# Senate Meeting

**Governing Documents and Resources**

## OPEN SESSION

### 3:30 p.m.

1. **Territorial Acknowledgement**  
   - Oral

2. **Conflict of Interest**  
   - Oral  
   - Declaration

3. **Approval of the Agenda**  
   - Oral  
   - Decision

4. **Minutes of the 15 May 2023 Meeting**  
   - Oral  
   - Decision

5. **Business Arising from the Minutes**  
   - Oral  
   - Input

6. **Senate Work Plan**  
   - Oral  
   - Information

### 3:35 p.m.  

7. **Report of the President**  
   - Oral  
   - Information
   a. **President's Update**  
   b. **PART Annual Update (Christopher Taylor, Anita Taylor)**

### 4:10 p.m.  

8. **Report of the Vice-President, Academic and Provost**  
   - Oral  
   - Information  
   a. **Digital Learning Strategy** (Rush, David DeVidi, Johanna Wandel, Aldo Caputo)

### 4:20 p.m.  

9. **Recommendation to Change the Name of the Department of Management Sciences to the Department of Management Science and Engineering**  
   - Oral  
   - Decision
   Motion: To change the name of the Department of Management Sciences to the Department of Management Science and Engineering.

### 4:25 p.m.  

10. **Report – Senate Graduate & Research Council**  
   - Oral  
   - Decision
   a. **Graduate Studies Academic Calendar Revisions**  
   Motion: To approve revisions to the co-operative education section of the Graduate Studies Academic Calendar (GSAC) to include Graduate Work-integrated Learning definitions and content, and to approve and add a new Community and Industry Research Projects (CIR) course component to the GSAC and Quest glossary of terms.
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<td>4:30 p.m.</td>
<td>10. Report – Associate Vice-President, Academic</td>
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<tr>
<td>(20 mins)</td>
<td>a. Teaching Assessment Report</td>
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<td>b. Digital Learning Principles and Guidelines</td>
<td>111</td>
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<td>Motion: To approve the Principles and Guidelines for Digital Learning,</td>
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<td>effective 1 September 2023, as presented.</td>
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<td><strong>Consent Agenda</strong></td>
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<td>Motion: To approve or receive for information the items on the consent</td>
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<td>agenda, listed as items 11-17 of the Senate agenda</td>
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<td>11. Report – Senate Graduate &amp; Research Council</td>
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<td>12. Report – Senate Undergraduate Council</td>
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<td>a. Academic Regulation Revision to Admission for the Faculty of Engineering</td>
<td>121</td>
<td>Decision</td>
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<td>Motion: That Senate approve the proposed academic regulation revision to</td>
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<td>Admission for the Faculty of Engineering, effective 1 September 2024, as</td>
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<td>b. Academic Regulation for Admission Fraud</td>
<td>125</td>
<td>Decision</td>
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<td>Motion: That Senate approve the proposed academic regulation revision for</td>
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<td>Admissions Fraud, effective 1 September 2023, as presented.</td>
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<td>c. Academic Regulation Revision for Admission Requirements</td>
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<td>Decision</td>
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<td>Motion: That Senate approve the proposed academic regulation revisions of</td>
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<td>Admissions Requirement for Duolingo Component Scores, effective 1 September</td>
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<td>13. Report – Vice-President, Research &amp; International</td>
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<td>Information</td>
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<td></td>
<td>a. Awards, Distinctions, Grants, Waterloo International Engagements</td>
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<td>15. Report of the Provost – Faculty Appointments, Leaves</td>
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<td>16. List of Graduands – Spring 2023 Convocation</td>
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<td>17. Other Business</td>
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<td></td>
<td>a. Senate Orientation Module</td>
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If you require assistance or need to convey regrets, please contact the Secretariat at senate@uwaterloo.ca
### Important Dates

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<td>9-13 October 2023</td>
<td>Fall Reading Week</td>
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<td>20-21 October 2023</td>
<td>Convocation</td>
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OPEN SESSION

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

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

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

2. APPROVAL OF THE AGENDA
A motion was heard to approve the agenda as distributed. Skidmore and Porreca. Carried with one abstention.

