

University of Waterloo
SENATE EXECUTIVE COMMITTEE
Notice of Meeting

Date: Monday 1 November 2021
Time: 3:30 p.m.
Place: Microsoft Teams Videoconference

AGENDA	Action
1. Minutes of the 4 October 2021 Meeting	Decision
2. Business Arising from the Minutes	
3. Draft 15 November 2021 Senate Agenda	Decision
4. Senate Governance Review	Discussion
5. Other Business	

22 October 2021

Karen Jack
University Secretary

University of Waterloo
SENATE EXECUTIVE COMMITTEE
Minutes of the 4 October 2021 Meeting

Present: Jeff Casello, Joan Coutu, Benjamin Easton, George Freeman, Vivek Goel (chair), Karen Jack (secretary), Zabeen Khamisa, Christiane Lemieux, Kristina Llewellyn, Graham Murphy, Luke Potwarka, James Rush, Johanna Wandel

Guests: Diana Gonçalves, Andrea Kelman, Mike Grivicic

The chair welcomed members to the meeting.

1. MINUTES OF THE 7 SEPTEMBER 2021 MEETING

Members approved the minutes of the 7 September 2021 meeting by consensus.

2. BUSINESS ARISING FROM THE MINUTES

There was no business arising.

3. DRAFT 18 OCTOBER 2021 SENATE AGENDA

During his review of the agenda, the chair noted: that the approval of the list of graduands will be moved to the consent agenda with an explanatory memorandum, that the presentation is being finalized and will be from the director of an interdisciplinary institute; his intentions with respect to future content in his reports. The secretary and Casello spoke briefly to the reports from committees and councils. The committee approved the agenda subject to the changes as described.

4. OTHER BUSINESS

There was no other business.

4 October 2021

Karen Jack
University Secretary

University of Waterloo
SENATE
Notice of Meeting

Date: Monday 15 November 2021
Time: 3:30 p.m.
Place: Microsoft Teams Videoconference

	OPEN SESSION		PAGE #
3:30	<p><u>Consent Agenda</u> Motion: To approve or receive for information by consent items 1-6 below.</p> <ol style="list-style-type: none"> 1. Minutes of the 18 October 2021 Meeting 2. Reports from Committees and Councils <ol style="list-style-type: none"> a. Senate Graduate & Research Council b. Senate Undergraduate Council 3. Report of the President <ol style="list-style-type: none"> a. Recognition and Commendation 4. Report of the Vice-President, Academic & Provost 5. Reports from the Faculties 6. Report from the COU Academic Colleague 	Decision	5
		Information	11
		Decision/Information	13
		Information	27
		TBD	
		Information	29
		Information	31
	<p><u>Regular Agenda</u></p>		
3:35	7. Business Arising from the Minutes		
3:40	8. Presentation – Research Annual Report – Dr. Charmaine Dean	Information	
3:55	9. Reports from Committees and Councils <ol style="list-style-type: none"> a. Senate Graduate & Research Council b. Joint Report from Senate Graduate & Research Council and Senate Undergraduate Council ¹ c. Senate Undergraduate Council 	Decision Decision	37
		Information	43
4:10	10. Report of the President		
4:20	11. Q&A Period with the President	Information	
4:30	12. Report of the Vice-President, Academic & Provost	TBD	
4:40	13. Report of the Vice-President, Research & International	Information	
4:45	14. Other Business		
	BREAK		

¹ To be distributed

CONFIDENTIAL SESSION			PAGE #
4:50	15. Minutes of the 18 October 2021 Meeting	Decision	9
4:55	16. Business Arising from the Minutes		
5:00	17. Reports from Committees and Councils a. Honorary Degrees Committee	Decision	
5:05	18. Report of the President	Information	
5:10	19. Other Business		

KJJ/dg
22 October 2021

Karen Jack
University Secretary
Secretary to Senate

University of Waterloo
SENATE
Minutes of the Monday 18 October 2021 Meeting

Present: John Abraham, Nasser Mohieddin Abukhdeir, Sheila Ager, Jean Andrey, Mike Ashmore, Sandra Banks, Lisa Bauer-Leahy, Michael Beauchemin, Anne Bordeleau, Carmen Bruni, Jeff Casello, Trevor Charles, Robyn Clarke, Joan Coutu, Neil Craik, Lori Curtis, Kristine Dalton, Charmaine Dean, David DeVidi, Catherine Dong, Paul Fieguth, Wendy Fletcher, George Freeman, Mark Giesbrecht, Moira Glerum, Martha George, Vivek Goel (chair), Onurcan Gokkaya, Kelly Grindrod, David Ha, Kevin Hare, Dennis Huber, Natalie Hutchings, Karen Jack (secretary), Martin Karsten, Achim Kempf, Zabeen Khamisa, Jennifer Kieffer, Veronica Kitchen, Alysia Kolentsis, Christiane Lemieux, Robert Lemieux, Xianguo Li, Lili Liu, Kristina Llewellyn, Carol Ann MacGregor, Blake Madill, Peter Meehan, Samantha Meyer, Ian Milligan, Graham Murphy, Richard Myers, Beth Namachchivaya, Cathy Newell Kelly, Erin O’Connell, Daniel O’Connor, Troy Osborne, Luke Potwarka, William Power, Neil Randall, James Rush, Naima Samuel, Matthew Schwarze, Marcus Shantz, Joanne Shoveller, Siv Sivaloganathan, Siva Sivoththaman, Chao Tan, Bruno Tremblay, Sharon Tucker, Graeme Turner, Johanna Wandel, Paul Ward, Mary Wells, Stan Woo, Nancy Worth, En-Hui Yang

Guests: Jean Becker, Kathy Becker, Bruce Campbell, Lindsay Campbell, Aldo Caputo, Donna Ellis, Barbara Forrest, Brian Forrest, Diana Goncalves, Candace Harrington, Ruth Huard, Ross Johnston, Suzanne Kearns, Andrea Kelman, Nick Manning, Norah McRae, Bessma Momani, Fayaz Noormohamed, Chris Read, Ian Rowlands, Daniela Seskar-Hencic, Nadia Singh, Allan Starr, Sherri Sutherland, Brandon Sweet, Sean Thomas, Marilyn Thompson, Caitlin Vaux, Chris Wilson-Smith

Absent: Dominic Barton*, Benjamin Easton*, Cindy Forbes*, Ellen MacEachen, Zoran Miskovic, Oudy Noweir, Diana Vangelisti, Clarence Woudsma, Samer Zu’Mot

*regrets

OPEN SESSION

CHAIR’S REMARKS

The chair welcomed Senators to the meeting.

Consent Agenda

Senate heard a motion to approve or receive for information the items on the consent agenda.

Beauchemin and Andrey.

1. MINUTES OF THE 20 SEPTEMBER 2021 MEETING

Senate approved the minutes of the meeting.

2. REPORTS FROM COMMITTEES AND COUNCILS

a. Senate Graduate & Research Council. Senate received the report for information.

b. Senate Undergraduate Council

i. Academic Plan Changes

Faculty of Arts – Sexuality, Marriage and Family Studies

Motion: That Senate approve the following degree description change, effective 1 September 2022.

ii. Plan Inactivations

Faculty of Science – Education Program for Photonics Professionals

Motion: Effective 1 September 2022, Senate approve the inactivation of the Diploma in Education Program for Photonics Professionals.

**iii. Academic Regulation Changes
Registrar's Office**

Motion: That Senate approve the proposed central statement regarding the undergraduate communication requirement, effective 1 September 2022.

Motion: That Senate approve the revised Aegrotat (AEG) grade definition and undergraduate transcript legend text, effective 1 September 2022.

Senate received the remainder of the report for information.

3. REPORT OF THE PRESIDENT

Recognition and Commendation. Senate received the report for information.

**4. REPORT OF THE VICE-PRESIDENT, ACADEMIC & PROVOST
Degrees, Diplomas, and Certificates**

Motion: That Senate approve the lists of candidates for degrees, diplomas and certificates as recommended by the Faculty councils and the associate vice-president, graduate studies and postdoctoral affairs, and to authorize the chair to act on behalf of Senate, based on the recommendation of the registrar or, in the case of graduate students, the associate vice-president, graduate studies and postdoctoral affairs, to add to or change the lists of candidates for degrees, diplomas, and certificates, provided that the chair report back to Senate to advise of any such additions or changes.

5. REPORTS FROM THE FACULTIES

Senate received the reports for information.

6. COMMITTEE APPOINTMENTS

Senate Executive Committee

Motion: To approve Michael Beauchemin (alumni) as the alumni representative, term to 30 April 2023, and Oudy Noweir (undergraduate student) as a student representative, term to 30 April 2023.

Senate received the remainder of the report for information.

The question was called and carried unanimously.

Regular Agenda

7. BUSINESS ARISING FROM THE MINUTES

There was no business arising.

**8. PRESENTATION BY DR. SUZANNE KEARNS, WATERLOO INSTITUTE FOR
SUSTAINABLE AERONAUTICS (WISA)**

Following an introduction by Jean Andrey, Dr. Kearns walked members through her slides, speaking to: the student pilots support research ecosystem; WISA's mission and history; some of the interdisciplinary research being undertaken at the institute; the involvement of faculty members from all six Faculties; the research partnership process and current collaborations; future priorities and plans; alignment with the Strategic Plan.

The chair offered his appreciation for the institute's strong interdisciplinary work and the alignment of its activities with the University's Strategic Plan.

9. REPORTS FROM COMMITTEES AND COUNCILS

Senate Graduate & Research Council

Following a brief review of the report by Casello, Senate heard a motion to approve updates to the regular-full time graduate student definition regarding the number of hours a student can be employed by the University, effective 1 September 2021.

Casello and Dalton. Carried unanimously.

Joint Report from Senate Graduate & Research Council and Senate Undergraduate Council

The chair advised that this item is tabled until the November meeting.

Senate Undergraduate Council

Senate heard several motions, with some moved together, as below:

Faculty of Arts – Political Science

That Senate approve the proposed new Canadian Politics and Public Policy Minor, effective 1 September 2022.

That Senate approve the inactivation of the Public Policy and Administration minor; the Canadian Politics, the Global Governance, and the Politics and Business specializations, effective 1 September 2022.

DeVidi and Ager. Carried unanimously.

