Guidelines, an asynchronous online class has no scheduled meets, may include limited synchronous elements for which equivalent alternatives or flexible options exist. A synchronous online class has regular (usually weekly) scheduled online meets throughout the term.

Recommendations:

- a. Define official digital modalities offered at Waterloo (on-campus, blended, and online; synchronous and asynchronous) and communicate information regarding each mode and related learner expectations (e.g., in-person and online time commitments) to students via scheduling and course selection information.
- b. Establish University-level principles and guidelines to ensure that baseline requirements for digital learning are met and that Waterloo students have consistent, high quality digital learning experiences.
- c. Provide support for all modes of digital learning design, from individual digital assets to full online courses, by expanding access to appropriate services.
- d. Ensure that academic support units (ASUs) involved in student learning are themselves supported in delivering digital services to students.

3.5 Strategic Direction 5: Implement a model of digital learning that is sustainable, efficient, and effective.

An effective institutional digital learning strategy needs to be coordinated centrally to ensure equitable support and resources across Faculties. The overall operational model should be one in which the University provides vision, direction, guardrails, and an environment conducive to digital teaching and learning, while removing barriers to innovation. Program directors and faculty members are key stakeholders in digital learning decisions and need to be involved in associated operational decisions including selection of technology and tools. Faculty workload in the development of new digital resources is a concern, and the University needs to establish clear guidelines for the creation, ownership, sharing, reuse and updating of digital assets and Open Educational Resources (OERs). Sustainability in the lifecycle of digital assets in turn requires adequate and predictable support to create and maintain quality, track trends in the post-secondary sector and ensure compliance with copyright, privacy, and security considerations.

IP for the Digital Age

Policy 73 (Intellectual Property Rights) Section 8 states that IP generated in the course of teaching activities is generally treated in the same manner as that for research activities. It notes that materials required for “course management and administration, such as course outlines, final exams and laboratory manuals is considered an assigned task, and copyright for such material is vested in the University”, but that copyright for detailed teaching materials belongs to the creator. The policy further states that detailed teaching material “which has been printed and distributed or made publicly available should also be available for royalty-free use for teaching and research by other members of the University”. Currently, Centre Extended Learning courses commonly implement a course author agreement which follows 8E of Policy 73: “materials for use in distance and continuing education shall be made available to the University under contract(s) with the author(s)” but this contract typically includes an “exclusive, royalty-free license by the University for distance and continuing education”, and this provision in turn is normally subject to Policy 73’s reference to material printed or made publicly available.

The language of the Policy, which was established in 1997 and last revised in 2000, leaves room for interpretation when it comes to digital assets and courses. For example, it is unclear if uploading an asynchronous lecture to the LMS constitutes either printed or publicly available. In practice, many instructors “own” their digital assets, and sharing of these to other instructors assigned the same course relies on goodwill.

Open Educational Resources (OERs)

Since 2020, eCampusOntario, through its Virtual Learning Strategy (VLS), has been supporting e-learning development and capacity throughout the sector. A significant focus of its efforts and funding have been directed at the creation and adoption of free and openly licensed Open Educational Resources. eCampusOntario estimates that this has saved Ontario students over \$15M in textbook and materials costs during that time (<https://openlibrary.ecampusontario.ca/impact/>). Our own institutional data suggests that textbook purchase rates can range anywhere from 60% to as low as 30% depending on the class, and lack of access can be a significant impediment to student success. Increased adoption of OERs would also benefit the institution by allowing for more efficient sharing and preservation of learning resources. A 2021 study by the Open Education Librarian at the University of Waterloo Library, supported by VLS funding, identified several campus needs required to support OER, including a repository, licensing and accessibility support, and funding for development – needs that overlap with several DLS recommendations.

Recommendations:

- a. The University should establish a standing committee on digital learning , with representatives from each Faculty, staff, and students.
- b. The University should review intellectual property policy (Policy 73) with special regard to teaching materials, with the goal of making digital assets created in the course of one’s employment readily available for reuse within the institution (e.g., for use in core course, large multi-section courses, or courses serving several programs or Faculties).

- c. The EDTECH governance structure should ensure that the appropriate processes and technology are in place to support the creation, sharing, and life cycle management of digital teaching and learning assets, including a platform that facilitates the sharing and reuse of digital course assets within the University of Waterloo.
- d. The University should incentivize the development of digital materials that can be shared within the University of Waterloo community and, when appropriate, more widely as open educational resources (OERs).
- e. The University should commit to ongoing support for digital learning. This could include funding for students to help co-create digital learning experiences (e.g., online learning assistants during pandemic).
- f. The University should commit to ongoing resourcing in areas such as copyright, accessibility, privacy, security, and digital asset management in ways suited to supporting the important roles each plays in digital teaching and learning.

3.6 Strategic Direction 6: Continue to advance an agile, technology-enabled learning ecosystem that supports high-quality digital learning options.

The institution should provide a seamless ecosystem of physical and digital spaces with guidelines for digital and classroom environments that can combine to optimize both teaching and learning experiences. Faculty, program, and instructor autonomy need to be carefully balanced against measures ensuring that students have a consistent experience across Waterloo. Students cannot be expected to use a different platform for every digital experience, nor can the institution support all technology. Instructors would benefit from more consistency in the technology as well. Reviews of technological tools and platforms that ensure access, privacy, and security, as well as overall reliability, are essential for ensuring a quality digital learning experience. A multi-tiered approach in which the common needs are provided by centrally supported platforms, but allows for Faculty, program, and instructor selected tools to meet needs not fulfilled by these platforms would be ideal. The goal of the nascent [EDTECH governance structure and Technology Hub](#) is to provide an expedient, transparent way to field and assess new technology requests, and implement these when appropriate. However, we should also ensure that there is capacity and responsibility assigned for research and exploration of emerging technology. Future tools should support new and emerging learning frameworks and strategic directions, not just current or common needs. In some cases, “home grown” systems have and will continue to provide vital services and a competitive advantage for Waterloo. These systems require dedicated internal development and operational support. Finally, each operational area should adopt a LEAN/continuous improvement approach to identify system limitations, procedures, standing practices, etc., that hamper innovation and to fully realize the benefits of a digital learning strategy and digital campus.

Supporting local innovation

Outline, a tool developed through Science Computing to support the development and delivery of online course syllabi, is an example of a successful in-house system designed to meet the needs of the university community, including integration with essential information systems. The online platform also has many innovative features, such as providing a “heat map” of students’ busy times, providing instructors with important scheduling information, and providing accessible syllabi. As this

Recommendations:

- a. The University utilizing three tiers of institutional tools: 1) a suite of centrally supported core systems, 2) Faculty-based purchased and supported tools, and 3) instructor-selected and supported special

purpose course tools to help achieve a balance between consistency for students and instructor autonomy.

- b. The new EDTECH governance structure should define a clear, responsive process for the identification, vetting, and implementation of tools, with an ongoing commitment to support current and future central acquisitions. The structure should also assign responsibility and include a mechanism for identifying, researching, and recommending new teaching and learning technologies.
- c. The University should review its procurement process to ensure that it is suited to the efficient selection of optimal technology within the rapidly shifting EDTECH marketplace.
- d. The University should have a team dedicated to support the development, customization, and integration of in-house EDTECH systems for digital learning. This could involve ASU and Faculty collaboration and pooling of resources.
- e. The selection of future tools, such as the learning management system (LMS), should consider both current and future needs, pedagogic frameworks and strategic directions (e.g., WatSEE, the Future Ready Talent Framework, WatSPEED/lifelong learning).
- f. The University should commit to ongoing investment in campus infrastructure to support digital learning on campus (e.g., Wi-Fi, flexible teaching and learning spaces) and develop classroom standards and specifications based on room capacity and function to be employed in new builds or retrofits irrespective of space ownership or management to foster a more consistent technological and functional experience.

3.7 Strategic Direction 7: Leverage digital strategies to enhance and expand work-integrated and life-long learning.

Work-integrated and lifelong learning are key strengths of the Waterloo experience and brand. Our existing curricular structure prioritizes traditional credit hour courses along with professional development (PD) courses and co-op/internship placements. The new credentials framework under development, enabled by digital teaching and learning, can create new opportunities beyond this structure – for example, micro-credentials for existing students and outward facing opportunities for non-traditional learners, delivered through WatSPEED and other means. As our students gain digital skills and competencies beyond the traditional course-based settings, these can be tracked and credentialled via digital dashboards and wallets. Students can be better prepared for the workplaces of the future with more exposure to virtual and augmented reality experiences. Work-integrated and professional opportunities can be enhanced for all students; for example, graduate students will benefit from the expanded reach of research, conferences, teaching and learning opportunities and networking that are facilitated by digital communities and events. The flexibility and access afforded by digital formats have the potential to reach more non-traditional students in the future.

Dashboards to track learning

In 2022, the Centre for Work-Integrated learning launched the PD Major Reflective Report Power BI dashboard (MRR dashboard). The MRR dashboard allows program administrators to synthesize the MRRs, including summaries of co-op learning experiences and how co-op and academic skills integrate. Furthermore, the dashboard asks students to self-assess their Future-Ready Talent Framework skills. While the MRR dashboard is not student-facing and does not yet allow for longitudinal analysis, a similar approach could be taken for students to combine self-assessment with credentialed professional development training over the course of the degree, ultimately leading to verifiable competencies for possible inclusion in digital wallets as per recommendation 7d.

Champions of Teaching and Learning

Waterloo's Teaching Fellows program was initiated in response to [Recommendation of the final report of the Task Force on Innovative Teaching Practices to Promote Deep Learning at the University of Waterloo](#) (2011) Objective 4: Build a Community of Faculty Leaders Focused on Teaching and Learning. Teaching Fellows are tasked with providing leadership in teaching within their own constituencies by developing best practices to enhance student learning. Currently, three of Waterloo's faculties (Science, Engineering, and Health) have unit level Teaching Fellows with a faculty-level lead Teaching Fellow, while the remaining faculties have appointed one Teaching Fellow for the whole faculty. The scope and operations of each faculty's Teaching Fellow(s) vary widely, but all six lead teaching fellows meet regularly to share projects and ideas across faculty lines. Since 2021, the teaching fellows have been championing the Blended Learning Project to help instructors incorporate face-to-face and online components into their courses in an evidence-based, learner-centred way. The Teaching Fellows are a natural conduit to instructors within Faculties. As a result, they are being increasingly called upon to support teaching and learning initiatives, including the DLS, testing the limits of their capacity.

Recommendations:

- a. Employ the credentials framework currently under development to digitally deliver micro-credentials that allow for shorter, stand-alone but stackable credits, which could also be made available to non-student audiences via open enrolment.
- b. Continue to expand WatSPEED digital lifelong learning offerings to cater to the greater demand for online offerings, as well as accessing new markets and repurposing existing (credit course) digital assets where appropriate.
- c. Develop digital learning resources and co-curricular opportunities that support career readiness, particularly for graduate students.
- d. Develop a student dashboard that tracks all for-credit and experiential learning, e.g., the Future Ready Talent Framework competencies that occur in co-op work placements.
- e. Implement a digital wallet to authenticate digital micro-credentials and competencies.

3.8 Strategic Direction 8: Identify and support faculty professional and pedagogical development needs for digital teaching and learning.

Teaching is a fundamental component of Waterloo's mission. Policies 76 and 77 highlight the importance of teaching in hiring, tenure, and promotion. With the increased use of educational technology and demand for digital literacy, Waterloo's instructors should be supported in their pursuit

of excellence in digital teaching and learning. Ideally, technology should be intuitive, integrated, and supported by a team of specialists who make it possible for instructors to focus on pedagogy and let the technology fade into the background. Faculties should determine what models are appropriate within their organization and culture.

Recommendations:

- a. Recognize the time required to develop and integrate digital tools, content, and strategies into teaching and factor this into the equitable assignment of duties.
- b. Develop a certificate in digital teaching and learning for instructors and graduate students.
- c. Expand each Faculty's Teaching Fellows program to provide capacity, support, and reach for digital initiatives.

Coordinating Support

In 2020, Waterloo launched the *Keep Learning Team* in response to the overwhelming need for support related to an institution-wide shift to remote learning. The *Keep Learning Team* recognizes that a co-ordinated approach is needed to advance teaching and learning. The core group – the Centre for Extended Learning, Centre for Teaching Excellence, Information Technology and Media Services, and the Library, meets bi-weekly, with full team meetings including AAS, Academic Integrity, the Writing and Communication Centre and the Student Success Office once per term. *Keep Learning* has updated its post-pandemic mandate to focus on coordinating action and resources on emerging issues as appropriate.

Continue the collaboration among key teaching and learning related academic support units (e.g., Keep Learning) as a means to coordinate and streamline access to resources and support for instructors. Keep Learning should also continue to provide guidance and support for overall directions set by University leadership, Teaching Fellows, and related advisory bodies.

3.9 Strategic Direction 9: Expand our global reach and reputation using digital strategies.

An intentional approach to increased digital opportunities is key to expanding Waterloo's global reach and reputation. Digital learning allows us to overcome limits in space and time and open the Waterloo experience to those who are not able or looking to participate in a traditional residential experience. A robust catalogue of online course and program offerings coupled with a strong marketing and brand development for Waterloo in this space will provide access to global non-traditional learners. Within

existing curricula, structured collaborative opportunities within face-to-face and online courses can support linkages and partnerships with other institutions, and foster internationalization.

Targeted Global Programs

In 2014, the Georgia Institute of Technology, launched the first accredited Master of Science in Computer Science in a "massive online" format for students who may not have been able to attend traditional on-campus classes at a fraction of the cost of traditional, residential programs. In that time, the program has enrolled over 9,000 students from all 50 U.S. states and nearly 120 different countries, making it the largest master's degree program in computer science. Not only has this program become a significant source of revenue for the institution, but it has also opened a highly regarded quality program to new markets of previously underserved students.

Collaborative Online International Learning (COIL)

Collaborative Online International Learning (COIL) builds on the foundation of collaborative learning – learning through interaction with others. COIL initiatives connect classes in different cultural and geographic contexts engaged in similar courses. Through these globally networked classrooms, students go beyond expanding expertise to build relationships and expand cross-cultural awareness and contributing to develop self. While COIL itself requires some instructor investment up front, it is generally an accessible and cost-effective way to develop digital communication skills, internationalize, and contribute to all three elements of the WatSEE framework.

Recommendations:

- a. Identify key markets which are underserved in Waterloo's areas of strength; develop and market scalable online programs, including course-based graduate degrees.
- b. Promote and grow international enrollment of traditional and life-long learners via a strong catalogue of digital offerings.
- c. Create opportunities for every student to engage in intercultural co-curricular linkages, e.g., via Collaborative Online International Learning (COIL) initiatives

3.10 Strategic Direction 10: Employ digital-enabled approaches to support equity, representation, inclusion, and anti-racism goals and initiatives.

The University is actively seeking to increase representation at the institution. Digital tools can increase the diversity of voices heard in the classroom, reach more students with anti-racism competency and capacity building, and expand the expertise and collaborative opportunities available beyond the campus.

In addition to representation, learners are diverse in needs – they learn and demonstrate learning in multiple ways, their backgrounds and support needs vary, they may have accessibility requirements, including neurodiversity, and geographic, physical, and economic access to a campus may be an issue. Flexible pathways and varying delivery modes enabled by digital learning can support the wide-ranging needs of our student population.

Applying Universal Design for Learning

Universal Design for Learning (UDL) in post-secondary education focuses on eliminating barriers to build access to a wide range of users. UDL is built on three principles: multiple means of representation, multiple means of expression, and multiple means of engagement. Multiple means of representation can include traditional face-to-face lectures in addition to recordings, narrated slide decks or text-based asynchronous content. Using various forms of representation in turn makes learning more accessible for those who struggle with the linear progression of a traditional lecture, allows those who must miss class for any reason to progress, and enables alternate pacing for all. Multiple means of expression and engagement include not just written projects and oral presentations, but the range of expression enabled by digital means (e.g., podcasts, short videos, web formats, online discussion groups). These multiple ways of learning, engagement and expression are designed to give students flexibility and the choice to pursue learning in the medium that most resonates with them or meet their needs. Digital approaches greatly increase the modes of engagement, expression, and representation available in teaching and learning.

Meeting New Accessibility Standards

The Final Postsecondary Education Standard Recommendations Report on the development of proposed post-secondary education standards under the Accessibility for Ontarians with Disabilities Act (AODA) was released in April 2022, comprising 185 recommendations that address 9 barrier areas. The recommendations are wide-ranging and touch every aspect of publicly assisted universities' operations. Eleven of the 169 recommendations explicitly address teaching and learning, with a further nine focused on digital teaching and learning itself. While digital formats can help achieve some of the AODA PSE recommendations (e.g., Recommendation 45, Student requests for accessible formats), we note that use and expansions of digital technologies itself introduces new challenges for accessibility (e.g., the Report's Recommendation 74, Accessibility of technology).

Recommendations:

- a. All areas of the University should utilize digital learning as an important (but not exclusive) means of supporting Universal Design for Learning (UDL) campus initiatives, recognizing that the availability of digital formats and the flexibility afforded by digital teaching and learning go a long way in supporting UDL goals.
- b. The University should provide centralized support for achieving AODA post-secondary education standards.
- c. The University should promote flexible pathways to underserved, international, and non-traditional students in order to recruit more underrepresented students.
- d. The University should develop digital modules in EDI-R that can be embedded in the curriculum or offered as micro-credentials.
- e. Programs should leverage digital formats as a means of introducing indigenous elements into the curriculum, including providing the flexibility to do so, and the University can use online modules as a means promote awareness and action regarding indigenization and reconciliation.
- f. Programs should use digital tools to bring more underrepresented voices into the classroom (e.g., guest lecturers, advisors, mentors, etc.)

3.11 Strategic Direction 11: Lead in teaching and learning that exploits the combined and unique strengths of technology and human interaction.