3. MINUTES OF THE 17 APRIL 2023 MEETING
A motion was heard to approve the minutes as distributed. Newell Kelly and Porreca. Carried.

4. BUSINESS ARISING FROM THE MINUTES
   There was no business arising.

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

6. REPORT OF THE PRESIDENT
   a. President’s Update
      Goel provided his report:
      - With May as Asian Heritage month, Goel noted this offers the opportunity to pay special attention to the vital roles our community members of Asian heritage play in the success of our institution, while also recognizing the important work needed to eliminate anti-Asian racism, and all forms of racism, on our campuses.
      - He highlighted the conflict in Sudan and its toll on life and peace adds to a growing list of humanitarian crises around the world, and informed members that Ian Rowlands and Waterloo International had issued a statement on behalf of the University expressing concern regarding the ongoing conflict in Sudan and sympathy for those impacted by events there.
      - On May 8, 2023 the university welcomed 27 successful applicants for its second summer research program for students from Ukraine. This program runs from May to August 2023 and is designed for 4th year bachelor, master, and doctoral students from Ukrainian universities whose studies were affected by Russia's full-scale invasion of Ukraine.
      - On April 24, 2023 the Globe and Mail reported on a memo sent to our research community and graduate students, and on May 3, 2023 the Toronto Star reported on Waterloo ending its partnerships with Huawei. The Office of the Vice-President, Research and International has developed a safeguarding research workplan and has identified activities to assist faculty with their research to enhance successful outcomes and to safeguard their work. As well, Vice-President Dean has been leading the sector-wide development of best practices around safeguarding research in line with the federal and Ontario provincial governments, and has been engaged in regular conversations with peer institutions in the U15 and with government agencies.
      - Goel hosted a Queen’s Park Reception with over 30 MPPs, including MCU Minister Jill Dunlop and several of their cabinet colleagues, in attendance. The focus on the event was how the University is driving innovation, from industry partnerships, research commercialization and entrepreneurialism.
      - On May 5, 2023 Waterloo hosted, in partnership with Health Canada, Statistics Canada and Canadian Institute for Health Information, a conference in Ottawa entitled Cybersecurity, Privacy, and Artificial Intelligence in Health Data: Advancements and Challenges.
      - A recent Financial Times article titled “Toronto capitalises on tech success,” said, “few outside of Canada had heard of the University of Waterloo in sleepy south-west Ontario. Today, it is widely regarded to be a breeding-ground for world-class tech talent.” and quoted Lauren Haw, chief executive of Toronto-based real estate platform Zoocasa, that “Waterloo is like saying you went to Harvard Law”.
      - As noted at last Senate, on April 21 the University of Waterloo, in partnership with MaRS Discovery District, hosted the Waterloo Innovation Summit which brought together some of the world’s leading experts on sustainable aeronautics, electric and autonomous vehicles, clean energy and urban planning to reimagine the future of local and global transportation.
      - On May 23, Prince Hussain Aga Khan will engage in a fireside conversation at Humanities Theatre, to share his work and photography on the devastating impact of plastic pollution and human activity on marine life and the environment.
Spring 2023 Convocation will be on June 13 to 17, 2023 and members were encouraged to take part and to encourage their colleagues to do so also.

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

7. REPORT – SENATE GRADUATE & RESEARCH COUNCIL
   a. Major Program Modification to the Master of Engineering (Meng) in Mechanical and Mechatronics Engineering – Co-operative Program
      Casello provided an overview of the item, and a motion was heard that Senate approve adding a direct entry Co-operative program/option to the MEng in Mechanical and Mechatronics Engineering Program, effective 1 September 2023, as presented. Casello and Wells. Carried.
   b. Major Program Modification to the Graduate Diploma (GDip) in Design Engineering and Graduate Diploma (GDip) in Design Engineering – Cooperative Program
      Casello provided an overview of the item, and a motion was heard that Senate approve discontinuing the type 2 GDip in Design Engineering and the type 2 GDip in Design Engineering – Co-operative Program, effective 1 September 2023, as presented. Casello and Wells. Carried.
   c. Major Program Modification to the Master of Mathematics (MMath) in Statistics
      Casello provided an overview of the item, and a motion was heard that Senate approve discontinuing the coursework study option from the MMath in Statistics program, effective 1 September 2023, as presented. Casello and Giesbrecht. Carried.