Faculty of Arts – St Paul’s University College

That Senate approve changes to the human rights minor, effective 1 September 2022.

DeVidi and Myers. Carried unanimously.

Faculty of Science – School of Optometry & Vision Science

That Senate approve an earlier effective date of September 2021 for the optometry advance standing program.

Faculty of Science – Transfer Students

That Senate approve revisions to the transfer student regulations in the Faculty of Science, effective 1 September 2022.

DeVidi and Lemieux. Carried unanimously.

10. REPORT OF THE PRESIDENT

Goel expressed condolences on the recent passing of former liaison librarian and alumna Maatje Blok and Professor Safieddin Safavi-Naeini. He then provided Senate with an update on: recent activities (including: the launch of WISA; co-op hiring, recent partnerships); some recent recognition of Waterloo faculty members; world university and other rankings; Waterloo’s equity survey, and a reminder to Senators to participate if they have not done so already; some activities relating to the Strategic Plan; plans for upcoming discussions at Senate about the Strategic Plan.

11. Q&A PERIOD WITH THE PRESIDENT

There were no questions.

12. REPORT OF THE VICE-PRESIDENT, ACADEMIC & PROVOST

Rush updated Senate about: on campus student activity and enrolments this fall; tuition and aid projections; the return to campus project’s priorities and next steps; the recently released HREI review report and resulting leadership announcements about Jean Becker as the Associate Vice-

President, Office of Indigenous Relations, and Dr. Christopher Taylor as the Associate Vice-President, Office of Equity, Diversity, Inclusion and Anti-Racism.

In response to questions, Newell Kelly confirmed that data relating to class sections and enrolments represent how classes are coded within Quest, and DeVidi confirmed that surveys have been and continue to be undertaken to elicit students' views about online, in person, and hybrid instruction.

13. REPORT OF THE VICE-PRESIDENT, RESEARCH & INTERNATIONAL

Dean offered her congratulations to all researchers named in the report who had recently received awards, distinctions, and grants. Senate received the report for information.

14. OTHER BUSINESS

In response to a request for an update on the potential revisions to Policies 76 and 77, Rush advised that in accordance with Policy 1's provisions regarding class F policy development and amendment, the Faculty Relations Committee continues to discuss these policies and it will communicate with the community in line with policy development and approval requirements articulated in Policy 1.

In response to a question, the secretary advised that a joint meeting of the Staff Relations and Faculty Relations Committees will be booked soon to receive the final report of the Policy 33 development committee and the recent feedback received from the Code of Conduct and Safety Working Group of the President's Anti-Racism Taskforce.

Senate convened in confidential session.

21 October 2021

Karen Jack
University Secretary

CONFIDENTIAL SESSION

The confidential minutes have been removed

21 October 2021

Karen Jack
University Secretary

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University of Waterloo
SENATE GRADUATE & RESEARCH COUNCIL
Report to Senate
15 November 2021

Senate Graduate & Research Council met on 4 October 2021 and agreed, in accordance with [Senate Bylaw 2](#) (section 4.03), to forward the following item to Senate for information as part of the consent agenda.

Further details are available at: <https://uwaterloo.ca/secretariat/committees-and-councils/senate-graduate-research-council>

FOR INFORMATION

RENEWAL OF RESEARCH INSTITUTE

On behalf of Senate, council approved the renewal, for a 5-year term, of the Waterloo Institute for Complexity and Innovation (WICI).

GRADUATE STUDIES ACADEMIC CALENDAR UPDATES

On behalf of Senate, council approved minor updates to [General Information](#) within the Graduate Studies Academic Calendar, effective Winter 2022, provided on this [link](#).

UNIVERSITY RESEARCH ETHICS

On behalf of Senate, council approved the following:

- Clinical Research Ethics Board – new member (1)

GRADUATE AWARDS

On behalf of Senate, council approved the Scotiabank Master of Mathematics for Teachers (MMT) Scholarship (trust).

/mh kw Jeff Casello
Associate Vice-President, Graduate Studies and
Postdoctoral Affairs

Charmaine Dean
Vice President, Research & International

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University of Waterloo
SENATE UNDERGRADUATE COUNCIL
Report to Senate
15 November 2021

Senate Undergraduate Council met on October 5, 2021 and agreed to forward the following items to Senate. Council recommends that these items be included for information or approval, as noted, in the consent agenda.

Further details are available at: uwaterloo.ca/secretariat/committees-and-councils/senate-undergraduate-council

FOR APPROVAL

ACADEMIC PLAN CHANGES

Faculty of Engineering **Systems Design Engineering**

1. **Motion:** That Senate approve the addition of technical electives lists (formerly housed on departmental website), effective 1 September 2022:

Background and Rationale: The Calendar is the official contract between the University of Waterloo and students. Departments advertising technical electives on their website were asked to add them to their sections of the Calendar. In doing so the Academic Advisement reports will be up to date, and mirror what is in the Calendar. This allows the reports to represent the Calendar for audit purposes.

Revised Undergraduate Calendar text:

The Department of Systems Design Engineering offers a wide variety of technical elective courses in the third and fourth year. Students are encouraged to design their own elective package to develop expertise in their particular interest area. Approved technical elective courses are available from Systems Design Engineering, from other Engineering departments, and from a wide list of technical courses in the faculties of Science and Mathematics. Only courses from Engineering and Computer Science will contribute towards CEAB hours in the categories of "Engineering Science" and "Engineering Design." **Some examples are listed below.**

Biomedical Engineering

- **BME 499 Elective Biomedical Research Project**
- **BME 550 Sports Engineering**
- **BME 551 Biomechanics of Human Movement**
- **BME 581 Ultrasound in Medicine and Biology**
- **BME 587 Special Topics in Biomedical Signals**
- **BME 588 Special Topics in Biomechanics**
- **BME 589 Special Topics in Biomedical Devices**

Civil Engineering

- **CIVE 440 Transit Planning and Operations**
- **CIVE 460 Engineering Biomechanics**

Electrical and Computer Engineering

- **ECE 254 Operating Systems and Systems Programming**

- ECE 356 Database Systems
- ECE 358 Computer Networks
- ECE 406 Algorithm Design and Analysis
- ECE 457B Fundamentals of Computational Intelligence
- ECE 459 Programming for Performance
- ECE 484 Digital Control Applications

Management Sciences

- MSCI 343 Human-Computer Interaction
- MSCI 432 Production and Service Operations Management
- MSCI 444 Information Systems Analysis and Design
- MSCI 446 Introduction to Machine Learning
- MSCI 555 Scheduling: Theory and Practice

Mechanical Engineering

- ME 321 Kinematics and Dynamics of Machines
- ME 574 Engineering Biomechanics

Mechatronics Engineering

- MTE 241 Introduction to Computer Structures & Real-Time Systems
- MTE 325 Microprocessor Systems and Interfacing for Mechatronics Engineering
- MTE 544 Autonomous Mobile Robots

Systems Design Engineering

- SYDE 322 Software Design
- SYDE 334 Applied Statistics
- SYDE 522 Foundations of Artificial Intelligence
- SYDE 531 Design Optimization Under Probabilistic Uncertainty
- SYDE 532 Introduction to Complex Systems
- SYDE 533 Conflict Resolution
- SYDE 542 Interface Design
- SYDE 543 Cognitive Ergonomics
- SYDE 544 Biomedical Measurement and Signal Processing
- SYDE 548 User Centred Design Methods
- SYDE 552 Computational Neuroscience
- SYDE 553 Advanced Dynamics
- SYDE 556 Simulating Neurobiological Systems
- SYDE 572 Introduction to Pattern Recognition
- SYDE 575 Image Processing
- SYDE 584 Physiological Systems and Biomedical Design
- SYDE 599 Special Topics in Systems Design Engineering

**Faculty of Engineering
Biomedical Engineering**

2. **Motion:** That Senate approve the addition of technical electives lists (formerly housed on departmental website), effective 1 September 2022:

Background and Rationale: The Calendar is the official contract between the University of Waterloo and students. Departments advertising technical electives on their website were asked to add them to their sections of the Calendar. In doing so the Academic Advisement reports will be up to date, and mirror what is in the Calendar. This allows the reports to represent the Calendar for audit purposes.

Revised Undergraduate Calendar text:

The Department of Systems Design Engineering offers a wide variety of technical elective courses in the third and fourth year. Biomedical Engineering students are encouraged to design their own elective package to develop expertise in their particular interest area. Approved technical elective courses are available from the Department of Systems Design Engineering (SYDE and BME TEs), from other Engineering departments, and from a wide list of technical courses in the Faculties of Science and Mathematics. There are a variety of technical electives with biomedical content, but students can also take technical electives on other topics. ~~Students may choose to take their technical electives from a more restricted list to receive the Neural Engineering Specialization or the Sports Engineering Specialization.~~ Only courses from Engineering and Computer Science will contribute towards CEAB hours in the categories of "Engineering Science" and "Engineering Design." **Some examples are listed below.**

Biomedical Engineering

- **BME 499 Elective Biomedical Research Project**
- **BME 550 Sports Engineering**
- **BME 551 Biomechanics of Human Movement**
- **BME 581 Ultrasound in Medicine and Biology**
- **BME 587 Special Topics in Biomedical Signals**
- **BME 588 Special Topics in Biomechanics**
- **BME 589 Special Topics in Biomedical Devices**

Civil Engineering

- **CIVE 460 Engineering Biomechanics**

Electrical and Computer Engineering

- **ECE 224 Embedded Microprocessor Systems**
- **ECE 252 Systems Programming and Concurrency**
- **ECE 254 Operating Systems and Systems Programming**
- **ECE 356 Database Systems**
- **ECE 358 Computer Networks**
- **ECE 406 Algorithm Design and Analysis**
- **ECE 457B Fundamentals of Computational Intelligence**
- **ECE 459 Programming for Performance**
- **ECE 484 Digital Control Applications**

Management Sciences

- **MSCI 343 Human-Computer Interaction**
- **MSCI 432 Production and Service Operations Management**
- **MSCI 444 Information Systems Analysis and Design**

- MSCI 446 Introduction to Machine Learning
- MSCI 555 Scheduling: Theory and Practice

Mechanical Engineering

- ME 574 Engineering Biomechanics

Mechatronics Engineering

- MTE 241 Introduction to Computer Structures & Real-Time Systems
- MTE 325 Microprocessor Systems and Interfacing for Mechatronics Engineering
- MTE 544 Autonomous Mobile Robots

Systems Design Engineering

- SYDE 322 Software Design
- SYDE 334 Applied Statistics
- SYDE 522 Foundations of Artificial Intelligence
- SYDE 531 Design Optimization Under Probabilistic Uncertainty
- SYDE 532 Introduction to Complex Systems
- SYDE 533 Conflict Resolution
- SYDE 542 Interface Design
- SYDE 543 Cognitive Ergonomics
- SYDE 544 Biomedical Measurement and Signal Processing
- SYDE 548 User Centred Design Methods
- SYDE 552 Computational Neuroscience
- SYDE 553 Advanced Dynamics
- SYDE 556 Simulating Neurobiological Systems
- SYDE 572 Introduction to Pattern Recognition
- SYDE 575 Image Processing
- SYDE 584 Physiological Systems and Biomedical Design
- SYDE 599 Special Topics in Systems Design Engineering

Specializations

Students may choose to take their technical electives from a more restricted list to receive the Neural Engineering Specialization or the Sports Engineering Specialization.