The *Waterloo at 100* discussion paper envisions “delivering on the value of engaged interaction to deepen learning, inquiry, and work while leveraging digital technologies, pedagogies, and services to complement an excellent experience. Waterloo has a deep culture of innovation, and we need to apply this mindset to the transformation of teaching and learning through digital means. Incentives and support, including through emerging mechanisms like the Teaching Innovation Incubator (TII), will promote innovation and agility, as will creating an environment in which successful innovations are disseminated and shared. Mitigating the risks associated with the pursuit of transformational change will help engage faculty in digital teaching innovation.

Incubating New Ideas in Digital Learning

The University of Waterloo Teaching Innovation Incubator (TII) is envisioned as a means to develop and enable bold new approaches to teaching and learning. The TII will serve as a mechanism for experimentation, fostering pilot projects of new ideas from our existing complement of faculty and staff. The TII is, as of early 2023, still in its beta phase, with three projects in development. One of the key points in the development of the TII is that, while innovation in teaching is happening, it can be challenging for individual innovators to operate outside institutional rules and navigate administrative structures or bring together the resources to implement and scale transformative ideas. Furthermore, innovation comes at a risk, and a Teaching Innovation Incubator can help mitigate some of the concerns associated with high-risk, high-reward teaching innovations. While the TII is not explicitly about digital teaching, digital teaching and learning is increasingly becoming a part of the teaching and learning landscape. Indeed, two of the three beta TII projects draw on or are likely to include some elements of digital teaching.

Recommendations:

- a. The University should provide structure and support for digital teaching innovation and make fostering digital teaching innovation one of the foci of the Teaching Innovation Incubator.
- b. The University should ensure that there is ongoing proactive exploration and research into emerging technologies and their potential application in teaching and learning (e.g., AR/VR, AI driven tools).
- c. The University should develop better mechanisms for recognizing and diffusing innovation across the institution (e.g., faculty community of practice, digital learning exemplar website). Evaluation of success should be a required component of any University-supported project.
- d. The University should define institutional objectives and key results (OKRs) as appropriate for the recommendations in this report, including measures of student success and student satisfaction (e.g., from student course perceptions surveys, NSSE results, term surveys).

3.12 Strategic Direction 12: Engage in a broader transformation initiative and develop a vision for a fully digitally enabled university that appropriately leverages technology to enhance all university services.

A digital learning strategy needs to be embedded within a larger institutional digital transformation to Waterloo as a digitally enabled campus. Digital learning will be most successful if other student supports and services are available in a flexible manner. Many of the recommendations above also pertain to all the digital interactions our students have with the University (applying, registering, communicating, etc.)

There should be consistency among University systems and the user experience should be as seamless as possible. The digital learning technology ecosystem needs to work with other institutional systems and processes, and the ability to access and share data across the institution is a key enabler of this interoperability, as well as enhancing overall institutional efficiency, optimization, and informed decision-making.

Recommendations

- a. Improve sharing of institutional data and establish open data standards.
- b. Continue gathering data on current and prospective students' needs, preferences, and drivers of success.

4. Conclusion and Next Steps

This report is the result of extensive consultations from June to November 2022. While the consultations were influenced by the challenges and lessons of the pandemic, the Working Group and the stakeholders who contributed were asked to focus on intentionally and strategically approaching digital learning. While it is obviously not possible to capture every idea and suggestion that emerges in such a process, overall, we believe this to be a comprehensive report of the findings, and one which accurately captures the essence of the consultations.

This report aims to be consistent with the strategic plans and frameworks which guide our work at Waterloo, chief among them, our strategic plan, *Connecting Imagination with Impact*. However, the recommendations as presented here are intended to form the basis of a Digital Learning Strategy for Waterloo, and perhaps also become a facet of the vision for **Waterloo at 100**, mapping a longer-term trajectory for Waterloo.

To facilitate reference, discussion and action, the Working Group have created a briefing document to accompany this report that summarizes the Strategic Directions and Recommendations, along with current activity, areas of responsibility and potential timelines. This could serve as an action plan of sorts. In Recommendation 5.a., the report recommends forming a committee or similar mechanism to both implement the current recommendations and develop future strategy, as developing strategy should be an ongoing process. Finally, as noted above, the focus of this investigation was on digital learning, so Waterloo may want to focus next on developing a comprehensive Teaching and Learning Strategy, as well as initiating a broader institutional digital transformation that considers all manner of university services and operations.

Appendix A: Project team

Team member	Role	Faculty/Unit
Johanna Wandel	Co-lead	Environment (Associate Dean, Undergraduate)
Aldo Caputo	Co-lead	Centre for Extended Learning (Director)
James Skidmore	Faculty representative	Arts
Robert Hill	Faculty representative	Science
Diana Skrzydlo	Faculty representative	Mathematics
Peter Johnson	Faculty representative	Environment
Tamara Maciel	Faculty representative	Health
Carolyn MacGregor	Faculty representative	Engineering
Stephanie Ye-Mowe	Student representative	Waterloo Undergraduate Student Association
Kevin Bonnell	Student representative	Graduate Student Association
Mary Power	ASU representative	Centre for Teaching Excellence
Pam Fluttert	ASU representative	Instructional Technology and Media Services, IST
Victoria Chu	ASU representative	Library
Kari Weaver	ASU representative	Library
Alisa Sivak	Communications/Research	Office of the Associate Vice-President, Academic
Wendy Hague	Project Manager	Project Management Office (IST)

Additional support was provided by the following stakeholders:

Jill Knight	Student representative	Waterloo Undergraduate Student Association
Jordan Daniels	Student representative	Waterloo Undergraduate Student Association
Tolulope Alayande	Student representative	Graduate Student Association
Anton Mosunov	Faculty representative	Mathematics

Appendix B: Summary of Consultations

Stakeholder group	Nature of consultations
Students	
Undergraduate students	“Intercept” surveys Focus groups
Graduate students	Focus groups
Academic Support Units	
Centre for Teaching Excellence (CTE)	Group consultation
Centre for Extended Learning (CEL)	Surveys Group consultations: copyright/editorial, LSS, Exams, Developers, OLC, Systems, LMS/QA teams
Library	Group discussions with: University Library, Print and Retail Services, AFIW Libraries, Executive Team
Writing and Communications Centre	Small group consultation with Clare Bermingham and Elise Vist
WatSPEED	Individual consultation with Sanjeev Gill Individual consultation with Peter Carr
Work-Learn Institute	Individual consultation with Anne Fannon
Centre for Work-Integrated Learning	Individual consultation with Andrea Prier
Academic Integrity and Quality Assurance	Individual consultation with Amanda McKenzie
Information Systems & Technology (IST)	Group discussion with IST Exec (Directors, Chief Information Officer, Executive Officer) Group Discussion, Instructional Technologies and Media Services (ITMS) group Group discussion (open invite) for other IST staff
Faculty Computing User Support Group (FACCUS) and Computing Technologies Services Committee (CTSC)	Email invite to combined group for discussion
Student Success Office	Group discussion with Heather Westmorland, Mike Chee, Angela Rooke
MUR	Small group discussion with Kari Pasick Stewart and Jody Berringer
Keep Learning (CTE, ITMS, Library and CEL)	Small group discussion with Keep Learning team
Instructional faculty/staff	
Arts	Surveys (n=38) Individual consultations and small group interviews (n=10) Focus group session (n=15)
Science	Surveys (n=50) Group discussion (n=13)

Environment	Surveys (n=20) Group discussion (n=13) Individual consultations (n=2)
Engineering	Surveys (n=59) Individuals consultation (n=1) Group meetings with Faculty Operations Advisory Committee (FOPS) (Associate Deans: Undergrad; Co-op Education; Outreach, Diversity and Equity; Teaching; Director of Admissions, academic program leads, liaisons; n=21) Group discussions with: Teaching-Learning Champions (n=9), 3 group discussion sessions (n=8, n=12, n=11), email responses (n=3) Note: group discussions included a mix of students, faculty, technicians.
Math	Group discussions (n=33) Individual consultations (n=9) Email consultations (n=2) Note: sessions included instructional support coordinators
Health	Surveys (n=1) Individual consultations (n=4) Email consultations (n=1)
Faculty Leadership	
Deans	Individual consultations with Lili Liu, Mary Wells, Bob Lemieux, Bruce Frayne, Jean Andrey, Mark Giesbrecht
Faculty of Arts leadership	Group consultation with Sheila Ager, Marty Cooke, Anna Esselment, Robert Park
Associate Deans, Undergrad (and related)	Individual consultations with Brendon Larson, Monica Barra, Laura Deakin, Leeann Ferries, Benoit Charbonneau, Peter Wood, Dan Davison
Associate Deans, Grad	Individual consultations with Peter Deadman, Martin Ross, Bertrand Guenin, Brian Laird, Siva Sivathamman
Associate Deans, Computing	Group consultation with UCIST subgroup: Stefan Idziak, Marek Stastna, Robert Park, Fred Zhu
AFIWs	Individual consultations with Kristiina Monteiro (Renison), Carol Anne MacGregor (St. Jerome's)
Senior Leadership	
AVP International	Individual consultation with Ian Rowlands
AVP Academic	Individual consultation with David De Vidi
AVP Graduate Studies and Postdoctoral Affairs	Individual consultation with Jeff Casello
AVP Innovation	Individual consultation with Sanjeev Gill
AVP Cooperative and Experiential Education	Individual consultation with Norah McRae
Special Advisor to the Provost, WatSEE	Individual consultation with Marlee Spafford

Chief Information Officer	Individual consultation with Bruce Campbell
Registrar	Small group consultation with Cathy Newell-Kelly and Jennifer Coghlin

Secondary Data from Previous Surveys

Instructor Survey Data

- Spring 2021 Held With Survey Instructor Qualitative Analysis
- Winter 2021 Instructor Survey
- Faculty of ENG Instructor Software Needs Online Teaching Survey Results

Student Survey Data

- Spring 2020
- Winter 2021
- WUSA Fall 2020 FINAL Teaching and Course Quality Survey Report
- WUSA flexible_remote_options winter_2022

Appendix C: Environmental Scan

A number of U15 and Ontario universities have or are working towards some variation of a “digital learning strategy,” but what that looks like varies significantly by institution. The following table summarizes the results of an environmental scan, indicating which schools have or are in the process of developing a strategy, broadly noting the type of strategy, and identifying the primary role or office that appears to have initiated the development of a strategy. This scan is limited to the information that was available online for each institution and therefore may contain inaccuracies.

Strategies were broadly categorized as addressing:

1. **Virtual learning** – a focus on development of virtual learning resources (e.g., online courses, open educational resources, guidelines). Ontario universities developing their virtual learning capacity received specific funding from e-Campus Ontario.
2. **Digital teaching and learning** – a focus on development of digital capacity supporting teaching and learning, touching on campus administration and infrastructure where relevant
3. **Digital campus** – focus on digital infrastructure (often led by campus IT team)

U15 Universities	Status	Type of Strategy	Initiated by	Methods
U Alberta	Yes (2013)	Digital teaching and learning	President	SWOT analysis
U British Columbia	In progress	Digital teaching and learning	Provost and Vice-President, Academic	Consultations
U Calgary	In progress	Virtual learning	Institute for Teaching & Learning	n/a
Dalhousie U	Yes (2021)	Digital campus	Provost and Vice-President, Academic	Consultations
U Laval	No		n/a	n/a
U Manitoba	No		n/a	n/a
McGill U	Yes (2020)	Digital campus	IT unit	n/a
McMaster U	In progress	Teaching & learning strategy	Provost and Vice-President, Academic	Consultations
U Montréal	No		n/a	n/a
U Ottawa	In progress	Digital campus	Information Technology unit	Consultations
Queen’s U	Yes (2018)	Digital campus	Unclear	Environmental scan Consultations
U Saskatchewan	Yes (2018)	Digital teaching and learning	Learning Technologies unit	n/a
U Toronto	In progress	Digital teaching and learning	Digital Learning Innovation unit	n/a
Western U	Yes (2020)	Virtual learning	Provost	Environmental scan
Ontario Universities				
Brock U	In progress	Virtual learning	n/a	n/a
Carleton U	In Progress	Digital campus	Information Systems Executive Committee	Consultations
Lakehead U	In progress	Virtual learning	Associate Vice-Provost, Academic	n/a

Laurentian U	In progress	Virtual learning	n/a	n/a
Nipissing U	In progress	Virtual learning	n/a	n/a
OCAD U	Yes (2018)	Digital teaching and learning	Technology Enabled Learning Committee	Consultations
Ontario Tech U (UOIT)	Yes	Digital teaching and learning	Office of Learning and Innovation	Strategic Plan
Toronto Metropolitan U	Yes (2017)	Virtual learning	Provost	n/a
Trent U	In progress	Virtual learning	Trent Online	n/a
U Guelph	In Progress	Digital teaching and learning	IT	Consultations
U Windsor	In progress	Virtual learning	Office of Open Learning	n/a
Wilfrid Laurier U	Yes (2019)	Digital teaching and learning	VP, Research and VP, Finance & Admin	Consultations
York U	In Progress	Digital campus	AVP, Teaching & Learning and IT	Strategic Plan

Appendix D: Overview table (to be completed as part of a workplan)

IP – in progress / SR – short range / MR medium-range / LR long-range

	Recommendation	Related recommendations	Responsibility	Time frame			
				IP	SR	MR	LR
STRATEGIC DIRECTION 1: The University should be intentional and evidence-based about the design and application of digital learning across curricula and programs.	a. Faculties should incorporate digital learning into their Strategic Plans in a manner that reflects the Digital Learning Strategy recommendations.	1b, 1c, 1d					
	b. Program-level planning decisions should support flexible pathways for students and consider how to employ digital strategies appropriately to enhance flexibility.	2a, 2b					
	c. Curriculum committees should review programs and map course modalities to optimize the student experience and progression through the program (e.g., the balance of online, blended and in-person offerings; the ideal fit of modes of delivery to courses) and periodically revisit this through the curricular review process. Course delivery modes should be determined by this plan and remain consistent, visible to students, and predictable from term to term, year to year.	1a, 2c, 4a					
	d. The University should consider how digital competencies can be reflected in institutional degree-level expectations, and these in turn would	1a, 1c, 7b					

	be reflected in program-level learning outcomes.						
	e. Curricular design support for Faculties should be expanded as necessary.	1e					
STRATEGIC DIRECTION 2: Develop and provide students with flexible pathways through curricula.	a. Continue to develop blended and online courses to intentionally develop flexible pathways.	1b					
	b. Make flexible pathways consistently available and easily identifiable to students.	1b					
	c. Create course and scheduling options that allow for more flexibility, such as decreased in-person contact time, and alternate course structures beyond the traditional 0.5 credit weight course (e.g., block courses, non-standard credit-weight courses).	1c, 3c, 7a					
	d. Implement a system of open enrolment that allows non-degree learners to enroll in selected courses (e.g., those without or with few prerequisites, likely to be of general interest, that can perhaps be bundled into a credential or that serve as an alternative pathway to admission), providing expanded opportunity for access, especially to fully online courses.						

STRATEGIC DIRECTION 3: Learner-centredness and student success should guide the application of digital learning.	a. Inform the application of digital learning with evidence, research and established best practices. Strategies should focus on promoting active learning and other high impact practices, achievement of institutional goals (e.g., retention, access, and engagement), and achieving key learner competencies (e.g., as articulated in WatSEE and the Future Ready Talent Framework).	1b, 1d					
	b. Continue to develop self-efficacy and a digital learning culture among students, including best practices for time management, collaboration, interaction, academic integrity, and respectful and ethical behaviour in digital environments. This should be done at the institutional and Faculty level, including programs and academic support units.	2a					
	c. Continue to encourage and support the increased use of evidenced-based blended and flipped modes of learning, supported through the Blended Learning Initiative and other projects, with the goal of utilizing in person time more effectively and increasing active learning in the classroom.	2c					
	d. Ensure students have access to the academic and non-academic supports, training, learning tools and technologies required for their success	1a					

	as digitally enabled learning becomes more ubiquitous (e.g., institutional site licenses for core educational software, remote access to labs and specialized technology; spaces on campus that allow students to participate in virtual classes or access virtual supports while on campus; remote access to mental health and student success supports).						
	e. Develop institutionally supported digital communities that provide opportunities for students to safely communicate and connect locally and globally for learning and communication, and to enhance and expand the on-campus experience.	7c, 3e					
STRATEGIC DIRECTION 4: Ensure a consistently high quality of learning experience across the institution regardless of the mode of delivery.	a. Define official digital modalities offered at Waterloo (on-campus, blended, and online; synchronous and asynchronous) and communicate information regarding each mode and related learner expectations (e.g., in-person and online time commitments) to students via scheduling and course selection information.	1c					
	b. Establish University-level principles and guidelines to ensure that baseline requirements for digital learning are met and that Waterloo students have consistent, high quality digital learning experiences.						
	c. Provide support for all modes of digital learning design, from individual						

	digital assets to full online courses, by expanding access to appropriate services.						
	d. Ensure that academic support units (ASUs) involved in student learning are themselves supported in delivering digital services to students.	1e					
STRATEGIC DIRECTION 5: Implement a model of digital learning that is sustainable, efficient, and effective.	a. The University should establish a standing committee on digital learning, with representatives from each Faculty, staff, and students.		University				
	b. The University should review intellectual property policy (Policy 73) with regard to teaching materials, with the goal of making digital assets created in the course of one's employment consistently available for reuse within the institution (e.g., for use in core course, large multi-section courses, or courses serving several programs or Faculties).		University				
	c. The EDTECH governance structure should ensure that the appropriate processes and technology are in place to support the creation, sharing, and life cycle management of digital teaching and learning assets, including a platform that facilitates the sharing and reuse of digital course assets within the University of Waterloo.	6a, 6c	EDTECH Governance				
	d. The University should incentivize the development of digital materials that can be shared within the University of	1e, 6e	University				