8. REPORT – SENATE UNDERGRADUATE COUNCIL
   a. Closure of Application to Part-Time On-Campus Three-Year General Science Program
      Newell Kelly provided an overview of the item, and a motion was heard that Senate approve the closure of application to part-time on campus Three-Year General Science program, effective 1 September 2023, as presented. Newell Kelly and Ager. Carried with one abstention.

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

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

   The motion carried with one opposed and one abstention.

10. AMENDMENT TO BYLAW 4 – Ex-OFFICIO MEMBERSHIP
    Goel provided an overview of the item and a motion was heard that Senate gives second and final reading to the amendments to Senate Bylaw 4 as presented, with said amendments to effect:

    i. Removal of the Vice-President, Advancement, the Vice-President University Relations, and the Deputy Provost, Integrated Planning and Budgeting as ex-officio members of Senate

    ii. Addition of the Associate Vice-President, Equity, Diversity, Inclusion and Anti-Racism, the Associate Vice-President, Indigenous Relations, and the Associate Vice-President Academic Operations as ex-officio members of Senate

    Newell Kelly and Casello. Carried with one abstention.
CONSENT AGENDA
A motion was heard to approve or receive for information the items on the consent agenda, listed as items 11-15 of the Senate agenda. Porreca and Skidmore. Carried.

11. REPORT – SENATE GRADUATE & RESEARCH COUNCIL
   Received for information.

12. REPORT – SENATE UNDERGRADUATE COUNCIL
   One item approved; remaining item received for information.
   a. That Senate approve the proposed academic regulation revision to the second degree and degree upgrades for the Faculty of Health, effective 1 September 2024, as presented.

13. REPORT – HONORARY DEGREE COMMITTEE
   Received for information.

14. REPORT – COU ACADEMIC COLLEAGUE
   Received for information.

15. REPORT – VICE-PRESIDENT, RESEARCH & INTERNATIONAL
   Received for information.

16. REPORT OF THE PROVOST – FACULTY APPOINTMENTS, LEAVES
   Received for information.

17. OTHER BUSINESS
   There was no other business.

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

16 May 2023

Andrea Kelman
University Secretary (Acting)
Secretary to Senate
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<td>Joint Report of GRC &amp; UC on Academic Calendar Dates</td>
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<td>University Committee on Student Appeals Annual Report (Policy 72)</td>
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<td>New Senator Orientations (before meeting)</td>
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1. Annual item
2. Board of Governors approval
3. Presented by the Vice-President Academic and Provost
4. Presented by the President and Vice-Chancellor, and Chair of Senate
5. Presented by the University Secretary
6. Leadership updates may include such topics as: Talent, We Accelerate Report, Communities (EDI, Sustainability), Waterloo International, etc.
### Senate Agenda Items

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### CLOSED AGENDA

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<th>19 June 2023</th>
<th>23 September 2023</th>
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### Joint SENATE/BOARD Strategic Plan Focus Sessions 3-4:30

- To be determined

### Joint SENATE/BOARD Continuing Education Sessions 3-4:30

- To be determined

### Special Topics for 2023-2024 to be Scheduled:

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

### For more information:

- secretariat@uwaterloo.ca
- uwaterloo.ca/secretariat, NH 3060
Item Identification:


Summary:

While Waterloo’s educational offerings have been and will increasingly make use of digital resources, the University currently has no comprehensive strategic framework for guiding the development of digital instruction and program design including selection of digital teaching and learning tools, and supporting the learning experience. The UW strategic plan, with our past accomplishments in digital teaching and learning, and our recent extensive experience with digital education necessitated by our response to the pandemic make it timely and important for Waterloo to develop an explicit digital learning strategy (DLS). This report provides recommendations to align projects and investments with one another and with strategic goals, explore new delivery models and flexible pathways, inform the development of a digital learning ecosystem and prepare and position Waterloo for a future which increasingly includes digital learning.