Faculty of Environment

School of Planning

3. **Motion:** That Senate approve the changes to the Honours Planning average requirements, effective 1 September 2022.

Background and Rationale: Students enrolled in Honours Planning are required to maintain a cumulative major average of 75% in their PLAN and ENVS courses. Historically, planning has had a two-tiered approach to major average with BES “Regular”/non-co-op degree students set at 70% and those enrolled in the co-op degree set at 75%. When our program moved exclusively to co-op in 2010, the major average was set at 75%. All students in our undergraduate program must maintain a 75% average or be moved to conditional standing before being removed from the program.

A decade after being implemented, there are a number of concerns about continuing with this average: a) it seems arbitrarily high without pedagogical or professional rationale; b) it causes stress and anxiety

among students who are just below this average; c) it raises concerns about grade inflation in the School; and d) it puts pressure on administration of the degree through conditional standings, petition processes, and other problems.

Revised Undergraduate Requirements:

Average Requirements

- Minimum cumulative major average of ~~75%~~ **70%** (all ENV5 and PLAN courses); and
- Minimum cumulative overall average of 65% (all courses).

4. **Motion:** That Senate approve the changes to the Honours Planning specialization average requirements, effective 1 September 2022, for the following four specializations:
 - a. Decision Support and Geographic Information Systems
 - b. Environmental Planning and Management
 - c. Land Development Planning
 - d. Urban Design

Background and Rationale: Students enrolled in BES Planning, who wish to earn a specialization, are required to maintain an average of 80%. Maintaining this average while lowering the cumulative major average in the program will limit the opportunity to earn a specialization for our student body. The high average requirement is also unique within Environment. Lowering the specialization average keeps the requirements in line with proposed changes to the cumulative major average.

Revised Undergraduate Requirements:

School of Planning students may choose to graduate with up to two specializations.

A minimum cumulative overall average of ~~80%~~ **75%** in the specialization courses is required.

Faculty of Environment and Faculty of Health

5. **Motion:** That Senate approve the administration/ownership change to the minor in tourism, effective 1 September 2022.

Background and Rationale: Recreation and Leisure Studies (Faculty of Health) is assuming full administrative responsibility for the Tourism Minor. The removal of this minor from the Faculty of Environment has no consequences for either faculty or students who will still be able to pursue this minor through the Faculty of Health. Geography and Environmental Management will continue to be consulted with regards to this minor.

Faculty of Health

6. **Motion:** That Senate approve the academic plan changes to the diploma in gerontology, effective 1 September 2022.

Background and Rationale: To be consistent with the recent changes to University definitions of minors, options, specializations, certificates, and diplomas, the School of Public Health and Health Systems is revising the number of required units which must be in the range of four to seven courses for a diploma. In addition, diplomas must be available to all students, including currently enrolled students, and non- or post-degree students, as reflected in the revisions. The statement in parentheses regarding GERON 201/HLTH 201 is redundant with Note 1 and is being removed, and Note 1 is being clarified. An additional note has been added to direct students in the Diploma to work with an academic advisor to discuss progression to ensure students are properly supported. Special topics courses

(HLTH 473) are being removed from the list of options in the restricted electives list as the Registrar's Office is moving towards a process where only requirements that are listed in the UG Calendar are those that will be coded for academic requirements reports. Removing these courses from the lists will lessen confusion and make it clear to students which courses can be used for specific degree requirements. Topics courses will still be considered on a case-by-case basis as substitutions for certain Core Content cluster requirements and this has been indicated in note 4 below. Listing specific statistics courses makes the choices more transparent for students to know whether they can use a statistics course they have already taken as one of the electives. Permission to include the PSYCH, SOC, REC, KIN, SDS, STAT, and ARTS courses has been granted by each unit in charge of the courses. PHIL 321J is a new course on the Philosophy of Palliative care for the Fall 2020 calendar that is appropriate to include as an elective choice for the diploma. Permission to include the course has been granted by the Philosophy department.

Revised Undergraduate Calendar text:

The Diploma in Gerontology program **plan offered by the School of Public Health Sciences** is available to **all** students who would like some training in gerontology but are unable to complete all of the requirements of a School of Public Health and Health Systems undergraduate degree., **including students currently enrolled in a degree program at the University of Waterloo, as well as non- or post-degree students. The Diploma may be of particular interest to students who would like to understand issues faced by older adults, strategies to promote successful aging, or individuals who are interested in working with older adults. Students with a university degree will be admitted and registered as post-degree students. Students without a university degree who satisfy the admissions requirements described below will be admitted as non-degree students.**

Admission Requirements for non-degree students

The following are considered minimum admission requirements **for students without a university degree or who are not currently in an undergraduate degree program.** Students will be considered on an individual basis to determine admissibility to the program **plan.**

1. Completion of a minimum of two years (four semesters totaling 10.0 units) or equivalent of post-secondary study prior to beginning the diploma program.
2. BIOL 130 or equivalent, or HLTH 103 or equivalent, within the past five years.

Diploma Requirements

1. A cumulative overall average of 67% in the course requirements.
2. Successful completion of all course requirements.
3. A maximum of five years to successfully complete the program from the time the student first enters the program.
4. Successful completion of ~~5.0~~ **3.5** units from the following requirements:
 - Required courses (1.0 unit)
GERON 201/HLTH 201 ~~(it is recommended that students begin their studies with GERON 201/HLTH 201)~~
GERON 400/HLTH 400
 - Restricted elective courses (~~4.0~~ **2.5** units):
GERON 218/HLTH 218/PSYCH 218
GERON 245/HLTH 245
GERON 310/HLTH 310/KIN 310
GERON 320/HLTH 320
GERON 352/HLTH 352/KIN 352/REC 362/SOC 352
GERON 355/BIOL 355
GERON 401A, GERON 401B
HLTH 253/SOC 253

HLTH 380
HLTH 407/KIN 407
HLTH 420/GEOG 432/PLAN 432
HLTH 451
HLTH 473 (course topic must be approved by the associate director, undergraduate studies)
KIN 342
KIN 343
KIN 406
KIN 418
KIN 422
KIN 429
KIN 359
PHIL 226
PHIL 319J
PHIL 321J
PSYCH 398
REC 361
SOC 248
SOCWK 240R
SDS 367R
An approved course in statistics (a list of approved courses is available from the School of Public Health and Health Systems Undergraduate Office).
A statistics course (0.5 unit) from the following list: HLTH 204, ARTS 280, KIN 232, PSYCH 292, REC 371, SOC 280, SDS 250R, STAT 202, STAT 221, STAT 231

Notes

- 1. It is recommended that students begin their studies with GERON 201/HLTH 201.** ~~GERON 201/HLTH 201 should normally be taken before or concurrently with restricted electives.~~
- 2. The Diploma in Gerontology is not open to students currently enrolled in a degree program at the University of Waterloo. Current students will enroll in the Minor in Gerontology. Students are encouraged to make note of course prerequisites and antirequisites and discuss their Diploma plan and course progression with an academic advisor in the School of Public Health Sciences.**
- 3. Certain topics courses or independent studies on the topic of aging may be substituted for the restricted elective requirements at the discretion of the School of Public Health Sciences associate director.**

ACADEMIC REGULATION CHANGES

Faculty of Arts

- 1. Motion:** That Senate approve the updated list of mutually exclusive plans, effective 1 September 2022.

Background and Rationale: Due to restructuring of plans in Political Science, several minors and specializations are changing, or being replaced by new plans that consolidate requirements from previous plans, so we are updating the list to avoid duplication. In addition, existing references in the Undergraduate Studies Academic Calendar will be changed to reflect this new consistent terminology:

Revised Undergraduate Calendar text:

Restrictions on Multiple-Plan Combinations

<https://ugradcalendar.uwaterloo.ca/page/ARTS-Restrictions-on-Multiple-Plan-Combinations>

....

Legend

* Indicates an inactivated plan

Table of invalid multiple-plan combinations

Plan/Program	Cannot be Combined With
Canadian Politics and Public Policy Minor	Political Science majors Canadian Politics Specialization* (Political Science majors) Public Policy and Public Administration Minor*
Canadian Politics Specialization* (Political Science majors)	Canadian Politics and Public Policy Minor
Political Science majors	Canadian Politics and Public Policy Minor Politics and Business Minor
Politics and Business Minor	Politics and Business Specialization*(Political Science majors) Political Science majors
Politics and Business Specialization* (Political Science majors)	Politics and Business Minor
Public Policy and Administration Minor*	Public Policy Specialization (Economics majors) Canadian Politics and Public Policy Minor
Public Policy Specialization (Economics majors)	Public Policy and Administration Minor*

2. **Motion:** That Senate approve the changes to the Bachelor of Arts Breadth Requirements, effective 1 September 2022.

Background and Rationale: A BLKST (Black Studies) subject code has been created for corresponding new courses, and is a fitting addition to the Transdisciplinary Studies section of the BA Breadth Requirements.