	Waterloo community and, when appropriate, more widely as open educational resources (OERs).						
	e. The University should commit to ongoing support for digital learning. This could include funding for students to help co-create digital learning experiences (e.g., online learning assistants during pandemic).	1d	University				
	f. The University should commit to ongoing resourcing in areas such as copyright, accessibility, privacy, security, and digital asset management in ways suited to supporting the important roles each plays in digital teaching and learning.		University				
STRATEGIC DIRECTION 6: Continue to advance an agile, technology-enabled learning ecosystem that supports high-quality digital learning options.	a. The University utilizing three tiers of institutional tools: 1) a suite of centrally supported core systems, 2) Faculty-based purchased and supported tools, and 3) instructor-selected and supported special purpose course tools to help achieve a balance between consistency for students and instructor autonomy.	5c, 6c, 6d					
	b. The new EDTECH governance structure should define a clear, responsive process for the identification, vetting, and implementation of tools, with an ongoing commitment to support current and future central acquisitions. The structure should also assign	5c	EDTECH Governance				

	responsibility and include a mechanism for identifying, researching, and recommending new teaching and learning technologies.						
	c. The University should review its procurement process to ensure that it is suited to the efficient selection of optimal technology within the rapidly shifting EDTECH marketplace.	6a	University				
	d. The University should have a team dedicated to support the development, customization, and integration of in-house EDTECH systems for digital learning. This could involve ASU and Faculty collaboration and pooling of resources.		University				
	e. The selection of future tools, such as the learning management system (LMS), should consider both current and future needs, pedagogic frameworks and strategic directions (e.g., WatSEE, the Future Ready Talent Framework, WatSPEED/lifelong learning).						
	f. The University should commit to ongoing investment in campus infrastructure to support digital learning on campus (e.g., Wi-Fi, flexible teaching and learning spaces) and develop classroom standards and specifications based on room capacity and function to be employed in new builds or retrofits irrespective of space						

	ownership or management to foster a more consistent technological and functional experience.						
STRATEGIC DIRECTION 7: Leverage digital strategies to enhance and expand work-integrated and life-long learning.	a. Employ the credentials framework currently under development to digitally deliver micro-credentials that allow for shorter, stand-alone but stackable credits, which could also be made available to non-student audiences via open enrolment.	2c					
	b. Continue to expand WatSPEED digital lifelong learning offerings to cater to the greater demand for online offerings, as well as accessing new markets and repurposing existing (credit course) digital assets where appropriate.	1d					
	c. Develop digital learning resources and co-curricular opportunities that support career readiness, particularly for graduate students.	3e					
	d. Develop a student dashboard that tracks all for-credit and experiential learning, e.g., the Future Ready Talent Framework competencies that occur in co-op work placements.	1e, 10d					
	e. Implement a digital wallet to authenticate digital micro-credentials and competencies.	1d, 8d					
STRATEGIC DIRECTION 8: Identify and support faculty professional and	a. Recognize the time required to develop and integrate digital tools, content, and strategies into teaching		Faculties				

pedagogical development needs for digital teaching and learning.	and factor this into the equitable assignment of duties.						
	b. Develop a certificate in digital teaching and learning for instructors and graduate students.	8d					
	c. Expand each Faculty's Teaching Fellows program to provide capacity, support, and reach for digital initiatives.	7e	Faculties				
	d. Continue the collaboration among key teaching and learning related academic support units through Keep Learning as a means to coordinate and streamline access to resources and support for instructors. Keep Learning should continue to provide guidance and support for overall directions set by University leadership, Teaching Fellows, and related advisory bodies.	8b	Academic Support Units				
STRATEGIC DIRECTION 9: Expand our global reach and reputation using digital strategies.	a. Identify key markets which are underserved in Waterloo's areas of strength; develop and market scalable online programs, including course-based graduate degrees.						
	b. Promote and grow international enrollment of traditional and life-long learners via a strong catalogue of digital offerings.						
	c. Create opportunities for every student to engage in intercultural co-curricular linkages, e.g., via	3e					

	Collaborative Online International Learning (COIL) initiatives						
STRATEGIC DIRECTION 10: Employ digital-enabled approaches to support equity, representation, inclusion, and anti-racism goals and initiatives.	a. All areas of the University should utilize digital learning as an important (but not exclusive) means of supporting Universal Design for Learning (UDL) campus initiatives, recognizing that the availability of digital formats and the flexibility afforded by digital teaching and learning go a long way in supporting UDL goals.		All				
	b. The University should provide centralized support for achieving AODA post-secondary education standards.		University				
	c. The University should promote flexible pathways to underserved, international, and non-traditional students in order to recruit more underrepresented students.	1b, 2a, 2b	University				
	d. The University should develop digital modules in EDI-R that can be embedded in the curriculum or offered as micro-credentials.	7d	University				
	e. Programs should leverage digital formats as a means of introducing indigenous elements into the curriculum, including providing the flexibility to do so, and the University can use online modules as a means promote awareness and action regarding indigenization and reconciliation.		Programs				

	f. Programs should use digital tools to bring more underrepresented voices into the classroom (e.g., guest lecturers, advisors, mentors, etc.)		Programs				
STRATEGIC DIRECTION 11: Lead in teaching and learning that exploits the combined and unique strengths of technology and human interaction..	a. The University should provide structure and support for digital teaching innovation and make fostering digital teaching innovation one of the foci of the Teaching Innovation Incubator.	8c, 8d	University				
	b. The University should ensure that there is ongoing proactive exploration and research into emerging technologies and their potential application in teaching and learning (e.g., AR/VR, AI driven tools).		University				
	c. The University should develop better mechanisms for recognizing and diffusing innovation across the institution (e.g., faculty community of practice, digital learning exemplar website). Evaluation of success should be a required component of any University-supported project.		University				
	d. The University should define institutional objectives and key results (OKRs) as appropriate for the recommendations in this report, including measures of student success and student satisfaction (e.g., from student course perceptions surveys, NSSE results, term surveys).		University				

STRATEGIC DIRECTION 12:	a. Improve sharing of institutional data and establish open data standards.						
Engage in a broader transformation initiative and develop a vision for a fully digitally enabled university that appropriately leverages technology to enhance all university services.	b. Continue and better coordinate communications and data gathering on current and prospective students' needs, preferences, and drivers of success.						

For Information

Public

Open Session

To:

Senate

Sponsor:

James W.E. Rush, Vice-President Academic and Provost

Contact Information:

Provost's Office

Presenter:

James W.E. Rush, Vice-President Academic and Provost

Contact Info:

Provost's Office

Date of Meeting:

June 19, 2023

Item Identification:

8(b). Recommendation to change the name of the Department of Management Sciences to the Department of Management Science and Engineering.

Summary:

This report provides rationale for the recommendation to change the name of the Department of Management Sciences, including a summary of consultation activity, and positive results from the department-level and Engineering Faculty Council votes. An environmental scan of counterparts in also aligned to the recommendation.

Recommendation/Motion:

To change the name of the Department of Management Sciences to the Department of Management Science and Engineering.

Governance Path:

Department-level vote, online February 13-17, 2023

Engineering Faculty Council vote, April 18, 2023

Deans Council (plus PVP), May 31, 2023

Previous Action Taken:

In Spring 2022, a renaming committee was formed to obtain feedback from appropriate stakeholders on the appropriate department name through direct consultation, online surveys, and meetings with faculty, staff, and students in the department. The committee presented the results of extensive data collection to the department at a special meeting (Dec 5, 2023). Two follow-up discussions took place at department meetings (Jan 16, 2023 and Feb 6, 2023). Mary Wells, Dean of Engineering held an online vote with strong support, followed by a vote by the Engineering Faculty Council with strong support. A discussion at Deans' Council (plus PVP) confirmed no issues would be presented for other faculties or departments as a result of the recommended change to the Department of Management Science and Engineering.

Highlights:

The enclosed report summarizes the history of the department, and how the highly interdisciplinary field of management sciences requires a unique name consideration. Management sciences is typically associated with business schools, yet the department is situated within the Faculty of Engineering, given the highly technical engineering areas within these management sciences and some overlap with many industrial engineering programs. A greater emphasis on Data Analytics reflects part of the motivation for the name change.

Documentation Provided:

- Briefing note: Motion for Department Name Change

University of Waterloo
REPORT OF THE VICE-PRESIDENT, ACADEMIC and PROVOST
Report to Senate
19 June 2023

FOR APPROVAL

Department Name Change

Motion: To change the name of the Department of Management Sciences to the Department of Management Science and Engineering.

Rationale:

The Department of Management Sciences was founded in 1969 when it launched its graduate programs that are still running today: our course-based Master of Management Sciences (MMSc) programs and our research-based MASc & PhD programs. In 1998, the department launched the first online graduate program in Canada, initially named Management of Technology at a Distance (MOT@Distance), which was expanded to include topics in Operations Research and Information Systems and renamed to the MMSc Online program. In 2007, we introduced a Bachelor of Applied Science (BASc) in Management Engineering, a unique accredited engineering undergraduate program which has been an outstanding success. We also offer an Option in Management Sciences at the undergraduate level.

More recently, we have expanded our programs to include a graduate diploma in data analytics (GDDA), which is offered both to our Master of Management Sciences (MMSc) students, and starting in Fall 2024, will be offered as a standalone program.

When it was established in 1969, the field of Management Sciences was in its infancy and is still today understood as a highly interdisciplinary field. Our department at Waterloo is unique in several ways. Management Sciences is often considered to be associated with business schools and certain specializations that they offer, but at Waterloo we are in the Faculty of Engineering. We also have a stronger focus on the technical engineering areas within these management sciences (e.g., operations research and information systems) and have some overlap with many industrial engineering programs. Our recent programs and emphasis in Data Analytics reflects this focus and is part of the motivation for considering a name change. Lastly, we are unique within the Faculty of Engineering as the only department that does not have “Engineering” in their name.

To both determine the best name to put forward and to obtain feedback from appropriate stakeholders, we formed a Renaming Committee comprised of Samir Elhedhli (Committee Chair), Ada Hurst, Houra Mahmoudzadeh, Frank Safayeni, and Oliver Schneider. These committee members engaged in an extensive process involving:

- Direct consultation with 30 faculty members
- Direct consultation with 7 staff members
- Data collection from surveys from 227 alumni (83 MGTE undergraduate alumni, 67 MMSc coursebased graduate alumni, and 77 MASc/PhD thesis-based graduate alumni)
- Meetings with 80+ current graduate students (MMSc: 34 online, 60+ in-person; MASc/PhD: 18 online, 20+ in-person)
- Meetings with 120+ current undergraduate students (120 online, 100+ in-person)

- Direct consultation with 2 Faculty of Engineering staff and 2 retired department chairs

The committee presented the results of this extensive data collection to the department at a special meeting (Dec 5, 2023). Many name ideas were generated, but the names that had the highest support were:

- Management Science(s) (our current name)
- Management Engineering (the name of our undergraduate program)
- Management Science(s) & Engineering

The department wanted to explore these names and a few others with some support (e.g., Industrial & Systems Engineering, Management and Information Systems Engineering, and Management Engineering & Business Analysis). We had two follow-up discussions at department meetings (Jan 16, 2023 and Feb 6, 2023). It became clear that Management Science & Engineering was the most preferred name concept, and that the singular Management Science (not the current “Management Sciences”) was more consistent with external examples. Lastly, the Dean of Engineering held an online vote with the question “Do you support the renaming of the Department of Management Sciences to the Department of Management Science and Engineering?” The results of that vote were:

- 25 regular faculty voted “yes”, 3 voted “no”, and 2 did not participate.
- 6 staff voted “yes” (all voted, and none voted “no”).

Following strong support from the department, a meeting of the Engineering Faculty Council (EFC) on April 18, 2023 resulted in strong endorsement for the proposed name change where 54 voted “yes”, 1 voted “no”, and 2 did not participate.

Environmental scan:

Our counterparts in Canada are as follows. Shown below, there is some diversity of naming, no doubt reflecting different histories and constituent disciplines, though most reflect a focus on “management”, and “engineering”. Several append the term “science.” As we are quite interdisciplinary, there is some overlap with industrial engineering and business schools.

Industrial Engineering in Canada:

- University of Toronto: Department of Mechanical and Industrial Engineering
- Dalhousie University: Department of Industrial Engineering
- Ryerson University: Department of Mechanical and Industrial Engineering
- Concordia University: Department of Mechanical, Industrial, and Aerospace Engineering

Most business schools in Canada use the name “Business School” with some important and relevant exceptions to our case:

- University of Toronto: Rotman School of Management
- McGill University: Desautels Faculty of Management

The most relevant counterpart that we have globally is Stanford’s Management Science & Engineering Department. Our proposed name matches Stanford’s department name and would be recognizable internationally as having significant overlap.

Annual Report of Progress with respect to Assessment of Teaching

David DeVidi, Associate Vice-President, Academic

Over the past several years it has become standing practice to present Senate with an update each spring on the progress with respect to creating fairer and more useful processes for the assessment of teaching at Waterloo. I am pleased to be able to bring forward the attached report, prepared by Sonya Buffone, Director and Kathy Becker, Specialist of the Office of Teaching Assessment Processes, which provides an update that I hope Senators will find useful and informative. I offer here a brief summary as a preface to that report.

These reports have come a long way from the mid-to-late 2010s, when the reports had entirely to do with progress on the development of a new Student Course Perceptions questionnaire. In response to community feedback, including from students, FAUW, and many faculty members and in response to the research literature on best practices for assessment of teaching, the University of Waterloo is taking steps towards a profound shift to a more holistic model of teaching assessment. This approach reduces, but does not eliminate, reliance on student perception surveys by gathering evidence from a variety of sources. It endeavors to take into account the full range of activities relevant to good teaching. Among the sources of information that will be considered are:

1. Student Course Perception surveys
2. Peer Reviews of Teaching
3. Teaching Dossiers that allow instructors to present evidence relevant to the quality of their teaching, including reporting on steps they have taken to improve their own teaching and to help others improve theirs
4. Evidence about student supervision --- especially, but not solely, graduate student supervision.

Teaching Effectiveness Framework

In the past few spring updates, evolving versions of a Teaching Effectiveness Framework have been presented. The version presented last year was the culmination of years of work, including many rounds of consultation with faculty, students, and professional staff by the Course Evaluation Project Team (CEPT) and the Complementary Teaching Assessment Processes Team (CTAPT), and was presented (and we take it as accepted) as in final enough form to work with, while recognizing that it will be a living document open to further refinement. During the past year the model has indeed been updated in response to the TAP Office's ongoing consultations with the community. This ongoing work is important because the Teaching Effectiveness Framework informs all aspects of the work involved in creating a holistic model for assessment of teaching because it spells out recognized values and priorities for teaching and learning at Waterloo.

Student Course Perception Surveys

Long time Senators will recall that before Senate adopted the new Student Course Perception instrument a large pilot test was carried out. It was partly in response to the results in the pilot test that Senate voted, by a large majority, to adopt the new tool. The relevant Senate motion called for ongoing research into the behaviour of the survey tool and for the development of additional "tiers" of questions as part of a projected "cascaded model."

Research

In the report you will find an update about the research undertaken in the past year and planned for the near future, including:

- A large-scale quantitative study of the numerical responses to core SCP questions for Winter 2022 has been completed considering, among other things, whether the results provide evidence of various sorts of associations between instructor gender or race and survey scores. This was the first institutional study to use the Equity Survey data. The full report is found here: [TAP Office Reports](#)
- A second large-scale quantitative study of the responses to the core SCP questions is in progress for Winter 2023.
- In response, among other things, to concerns expressed by faculty members, a large-scale qualitative study of the responses to the open-ended SCP questions has also been initiated for Winter 2023.

Cascaded model

- Tier-two survey question development is well underway in several Faculties. The report outlines progress to date and provides an important outcome of those consultations: the Teaching & Learning Priority Maps created by each Faculty.
- During the tier-two Faculty consultations, a strong desire was expressed by Faculty to develop course-level questions (tier four of the cascaded model). As a result, **the TAP office is excited to officially begin development of tier-four SCP survey questions in the Fall 2023.**

Response rates

Response rates on SCP surveys have been on the decline for quite some time --- at least since the start of the pandemic. The TAP Office did some research on the scale of this decline and has prepared a report that offers some possible explanations and some advice to stakeholders to help address this issue.

Complementary Methods

The report updates progress on implementing the recommendations from CTAPT:

- The TAP office is working with CEL to develop a system to relieve the administrative burden of implementing Peer Reviews of Teaching, a frequently voiced concern during CTAPT consultations. The report describes some important aspects of the new system and makes clear the role the TAP office will play in this process --- it provides logistical support and leaves the academic decisions in the hands of Departments and Faculties. It also describes next steps for Faculties.
- The report also provides a brief update on Teaching Dossiers.

Steps for the future

1. The TAP Office has only two extremely diligent members and, as can be seen even from this summary document, is attempting to move many projects forward at once. It is not uncommon

that the Office receives questions of the general form “when can we expect X?” or more bluntly “why are we still waiting for Y?”

With the support of Daniela Seskar-Hencic, Director of Strategic Planning and Evaluation, and Jana Carson, Senior Manager of Evaluation and Accountability, of Institutional Analysis and Planning to develop a logic model for the TAP portfolio. An initial draft of the logic model is provided in the report. This will, we hope, help assure the community that there is actually a feasible plan in place so that all the various promised improvements to teaching assessment will arrive, even if not on the accelerated schedule that would be possible with unlimited resources.

2. While this is not highlighted in Sonya’s report, I will add myself that it is the intention of the University to strike a working group whose mandate will be to provide advice to performance review and tenure and promotion committees about how to arrive at appropriate holistic assessments of teaching performance in light of evidence from multiple sources. This has been on hold partly because the work of the committee may be impacted by changes to Policy 76 or 77 and the discussions about revising those policies have not yet concluded.

The purpose of these annual reports is to provide a transparent and comprehensive summary of the key developments as we work toward a holistic model for the assessment of teaching. With such a many-faceted and sometimes contentious project, our goal is to keep stakeholders informed. Consultations are at the heart of this work. We remain committed to the goal of developing and implementing a holistic model for teaching assessment that is aligned with the institutional [Teaching Effectiveness Framework](#) and that provides meaningful and fair assessment of teaching effectiveness.