Previous Action Taken:

The Digital Learning Strategy (DLS) is an institutional project, aligned with the University’s 2020-2025 strategic plan. The DLS working group was formed in Winter 2022, with the goal of providing summary information and outlining options for the campus community, and making recommendations to senior leadership. The DLS working group had representatives from all six faculties, undergraduate and graduate students, and key student-facing ASUs. The working group undertook extensive consultations with campus stakeholders from June to October 2023.

Highlights:

The enclosed report includes goals, principles, strategic directions, and recommendations for digital teaching and learning at Waterloo as well as summaries of consultations, an environmental scan, and a narrative which provides context. The strategic directions and recommendations build on one another and, in some cases, must be achieved in a stepwise fashion, but the ordering is not meant to imply either sequential action or priority.
Office of the Secretariat

Documentation Provided:

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

Digital Learning Strategy Working Group

May 2023
Acknowledgements

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

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

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

Co-chairs, Digital Learning Strategy Working Group

Aldo Caputo  
Director  
Centre for Extended Learning

Johanna Wandel  
Associate Dean, Undergraduate Studies  
Faculty of Environment
1. Introduction

1.1 Goals of the Digital Learning Strategy Project

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

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

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

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

a. **Alignment of projects and investments with one another and with strategic goals**

Several digital learning-related projects are already underway, and more are imminent. A decentralized university like Waterloo runs the risk of trying to advance the same goal simultaneously in different areas of the university, with each unaware that similar work is being done elsewhere. The result may be multiple solutions, each of which requires investment in different tools or strategies to accomplish the same or similar objectives. While some decisions, for example the implementation of digital learning in degree and non-degree learning experiences, are most appropriately made at the program or department level, there is an urgent need for overall coordination and consistency across the University, and to ensure that we work toward the Strategic Plan’s goal to “prepare talent to lead in a future that promises great opportunity and waves of disruption.”

b. **Decision-making processes that strike the right balance between operational efficiency, a suitable degree of experimentation, and finding local solutions when appropriate**

Waterloo’s decentralized structure also has many strengths. In the digital teaching and learning space, it has resulted in a multitude of home-grown local solutions, some of which have seen widespread adoption by the broader university community. However, there is the risk that Faculties, departments, and instructors working in isolation miss the opportunity to leverage these solutions, as well as learn from one another’s successes and failures. Waterloo’s structure supports agility and cultivates experimentation, but we need to ensure that the resulting innovations are shared across the institution, rather than duplicated, and this commitment to innovation is balanced with consistency of the student experience across platforms and technologies and appropriate vetting for privacy, security, accessibility, and quality.
c. How digital learning could disrupt the traditional educational marketplace and how Waterloo should prepare
The evolving educational marketplace, including the emergence of private online educational providers, the availability of online degrees at scale, changes in demographics and participation rate, the transformation of the learning resource publishing industry (i.e., what used to be the textbook industry), widespread interest in and availability of open educational resources, and the need for different types of credentials for lifelong learners, prompt us to reflect on how we might adapt. We need to be technologically agile and responsive to change without losing sight of our core mission and values. Key components of this reflection include revisiting credentials and considering our role in the lifelong learning space.

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

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

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

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

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

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

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

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

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

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

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

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

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

1.3 Summary of Consultation Process

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

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

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

b. Environmental Scan
Digital teaching and learning features in the strategic plans of many universities, but only a small number have completed standalone digital learning strategies. In response to a 2022 Educause survey, only 10% of Educause members (primarily U.S.) indicated that their institutions have completed a DLS,
with a further 14% currently in the process of creating one. Common themes across institutions which have, or are in the process of creating, a DLS include an emphasis on technological systems; the creation of a shared vision of digital learning for faculty, staff, students and administration; flexible and equitable pathways for student success; alignment of resources, workforce development, and cultural changes. The foci of this report are consistent with these themes, with additional emphasis on student success, work-integrated learning, and internationalization/global reach. A summary of the DLS status of our competitor institutions is included in Appendix C. Going forward, Waterloo should continue to monitor this space and stay abreast of other institutions’ digital learning strategies.