Revised Undergraduate Calendar text:

Transdisciplinary Studies (0.5 unit): AFM, APPLS, ARBUS, ARTS, **BLKST**, BUS, CDNST, CMW, GBDA, GSJ, HRM, HRTS, HUMSC, INDG, INDENT, INTST, LS, MENN, MGMT, PACS, SFM, SMF, SOCWK. Also any course taken in another University of Waterloo faculty. See Notes 1 and 5 below.

Faculty of Engineering

3. **Motion:** That Senate approve the list of courses fulfilling the undergraduate communication requirement for all Engineering degree programs, effective 1 September 2022.

Background and Rationale: A new academic calendar page is being added to indicate which courses fulfil the undergraduate Communication Requirement. Some degree programs made this existing

requirement clear, while others did not. This summary page clarifies the requirement for all Engineering students.

Revised Undergraduate Requirements:

Each plan in the Faculty includes one or more courses that students must successfully complete to satisfy the Undergraduate Communication Requirement. These courses are:

- Architecture: ARCH 120
- Architectural Engineering: ENGL 191/SPCOM 191
- Biomedical Engineering: BME 101 and BME 101L
- Chemical Engineering: One of EMLS 101R, EMLS 102R, EMLS 129R/ENGL 129R, ENGL 109, SPCOM100, SPCOM 223
- Civil Engineering: ENGL 191/SPCOM 191
- Computer Engineering: ENGL 192/SPCOM 192
- Electrical Engineering: ENGL 192/SPCOM 192
- Environmental Engineering: ENGL 191/SPCOM 191
- Geological Engineering: ENGL 191/SPCOM 191
- Management Engineering: ENGL 192/SPCOM 192
- Mechanical Engineering: ME 100
- Mechatronics Engineering: MTE 100
- Nanotechnology Engineering: One of EMLS 101R, EMLS 102R, EMLS 129R/ENGL 129R, ENGL 109, SPCOM 100, SPCOM 223
- Software Engineering: One of EMLS 101R, EMLS 102R, EMLS 129R/ENGL 129R, ENGL 109, ENGL119, ENGL 209, ENGL 210E, SPCOM 100, SPCOM 223
- Systems Design Engineering: SYDE 101 and SYDE 101L

Faculty of Health

4. **Motion:** That Senate approve the updated co-operative education requirements and regulations, effective 1 September 2022.

Background and Rationale: The proposed changes aim to: 1) provide more clarity and transparency for students; 2) gather co-op information from multiple pages into one place; 3) provide a clear schedule students should follow to complete all co-op degree requirements within the academic/work term sequence.

Revised Undergraduate Calendar text:

Eligibility

Students must be in an honours academic plan to be eligible for the co-operative (co-op) system of study.

~~In order to be eligible to~~ To receive a co-op designation at the time of graduation, students in the Faculty of Health are required to successfully complete:

- a minimum of four work terms,
- a minimum of four professional development (PD) online courses, and
- a minimum of four work-term reports.

Students are given five work-term opportunities in which to complete these requirements throughout the normal study/work-term sequence.

These requirements are in addition to the rules that apply to all co-op students at the University of Waterloo.

Work Terms

Information, from interviews to credit completion, is available through Co-operative Education.

Professional Development (PD) Courses

PD courses are intended to enhance the student's professional development and assist in integrating their academic and work-term experiences. Co-op students ~~in the Faculty~~ are required to successfully complete four PD courses. ~~Each PD course is worth 0.5 unit and may~~, **which cannot be substituted for with regular academic courses credit.** With the exception of PD 1, students are expected to **take complete** the courses while on their co-op work terms, **at a rate of one per term. Students who do not successfully complete a PD course at the appropriate time will be withdrawn from the co-op program.** The schedule for completing the PD courses is as follows:

- PD 1: Career Fundamentals, must be ~~taken~~ **completed** before the first work term.
- PD 12: Reflection and Learning in the Workplace, must be completed during the first work term.
- Two additional PD courses of the student's choice should be completed during subsequent work terms.

Further information is available through the Professional Development Program.

Work-term Reports

Students must successfully complete a minimum of four work-term reports based on four approved and credited work terms. **Students who do not successfully complete a work-term report at the appropriate time will be withdrawn from the co-op program. The schedule for completing work-term reports is as follows:**

~~Work-term reports are normally completed according to the following schedule:~~

- ~~The successful completion of PD 12: Reflection and Learning in the Workplace,~~ will count for credit as the first work-term report. PD 12 is normally completed during the first work term, and it is meant to help prepare students for the completion of their work-term reports in subsequent work terms. **Students may not submit subsequent work-term reports until PD12 has been successfully completed.**
- WKRPT 200H: ~~Applied Health Sciences~~ Work-term Report 2, is normally completed by the end of the second work term.
- WKRPT 300H: ~~Applied Health Sciences~~ Work-term Report 3, is normally completed by the end of the third work term.
- WKRPT 400H: ~~Applied Health Sciences~~ Work-term Report 4, is normally completed by the end of the fourth work term.

~~Work-term reports must be submitted to the Faculty of Health through Waterloo LEARN, no later than the sixth day of classes in the term following the co-op work term for which the work-term report was prepared.~~ Information regarding work-report guidelines is available through the Faculty of Health's web page, co-op procedures.

Co-op Standing Rules

Students will be removed from their co-op program in the following situations:

- **Failure to successfully meet academic program requirements, including minimum averages;**
- **Two unemployed or failed work term opportunities;**
- **Two failed work-term reports (including PD 12).**

Normally, students who are removed from co-op will not be re-admitted into the co-op program.

Notes

1. The ~~co-operative system of study program~~ is only open to full-time students.
2. The ~~co-operative system of study program~~ is not open to students seeking to complete a second degree.

5. **Motion:** That Senate approve revisions to academic standing regulations, effective 1 September 2022.

Background and Rationale: The proposed changes aim to provide more clarity and transparency for students.

Revised Undergraduate Calendar text:

Students must meet the minimum cumulative overall **and major** averages ~~and minimum cumulative major average~~ as shown in the chart below in order to be eligible to continue in their plan. For all joint and double honours plans, the major average of both majors must be satisfied.

Legend

~~* Students must achieve a minimum cumulative overall average of 63%. Students must achieve a minimum cumulative major average of 67% is calculated based on a minimum of 1.5 HLTH units attempted.~~

~~** Students must achieve a minimum cumulative overall average of 70%. Students must achieve a minimum cumulative major average of 75% calculated based on a minimum of 1.5 HLTH units attempted.~~

Standing	Program	Cumulative Overall Average	Cumulative Major Average
Excellent (Honours Programs)	Health Sciences*	80%	80%
	Public Health*	80%	80%
	Kinesiology	80%	80%
	Recreation and Leisure Studies	80%	80%
Good (Honours Programs)	Health Sciences*	70%	70%
	Public Health*	75%	75%
	Kinesiology	70%	70%
	Recreation and Leisure Studies	70%	70%
Satisfactory (Honours programs)	Health Studies Sciences*	63%	67%
	Public Health**	70%	75%
	Kinesiology	63%	67%
	Recreation and Leisure Studies	65%	70%
Satisfactory (General programs)	Kinesiology	53%	60%
	Recreation and Leisure Studies	60%	65%

General students who raise their cumulative overall ~~average~~ and major averages to honours levels may apply to be readmitted to an honours plan.

6. **Motion:** That Senate approve revisions to Health's foundation term regulations, effective 1 September 2022.

Background and Rationale: The proposed changes aim to: 1) provide more clarity and transparency for students; 2) reflect campus-wide enrolment process changes (online application form has replaced paper contracts); and 3) provide equity in how courses are cleared between non-degree students (credit awarded for courses with grades of 50% or higher) and Foundation term students (credit awarded for courses with grades of 60% or higher).

Revised Undergraduate Calendar text:

Any student in the Faculty of Health who has earned an **academic standing of Failed** – required to withdraw, ~~standing~~ will be required to meet with an academic advisor to discuss their academic progress. **Students who earn an academic standing of Failed – required to withdraw at the end of their 1A or 1B term will have** ~~and~~ the option of enrolling in the Foundation Term. The Foundation Term requires that a student be enrolled in a reduced course load, including UNIV 101 **and two academic courses with associated labs**. These courses will be selected in consultation with their academic advisor. A contract outlining the details of the Foundation Term **will be generated for each student.** ~~must be signed by the student and submitted to their academic advisor by a date specified by the academic advisor otherwise enrolment will be cancelled.~~

Students committing to the Foundation Term:

1. Will remain in their existing plan (~~e.g., Health Studies~~) but will be permanently moved to a regular program if they are currently in co-op.
2. Will have their Failed - required to withdraw standing changed to Conditional - may proceed subject to stipulated conditions.

Completion of the Foundation Term:

1. If all conditions are met at the end of the Foundation Term, students will remain in their honours regular plan (~~e.g., Health Studies~~) and all courses completed prior to the Foundation term ~~from their first two academic terms that are below 60% may~~ **will be cleared, at the discretion of their academic advisor. Cleared grades will remain on the student record but will not be included in the calculation of cumulative plan averages. Calculation of cumulative plan averages will begin with the Foundation Term. Cleared courses with grades 50% and above will contribute to the total credits required to achieve degree requirements.**
2. Students who fail to meet the minimum conditions outlined in the Faculty's Foundation Term contract will ~~be~~ **receive an academic standing of Failed** - required to withdraw. These students will be eligible for one ~~non-degree term~~ **Non-Degree Term** (~~see Non-Degree Term~~) to try to facilitate readmission to another Faculty of Health academic unit or another program at the University of Waterloo. Students are required to meet with the Faculty of Health student success officer to arrange enrolment in that term.
3. Students who fail to earn 60% in UNIV 101 will have exhausted all options for academic remediation at the University of Waterloo. These students will ~~be~~ **receive an academic standing of Failed** - required to withdraw from the University, **which will result in immediate withdrawal from the University.**

Note

Students need to contact Student Awards & Financial Aid to ensure they understand the implications that a reduced course load has on their financial aid or scholarships.

Faculty of Science

7. **Motion:** That Senate approve the revisions to the undergraduate communication requirement, effective 1 September 2022.