Assessment of Teaching: Overview
Update to Senate, May 2023

Sonya Buffone, Director Teaching Assessment Processes
Kathy Becker, Specialist, Teaching Assessment Processes

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Background: Teaching Assessment Processes

For several years, the University of Waterloo has been updating teaching assessment processes. The goal: a profound shift toward a holistic model of assessment that gathers evidence from a variety of sources relevant to different aspects of good teaching, including 1) Student Course Perception surveys, 2) Peer Reviews of Teaching, and 3) Teaching Dossiers, and that takes into account evidence relating to high quality 4) student supervision. This new system is being developed with an eye to the research literature, Waterloo-specific research, consultations with campus stakeholders, and the experiences of other Canadian universities. Over time, these efforts have grown beyond the original focus of the Course Evaluation Project Teams (CEPT1&2) of improving the quality of Student Course Perception (SCP) surveys (though further work on the SCPs continues).

Since the launch of Phase 2 CEPT in late 2017, there have been regular reports to Senate about the progress of these efforts. For the past few years, these reports have occurred early in Spring Term.

Teaching Assessment Processes at the University of Waterloo

Overarching Goal

To mitigate the impact of systemic biases on the teaching component of UW's merit, tenure & promotion process by including multiple sources of information. ← **PART Recommendation #19**

Objectives

Gradually eliminate single source teaching assessment practices	Foster increased equity in teaching assessment
Advance progress toward holistic assessment (Senate endorsed)	Continuous development and improvement of systems and processes
Demonstrate leadership in teaching assessment	
Provide evidence that drives improvements in teaching quality, contributing to improved student outcomes, engagement, satisfaction, perceptions.	

Ongoing Development & Implementation

The Teaching Assessment Processes (TAP) office continues to oversee development and implementation of a number of initiatives related to the holistic teaching assessment model across campus including:

- Implementing recommendations from the Complementary Teaching Assessment Processes Team (CTAPT) for Peer Review of teaching (PRT) and Teaching Dossiers (TD) to provide useful and feasible methods for gathering information about teaching that is *complementary* to that which can be gathered from SCPs.
- Developing tier-two Faculty-level questions for the SCP survey cascaded model in consultation with the Faculties.
- Developing tier-four survey questions for the SCP survey cascaded model (forthcoming Fall 2023)
- Ongoing quantitative analysis of the SCP survey results with a specific focus on how SCP scores are associated with factors identified in the literature, with a specific focus on

racial and gender identity. Winter 2022 analysis is complete with Winter 2023 analysis underway.

- Qualitative analysis of the open-ended responses on SCPs. This is the first ever institutional study of its type (the research literature is also sparse) that offers a further contribution to the TAP office's commitment to implement a holistic assessment model that is comprehensive, equitable, defensible, and offers a protective resistance against the impacts of systemic biases on teaching assessment.
- *Socializing the Teaching Effectiveness Framework and ensuring holistic assessment methods are aligned with this framework.* The purpose of the TE framework is to identify aspects of teaching that are simultaneously important and valued aspects of good teaching to both instructors and students at Waterloo and consistently identified in the research literature on teaching and learning as important aspects of effective teaching. The framework identifies aspects of teaching that UW values and hopes to incentivize. It will also help clarify appropriate uses of different sources of information about teaching when assessments of teaching performance are carried out. For instance, no single tool provides useful assessment of all the valued aspects of teaching included in the framework, so having the framework in place can help prevent over-reliance on any one source (such as the SCP).
- Developing methods for assessing the *quality* of student supervision. The Office of Graduate Studies and Postdoctoral Affairs is leading a process to develop such methods, with the hope that there might be systematic sources of useful information beyond just numbers of students supervised by a given faculty member.

It is not obvious how holistic sources of information will be combined into a single assessment. While local differences in how different sources of information are expected to be used (e.g., due to differences in modes of teaching in different programs, the amount of graduate supervision done by faculty members in different units etc.), the use of different sources of information should not vary arbitrarily (e.g., changing when a new department chair is appointed etc.).

To this end, the University is currently in the process of revising Policy 76 - Faculty Appointments and Policy 77 - Tenure and Promotion of Faculty Members. These policy changes are expected to include a clearer definition of teaching effectiveness and its relevant activities and in turn this will require consideration of more systematic sources of information as they relate to teaching assessment.

The TAP office has proposed that a Summative Working Group (SWG) be struck by the Provost. The SWG will include individuals with relevant experience and expertise to develop reasoned,

sound, and equity-informed recommendations on the use of holistic teaching assessment data for summative purposes.¹

Included in This Report

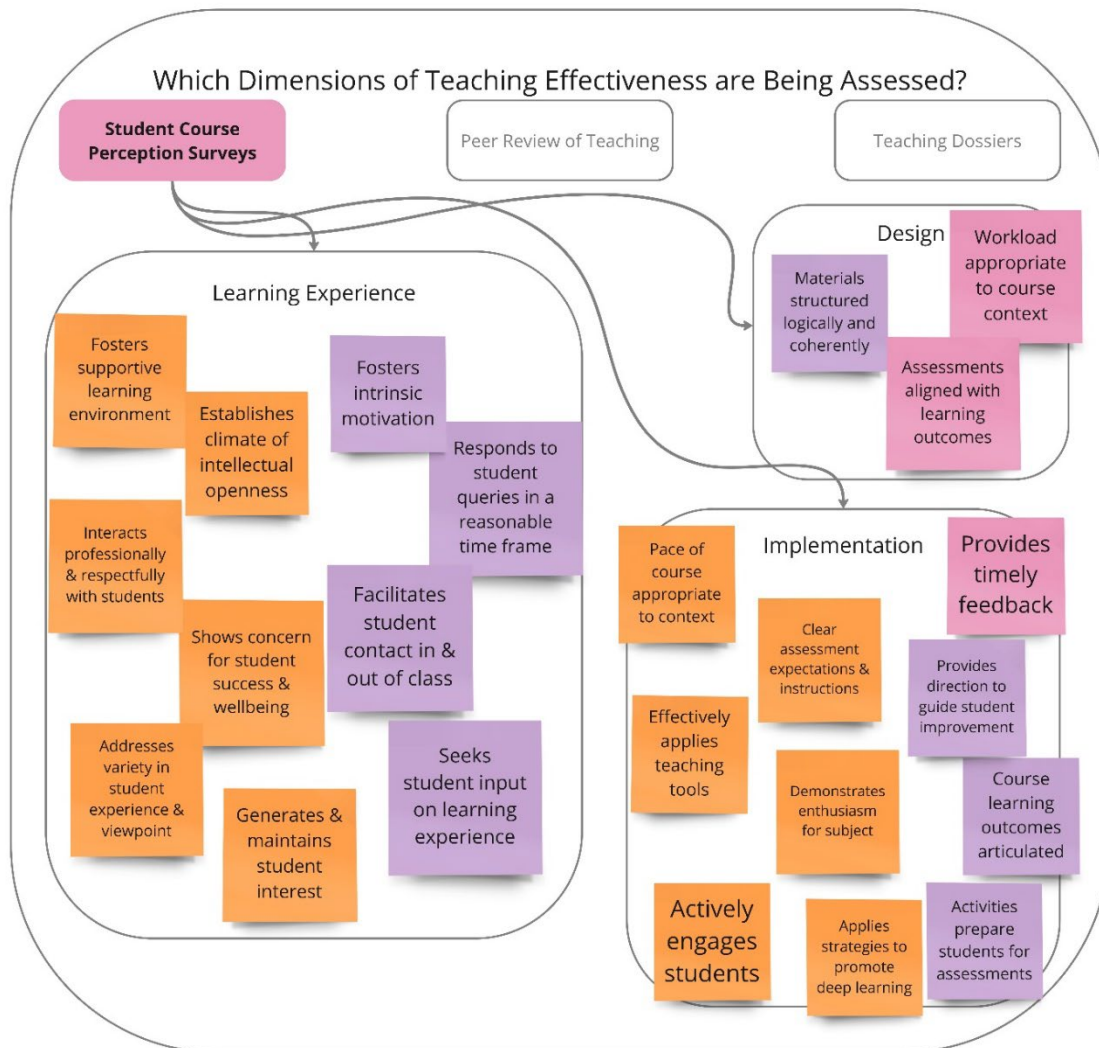
Summary reports on the areas of teaching assessment where there have been the most important developments in the past year are provided below. This includes the following sections:

- An update on Student Course Perception Surveys
 - Question development
 - Analysis of Winter 2022 data and upcoming analysis of Winter 2023 data
 - Updated Teaching Effectiveness Framework
 - The framework is the joint work of Teaching Assessment Processes Office (building on years of work by the CEPT) and CTAPT and is the product of several rounds of consultation with the University community, including students and instructors.
- Updates on the progress of implementing the recommendations from CTAPT, namely
 - Peer Reviews of Teaching and
 - Teaching Dossiers
- A working Logic Model for the Teaching Assessment Processes office outlining key steps in the implementation

¹ Members of the committee will be appointed by the Provost on advice from the Deans and AVPA and in consultation with the President of FAUW and the AVP GSPA.

Update: Student Course Perception Surveys

Summary: Student Course Perception Surveys



We outline here key developments with respect to Student Course Perception (SCP) surveys.

SCP Core Questions

In Winter 2022 a large-scale quantitative study of the core SCP questions was completed. This was the first institutional study to use the Equity survey data.

This analysis involved numerous statistical tests to examine how various instructor characteristics (racial identity, sex, time in Canada, and appointment type) and course

attributes (class size, Faculty of course offering, course type) are associated with Winter 2022 student responses to SCP surveys. The full report is found here: [TAP Office Reports](#)

Winter 2023 SCP Core Questions Quantitative Study

- A second large-scale quantitative study of the core SCP questions is in-progress for Winter 2023 SCP data. The TAP office continues their work with the SSCRU to examine how SCP scores are associated with various biasing factors including race and gender as well as other variables like class size.
- Two user guides are under revision, based on the findings from this analysis (one for academic administrators and one for instructors) to help understand and guide interpretation of the new SCP survey.² These documents are live-available as one downloadable pdf and also accessible as online “tools.” The intention is for these guides to be living documents, revised over time in response to feedback from the campus community so they will be as useful as possible.
- The TAP office has created surveys to obtain feedback from campus stakeholders on their experiences with the guidebooks and the new data report for the SCP survey.³

Cascaded Model: Additional tiers of survey questions Update

Overview

As noted in the June 2020 report to Senate, Deans Council endorsed a “cascaded model” for further development of the SCP survey. The TAP office is currently consulting with the Faculties to develop a second tier of questions to be asked in every course in that Faculty; further tiers (for departments or programs, and perhaps for formative-only course-specific questions) will be developed later.

Instructors’ Voices Heard

Calls for Course-Level Questions (tier 4 SCP)

Throughout the consultation process, in four of the six Faculties that have engaged in this process, a strong desire was expressed to develop course-level questions (tier 4 of the cascaded model). The requests for course-level questions were grounded in the sentiment that these metrics could provide incredibly useful *formative* information for instructors to help improve and develop their teaching practices. Questions at the course level are, in the view of many Faculty members we consulted with, likely to help by providing metrics closely linked to the technical part of teaching.

² Access the guidebooks here: [Academic Administrator Guidebook](#) and [Instructors](#) (note, pdf versions are available).

³ Access the surveys here: [Academic Administrator Survey](#) and [Instructor Survey](#)

Sonya Buffone, Director, TAP, Gordon Stubley, former Associate Dean, Teaching (Engineering) and a 3M National Teaching Fellow, and Kathy Becker, Specialist, TAP, took this request very seriously, bringing it to the attention of Leadership (AVPA & Provost). As a result, **the TAP office is excited to officially begin development of tier-four SCP survey questions.**

Development of tier-four will take some time to implement and involves a number of logistical considerations including:

- Development of the SCP platform “Student Course Perceptions” which is currently not equipped to house an additional tier of SCP items (development will begin in Fall 2023).
- Reassessment of survey start and end survey dates across Faculties; to implement tier-four questions, which will accommodate Instructor question choice, it is anticipated that consistent SCP start and end dates will be required.
- Planning for a consultative process to generate questions for the question ‘bank’
- Development and implementation of question guidelines to ensure basic survey question design standards are applied.
- Development and implementation of guidelines and processes to inform decisions such as maximum individual survey length, question assessment and/or replacement if they are not being used etc.

SCPs From the Top-down

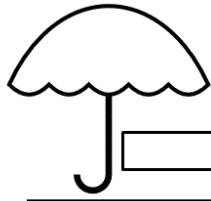
The Cascaded SCP Model: What is it?

A visual depiction of the cascaded SCP model for student surveys is outlined below. Originally proposed by CEPT1, the cascaded model consists of 3 or 4 tiers (total number of tiers TBD) of survey questions for students to provide perceptions of their experience(s) in a course. The first tier of questions consists of the **core institutional-level survey questions** which are asked in every course across all Faculties and participating AFIWs. The core questions have been developed and are currently implemented in SCP surveys campus wide (officially launched in Winter 2022).

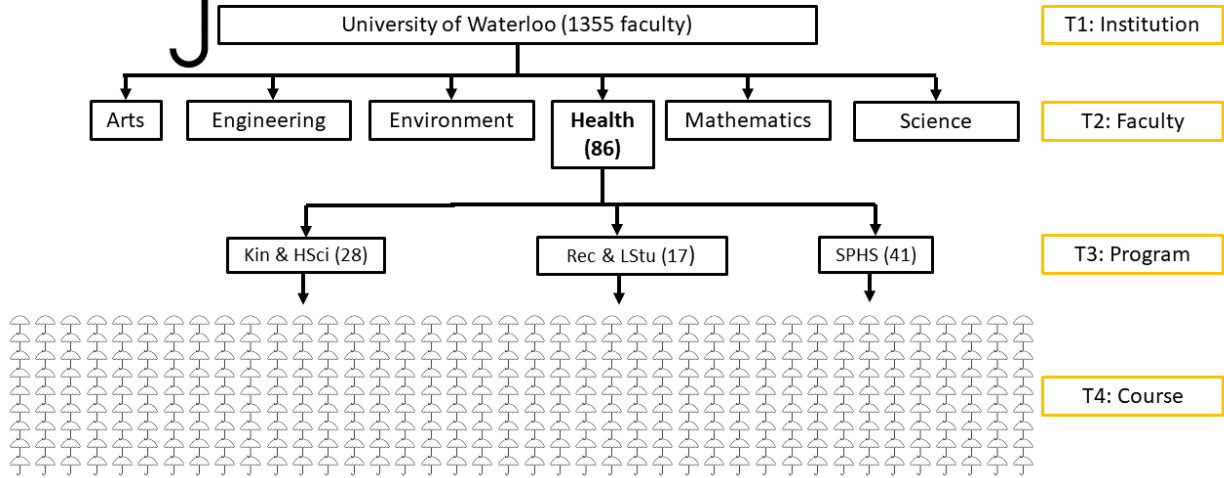
Tier-two (the focus of this overview) is currently in development and consists of Faculty-specific survey questions. Survey items at this level span the Faculty, meaning they are applicable to every course offering at all levels in a specific Faculty.

Tier-three (if developed) will consist of program-level survey items. This tier is currently not in development. The need/desire for this tier of survey questions will be assessed once the higher priority tier-two and tier-four levels have been developed.

Tier-four will consist of survey questions specific for an instructor’s teaching of a given course. These questions will be unique for each course, and the instructor will select questions for their own SCP survey at their discretion. **As a result of consultation feedback and the high demand we have had from Faculty members for course-level questions, the TAP office is now prioritizing the development of tier-four questions.**



The Cascaded Model



Institutional Teaching Effectiveness Framework

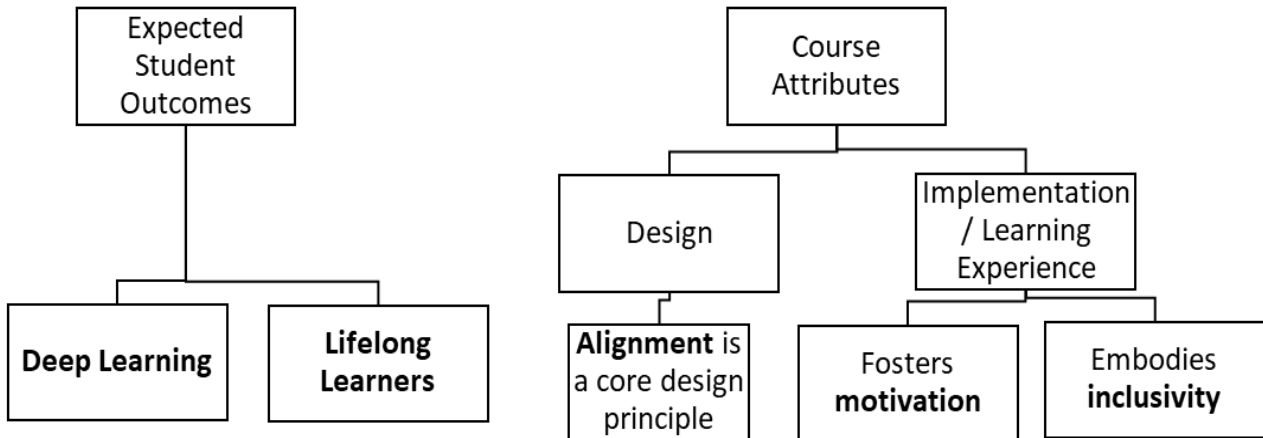
In June 2022, Senate endorsed the decision of Deans' Council to accept the institutional [Teaching Effectiveness Framework](#). This framework serves as the fundamental foundation for developing UW's holistic teaching assessment processes (SCPs, Peer Review, Teaching Dossiers and Student Supervision methods) and is depicted below.