2. Vision and Principles

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

2.1 Vision

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

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

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

1. **Put learner-centredness and student success first**: We clearly heard that the needs, interests, and abilities of learners should be the primary consideration and driver of DLS implementation. In a learner-centered environment, the focus is on creating an engaging and interactive learning experience using teaching and learning strategies that encourage students to take an active role in their own learning and to develop critical thinking, problem-solving, and other important skills. Students are more likely to be successful and motivated when they are actively involved in the learning process and when their needs and interests are considered.

2. **Value human interaction and community**: The Working Group heard clearly that Waterloo should not move in the direction of becoming a primarily digital or online institution, and that we should not engage in digital learning that is impersonal and predominantly independent or self-directed. Students should have the opportunity to engage with instructors, fellow students, and learning content activities regardless of the degree of digital learning involved. We also need to remember that humans are a social species and learning is a community-based endeavor, and design accordingly, regardless of the mode of instruction. Digital tools can be used to enhance and extend learning interaction as well as build community.
3. **Focus on quality**: Quality should factor into all pedagogical and design decisions as we pursue digital means of teaching and learning. While there are digital-specific strategies and application knowledge that are required, many principles of good teaching are universal, and thus apply equally to digitally enabled or enhanced teaching. Technology should be regarded as a tool to achieve teaching and learning outcomes, and ideally fade into the background.

4. **Foster equity, diversity, and inclusion, and increase access**: The Working Group heard about opportunities and challenges associated with digital learning and equity, diversity, and inclusion, including various difficulties students and instructors had in accessing technology and participating in remote learning. While many of these issues were precipitated by the pace at which implementation happened in recent years, it is important that we keep all users in mind when implementing digital learning strategies. Digital learning offers opportunities to increase representation and reach traditionally underserved students by making learning more flexible and available beyond the campus, as well as more accessible to many neurodiverse students and/or students with disabilities by providing learning materials in multiple formats.

5. **Develop agility and resilience**: During the pandemic, the rapid shift to remote learning tested our digital limits and demonstrated where and how we could establish more robust infrastructure, capacity, and capabilities with respect to digital learning. Doing so should help to better position the University to respond to future challenges, both known and unknown, large, and small.

6. **Strive for flexibility**: Flexibility for students, instructors (course delivery, pedagogy), programs (scheduling, program outcomes, coordination), and the institution is one of the main desired outcomes of defining a strategic approach to digital learning.

7. **Be intentional**: Intentionality is woven into many of the findings in this report, including the overarching goal of the DLS which is to *shift* teaching and learning in an informed, coordinated manner rather than allowing it to drift in a multitude of directions (including regressing to pre-pandemic norms). The pandemic and remote teaching experience led us to re-examine many of the preconceptions and assumptions we held toward digital learning and provided an opportunity to assess the relative strengths of various forms of teaching and learning. The university should clearly articulate the value of the campus experience, and programs should thoughtfully implement (and ideally combine) the inherent strengths of face-to-face and other modes in designing programs and learner experiences.

### 3. Strategic Directions and Recommendations

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

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

In-person teaching and learning has been a core characteristic of most University of Waterloo degrees. Although correspondence, distance and, more recently, online courses have been offered for decades, the COVID-19 pandemic that resulted in near universal remote teaching has indelibly shifted student
expectations and instructor capacity. This experience, coupled with the continued evolution of digital tools and pedagogical practices, requires that we consider digital learning beyond the binary of in-person and online modes.