Background and Rationale: The Registrar's Office brought forward a motion to September 2021 Senate Undergraduate Council, to create a university-wide statement about Undergraduate Communications Requirement (UCR) in the UG Calendar which will link to each faculty's UCR-related page. To be consistent with the BSc granting programs and to bring transparency to students, the Communication Requirement page (<http://ugradcalendar.uwaterloo.ca/page/SCI-Degree-Requirements-Communication-Requirement>), will list the program courses used to fulfil the UCR requirement in Optometry and Pharmacy degree-granting programs, OPTOM 360 and PHARM 127, respectively, as they have never been stated in the Calendar prior. Reference to relevant admission requirements will be removed, although students will still have met writing-intensive English course requirements as part of the OD/PharmD admission requirement. Those completing the admissions requirements at UWaterloo will earn the UCR milestone before matriculation into the OD/PharmD programs, while those completing the admission requirements elsewhere will earn the UCR milestone after successful completion of OPTOM 360/PHARM 127, as the milestone can only be earned once.

Revised Undergraduate Calendar text:

Note #2: Students in the Doctor of Optometry and Doctor of Pharmacy programs ~~meet~~ **fulfil** the Communication Requirement ~~by satisfying their relevant communication-related admission and program requirements.~~ **upon successful completion of OPTOM 360 and PHARM 127, respectively.**

FOR INFORMATION

MINOR PLAN & CURRICULAR MODIFICATIONS

Council approved the following on behalf of Senate:

- minor plan changes for the Faculty of Arts (English-literature; English-literature and rhetoric; English-rhetoric, media, and professional communication; English minor; German; legal studies minor, international studies minor; international trade minor; applied language studies minor; Canadian studies minor; Indigenous studies minor); Faculty of Engineering (nanotechnology engineering, entrepreneurship minor, management studies option); Faculty of Science (environmental sciences/water science specialization, pharmacy, biomedical sciences, joint honours x with biology, with Earth, and with physics).
- new courses for the Faculty of Arts (Black studies, speech communication, theatre and performance, English, visual culture, political science, East Asian studies, religious studies, Spanish, sustainability and financial management); Engineering (architecture, business, entrepreneurship and technology); Environment (environment, environment, resources and sustainability, geography and environmental management, knowledge integration, environment and business); Faculty of Health (public health sciences, kinesiology).
- course changes for the Faculty of Arts (accounting and financial management, arts, economics, English, cultural identities, philosophy, applied language studies, social development studies, legal studies, sustainability and financial management); Faculty of Engineering (architecture, civil engineering, electrical and computer engineering, mechatronics engineering, systems design engineering); Faculty of Environment (geography and environmental management, knowledge integration, planning, environment and business); Faculty of Health (health, work report, gerontology,

public health sciences, kinesiology, recreation and leisure studies); Faculty of Science (earth sciences, physics); Co-operative Education Council (professional development); and over 1,800 course short title changes from the Office of the Registrar.

- course inactivations for the Faculty of Environment (environment, resources and sustainability, knowledge integration, international development); Faculty of Health (public health sciences, kinesiology, recreation and leisure studies).
- course subject change for the Faculty of Health (HLTH: from Health to Public Health Sciences).
- academic regulations for the Faculty of Science (optometry).

/dj

David DeVidi
Associate Vice-President, Academic

University of Waterloo
SENATE
Report of the President
15 November 2021

FOR INFORMATION

Recognition and Commendation

Honours relating to Advancing Research for Global Impact

University of Waterloo Professor and Nobel Laureate Donna Strickland has been named a Fellow of the Hagler Institute for Advanced Study at Texas A&M University.

The Hagler Institute announced its 10th class of Hagler Fellows on September 28, and Professor Strickland was among the eight honourees. The list of Fellows includes scientists, engineers and scholars who are recognized internationally for their achievements. Each belongs to the National Academies of Sciences, Engineering and Medicine, or hold recognitions of equal stature in their fields. (Adapted from the [Daily Bulletin, 6 October 2021](#))

Honours relating to Developing Talent for a Complex Future

The University of Waterloo has secured its **top spot as most innovative University in Canada**. For 29 years, Waterloo held this title, 2020 being the exception. The University of Toronto and University of British Columbia follow in second and third place.

Numerous startup incubators and entrepreneurial support programs are housed at the University of Waterloo, including Velocity, Concept and St. Paul’s GreenHouse,” says Sanjeev Gill, associate vice-president, innovation. “Our former students or graduates go on to become leading entrepreneurs and researchers, founding unicorn companies valued at more than \$1 billion, such as Faire founded by Waterloo alumnus Marcelo Cortes and ApplyBoard, co-founded by Engineering alumnus Martin Basiri.”

(Adapted from the [Daily Bulletin, 12 October 2021](#))

When “business as usual” came to a screeching halt in March 2020, the University of Waterloo quickly pivoted to develop new ways for students and employers to continue to realize the co-op advantage. This resilient response helped **retain 78 per cent of Waterloo’s co-op students through the beginning stages of the pandemic**, and supported the shift to a remote, online workforce.

Rising to employment challenges experienced nationally and globally was not an easy feat, but demand for the Waterloo co-op program continues to rise.

In 2021, more than 23,760 students have been hired for co-op work terms— a record high for the number of employed students in the University’s history.

“We are now seeing 10,000 plus, students scheduled out for this upcoming winter 2022 work term, which is remarkable. It’s also the most ever for a single term at Waterloo and for any Canadian institution,” says Norah McRae, associate provost of Co-operative and Experiential Education (CEE). (Adapted from the [Daily Bulletin, 13 October 2021](#))

Two students at the University of Waterloo expect to be part of history this weekend when an **autonomous, million-dollar racecar** they helped develop drives itself around the famed Indianapolis Motor Speedway at speeds of up to 120 miles per hour.

Brian Mao and Ben Zhang are members of a four-university team set to compete with rivals from around the world for a US \$1-million top prize at the Indy Autonomous Challenge on Saturday. “This is something nobody else has done before – take autonomous vehicles up to those kinds of speeds,” said Mao, a master’s student in applied mathematics. “There are a lot of unsolved problems that have to be tackled.”

Ten teams representing 21 universities will put modified Dallara AV-21 racecars through their paces at Indy, the largest sports venue in the world, as the culmination of a competition that included several simulated races.

(Adapted from the [Daily Bulletin, 21 October 2021](#))

Honours relating to Strengthening Sustainable and Diverse Communities

With **partner institutions in Spain and the United States, the University of Waterloo** is catalyzing discussions regarding how networked universities can best advance **climate action**.

The University of Waterloo is a member of the University Global Coalition (UGC), which was formed in 2019, to foster engagement, leadership, and collaboration amongst universities in support of the Sustainable Development Goals both locally and globally through their education, research, and service missions.

As part of their contributions to the Coalition, the University of Waterloo, Universidad Carlos III de Madrid, and the University at Buffalo worked together to identify more than 30 national and international higher-education networks focused on or connected to climate change. They also highlighted the networks’ geographic and thematic dimensions.

(Adapted from the [Daily Bulletin, 21 October 2021](#))

University of Waterloo
REPORT TO SENATE FROM THE FACULTIES
15 November 2021

FOR INFORMATION

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/ca.secretariat/files/uploads/files/report_all_faculties_november_2021.pdf

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Council of Ontario Universities Academic Colleague Report

1. COU During the Covid-19 Pandemic

The Council of Ontario Universities Academic Colleagues have maintained a regular, albeit virtual, meeting schedule throughout the Covid-19 Pandemic. The majority of issues discussed by the Academic Colleagues were related to the Pandemic itself, and frequently, within days or weeks of the meetings, the updates were superseded by new developments. For example, on August 18, 2021, the COU's Covid Reference Table liaison presented a summary of reopening details at Ontario Universities, noting that all 19 universities had similar plans which included regular rapid testing alternatives for unvaccinated faculty and staff at Ontario universities; six days later, following the recommendation from the Council of Medical Officers of Health, all 19 universities announced mandatory vaccination without a rapid testing alternative.

In the past year, the work of the COU has focused on three priorities: reopening, institutional autonomy, and financial sustainability.

Covid-19 Reopening

COU established its Covid-19 Reference Table in October 2020, with the mandate of sharing pandemic-related practices and coordinating information among Ontario's universities, providing information and advice to Executive Heads to support advocacy (e.g. capacity limits, exemptions to provincial lockdown rules), and acting as sector-wide point of contact for data on universities' abilities to support Covid testing, vaccination, PPE procurement and wastewater surveillance. The Covid-19 Reference Table liaised with a subgroup of the COU Legal Counsels group, the Vaccination Legal Counsels' Working Group, to provide guidance and advocacy with government and Public Health Ontario with respect to vaccination policies. Following advice from the Reference Table, COU and Colleges Ontario, along with the Toronto Board of Trade, called for a vaccine mandate and vaccination pass. COU played a key role in working with the Council of Medical Officers of Health to achieve a mandatory vaccination recommendation in the absence of such at the Provincial Medical Officer of Health calling for the same.

Institutional Autonomy

Laurentian University filed for creditor protection on February 1, 2021, which resulted in the loss of over 100 faculty positions and cuts of 69 programs in Spring 2021. While the financial difficulties faced by Laurentian are not entirely due to Ontario's tuition freeze, declining operating grants and disruption of international student revenue in light of the pandemic, these played a role in decreased revenue. The COU is developing a four-point plan that will flag financial difficulties at individual institutions far enough in advance to head off the possibility of bankruptcy.

In April, the Government of Ontario introduced Bill 276, Schedule 16, which severs the existing degree-granting partnership of the Northern Ontario School of Medicine (NOSM) with Lakehead and Laurentian Universities and creates NOSM as its own degree-granting university. COU has expressed concerns due to lack of due process and consultation with the sector or the two universities in question, which is seen as a precedent which threatens universities' autonomy.

Financial sustainability

Ontario universities continue to be challenged by a 10% cut in domestic tuition in January 2019, and an ongoing tuition freeze in 2020 and 2021. Over three years, this has meant reduced revenue of \$1.8B for Ontario universities. Provincial operating grants at publicly assisted universities continue to stagnate, and Ontario continues to have among the lowest per-student provincial funding model.

Ontario universities have an overreliance on international student revenue to make up the provincial funding and tuition shortfall. External factors, including geopolitical tensions (e.g. Saudi Arabia in 2019) have brought this into greater focus than ever – 80% of international student enrolment comes from 10 countries, with 62.2% from just two. While Canada, particularly Ontario, continues to be a strong attractor for international students, there is increasing competition from other host countries including the UK, USA, China and India.