Institutional Teaching Effectiveness Framework

	Design	Implementation	Learning Experience	Professional Development
Overview	Alignment at planning level	Design to action	Student perceptions of their learning experience	Activities supporting growth as instructor/supervisor
Areas of Focus	Planning Framework	Communication Promotion of student engagement Variety of teaching strategies/practices Assessments/feedback	Rapport Responsiveness Engagement with learning Diversity/inclusivity	Reflection Continuous improvement Collaboration, mentorship, leadership
Examples of Possible Indicators	Learning objectives Learning materials Learning activities Teaching philosophy	One-on-one/small group/large group interactions Synchronous/asynchronous instructional activities	Classroom environment Outside-of-class (i.e., interaction with instructor/supervisor)	Refinement of instructional materials/approaches Workshops & conferences (participation/leadership) Scholarship of Teaching & Learning Mentorship (colleagues/students)

The institutional Teaching Effectiveness Framework informed development of the teaching and learning priority map outlined below. This priority map helps us to clearly map out how the core SCP survey questions are grounded in key principles of the Teaching Effectiveness Framework.

Institutional Teaching & Learning Priority Map



Expected Student Outcomes (not measured with SCP)

Deep learning occurs from experiences that encourage learners to make connections, apply knowledge in new contexts, engage in learning activities and analytical thinking on their own and with others, and retain their learning.

Lifelong learning occurs from experiences that teach students to think about their thinking, become self-aware as learners, take responsibility for their learning, and self-assess their learning.

Course Attributes (measured with SCP)

Alignment in design occurs when outcomes that are focused on learning are made explicit for learners in courses and programs, the assessments of learning match the outcomes, and the incorporated activities prepare learners for the assessments.

Motivation occurs when learning experiences, inside and outside the classroom, are relevant and of value to learners, provide them with choice, and feel achievable yet appropriately challenging.

Inclusivity occurs when learning environments and experiences engage learners with differences respectfully and are designed to enable all to learn.

Tier-two Consultation Status

In July 2020, Sonya Buffone, TAP Director, and Gordon Stublely, former Associate Dean, Teaching (Engineering) and a 3M Teaching Fellow, began consultations with the Faculties to design tier-two SCP survey questions grounded in Faculty-specific teaching & learning priorities. Progress in each Faculty to-date is highlighted below.

Faculty	Start Date	Priority Map Status	Tier two Question(s) Status	Notes
Engineering	July 2020	Completed	Indefinite Pause	Faculty decision to pause process due to lack of consensus on proposed tier 2 items.
Environment	December 2020	Completed	Pending/Paused	Tier-two items have been proposed and pending Faculty-level approvals prior to pilot-testing. The Faculty is waiting for a decision on the use of these survey questions before proceeding.
Health	March 2022	Completed	Pending	Tier-two items have been proposed and are pending Faculty-level approvals prior to pilot-testing.
Math	March 2022	Completed	Pending	Tier-two items have been proposed and are pending Faculty-level approvals prior to pilot-testing.
Arts	TBD			
Science	TBD			

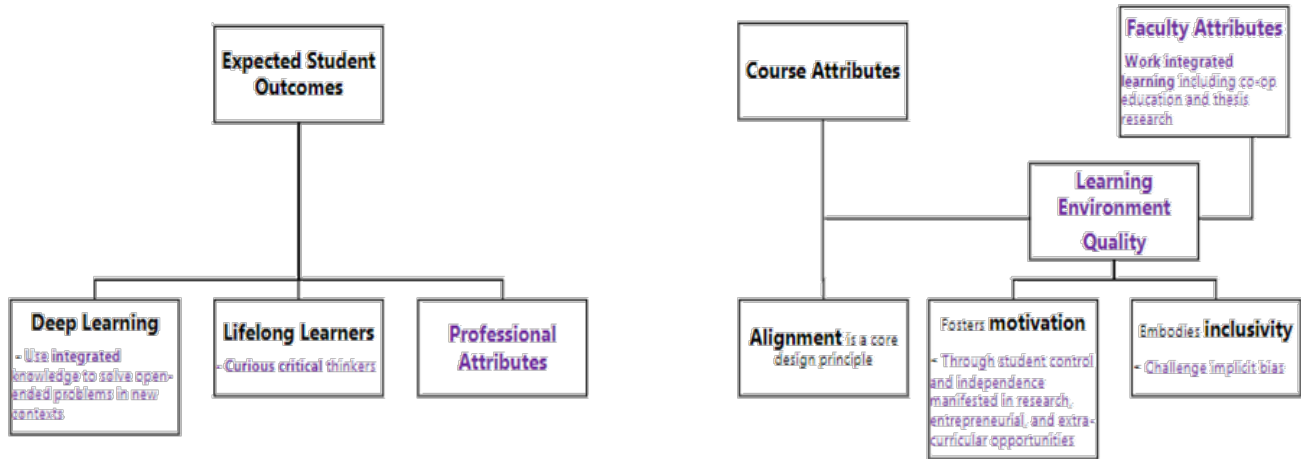
Teaching & Learning Priority Maps by Faculty

In phase one of the consultations the working group draws on the Faculty’s Strategic Plan to identify and define teaching and learning priorities and create a Faculty-specific teaching and learning priority map. This priority map is used to develop the tier-two survey items so that the questions are grounded in teaching and learning priorities for the Faculty. The criteria used to define teaching and learning priorities are:

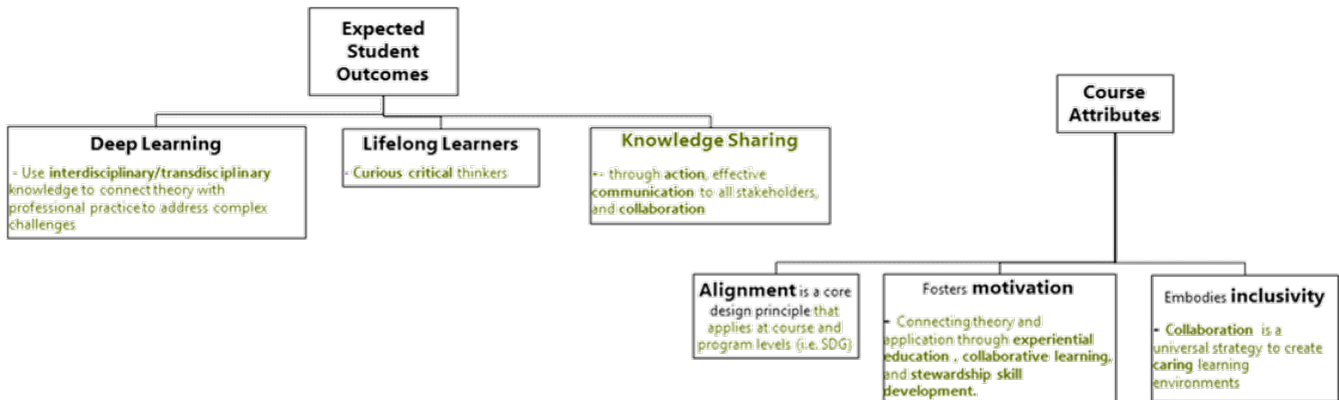
1. Spans the Faculty (captures all the diversity of the Faculty);
2. Evidence exists that it is a teaching priority (e.g., it is grounded in the strategic plan);
3. Fits into the institutional teaching and learning priority map and either
 - a. Broadens; or
 - b. Deepens key priorities; and

- Will be monitored at the Faculty level (e.g., fits into an Associate Dean's accountability/mandate).

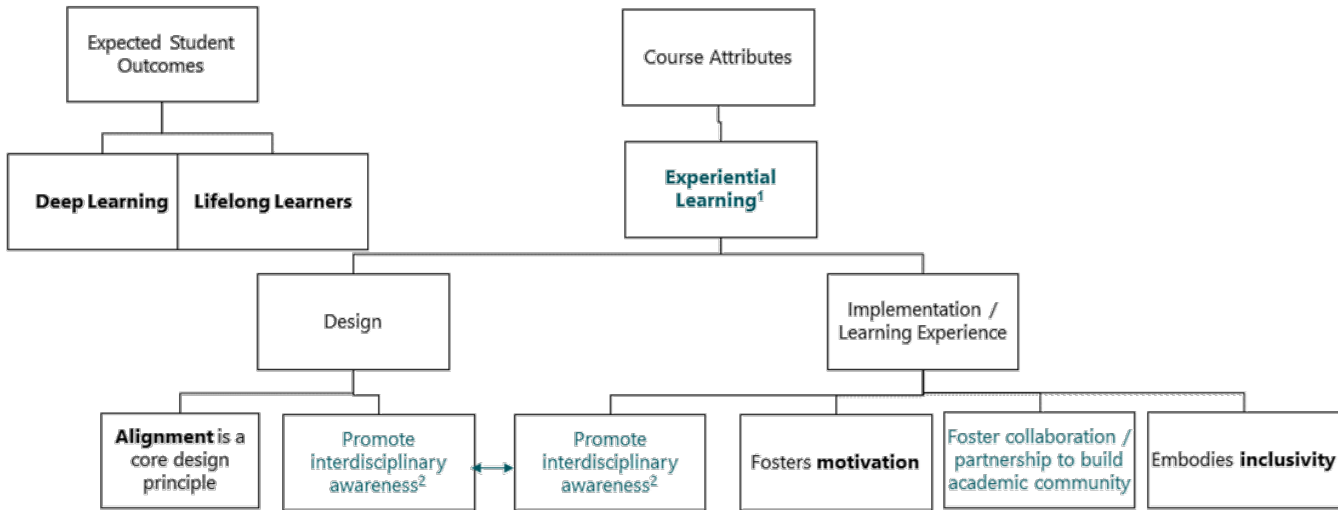
Engineering Teaching & Learning Priority Map



Environment Teaching & Learning Priority Map



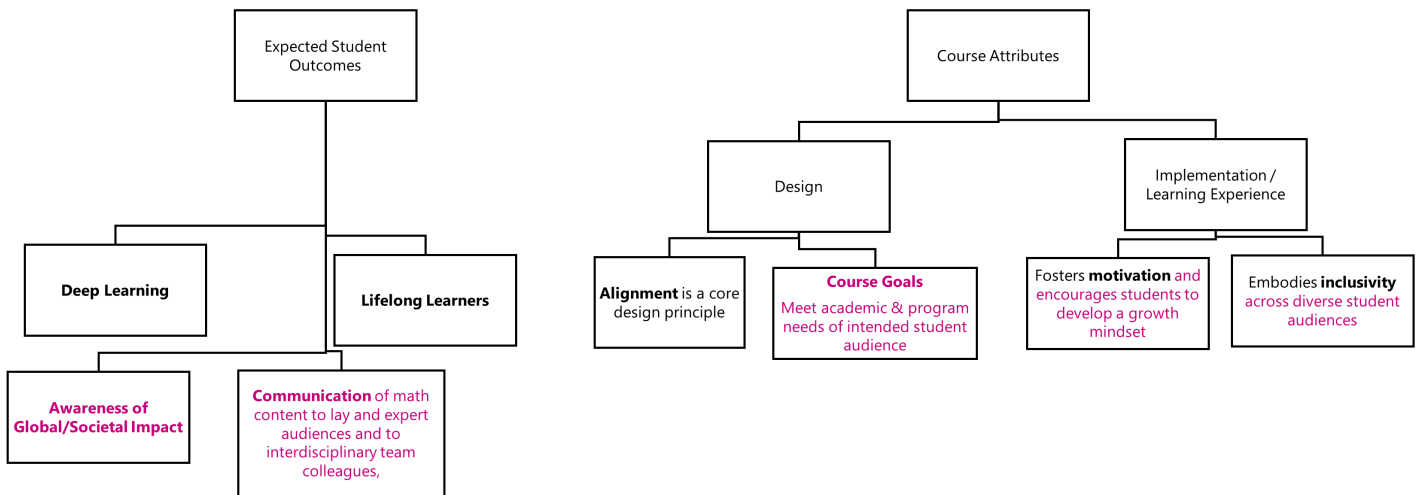
Health Teaching & Learning Priority Map



¹ Experiential education includes a broad spectrum of authentic learning activities

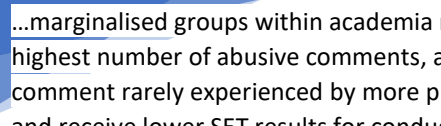
² Interdisciplinary study is a priority for all Health programs. The degree of applicability may vary at the course level.

Math Teaching & Learning Priority Map



Responses to open-ended questions Winter 2023 Qualitative Study

The proposed qualitative study of SCP open-ended responses for W2023 term is part of the TAP office's ongoing efforts to assess the performance of the new Student Course Perception Survey (SCP). While the results of the study may inform various future decisions the University might make about the use of responses to open-ended questions, **the immediate goal of the research is to provide data to inform decisions about:** (1) Whether and how to effectively respond to egregious comments (e.g., should we seek mechanisms to screen comments so that instructors are not subject to egregious comments; should we implement a mechanism to remove the numerical responses of students who provide an egregious comment to an open-ended question when calculating the average scores?); (2) Instructional material for students about what sorts of comments are helpful and appropriate. There is a plausible feeling in the campus community that it is our most vulnerable instructors who are likely to receive abusive comments. Thus results of this study will help to devise strategies to support faculty who receive abusive comments and hopefully help to prevent this from happening in the first place. This study is being designed in close collaboration with the EDI-R office.



...marginalised groups within academia receive the highest number of abusive comments, a veracity of comment rarely experienced by more privileged groups, and receive lower SET results for conducting the same level of work.”

Heffernan, T. 2022

The study is not limited to considering *egregious* comments, e.g., those that are patently racist or sexist. It has a number of “secondary” but still important goals. The study is guided by the (incredibly small) research literature and will investigate, for instance, gendered patterns of responses that do not qualify as egregious (frequency of comments about appearance, differences in types of laudatory descriptors depending on gender, etc.). (The study will involve three researchers and three distinct coding phases so that it is possible to cover various issues.)

In Fall 2022 the TAP office was granted approval from Deans council representatives to conduct this large-scale qualitative study of the open-ended responses on SCP surveys.

Proposed Timelines for 2023 Qualitative Analysis

- Collect qualitative comments submitted for the new SCP instrument in April 2023
- Data analysis will take place between May 2023 and September 2023
- Research report will be written between October 2023 and November 2023
- Results will be shared with the campus community in the Winter 2024 term.

SCP Response Rates

Overview

Starting in 2018, student course evaluations at the University of Waterloo began to be delivered using the online platform Evaluate (now known as Perceptions). In 2023, questions began to be raised about response rates. Since all Faculties are now using a common platform, response rate data can be reviewed and assessed at both the campus and Faculty levels. This response rate analysis was undertaken in response to questions about response rates.

Data Sources

- Perceptions survey platform response rate data: Fall 2018 (1189) to Spring 2022 (1225)
- Institutional Analysis and Planning Student Full Time Equivalent (FTE) data

To Keep in Mind

- Fall 2018 (1189) to Fall 2021 (1219): each Faculty was using a different set of survey questions.
 - Some Faculties were using multiple surveys with different numbers of questions in each.
 - A total of 17 different surveys were being used across campus during this period.
- Winter 2020 (1201): classes were abruptly shifted to remote learning, and numerical scores for that term remain restricted to course instructor; response rate data is included in this report.
- Some Faculties implemented COVID-specific surveys that were used from Spring 2020 until Fall 2021.
- Winter 2022 (1221): a common core question set (Student Course Perceptions, or SCP) were implemented campus wide.
 - Only one survey (SCP) is now being used on campus.

Response Rates: Past Four Years

As a first step, response rate data was plotted by term for the past four academic years: Fall 2018 to Spring 2022. Figure 1 shows that there is termly variability in response rates, with Fall terms generally experiencing the highest overall response rate in any academic year.

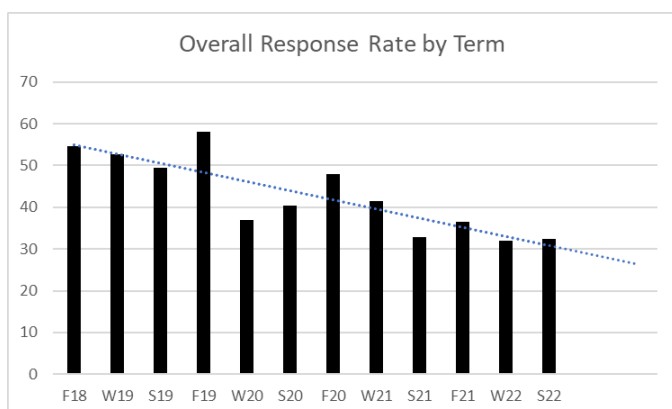


Figure 1: Overall response rate (%) by term

We then considered response rates by Faculty (see Figure 2 and Table 1). While all Faculties experienced declining response rates during this period, two Faculties stand out: Engineering and Mathematics. Engineering began and ended this four-year period with the highest overall response rate: above 60% in 2018-2019 and above 40% in 2021-2022. And Mathematics stands out because of a jump (roughly 3%) in overall response rate in the 2020-2021 academic year.

In the next section, we examine changes in the number of course evaluations being administered over this period.

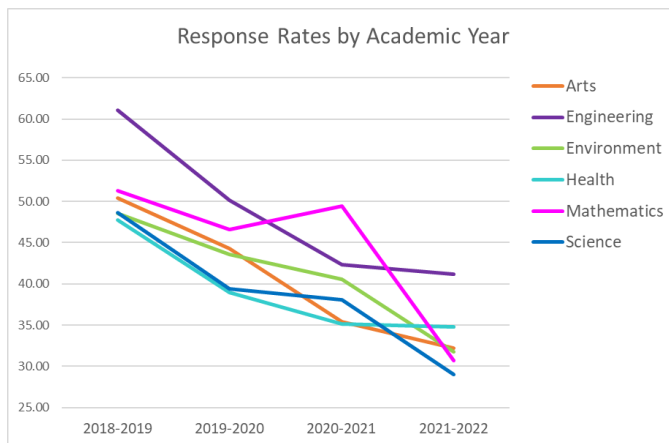


Figure 2: Response rates (%) for each Faculty by academic year

	2018-2019	2019-2020	2020-2021	2021-2022	4-Year Change
Arts	50.5%	44.3%	35.4%	32.2%	-18.3%
Engineering	61.0%	50.1%	42.3%	41.2%	-19.8%
Environment	48.6%	43.6%	40.6%	31.7%	-16.8%
Health	47.8%	39.0%	35.1%	34.8%	-13.0%
Mathematics	51.3%	46.6%	49.5%	30.7%	-20.6%
Science	48.6%	39.4%	38.0%	29.0%	-19.6%

Table 1: Response rates (%) for each Faculty by academic year, with 4-year change

Change in Number of Course Evaluations Administered

We wondered whether respondent burden, or survey fatigue⁴ more specifically, was impacting response rates, so we looked at the number of course evaluations being administered over this period. Figure 3 and Table 1 show the count of course evaluations being administered in each academic year. Both show that half of UW Faculties administered more course evaluations over the past four academic years, while half remained relatively consistent. Notably, Arts and Engineering asked their student body to complete roughly 25% more course evaluations over this period, and Mathematics increased the number of course evaluations administered by about 10%.