2. COU and Provincial Advocacy in 2021-2022

As we head into a provincial election year, COU is currently finalizing a comprehensive advocacy campaign in support of key sector interests. For the remainder of the 2021-22 academic year, the Ontario government is focused on avoiding major shutdowns, and COU staff report that *“These factors, paired with the growing concern regarding the Delta variant have created a challenging environment for advocacy with much of the political ‘bandwidth’ occupied with these drivers”* (i.e. Covid, election).

COU continues to engage the provincial government to advocate for revenue flexibility for financial sustainability and competitiveness of Ontario universities. A second key area of advocacy is to build knowledge and awareness in the public re: the role of Ontario universities in developing a skilled workforce, attracting investment and talent, and as drivers of local economies.

COU struck a Financial Sustainability and Competition Working Group (FSC WG) to lead the sector’s review and analysis of internal policy and advocacy recommendations linked to university funding and support. The WG met over the summer to consider government, student and institutional interests and priorities, and to develop sector-wide specific policy/advocacy options for consideration by Executive Heads.

3. Update on Strategic Mandate Agreements (SMA3)

Ontario had just launched the SMA3 process, which aims to couple provincial grant funding with institutional performance metrics (see <https://www.ontario.ca/page/2020-2025-strategic-mandate-agreement-university-waterloo> for a summary of Waterloo’s performance-based funding. The move to performance-based funding was designed to shift the provincial funding envelope from 1.4% of total grant funding tied to performance in 2019-20 to 60% by 2024-25 – this represents a shift from an estimate 0.5% of total operating revenue to 21.6% of same, though these values vary slightly by institution. In 2020-21 and 2021-22, performance based funding was to account for 25% of provincial grant (estimated 9% of total operating revenue) and 35% (estimate 12.6%) respectively. In early 2020, the ministry paused the coupling of operating grant and performance metrics for the first two years of

SMA3 to mitigate the impact of the pandemic on performance evaluations. Reporting of performance, however, continues as normal.

Ontario universities will have an opportunity to review their Year 3 performance targets and amend institutional weighting before funding is re-coupled in Year 3 (2022-23) and performance metrics on Skills and Competencies and Faculty Activity are activated.

4. Red Tape Bill: Supporting People and Businesses Act

From COU Updates to Academic Colleagues, courtesy of Cecilia Brain:

On October 7, the provincial government released Bill 13, [Red Tape Bill: Supporting People and Businesses Act](#). The [corresponding announcement](#) outlines several new government-wide initiatives that will be included in the Bill and that directly or indirectly impact universities.

Of particular note are three key advocacy asks for the college sector:

- ***Expansion of college degree-granting caps;***
- ***Exploring options for expanding the degree-granting authority of colleges; and***
- ***Exploring options to expand credentials in the public college system to include “applied” Master’s degrees***

The Ministry is also exploring options to reduce the administrative burden associated with multiple transfer payment agreements to the same transfer payment recipient. The government is seeking, where possible, to include multiple grants into a consolidated transfer payment agreement. COU advocated for these changes in our red tape recommendations to the government.

- ***Creating tuition fee transparency for university and college students:*** *The government is aiming to provide students with increased accountability, transparency and clarity by providing details of tuition fees at Ontario’s postsecondary institutions.*
- ***Reducing duplication of reporting requirements for the Ontario Student Opportunity Trust Fund / Ontario Trust for Student Support:*** *The legislation will remove the online reporting requirements for endowments to reduce duplication and benefit colleges and universities by easing the administrative burden. The requirement for reporting through audited financial statements will remain in place to ensure adequate oversight and accountability.*
- ***Removing barriers to entrepreneurial activities for postsecondary educational institutions:*** *The government is seeking to simplify how Ontario’s postsecondary institutions enrol international students, specifically for registered private career colleges and Indigenous institutes. These institutions will face less barriers in achieving designation as learning institutions under Ontario’s International Student Program.*
- ***Reviewing the Ontario Student Assistance Program performance requirements for private postsecondary institutions:*** *The Ministry will review the performance requirements for private postsecondary institutions approved for the Ontario Student Assistance Program (OSAP) to ensure they continue to be “...relevant and responsive to student needs within a growing and*

evolving sector.” The Ministry anticipates this review will create new opportunities and reduce red tape for private postsecondary institutions approved for OSAP.

- **Supporting digital learning for private career colleges:** *The Ministry is proposing changes to approvals for online delivery of training at private career colleges to support continued flexible delivery options to students.*

COU has raised concerns about specific items in the bill with the government and will be consulting with members on a path forward. We will also undertake a deeper analysis for additional impacts in the coming days.

5. The Changing Landscape of Private Universities in Ontario

At the October 20, 2021 meeting, COU Senior Policy Analyst Katarina Todic briefed Academic Colleagues on private university developments in Ontario.

Publicly-assisted universities’ authority to grant degrees is established in their individual legislative acts (e.g. the 1972 [University of Waterloo Act](#)). Since the Post-Secondary Education Choice and Excellence Act (PSECEA), passed under the Mike Harris government in 2000, the minister responsible for postsecondary education can allow organizations, including colleges, private institutions and non-Canadian institutions, to provide degree-level education in Ontario.

The use of the term “university” in Ontario requires either a legislative act or ministerial consent. There are currently six private institutions which have been permitted to use the term “university” by ministerial consent: Yorkville University and International Business University (which are both Canadian based), Niagara University and Northeastern University (both of which are USA-based) and Redeemer University and Tyndale University (both of which are Canadian-based Christian institutions). Currently, only the US-based institutions grant private Masters degrees in Ontario.

There are currently two further applications pending for use of the “university” term in Ontario: the Humanities Digital Degree Project (Bachelors degrees in History, Philosophy, English and French) and Global University Systems Canada to operate as “Niagara Falls University” with Bachelors and Masters Degrees in Digital Media, Business, Data Analytics and Biomedical Sciences. The Ontario Council of Academic Vice Presidents has submitted letters urging rejection of these two applications.

Increased degree-granting power of private universities will likely result in increased competition for high-fee-paying international students. International students enrolled private institution authorized to confer degrees in Ontario qualify for the Post-Graduation Work Permit Private institutions’ tuition fees for Ontario students are higher than tuition at publicly-assisted universities (with the exception of Niagara University’s MBA). However, in several cases, international tuition at private universities is lower than international tuition at publicly-assisted Ontario universities (e.g. IBU’s B.Comm costs \$17,700 per year, compared to \$34,000 average tuition for the same degree at Ontario’s publicly-assisted universities). Private universities have lower entrance requirements (as low as 65% at Tyndale, with none higher than 70%/3.0GPA minimum average).

Unlike publicly-assisted Ontario universities, private university enrolment data is not publicly available. At present, it is estimated to be small – Redeemer University has fewer than 1000 students, Tyndale has

fewer than 1500; Niagara University has a total of 3000 students (this includes the US-based students) and Northeastern has a total of 27,000 students across 9 campuses, only one of which is in Ontario. However, it is expected that some of these existing (IBU, which is in its first year of operation with Joanne Shoveller as President and Feridun Hamdullahpur as Chancellor) or pending application (Niagara Falls, Digital Humanities) plan to rapidly increase international student enrolment. There are approximately 570,000 students currently enrolled in Ontario's publicly-assisted universities, and further growth in domestic student enrollments is constrained by Ontario's corridor model.

Oct. 25, 2021

Johanna Wandel

COU Academic Colleague, University of Waterloo

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University of Waterloo
SENATE GRADUATE & RESEARCH COUNCIL
Report to Senate
15 November 2021

Senate Graduate & Research Council met on 4 October 2021 and agreed, in accordance with [Senate Bylaw 2](#) (section 4.03), to forward the following item to Senate for approval as part of the regular agenda.

Further details are available at: <https://uwaterloo.ca/secretariat/committees-and-councils/senate-graduate-research-council>

FOR APPROVAL

DISSOLUTION OF RESEARCH INSTITUTE

Waterloo Research Institute in Insurance, Securities and Quantitative Finance (WatRISQ)

- 1. Motion:** To approve the dissolution of Waterloo Research Institute in Insurance, Securities and Quantitative Finance (WatRISQ), as presented at Attachment 1.

Rationale: The Faculty of Mathematics, as supported by the Faculty of Arts, is seeking the dissolution of the Waterloo Research Institute in Insurance, and Quantitative Finance (WatRISQ). WatRISQ was founded in 2004, and helped to coordinate research activities in finance, mathematics, scientific computing and actuarial science. In recent years the support and coordination provided by WatRISQ had been minimal. The initial funding for WatRISQ has long since been depleted, and since then has been supported by the Faculty of Mathematics. In July of 2019, Tom Coleman (Director of WatRISQ) informed the membership that WatRISQ will be dissolved. For various reasons, the formal process for seeking dissolution was not completed at that time. With the unfortunate passing of Tom Coleman, no clear interest or leadership to allow WatRISQ to continue, and with the membership already being informed of the dissolution of WatRISQ, the Faculty of Mathematics is now seeking formal approval for the dissolution.

/mh kw Jeff Casello
Associate Vice-President, Graduate Studies and
Postdoctoral Affairs

Charmaine Dean
Vice President, Research & International



MEMORANDUM

To: Senate Graduate and Research Council

cc: Kathy Winter, University Secretary and Privacy Officer
Kevin Hare, Associate Dean Operations & Academics, Faculty of Mathematics
Bessma Momani, Interim Associate Vice-President, Interdisciplinary Research
Mark Giesbrecht, Dean, Faculty of Mathematics

From: Charmaine B. Dean, Vice-President, Research and International

Date: 2021-09-22

Subject: **Dissolution** of Waterloo Research Institute in Insurance, Securities and Quantitative Finance (WatRISQ)

- For information -

I am writing to advise you that the Research Leaders Council has recommended to me that the Waterloo Research Institute in Insurance, Securities and Quantitative Finance (WatRISQ), a university-level institute, be dissolved.

I have accepted this recommendation and therefore I am bringing forward to Senate Graduate and Research Council a consideration of the dissolution of WatRISQ.

MEMORANDIUM**To:** Research Leaders Council**From:** Kevin Hare, Associate Dean Operations & Academics, Faculty of Mathematics**Date:** July 22, 2021**Re:** Dissolution of WatRISQ

The Faculty of Mathematics is seeking the dissolution of the Waterloo Research Institute in Insurance, and Quantitative Finance (WatRISQ). WatRISQ was founded in 2004, and has helped to coordinate research activities in finance, mathematics, scientific computing and actuarial science. In recent years the support and coordination provided by WatRISQ had been minimal. The initial funding for WatRISQ has long since been depleted, and since then has been supported by the Faculty of Mathematics. In July of 2019, Tom Coleman (Director of WatRISQ) informed the membership that WatRISQ will be dissolved. For various reasons, the formal process for seeking dissolution was not completed at that time. With the unfortunate passing of Tom Coleman, no clear interest or leadership to allow WatRISQ to continue, and with the membership already being informed of the dissolution of WatRISQ, the Faculty of Mathematics is now seeking formal approval for the dissolution. There are no current outstanding issues.



MEMORANDUM

June 15, 2021

To: Bernard Duncker

The Faculty of Mathematics would like to pursue dissolution of WatRISQ. The membership of WatRISQ was informed in July of 2019 that WatRISQ was to be dissolved. Unfortunately, due to uncertainty of the direction the Math Faculty wished to take with respect to Data Finance and Fin Tech, and the intervening pandemic, this had never been formally conveyed to the Office of Research. With the loss of WatRISQ's founding member, Thomas Coleman, we are now formally conveying this request to dissolution.

If you have any questions, you may reach out to either myself or Kevin Hare.

Your sincerely,



Mark Giesbrecht
Dean, Faculty of Mathematics
University of Waterloo, Canada
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MEMORANDIUM

To: Research Leaders Council

From: Sheila Ager, Dean Faculty of Arts

Date: October 5, 2021

Re: Dissolution of WatRISQ

The Faculty of Arts agrees with the dissolution of the Waterloo Research Institute in Insurance, and Quantitative Finance (WatRISQ). WatRISQ has been dormant in recent years, its initial funding depleted. With the unfortunate passing of Tom Coleman, no clear interest or leadership to allow WatRISQ to continue, and the membership already being informed of the dissolution of WatRISQ back in 2019, the Faculty of Arts concurs that it is time to formally end WatRISQ.

A handwritten signature in cursive script that reads "Sheila Ager".

Sheila Ager
Dean of Arts

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University of Waterloo
SENATE UNDERGRADUATE COUNCIL
Report to Senate
15 November 2021

Senate Undergraduate Council met on October 5, 2021 and agreed to forward the following items to Senate for approval in the regular agenda.

Further details are available: <https://uwaterloo.ca/secretariat/committees-and-councils/senate-undergraduate-council>

FOR APPROVAL

NEW ACADEMIC PLANS

Faculty of Arts
Dean of Arts

1. **Motion:** That Senate approve the proposed new Diploma in Black Studies and the Diploma in Fundamentals of Anti-Racist Communication, effective 1 September 2022.

Rationale and Background: The Diploma in Black Studies provides students with a credential that confirms their introductory but fundamental understanding of Black arts, life, culture, and society. The diploma program is undergirded by the theory of Black Intersectionality (focusing on the intersection of race, class, gender, sex, sexuality, and region). The Diploma offers students both a means to deepen understanding of Black Studies and apply that understanding to developing and sustaining strong Black communities, peoples, and individuals and to work toward intervening in anti-Blackness in arts, culture, life, politics, and society. To earn the Diploma, students will be required to complete two foundations courses in Black Studies (one in social science perspectives— BLKST 101, and the other in arts and humanities—BLKST 102) and three electives chosen from an array of course offerings in BLKST. It is anticipated that the Diploma program will be attractive to PD/ND students from a variety of academic backgrounds.

Plan Requirements (new calendar text):

Students registered in degree programs or any non- or post-degree academic plan may pursue the Diploma in Black Studies.

The Diploma in Black Studies requires successful completion of a minimum of 2.5 academic course units (five courses), with a minimum cumulative diploma average of 65%, including:

- BLKST 101, BLKST 102
- One of BLKST 230, BLKST 224/SPCOM 224/THPERF 224, BLKST 330
- At least two additional BLKST courses (1.0 unit) at the 200-level or above

BLKST Course List

100-level

101 Foundations of Black Studies

102 Introduction to Black Arts, Culture, and Literature / cross-listed with VCULT 112, SPCOM 112, THPERF 112

200-level

201 Taking B(l)ack History

202 Black and Free

203 Introduction to Anti-Racist Communication
210 Language, Life, and Literature in the Caribbean
224 Black Performance Studies / Cross-listed with SPCOM 224 and THPERF 224
230 Black Feminisms
240 Black Diasporic Lives, 1740-1900
244 Introduction to Black Canadian Writing / Cross-listed with ENGL 244

300-level

302 Strategic Management of Black Enterprises
303 Black Anti-Racist Consulting Practices
304 Pan African Global Politics / cross-listed with PSCI 304
308 Writing Anti-Racism
310 Topics in Black Language and Linguistics
317 Afro-Latin America / cross-listed with SPAN 317
330 Black Queer Studies
380 Black Theatre Workshop
399 Special Topics in Black Studies

400-level

410 African American Rhetoric
421 The Black Atlantic
499 Black Entrepreneurial Enterprises

2. **Motion:** That Senate approve the proposed new Diploma in Fundamentals of Anti-Racist Communication, effective 1 September 2022.

Rationale and Background: The Diploma in Fundamentals of Anti-Racist Communication recognizes the responsibility of the University of Waterloo to provide students the opportunity to learn how to combat racisms generally and anti-Black racism specifically; how to understand historical and contemporary protests against racial injustices; and to discuss how and why both white and racialized figures have sought to intervene into racist structures and practices. Through completion of the diploma, students will acquire essential skills in anti-racist communication practices, racial awareness, cultural competency, interracial communication, and interracial allyship. Students will acquire the fundamental knowledge and skills to identify, articulate, and counter systemic and cultural oppressions and anti-racisms. This diploma will equip students with valuable knowledge and competencies that are much in demand by employers and in communities.

Plan Requirements (new calendar text):

The Diploma in Fundamentals of Anti-Racist Communication requires completion of a minimum of 2.0 academic units (four courses), with a minimum cumulative diploma average of 65%, including:

- BLKST 103, BLKST 203, BLKST 308
- One of the following courses: BLKST 201, BLKST 202, BLKST 210, BLKST 230, BLKST 240, BLKST 244/ENGL 244, BLKST 303, BLKST 310, BLKST 399 (see note) and BLKST 410.

Note

Only BLKST 399 topics in language, communication, and rhetoric may be used towards the diploma.

BLKST Course List – Diploma in Fundamentals of Anti-Racist Communication

100-level

103 Combating Anti-Black Racism

200-level

201 Taking B(l)ack History

202 Black and Free

203 Introduction to Anti-Racist Communication

210 Language, Life and Literature in the Caribbean

230 Black Feminisms

240 Black Diasporic Lives, 1740-1900

244 Black Canadian Writing--*cross-listed with ENGL 244

300-level

303 Black Anti-Racist Consulting Practices

308 Writing Anti-Racism

310 Topics in Black Language and Linguistics

399 Special Topics in Black Studies

400 level

410 African American Rhetoric

Faculty of Arts

Political Science

3. **Motion:** That Senate approve the proposed new Politics and Business Minor, effective 1 September 2022.

Rationale and Background: We believe the new Politics and Business Minor will have much wider appeal than the Politics and Business Specialization, which is very popular but is only open to Political Science majors. We are inactivating the Politics and Business Specialization, and the new minor will not be open to Political Science majors. The new minor will appeal particularly to Arts & Business students and / or other Arts majors who wish to ground their knowledge of business in a political context. The requirements are drawn from the existing Politics & Business specialization, with the addition of more economics and political science courses that meet the theme of the minor.

Plan Requirements (new calendar text):

The Politics and Business Minor requires successful completion of a minimum of four academic units (eight courses) with a minimum cumulative average of 65%, including:

- PSCI 231, PSCI 283 and PSCI 300
- Three of ECON 101, ECON 102, ECON 201, ECON 206, ECON 207, ECON 231, ECON 290, ECON 351, ECON 371
- Two of PSCI 252, PSCI 244, PSCI 254, PSCI 255, PSCI 301, PSCI 303, PSCI 350, PSCI 387, PSCI 403, PSCI 404, PSCI 405, PSCI 428, PSCI 455, PSCI 479, PSCI 485, PSCI 488

Course list

PSCI 231 Government and Business

PSCI 283 International Political Economy

PSCI 300 Theories of Political Economy

Three of

ECON 101 Introduction to Microeconomics

ECON 102 Introduction to Macroeconomics

ECON 201 Microeconomic Theory for Business and Policy
ECON 206 Money and Banking 1
ECON 207 Economic Growth and Development 1
ECON 231 Introduction to International Economics
ECON 290 Models of Choice in Competitive Markets
ECON 351 Labour Economics
ECON 371 Business Finance 1

Two of

PSCI 252 Global South
PSCI 244 Irrational and Rational Choices in Politics
PSCI 254 The Political Documentary
PSCI 255 Comparative Political Economy of Advanced Industrial Democracies
PSCI 301 Canadian Political Economy
PSCI 303 Political Economy of the Environment
PSCI 350 Political Economy of Development
PSCI 387 Globalization
PSCI 403 Topics in Politics and Business
PSCI 404 Globalization, International Business, and Development
PSCI 405 Chinese Political Economy
PSCI 428 The State and Economic Life
PSCI 455 Comparative Political Economy
PSCI 479 International Political Economy of Asia
PSCI 485 Selected Topics in International Political Economy
PSCI 488 Global Food and Agricultural Politics

Faculty of Environment

4. **Motion:** That Senate approve the proposed new Diploma in Future Cities, effective 1 September 2022.