This led us to wonder whether a change in enrolment was the reason for the increases in course evaluations being administered in Arts, Engineering, and Mathematics.

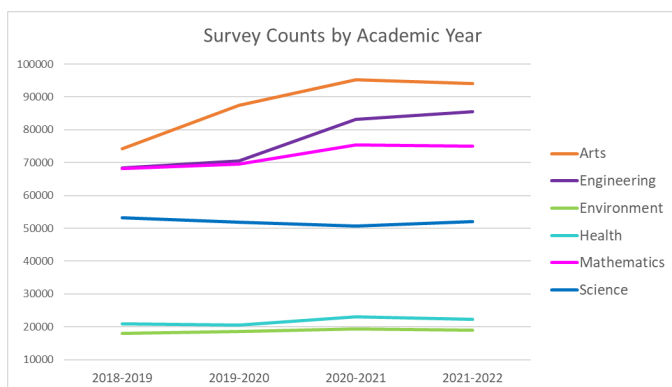


Figure 3: Number of surveys administered by each Faculty by academic year

	2018-2019	2019-2020	2020-2021	2021-2022	4-Year Change
	(#)	(#)	(#)	(#)	(%)
Arts	74302	87419	95303	94039	27%
Engineering	68314	70581	83158	85428	25%
Environment	17929	18655	19356	18901	5%
Health	20994	20463	23039	22294	6%
Mathematics	68240	69462	75473	75090	10%
Science	53171	51797	50782	52109	-2%

Table 2: Number of course evaluations administered by each Faculty by academic year, with 4-year change

⁴ (Porter et al., 2004)

Change in Enrolment

Table 3 shows the number of FTE students reported by IAP per Faculty for each of the past four academic years, as well as the change (%) over this period. Notably, the three Faculties with the largest increases in the number of course evaluations administered (Arts, Engineering, and Mathematics) also experienced the largest enrolment increases; however, the increase in course evaluations administered was not proportional to the increase in enrolment. The increase in course evaluations was 2.7 times as large as the increase in enrolment in Arts. The increase in course evaluations was nearly 3 times as large as the increase in enrolment in Engineering. And the increase in course evaluations was over 1.5 times as large as the increase in enrolment in Mathematics. As a next step, we compared changes in course evaluations administered with changes in enrolment.

	2018-2019	2019-2020	2020-2021	2021-2022	4-Year Change
	(#)	(#)	(#)	(#)	(%)
Arts	7184	7565	8020	7933	10%
Engineering	7738	7999	8241	8351	8%
Environment	2669	2690	2896	2617	-2%
Health	2960	2994	3263	3269	10%
Mathematics	8058	7869	9265	8527	6%
Science	6499	6722	6920	6627	2%

Table 3: FTE by Faculty, with 4-year change

Change in Course Evaluation Load

Table 4 shows the average number of course evaluations administered per FTE student in each Faculty, as well as the percent change over this period. Notably, Engineering administered 15.9% more course evaluations per FTE student, while Health and Science administered fewer course evaluations, on average, per FTE student (-3.8% and -3.9% respectively). Also notable is the variation in course evaluation load between Faculties. Students in Environment Health are asked to complete the smallest number of course evaluations, on average, for each course in which they are enrolled (6.9 and 7 respectively). Conversely, students in Arts and Engineering are asked to complete the largest number of course evaluations, on average, for each course in which they are enrolled (11.4 and 9.5 respectively).

And as noted in Figure 2, Mathematics experienced a nearly 3% response rate jump in 2020-2021, during which year there was also a drop in the average number of course evaluations per FTE student. These differences led us to look more closely for any association between course evaluations per FTE student and response rate.

	2018-2019 (#)	2019-2020 (#)	2020- 2021 (#)	2021-2022 (#)	4-Year Change (#)
Arts	10.3	11.6	11.9	11.9	1.5
Engineering	8.8	8.8	10.1	10.2	1.4
Environment	6.7	6.9	6.7	7.2	0.5
Health	7.1	6.8	7.1	6.8	-0.3
Mathematics	8.5	8.8	8.1	8.8	0.3
Science	8.2	7.7	7.3	7.9	-0.3

Table 4: Course evaluations administered per FTE student by Faculty, with 4-year change

Changes in Course Evaluation Load and Response Rate

Table 5 shows changes in course evaluations per FTE student and response rate by Faculty. In Environment, where the change in course evaluations was moderate (0.5 per student), the change in response rate was also moderate (-16.8%). Arts and Engineering were the two Faculties with the largest change in course evaluations administered per student (1.5 and 1.4 respectively), and they experienced similar large changes in response rate (-18.4% and -19.8% respectively). These results appear to support an interaction between increased course evaluation load and decreased response rate.

	change in # of course evaluations per student	change in response rate
Arts	1.5	-18.3%
Engineering	1.4	-19.8%
Environment	0.5	-16.8%
Health	-0.3	-13.0%
Mathematics	0.3	-20.6%
Science	-0.3	-19.6%

Table 5: % Change in course evaluations per student and response rate over the past four years

But the largest change in response rate occurred in **Mathematics** (-20.6%), where the number of course evaluations per FTE student increased by a smaller amount (0.3). And while both **Science** and **Health** reduced the number of course evaluations per FTE student (-0.3), Health experienced the smallest change in response rate (-13.0%), while Science experienced a large

change in response rate (-19.6%). These results are less supportive of a simple interaction between course evaluation load and response rate. So we decided to add a column to examine the initial (2018-2019) average number of course evaluations per FTE student (Table 6) to consider another possible association.

Environment, where the change in response rate was moderate (-16.8%), had the smallest initial number of course evaluations per student (6.7). And **Arts** and **Engineering**, where the change in response rate was large (-18.4% and -19.8% respectively), had the largest initial number of course evaluations per student (10.3 and 8.8 respectively).

Mathematics and **Science**, where the change in response rate was large (-20.6% and -19.6% respectively), had a moderate initial number of course evaluations per student (8.5 and 8.2 respectively). And **Health**, where the change in response rate was the smallest (-13.0%), had the smallest initial number of course evaluations per student (7.1).

These results appear to support an interaction between the initial number of evaluations per student, increases in course evaluation load, and decreases in response rate.

	2018-2019 # of course evaluations per student	4-Year Change in # of course evaluations per student	4-Year Change in Response Rate
Arts	10.3	1.5	-18.3%
Engineering	8.8	1.4	-19.8%
Environment	6.7	0.5	-16.8%
Health	7.1	-0.3	-13.0%
Mathematics	8.5	0.3	-20.6%
Science	8.2	-0.3	-19.6%

Table 6: Initial (2018-2019) # of course evaluations per student, change in # of course evaluations per student, and change in response rate over the past four years

One interpretation could be that in Faculties with smaller initial numbers of course evaluations per FTE student, even small changes to the number of course evaluations administered per FTE student negatively impacted response rates.

- In Faculties with smaller initial course evaluation loads (Environment and Health), small increases in the number of course evaluations administered per student resulted in small decreases in response rate.
- In Faculties with larger initial course evaluation loads (Arts, Engineering, and Mathematics), even small increases in the number of course evaluations administered per student resulted in large decreases in response rate.

This leaves one Faculty (Science) as an outlier, with a moderate initial course evaluation load (8.2), a decreased course evaluation load (-0.3), and a decreased response rate (-19.6%).

Overall Change in Course Evaluation Load and Response Rate

Figure 4 plots both course evaluations per FTE student and response rates for this four-year period. It illustrates the possible inverse interaction between the number of course evaluations administered per student and response rates. Combined with the impact of the Winter 2020 shift to remote learning on response rates, an increase of one survey per student (from 8.8 to 9.6) over this period may have contributed to an overall decline in response rates at the University of Waterloo.

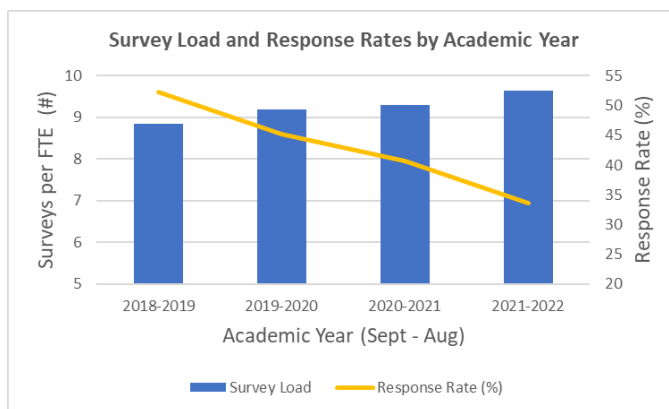


Figure 4: Survey load and response rates by academic year

Conclusion

This analysis was completed to examine changes in response rates. Findings suggest that a combination of factors may be at play:

- Response rates have been declining for some time.
- The sudden shift to remote learning in Winter 2020, which had profound impacts on many aspects of higher education, may have further impacted response rates.
- Findings suggest that small increases in the number of course evaluations administered over this period (+0.8 surveys per student) may also be contributing to declining response rates.

Next Steps

Declining response rates negatively impact the reliability of SCP survey data. Unreliable SCP data negatively impacts the University's progress toward a more equitable holistic teaching assessment model. The Teaching Assessment Processes (TAP) office will undertake activities to support Faculties in strengthening response rates. The recommended practices listed below can also support response rates.

Faculty and Department SCP Survey Administrators

- Help avoid respondent burden: do not create separate SCP surveys for single course offerings that have secondary components or multiple instructors.
 - Use the existing features of [Perceptions](#) when setting up surveys:
 - In *Add Courses* area, before clicking *Search Courses* button, click *Toggle All* to include all component types and apply *Primary* filter to exclude secondary components.
 - Use *Merge Surveys* feature to join surveys in classes with multiple instructors.
 - The TAP office is available to demonstrate these features or answer any questions!
- Apply a minimum two-week survey period as late in term as is feasible (outside of final exam period).
- Ensure each SCP survey has accurate instructor information.
 - Search survey list for “none” in Instructor ID column.
- Let instructors know:
 - You have set up SCP survey(s) for their course(s);
 - They can confirm SCP survey setup by logging in to the Perceptions platform;
 - If there are setup inaccuracies, they should let you know; and
 - They are the primary mode for communicating SCP survey details to their students.

Course Instructors

- Give students ten minutes during synchronous meet, whether online or in person, to complete course evaluations (SCP survey).
- Communicate with students; a [three-slide presentation](#) is available online.
 - Share link to [Perceptions](#) survey platform.
 - Affirm anonymity of responses.
 - Inform that results are not released until the following term.
 - Explain how results are used.
 - Numerical data are used in instructor performance reviews.
 - Written comments are seen only by course instructor(s) and used for course improvement.
 - Express your value of and appreciation for ratings and constructive student feedback:

- Where possible, provide a specific example of your past use of student feedback to improve the current course offering.

Support for SCP Administrators and Course Instructors

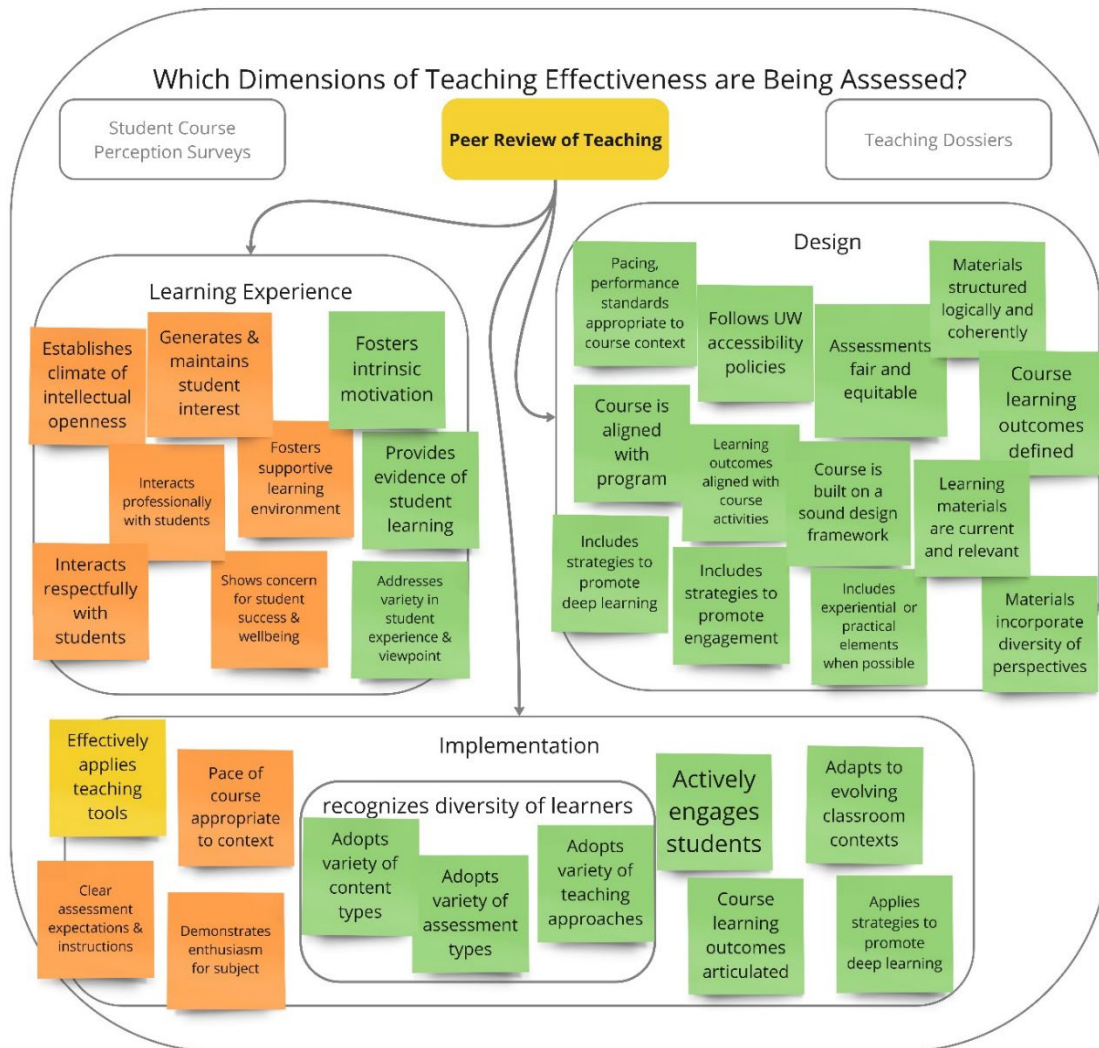
Contact [Kathy Becker](#), Teaching Assessment Processes Specialist, for support as needed.

Reference

Porter, S. R., Whitcomb, M. E., & Weitzer, W. H. (2004). Multiple surveys of students and survey fatigue. *New Directions for Institutional Research*, 2004(121), 63–73.
<https://doi.org/10.1002/ir.101>

Update: Peer Review of Teaching

Summary: Peer Review of Teaching



YELLOW = Peer Review of Teaching is primary source

ORANGE = both Peer Review of Teaching and Student Course Perception Survey are sources

GREEN = both Peer Review of Teaching and Teaching Dossiers are sources

The TAP office is in the process of implementing recommendations from the final report from the Complementary Teaching Assessment Processes Team (CTAPT) for PRT and teaching dossiers (TDs) as they relate to holistic teaching assessment. The call for PRT processes and CTAPT recommendations have long been supported by FAUW.⁵

⁵ <https://uwaterloo.ca/faculty-association/news/call-members-complementary-teaching-assessment-project-team>

The figure on the previous page highlights the dimensions of teaching effectiveness that PRT helps inform. A timeline for implementation of PRT is currently in development and will be shared with leadership soon. The TAP office role in PRT and next steps for Faculties are outlined on the following pages. The Centre for Teaching Excellence (CTE) is working with the TAP office to develop training for the Peer Assessors. The TAP office is also working with the CEL to develop an online platform to help facilitate the administrative tasks associated with peer review, this minimizes the burden of additional work for Faculties and faculty members.

History of PRT

Winter 2018

- The Complementary Teaching Assessment Project Team (CTAPT) was formed to research and develop methods of assessing teaching and to provide recommendations useful for both formative and summative assessment, based on empirical evidence and consultation with the University of Waterloo community.
- Membership of Phase 1 of CTAPT was assembled jointly by then FAUW Vice-President Shannon Dea and then AVPA Mario Coniglio.

March 2021

- Phase 2 of CTAPT launched.
- Membership was jointly agreed to by AVPA David DeVidi and by then FAUW President Dan Brown, and included representation from all six Faculties, from the AFIW, from CEL, and from CTE.

Endorsement of PRT

The PRT implementation process is grounded in decisions from Deans' Council and endorsed by Senate as follows:

May 2020:

- Motion: Senate endorsed the decision of Deans' Council to accept and act on the recommendations proposed in the report from CTAPT.
- Motion: Senate endorsed the decision of Deans' Council to continue work to develop feasible mechanisms for the implementation of Teaching Dossiers and Peer Review of Teaching as part of the processes for assessment of teaching at the University.
- Motion: Senate endorsed continued work on teaching performance review, in support of continued improvement of teaching and learning at the University and fairness in performance review, that considers many sources of information about all aspects of effective teaching.

<https://uwaterloo.ca/associate-vice-president-academic/sites/ca.associate-vice-president-academic/files/uploads/files/fauwsubmission.pdf>

June 2022:

- Senate endorsed the decision of Deans' Council to accept the institutional [Teaching Effectiveness Framework](#).
- Senate received the final report of recommendations from CTAPT.

TAP Office Role in PRT

Importantly, the TAP office will not administer or review PRT assessments. A working group will provide recommendations on the triangulation of teaching assessment data for use in performance review and tenure and promotion activities.

In consultations with academic administrators and instructors from each Faculty, CTAPT fielded a consistent concern with respect to the amount of time, effort, and resources required to implement a holistic assessment model that included SCPs, PRT, and TDs. In response to this concern, CTAPT recommended that the TAP office provide Faculties with resources and support to implement the holistic assessment model. The TAP office also helps to ensure that teaching assessment processes are more consistent across Faculties, helping to reduce inequities that can occur with inconsistent approaches. This is in direct alignment with the recommendations of the *President's Anti-Racism Task Force*. The TAP office was established in 2021, and in 2022 a full-time staff role was added to help implement PRT processes and related systems.

Details of TAP Office PRT Tasks

- Set up scheduling & administration platform
- Identify & prepare assessors (with guidance from Faculties)
- Develop workshops for assessors (with CTE support)
- Prepare supporting materials & maintain in repository
- Provide supporting materials to faculty members, performance review committees
- Organize data: faculty member appointment type/dates
- Prepare merit, tenure & promotion committees for reviewing PRT
- Maintain records of faculty members scheduled for PRT for each Faculty
- Match peer-reviewer to reviewee (in consultation with reviewee)
- Individual communications to connect reviewer & reviewee and offer support

Next Steps for Faculties in Implementing PRT

Scheduling Considerations

- Pre-tenure/pre-continuing = 1 PRT every 2 years on average
- Tenured/continuing = 1 PRT every 8 years on average

Immediate Next Steps

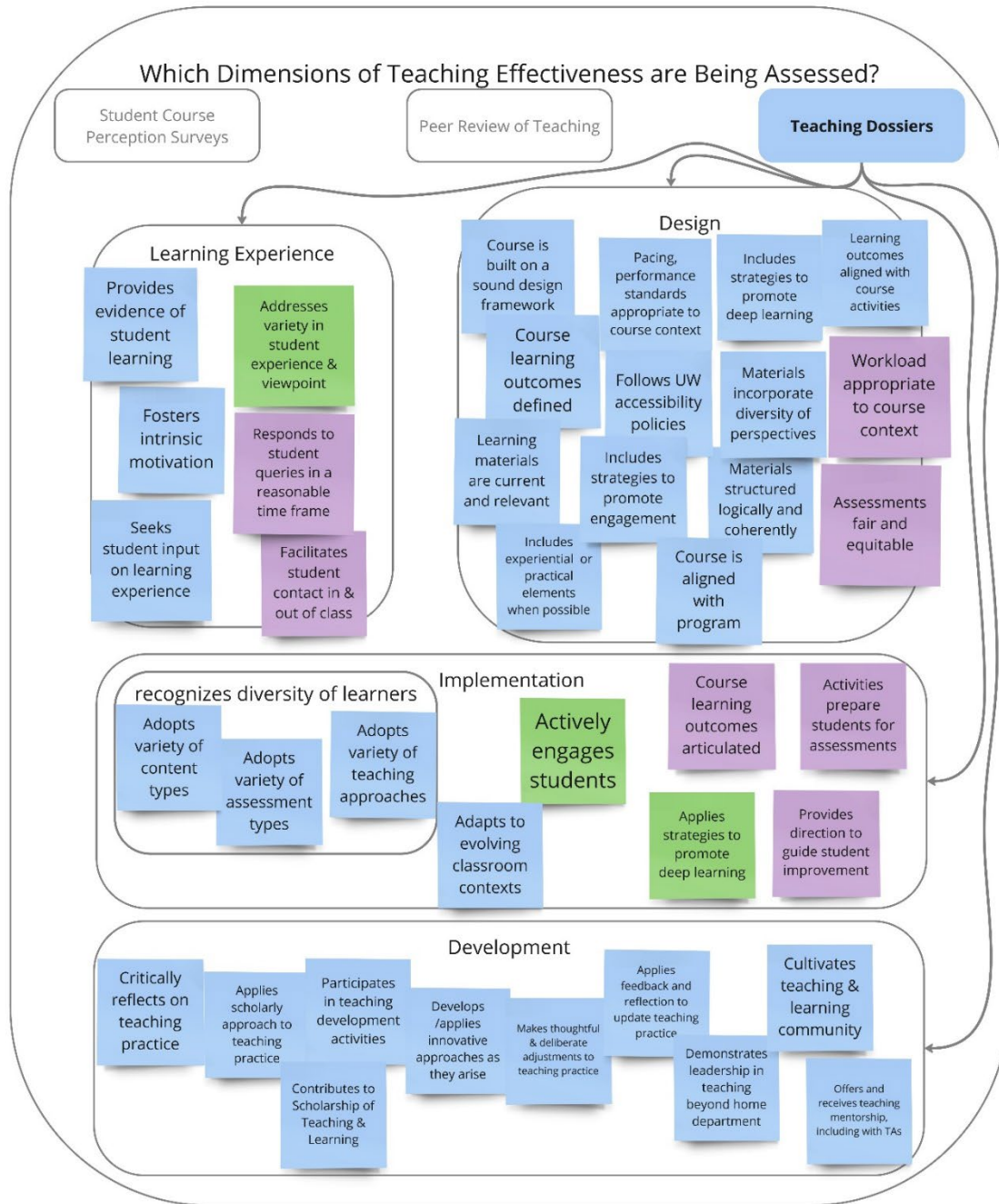
- Distribute PRT Update to Associate Deans and others tasked with leading the implementation of PRT in the Faculty
- Ask the point-people involved in implementing PRT to [connect with the TAP office](#)
- Be sure to follow CTAPT guidelines and recommendations for PRT (see [CTAPT PRT Details and Report Template \(PDF\)](#))
- Compile first list of faculty members with appointment types and dates and share with [TAP office](#)

Next Steps Requiring Consultation

- Compile list of Peer Reviewers (see *Selection of Peer Reviewers* section in [CTAPT PRT Details and Report Template \(PDF\)](#) for additional details).
- Amend [CTAPT PRT Report Template \(PDF\)](#) to suit Faculty context (while remaining aligned with [Teaching Effectiveness Framework](#)).
- Discuss with campus stakeholders (faculty, Chairs, administrative leaders) needs for PR platform (currently in development with CEL).

Update: Teaching Dossiers

Summary: Teaching Dossiers



BLUE= Teaching Dossiers are primary source

GREEN = both Teaching Dossiers and Peer Review of Teaching are sources

PURPLE = both Teaching Dossiers and Student Course Perception Survey are sources

Steps Towards Implementation

This report and presentation to Senate, coupled with earlier presentations of its recommendations to bodies like Deans' Council and groups like the Teaching Fellows, brings the formal work of Phase 2 of CTAPT to a conclusion. Implementation of the set of CTAPT recommendations that are to go forward is the work of others. CTAPT would like to provide a list of questions which, we think, can guide the University towards successful implementation as they are resolved:

- What timeline is reasonable for implementing these processes? Who will oversee the implementation, both at a macro level and at a micro level?
- How will input from various mechanisms (both qualitative and quantitative) be used to determine performance review ratings?
- How should language from Policy 77 be updated to best encode these changes into University policy?
- How should training for peer reviewers and review committees best be created and administered?
- With additional mechanisms in place, is the timing for performance review committees feasible? (This timing seems to be constrained by the release of Fall SCPS results and an allowance for time for commentary from instructors on one end, and by the need to submit scores to salary adjustment systems on the other end.)
- How should Faculties contribute to the ongoing oversight and evolution of these processes at the University level?

Teaching Dossiers & Performance Review Updates

- In September 2022 the TAP office brought CTAPT recommendations with respect to TDs and performance review (APR/BPR) form updates to Dean's Council. At this time Faculty Deans were provided the appropriate guiding documentation (as developed by CTAPT) to update performance review (APR/BPR) forms to align with the Teaching Effectiveness Framework (see Appendix B).
- The TAP office is working with the CTE to devise development programs for writing TDs for both performance review purposes and Tenure and Promotion purposes.

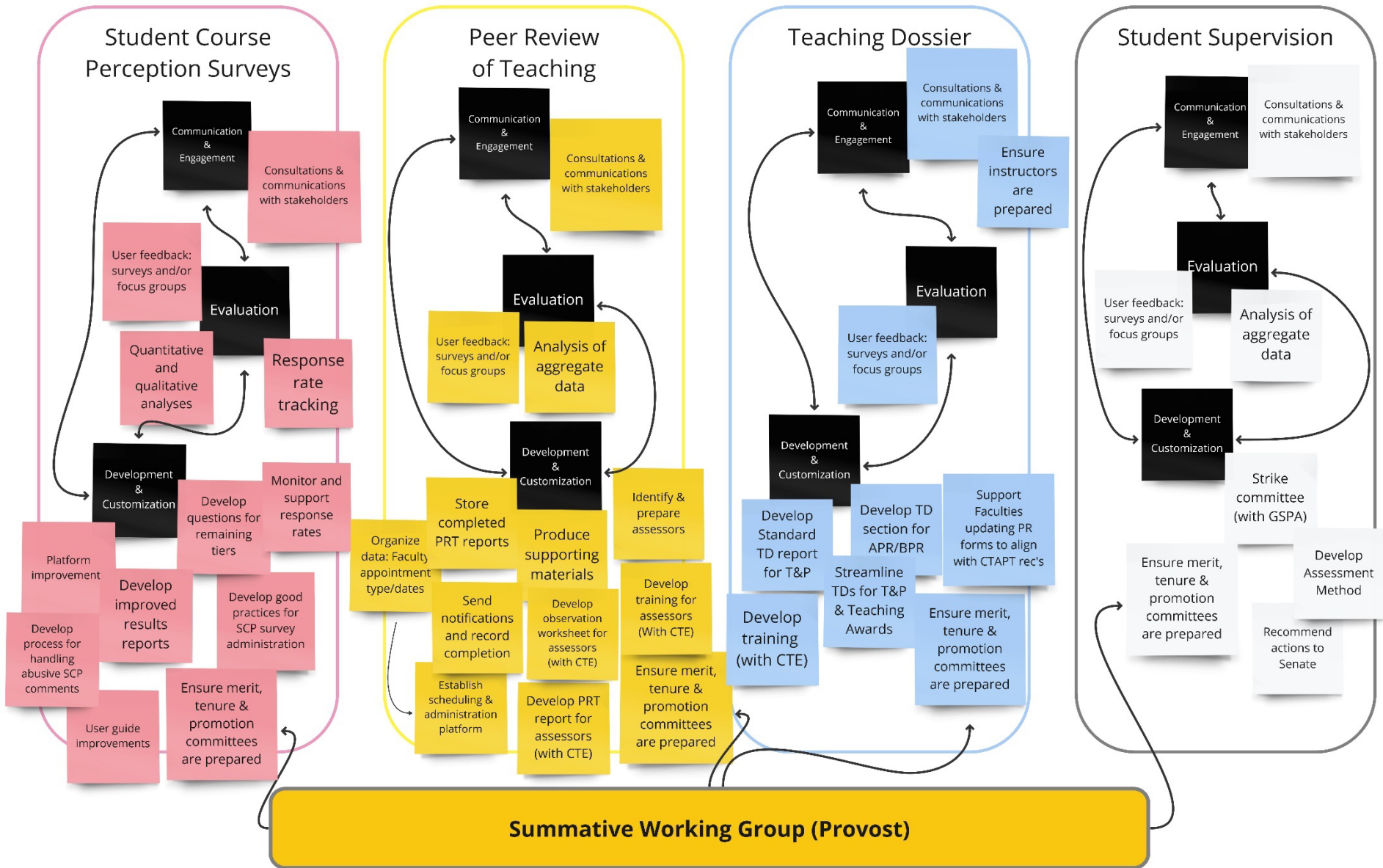
TAP Logic Model Draft

The TAP office is consulting with Daniela Seskar-Hencic, Director of Strategic Planning and Evaluation, and Jana Carson, Senior Manager of Evaluation and Accountability, of Institutional Analysis and Planning to develop and finalize this model.

Please note the two figures that follow are in-progress draft versions of the TAP office working model.

Goal	Implement a holistic teaching assessment framework at the University of Waterloo that is aligned with the institutional Teaching Effectiveness Framework and that is comprehensive, equitable, defensible, and offers a protective resistance against the impacts of systemic biases on teaching assessment.				
Objectives	Develop and implement Senate-endorsed holistic teaching assessment processes	Assess and improve processes and systems	Gather evidence that drives improvements in teaching quality	Foster increased equity in teaching assessment	Demonstrate leadership in teaching assessment
Initiatives 1. Fully implement revised Student Course Perception (SCP) Surveys 2. Implement Peer Review of Teaching 3. Implement Teaching Dossier 4. Implement Student Supervision Framework 5. Strike Summative Working Group (SWG)	Student Course Perception Survey Development <ul style="list-style-type: none"> Develop questions for remaining tiers Assess open-ended comments Implement student engagement strategies Peer review of Teaching <ul style="list-style-type: none"> Develop scheduling & administration platform (with CEL) Identify & prepare assessors Produce supporting materials Ensure merit, tenure and promotion committees are prepared Teaching Dossier <ul style="list-style-type: none"> Develop training (with CTE) Student Supervision <ul style="list-style-type: none"> Strike committee (with GSPA) Develop assessment approach Summative Working Group <ul style="list-style-type: none"> Develop recommendations on triangulation of teaching assessment data for use in merit, tenure & promotions 	Student Course Perception Surveys <ul style="list-style-type: none"> Test questions in all tiers (Conduct quantitative and qualitative analyses) Test student engagement strategies Develop improved reports Develop good practices for SCP survey administration Gather user feedback Improve user guides Improve platform Peer review of Teaching <ul style="list-style-type: none"> Gather feedback Improve admin system, training, supporting materials Teaching Dossier <ul style="list-style-type: none"> Establish consistency in short-version TD for APR/BPR forms Provide recommendations/guidance for TD's at tenure and promotion time Ensure TD's and teaching awards processes are aligned Gather feedback Student Supervision <ul style="list-style-type: none"> Gather feedback 	Student Course Perception Surveys <ul style="list-style-type: none"> Ensure merit, tenure and promotion committees are prepared Peer review of Teaching <ul style="list-style-type: none"> Develop PRT report for assessors (with CTE) User feedback: surveys and/or focus groups Analysis of aggregate data Teaching Dossier <ul style="list-style-type: none"> Develop TD section for APR/BPR forms Support Faculties updating PR forms to align with CTAPT rec's Student Supervision <ul style="list-style-type: none"> User feedback: surveys and/or focus groups Analysis of aggregate data 	Student Course Perception Surveys <ul style="list-style-type: none"> Develop process for handling abusive SCP comments Peer Review of Teaching <ul style="list-style-type: none"> Develop observation worksheet for assessors (with CTE) Develop training for assessors Teaching Dossier <ul style="list-style-type: none"> Develop standard TD report for T&P Streamline TD's for T&P & Teaching Awards Student Supervision <ul style="list-style-type: none"> Recommend actions to Senate Summative Working Group <ul style="list-style-type: none"> Provide advice to Deans, Associate Deans, Chairs and T&P committees on interpreting teaching assessment scores with equity lens. 	<ul style="list-style-type: none"> Consultations & communications with stakeholders Ensure instructors are prepared

TAP Office Activities in Each Area



Conclusion

We continue our focus to develop teaching assessment processes that are more equitable and robust, poising us as educators to lead the important (and often difficult) changes that are required to further enhance the culture of teaching and learning on our campuses, and to provide all of us with the opportunity to be more effective teachers through better understanding of what this actually means and through more modern and evidence-based approaches that ensure that we are on the right track.

Appendices

Appendix A: Teaching Effectiveness Framework: Defining the Categories

Design

Planning

- Builds course around one or more overarching themes, stories and/or questions
- Clearly defines attainable course-level and activity-level learning objectives/outcomes
- Includes learning material that reflects current scholarship from the field or that is clearly relevant
- Structures material in a logical and coherent order
- Sets pacing, workload and performance standards appropriate for the course level and topic
- Includes experiential components, professional connections, or practical applications, when possible.
- Plans a variety of teaching/learning strategies to promote student engagement and deep approaches to learning
- Incorporates a diversity of experiences, viewpoints, and backgrounds in course materials
- Adheres learning materials, activities, and assessments to University accessibility policies

Framework

- Aligns course design with program expectations
- Aligns course objectives and learning outcomes with course content and delivery
- Develops fair and equitable assessment methods that align with course objectives and outcomes

Implementation

Communication

- Communicates course-level and activity-level objectives/outcomes as well as teaching/learning approach and rationale to students
- Describes and explains material clearly using a pace appropriate to the context
- Demonstrates enthusiasm for the subject
- Uses technology, media or other teaching tools effectively

Student engagement

- Promotes student participation, peer interactions, or other active engagement with course content
- Uses teaching/learning strategies that encourage student engagement and deep approaches to learning

Variety of elements

- Adapts to evolving classroom contexts
- Adopts a variety of instructional practices, content types, and assessments that recognize diversity of learners

Assessments and feedback

- Enables students to prepare for assessments through instructional practices
- Communicates clear expectations and instructions for assessments
- Provides performance feedback in a timely manner
- Provides directions for student improvement individually or collectively

Learning experience

Rapport

- Fosters a supportive learning environment
- Establishes a climate of intellectual openness
- Shows concern for students' success and wellbeing
- Interacts professionally and respectfully with students

Responsiveness

- Provides sufficient opportunities for student contact inside and outside of class
- Responds to student inquiries and questions in an appropriate timeframe

Diversity

- Promotes inclusion and diversity by acknowledging variety of experiences, viewpoints, and backgrounds

Engagement and learning

- Generates and maintains student interest
- Fosters students' intrinsic motivation and responsibility for their own learning
- Seeks student input on course learning experience
- Provides evidence of student learning

Professional development

Reflection

- Reflects on and assesses teaching and learning practices
- Engages in a scholarly approach to teaching through determining and implementing best practices

Growth and continuous improvement

- Participates in professional development activities
- Makes thoughtful and deliberate changes to practices or develops innovations in response to new information about best practices or to other opportunities as they arise

- Regularly revises or updates course content, assignments, format, or teaching strategies in response to feedback and reflection

Collaboration, mentorship, and leadership

- Demonstrates leadership related to teaching and learning within the University and in the broader educational community
- Interacts and works with colleagues around teaching and learning
- Provides and receives mentorship related to teaching, including with teaching assistants
- Contributes to the Scholarship of Teaching and Learning

Appendix B: Template for Teaching Section in Faculty Performance Review Forms

1) Please list the courses that you taught over the evaluation period.