Rationale and Background: Societal response to challenge and change is often reactive or focused on short-term solutions. This undergraduate diploma in future cities will equip students to better anticipate, understand and respond to emergent challenges including climate and environmental change; calls for equity, diversity and inclusion; the rise of artificial intelligence; the changing nature of work; and global health challenges. This program uses multiple disciplinary perspectives as points of entry to lead students through a series of courses which will provide them with the tools to pro-actively plan for future challenges with a particular emphasis on cities. The first course can come from a number of disciplines; courses have been selected on the basis of being “big picture” courses that may spark an interest in futures. After this, students will complete courses focused on:

- a. Futures thinking. Futurists anchor their work in consideration of possible, plausible and desirable futures, and employ a range of techniques such as forecasting, backcasting, scenario planning and adaptation pathways to guide stakeholders to think about future stresses, how we respond to these, and where we hope to end up. Course: ENVS 210.
- b. Urban Futures. The world is increasingly urbanized, and many of our current and emerging societal challenges are keenly felt in cities. Waterloo currently has one course, STV 305, that explicitly examine cities in the modern world through the lens of technology. A second proposed course, ENVS 310, Future Cities, will explicitly consider urban systems through a future studies lens.
- c. Application of Futures Thinking to a Real World Problem. An applied capstone course (ENVS 410) will allow students to apply their training in future cities to a problem of their choice via an independent

project and expose them to emergent and established futures thinkers from various fields via a lecture series.

The departments hosting the listed courses have been consulted and were supportive. Students registered in degree programs or any non- or post-degree academic plan at the University of Waterloo may pursue the Diploma in Future Cities. Note: The Faculty of Environment, Waterloo's Quality Assurance office, and IAP discussed the approvals process for the undergraduate Future Cities diploma in July 2021. Waterloo's Quality Assurance office confirmed that the Quality Council considers UG diplomas to be a major modification, therefore the full program approval process is not required for this diploma. IAP has undertaken a financial summary for this program and will submit the Future Cities undergraduate diploma to MCU within Waterloo's annual program development. The undergraduate Diploma in Future Cities is expected to have enrolment that consists of mostly current degree students with some non-degree or post-degree enrolment, the same per course tuition as other Faculty of Environment courses, and does not require any new hires, library, or space resources to operate.

Plan Requirements (new calendar text):

At least 2.5 units are required with a minimum cumulative overall average of 65%.

Requirements

- ENVS 210
- ENVS 310 or STV 305
- ENVS 410 (1.0 unit)
- One of: EARTH 122, ENGL 208B, ENGL 248, ENVS 195, GEOG 203, GEOG 219, HLTH 370, PHIL 228, PHIL 259, PLAN 100, PSYCH 372, RS 285, SCI 201, SOC 369J, STV 100

ACADEMIC PLAN CHANGES

Faculty of Engineering

Mechanical and Mechatronics Engineering

1. **Motion:** That Senate approve the following changes to the mechatronics option, effective 1 September 2022.

Rationale and Background: The Mechatronics Option, as currently written, appears to require more courses than what is allowed for an option. The current description makes it look like more than nine courses are required whereas options are typically less than or equal to eight courses. The courses listed in Table 1 are removed as they are core courses, and therefore redundant for the Option. As currently written, the Mechatronics Option looks restrictive with respect to which students can pursue the option. The revised calendar text removes these perceived barriers. Overall, the revised calendar text is simpler and easier for students to understand. Adding BME 294, MTE 320 and 321 to the plan provides more flexibility for students to meet option requirements. ECE 260 is being added to the plan as a replacement for ECE 361 which has been removed from the ECE curriculum. Adding ECE 488 to the plan will help students satisfy the option requirements by offering another advanced control systems course. ECE 250, 254, MTE 140 and SYDE 322 are being removed from the plan in order to reduce option requirements which was part of the original purpose of the rewriting of the calendar text. These courses are not relevant to the option.

Plan requirements:

The study of mechatronics examines engineering systems that link and integrate the classical fields of mechanical, electrical, and computer engineering. The Mechatronics Option is primarily intended for students in ~~Computer, Electrical, Mechanical, and Systems Design Engineering~~. It is offered in response to the growing and increasingly

visible demands from industry and governments for graduates who can design products and processes that incorporate interdisciplinary skills in mechanical systems, electrical systems, and computer systems.

Option Structure and Course Requirements

The Option is defined in terms of three levels of courses. Level one courses are a normal part of the student's plan, and provide a basic background for the Option. These courses are listed in Table 1.

The level two courses are the four courses that are considered core courses for the Option. For each student, some of these are part of their curriculum while others are required as extra courses. It is expected that students will have to shift a Complementary Studies Elective (CSE) or one or more of their normal technical courses in order to complete the level two requirements. These courses are listed in Table 2.

The third set of courses is the level three courses, which represent elective courses in the different subject areas of the Option. The students must take at least one course from each of the five groups presented in Table 3.

Students are encouraged to contact the option co-ordinator if they have difficulty enrolling in a course. The Mechatronics Option is not available to the Mechatronics Engineering students.

The Option consists of eight courses selected from specified lists. Depending on the engineering plan, some of these courses may be part of the core curriculum. The courses listed below may have prerequisites, and it is the student's responsibility to satisfy these requirements or otherwise obtain permission to enrol.

Students are encouraged to contact the option co-ordinator if they have difficulty enrolling in a course. The Mechatronics Option is not available to the Mechatronics Engineering students.

Table 1. Level 1 Courses (Fundamental) in the Mechatronics Option

Computer Engineering and Electrical Engineering	Mechanical Engineering	Systems Design Engineering
<u>ECE 106</u> and <u>ECE 140</u>	<u>GENE 123</u> or <u>ME 123</u>	<u>SYDE 283</u>
<u>ECE 150</u>	<u>ME 101</u>	<u>SYDE 121</u>
<u>ECE 222</u>	<u>ME 262</u>	<u>SYDE 192</u>
<u>MATH 211</u> or <u>ECE 205</u> or <u>MATH 215</u>	<u>ME 303</u>	<u>SYDE 411</u>
<u>ECE 380</u>	<u>ME 360</u>	<u>SYDE 352</u>
<u>ECE 203</u>	<u>ME 202</u>	<u>SYDE 212</u>
<u>ECE 403</u> or <u>PHYS 358</u>	<u>ME 250</u>	<u>SYDE 381</u>

Table 2. Level 2 Courses (Core) in the Mechatronics Option

According to their plan, students taking the Mechatronics Option must take the following four courses.

Computer Engineering and Electrical Engineering	Mechanical Engineering	Systems Design Engineering
<u>ECE 240</u>	<u>ECE 240</u> or <u>SYDE 292</u>	<u>SYDE 292</u>

Computer Engineering and Electrical Engineering	Mechanical Engineering	Systems Design Engineering
<u>ME 321</u>	<u>ME 321</u>	<u>ME 321</u>
<u>ECE 224</u>	<u>ECE 224 or MTE 325</u>	<u>ECE 224 or MTE 325</u>
<u>ECE 361</u>	<u>ME 269</u>	<u>ECE 361 or ME 269</u>

Table 3. Level 3 Courses (Electives) for the Mechatronics Option

Students must take one course from each of the Group Topics.

Group Topic	Courses
Actuators and Sensors	<u>ECE 463, ME 561</u>
Computer Systems/Software	<u>ECE 250, ECE 254, ECE 356, (ECE 454 or ECE 455), ECE 458, ECE 459, SYDE 322, SYDE 572, SYDE 575, or MTE 140</u>
Control Systems	<u>ECE 481, ECE 484, MTE 460</u>
Robotics and Automation	<u>ECE 457A, ECE 457B, ECE 486, ME 547, MTE 544, SYDE 522</u>
Mechanical Systems	<u>ME 322, ME 524, SYDE 553</u>

Choose one course from each of the following lists.

List A - Electronics and Instrumentation

BME 294 Circuits, Instrumentation, and Measurements

ECE 240 Electronic Circuits 1

MTE 220 Sensors and Instrumentation

SYDE 292 Circuits, Instrumentation, and Measurements

List B - Embedded Microprocessor Systems

ECE 224 Embedded Microprocessor Systems

MTE 325 Microprocessor Systems and Interfacing for Mechatronics Engineering

List C - Electromechanical Devices

ECE 260 Electromechanical Energy Conversion

ME 269 Electromechanical Devices and Power Processing

MTE 320 Actuators & Power Electronics

List D - Machine Design

ME 321 Kinematics and Dynamics of Machines

MTE 321 Design and Dynamics of Machines

List E - Advanced Control Systems

ECE 481 Digital Control Systems

ECE 484 Digital Control Applications

ECE 488 Multivariable Control Systems

MTE 460 Mechatronic Systems Integration

List F - Robotics and Automation

ECE 486 Robot Dynamics and Control
ME 547 Robot Manipulators: Kinematics, Dynamics, Control
MTE 544 Autonomous Mobile Robots

List G - Mechanical Systems

ME 322 Mechanical Design 1
ME 524 Advanced Dynamics and Vibrations
SYDE 553 Advanced Dynamics

List H – Elective

ECE 356 Database Systems
ECE 454 Distributed Computing
ECE 455 Embedded Software
ECE 457A Cooperative and Adaptive Algorithms
ECE 457B Fundamentals of Computational Intelligence
ECE 459 Programming for Performance
ECE 463 Design & Applications of Power Electronic Converters
ME 561 Fluid Power Control Systems
SYDE 522 Foundations of Artificial Intelligence
SYDE 572 Introduction to Pattern Recognition
SYDE 575 Image Processing

Mechatronics Design Project

Each student in the Option must undertake a two-term design project/workshop (ME 481 and ME 482, or ECE 498A and ECE 498B, or SYDE 461 and SYDE 462) with a mechatronics theme which must be approved by the Faculty Mechatronics co-ordinator. Students must meet the project/workshop requirements of their home department.

ACADEMIC PLAN INACTIVATIONS

Faculty of Health

Recreation and Leisure Studies

1. **Motion:** That Senate approve the inactivation of following Honours Tourism Development academic plan, effective 1 September 2022.

Background and Rationale: Tourism Development in both the regular and cooperative education programs, will become inactive effective September 2022 due to low enrolment numbers over the past five years. Students will be able to study tourism related curriculum through the tourism minor, jointly offered by the department of Recreation and Leisure Studies and the Faculty of Environment. Students currently enrolled in the Tourism Development and those admitted to Tourism Development in September 2021 will be able to complete the degree requirements and graduate from the plan, as RLS will plan for a course substitution for the REC 380 course which will be inactivated in September 2022. The Tourism Development program will only be available to students registered in the Department of Recreation and Leisure Studies prior to August 31, 2022.

/dj

David DeVidi
Associate Vice-President, Academic