Course and Term	Type (UG/GR/Other)	Credit (R/O/F/D)	Enrollment	Notes

Notes:

- I. Credit can be Regular (R), Overload (O), Future Credit (F), Past Debt (D)
- II. Team-taught courses should be included with division of tasks mentioned under “Notes”.
- III. Additional information may be included in the Notes, such as if the course is required and/or elective, online/in-person, developed by instructor/taught for the first time

Please list the supervision tasks that you have undertaken over the evaluation period.

Student Name	Type (UG/M/PhD/Other)	Period of Time and Time Commitment	Notes

2) (OPTIONAL) Please provide brief comments on the context of this teaching/supervision, including challenges specific to particular courses/supervisions.

3) Please list curriculum work, course renewal, and new course development undertaken during the evaluation period.

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- 4) Please list work on the Scholarship of Teaching and Learning (e.g. publications, presentations at conferences or workshops, etc.) undertaken during the evaluation period.
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 -

- 5) Please list any professional development related to teaching (e.g. workshops or conferences attended, training done, etc.) undertaken during the evaluation period.
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 -

- 6) Please include, as an appendix, the most recent peer review report done of your teaching for summative purposes. If you have not had such a peer review done yet, jump to #8.

- 7) (OPTIONAL) Please provide comments on your peer review. These comments could include responses to the reviewer's comments, actions that you have subsequently taken in response, etc. Even if the peer review report is several years old, comments about ongoing work towards continuous improvement are still appropriate.

- 8) Please include, as an appendix, a summary of the student course perception survey results from the courses that you taught during the evaluation period. Exporting results (possibly without student comments) from perceptions.uwaterloo.ca is an effective way to do this.

- 9) (OPTIONAL) Please provide comments on your student course perception survey results. These comments could include contextual information that explains concerns that students raised, pedagogical choices that you made that you feel decreased your scores, constructive concerns that students raised that you will act on in a future offering, etc.

- 10) Provide a one-page narrative that includes highlights from your teaching over the evaluation period regarding some or all of the following four dimensions of effective teaching in relation to course teaching and/or supervision:
 - Design changes and/or successes
 - Implementation changes and/or successes
 - Actions you've taken to foster a positive learning environment for your students
 - The effect of teaching and learning professional development on your practice

Where possible, refer to Waterloo's Framework for Teaching Effectiveness

<https://uwaterloo.ca/teaching-assessment-processes/holistic-model/teaching-effectiveness->

[waterloo](#)) and/or teaching goals from previous years, and provide a small number of specific examples and/or some specific evidence from you, your students, and/or your peers.

11) List three goals / next steps over the next one to two years for you as an educator.

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Senate Graduate and Research Council

For Information

Consent Agenda

Open Session

To: Senate

Sponsor: Charmaine Dean
Contact Information: Vice-President, Research & International

Sponsor: Jeff Casello
Contact Information: Associate Vice-President, Graduate Studies and Postdoctoral Affairs

Presenter: Jeff Casello
Contact Info: jcasello@uwaterloo.ca

Date of Meeting: June 19, 2023

Agenda Item Identification: 10. Report - Senate Graduate & Research Council

Summary:

[Senate Graduate & Research Council](#) met on 8 May 2023 and agreed to forward the following items to Senate for information as part of the consent agenda.

On behalf of Senate, the following items were approved:

1. Graduate Awards

[Council approved](#) the following:

- a. Environment Student-Athlete Award - trust
- b. Clinician Scientist Graduate Award - trust
- c. Faculty of Arts Graduate Student Conference Award – endowment, Faculty funds
- d. RBC Graduate Scholarship – trust

2. Curricular Submissions

Council approved new courses and minor program revisions for:

- a. [Faculty of Health](#) (Health; Recreation and Leisure Studies)
- b. [Faculty of Science](#) (Academic Integrity Workshop)
- c. [Graduate Studies](#) (Graduate Studies)

Jurisdictional Information:

As provided for in [Senate Bylaw 2](#), section 4.03, council is empowered to make approvals on behalf of Senate for a variety of operational matters:

- (e) Consider, study and review all proposals for new graduate programs, the deletion of graduate programs, major changes to existing graduate programs, arrange for internal appraisals as the council shall see fit, and make recommendations to Senate thereon.

Senate

(f) On behalf of Senate, consider and approve all new graduate courses, the deletion of graduate courses, and proposed minor changes to existing graduate courses and programs, and provide Senate with a brief summary of council's deliberations in this regard. Any matter of controversy that might arise may be referred to Senate.

(i) On behalf of Senate, consider and approve all new graduate scholarships and awards. Any matter of controversy that might arise may be referred to Senate.

Senate Undergraduate Council

For Information

Consent Agenda

Open Session

To: Senate

Sponsor: David DeVidi, Associate Vice-President, Academic
Contact Information: david.devidi@uwaterloo.ca

Presenter: David DeVidi, Associate Vice-President, Academic
Contact Information: david.devidi@uwaterloo.ca

Date of Meeting: June 19, 2023

Agenda Item Identification: 11. Report – Senate Undergraduate Council

Summary:

[Senate Undergraduate Council](#) met on May 9, 2023 and agreed to forward the following items to Senate for information as part of the consent agenda.

On behalf of Senate, the following items were approved:

Minor Plan & Curricular Modifications

Council approved minor plan changes, new courses, course changes, and course inactivations for:

- a. [Faculty of Engineering](#) (chemical engineering; complementary studies electives; examination and promotions; geological engineering; management engineering; computing option; computer engineering option; management engineering; management sciences option; rules; school of architecture; software engineering option)
- b. [Faculty of Mathematics](#) (bmath data science plan; business administration and mathematics double degree; combinatorics and optimization joint honours; computer science; finance specialization; human computer interaction specialization; joint pure mathematics; mathematics/business administration; mathematics/information technology management; software engineering specialization)
- c. [Renison University College](#) (undergraduate communication requirement)
- d. [Software Engineering](#) (software engineering)
- e. [Registrar's Office](#) (architectural engineering; aviation; biomedical engineering; business, entrepreneurship and technology; computer science; electrical and computer engineering; environment; environment and business; environment, resources and sustainability; environmental engineering; general engineering; geography; geological engineering; gerontology; health; international development; kinesiology; knowledge integration; management sciences; materials and nano-sciences; mechanical engineering; mechatronics engineering; nanotechnology engineering; optometry; pharmacy; planning; public health sciences; pure mathematics; recreation and leisure studies; school of architecture; sexuality, marriage, and family studies; society, technology and values)

Jurisdictional Information:

As provided for in [Senate Bylaw 2](#); section 5.03; council is empowered to make approvals on behalf of Senate for a variety of operational matters:

- (c) On behalf of Senate; consider and approve all new undergraduate courses; the deletion of undergraduate courses; and proposed changes to existing undergraduate courses and minor changes to programs and/or plans; and provide Senate with a summary of council's deliberations in this regard. Any matter of controversy that might arise may be referred to Senate.
- (e) Consider; study and review briefs on any aspect of undergraduate studies from members of the university.

Senate Undergraduate Council

For Approval

Consent Agenda

Open Session

To: Senate

Sponsor: David DeVidi, Associate Vice-President, Academic
Contact Information: david.devidi@uwaterloo.ca

Presenter: David DeVidi, Associate Vice-President, Academic
Contact Information: david.devidi@uwaterloo.ca

Date of Meeting: June 19, 2023

Agenda Item Identification: 11a. Report – Senate Undergraduate Council:
Academic Regulation Revision to Admission for the Faculty of
Engineering

Summary:

[Senate Undergraduate Council](#) met on May 9, 2023 and agreed to forward the following items to Senate for approval as part of the consent agenda.

Recommendation/Motion:

That Senate approve the proposed academic regulation revision to Admission for the Faculty of Engineering, effective 1 September 2024, as presented.

Jurisdictional Information:

As provided for in [Senate Bylaw 2](#), section 5.03, council is empowered to make approvals on behalf of Senate for a variety of operational matters:

- (a) Make recommendations to Senate with respect to rules and regulations for the governance, direction and management of undergraduate studies in the university.

Governance Path:

Engineering Undergraduate Studies Committee approval date (mm/dd/yy): 03/23/23

Faculty approval date (mm/dd/yy): 04/18/23

Senate Undergraduate Council approval date (mm/dd/yy): 05/9/23

Background and Rational:

The current wording is outdated as the university no longer offers all the listed pre-university courses; however, these courses may exist with wording to correctly reflect the admission process for such courses. In addition, wording to the admission and advanced standing has been updated for clarity.

Proposed Changes:

Current calendar text: <http://ugradcalendar.uwaterloo.ca/page/ENG-BASc-and-BSE-Admission>

Proposed calendar text: (underlined and bolded = new, strikethrough = deletion)

Admission

All first-year engineering students enroll in September and spend the first fall term together at the University, after which they are divided into different streams depending on their plan of study. All students have the same total time on campus and in industry regardless of how their particular stream is scheduled. All students complete the last term of their plan of study together prior to graduation.

The following can be found in this Calendar:

- The admission categories, requirements, and procedures for all plans are outlined in the [Admissions section](#).
- Stream information for each Engineering plan is indicated on the [Study/Work Sequence page](#).
- Precise dates for the beginning and end of the various terms are shown in the [Calendar of Events and Academic Deadlines](#).

Admission for Applicants Not Currently Completing Ontario Secondary School

Applicants must provide recent grades in the required Ontario high school courses or their equivalent. Courses taken at Ontario Colleges of Applied Arts and Technology and similar non-university, postsecondary institutions elsewhere are normally not accepted as equivalent to the required high school courses. ~~The University has developed special pre-university mathematics, physics, and chemistry courses which can be taken online as an alternative.~~ **Post-secondary institutions may offer special pre-university mathematics, physics, and chemistry courses which can be taken to establish grades for required high school courses. Alternatively, applicants seeking to establish recent grades in required courses may take high school courses through an approved high school.** To discuss admissibility and appropriate qualifying studies, applicants are advised to contact ~~the director of admissions~~ **an admissions officer** for the Faculty of Engineering in the fall of the year prior to entering first year.

Admission to Advanced Standing

Admission ~~beyond~~ **beyond the** 1A term is limited to applicants who have ~~an academic~~ **academic course work** and work experience background that is considered equivalent to the particular class **cohort of students** they would join. ~~Due to the co-operative nature of a Faculty of Engineering plan, no student will be admitted above 3A.~~ **Given the unique nature of the direct-entry, cohort-based co-operative programs offered by the Faculty of Engineering, it is rarely possible to admit students beyond the first-year level. When advanced standing is possible, the first term of study will depend upon credits granted to an applicant. Transfer credits will only be granted when an equivalent course has been studied at a Canadian post-secondary institution. If the awarding of a transfer credit would prevent a student from fully participating in other courses of an academic program, a transfer credit will not be granted. Credit for previous work experience may be granted when previous work experience is deemed equivalent to a co-operative work term placement at an approved employer.**

~~Any student admitted to the 3A term will be required to enrol in the winter term, and to complete satisfactorily the final four academic terms, and the final three work terms and work reports.~~

~~Credit for previous work experience can be applied only to those work terms preceding the level of admission and cannot exceed three work terms. Students who are readmitted to an engineering plan are required to clear all previous failures.~~

Admission of Applicants with a Technical Degree

Applicants who already possess an undergraduate degree in a technical area such as engineering, science, or mathematics will normally be considered for admission into an undergraduate engineering plan only if space remains after all other qualified applicants have been considered. Postgraduate or graduate studies may be more appropriate for these applicants.

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Senate Undergraduate Council

For Approval

Consent Agenda

Open Session

To: Senate

Sponsor: David DeVidi, Associate Vice-President, Academic
Contact Information: david.devidi@uwaterloo.ca

Presenter: David DeVidi, Associate Vice-President, Academic
Contact Information: david.devidi@uwaterloo.ca

Date of Meeting: June 19, 2023

Agenda Item Identification: 11b. Report – Senate Undergraduate Council:
Academic Regulation for Admission Fraud

Summary:

[Senate Undergraduate Council](#) met on May 9, 2023 and agreed to forward the following items to Senate for approval as part of the consent agenda.

Recommendation/Motion:

That Senate approve the proposed academic regulation for Admissions Fraud, effective 1 September 2023, as presented.

Jurisdictional Information:

As provided for in [Senate Bylaw 2](#), section 5.03, council is empowered to make approvals on behalf of Senate for a variety of operational matters:

- (a) Make recommendations to Senate with respect to rules and regulations for the governance, direction and management of undergraduate studies in the university.

Governance Path:

Senate Undergraduate Council approval date (mm/dd/yy): 05/9/23

Senate Undergraduate Council approval date (mm/dd/yy): 05/26/23 (Revision of effective date)

Background and Rational:

The University of Waterloo has a process to deal with admissions fraud, however, a statement providing details of admissions fraud does not exist in the Undergraduate Studies Academic Calendar (USAC). Current information the University provides regarding admissions fraud is provided on the Future Students website as well as within Policy 71 (if admission fraud is discovered after registration). The proposed USAC text, created by sampling other institutions and our own existing processes, was endorsed by Undergraduate Operations on April 25, 2023.

Proposed New Calendar Text:

Admissions Fraud

It is an applicant's responsibility to ensure that all application information is truthful, complete, and correct. All documentation in support of an application for admission or readmission will be verified for authenticity. If evidence of falsified information and/or omission is found in the submission of an application for admission or readmission, the University of Waterloo reserves the right to deny admission, revoke any offer of admission (conditional or final), residence, and/or financial support. Previous submission of falsified or fraudulent documentation may be considered in future applications made to Waterloo.

Students are required to produce documentation verifying their identity to obtain their student identification. Should evidence of admissions fraud be discovered after registration, students are subject to Policy 71 (Student Discipline), and the penalty may be expulsion.

We may disclose evidence of any misrepresentation, fraudulent or falsified documentation to all Canadian universities, to Citizenship and Immigration Canada, and to law enforcement personnel when appropriate.

Senate Undergraduate Council

For Approval

Consent Agenda

Open Session

To: Senate

Sponsor: David DeVidi, Associate Vice-President, Academic
Contact Information: david.devidi@uwaterloo.ca

Presenter: David DeVidi, Associate Vice-President, Academic
Contact Information: david.devidi@uwaterloo.ca

Date of Meeting: June 19, 2023

Agenda Item Identification: 11c. Report – Senate Undergraduate Council:
Academic Regulation Revision for Admission Requirements

Summary:

[Senate Undergraduate Council](#) met on May 9, 2023 and agreed to forward the following items to Senate for approval as part of the consent agenda.

Recommendation/Motion:

That Senate approve the proposed academic regulation revisions of Admissions Requirement for Duolingo Component Scores, effective 1 September 2024, as presented.

Jurisdictional Information:

As provided for in [Senate Bylaw 2](#), section 5.03, council is empowered to make approvals on behalf of Senate for a variety of operational matters:

- (a) Make recommendations to Senate with respect to rules and regulations for the governance, direction and management of undergraduate studies in the university.

Governance Path:

Senate Undergraduate Council approval date (mm/dd/yy): 05/9/23

Background and Rational:

When the Duolingo English Language Proficiency Test was first introduced, there was not a means of reporting subscores. Duolingo, at the request of universities, has now started reporting subscores. Some institutions have already implemented subscore requirements (Western, Ottawa); others are publishing subscores for the next cycle, and there are some that have not yet decided to use subscores. Although we do not yet have reliable data on how students who have written the Duolingo are faring in their degree studies, in order to align with the standards of UW's other acceptable proficiency tests, requiring subscores for Duolingo, particularly in the areas of Literacy and Production, should be considered. For example, IELTS requirements are listed as 6.5 overall with 6.5 in writing and 6.5 in speaking and iBT (TOFEL) requirements are 90 overall with 25 in speaking and 25 in writing. Due to the importance of co-op and

communications initiatives for first-year students at UW, subscores are valuable indicators.

The change to the admission requirements is for the fall 2024 admission cohort; requirements are listed in recruitment publications and websites, but not in the Undergraduate Studies Academic Calendar.

Admission Requirement Revision:

A subscore of 110 in both Literacy and Production be added to the pilot period of Duolingo test score acceptance.



Office of the Vice-President, Academic and Provost

For Information

Open Session

To: Senate

Sponsor: James W.E. Rush, Vice-President, Academic and Provost
Contact Information: provost@uwaterloo.ca

Presenter: James W.E. Rush, Vice-President, Academic and Provost
Contact Information: provost@uwaterloo.ca

Date of Meeting: June 19, 2023

Agenda Item Identification: 14. Report of the Provost – Faculty Appointments, Leaves

Summary:

The Faculty Reports for Senators' information regarding the variety of appointments, reappointments, special appointments, leaves, and other matters of interest about individuals in the Faculties are available at the [Senate agenda page](#)¹.

¹ <https://uwaterloo.ca/secretariat/sites/default/files/uploads/documents/all-faculties-june-2023.pdf>

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