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

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

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

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

a. Faculties should incorporate digital learning into their Academic Program Plans in a manner that reflects the Digital Learning Strategy recommendations.

b. Program-level planning decisions should support flexible pathways for students and consider how to employ digital strategies appropriately to enhance flexibility.

c. Curriculum committees should review programs and map course modalities to optimize the student experience and progression through the program (e.g., the balance of online, blended and in-person offerings; the ideal fit of modes of delivery to courses) and periodically revisit this through the curricular review process. Course delivery modes should be determined by this plan and remain consistent, visible to students, and predictable from term to term, year to year.

d. The University should consider how digital competencies can be reflected in institutional degree-level expectations, and these in turn would be reflected in program-level learning outcomes.

e. Curricular design support for Faculties should be expanded as necessary.

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

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

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

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

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

Recommendations:

a. Continue to develop blended and online courses to intentionally develop flexible pathways.

b. Make flexible pathways consistently available and easily identifiable to students.

c. Create course and scheduling options that allow for more flexibility, such as decreased in-person contact time, and alternate course structures beyond the traditional 0.5 credit weight course (e.g., block courses, non-standard credit-weight courses).

d. Implement a system of open enrolment that allows non-degree learners to enrol in selected courses (e.g., those without or with few prerequisites, likely to be of general interest, that can perhaps be bundled into a credential or that serve as an alternative pathway to admission), providing expanded opportunity for access, especially to fully online courses.

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

Student success and enhanced learning experiences must be at the center of this DLS. Digital strategies should be evidence-based and focused on pedagogical practices that have a demonstrated ability to improve learning. For example, blended learning, and specifically “flipped classroom” approaches that provide foundational learning online and allow for more application and active learning in the classroom, have demonstrated positive impacts on students’ academic performance, motivation, engagement, and learning management skills. Digital learning provides a means to achieve learning competencies such as those articulated in the recently released WatSEE framework. For example, digital learning communities would allow learners to stay engaged with other learners and learning supports, whether they are on campus, studying remotely, on a co-op work term (the build relationships component of the WatSEE framework), and introduction of digital experiences and interaction would also prepare students for the digital workplaces they will encounter in the digital, distributed workplace (expand expertise). Digital learning can also enhance the graduate student experience through the facilitation of graduate research group meetings even when participants are in various locations. Finally, flexible pathways and access to lifelong learning further help students to achieve the develop self component of WatSEE.
The broader application of digital learning, whether it is within traditional, primarily residential curricula, fully online, or blended programs, also introduces new challenges for students. As students learn online, services provided by academic support units need to be available for learners not physically on campus and with diverse learning needs. At the same time, the integration of digital teaching through blended learning and combining in-person with online offerings in the same term means that some learning occurs online while students are physically on campus, which requires different types of study spaces.

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

**Recommendations:**

a. Inform the application of digital learning with evidence, research and established best practices. Strategies should focus on promoting active learning and other high impact practices, achievement of institutional goals (e.g., retention, access, and engagement), and achieving key learner competencies (e.g., as articulated in WatSEE and the Future Ready Talent Framework).

b. Continue to develop self-efficacy and a digital learning culture among students, including best practices for time management, collaboration, interaction, academic integrity, and respectful and ethical behaviour in digital environments. Faculties and student-facing ASUs should collaborate on developing support materials which foster student readiness and preparation for digital learning.

c. Continue to encourage and support the increased use of evidenced-based blended and flipped modes of learning, supported through the Blended Learning Initiative and other projects, with the goal of utilizing in person time more effectively and increasing active learning in the classroom.

d. Ensure students have access to the academic and non-academic supports, training, learning tools and technologies required for their success as digitally enabled learning becomes more ubiquitous (e.g., institutional site licenses for core educational software, remote access to labs and specialized technology; spaces on campus that allow students to participate in virtual classes or access virtual supports while on campus; remote access to mental health and student success supports).

e. Develop institutionally supported digital communities that provide opportunities for students to safely communicate and connect locally and globally for learning and communication, and to enhance and expand the on-campus experience.

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

The underlying principles and aims of good teaching are constant regardless of modality. A digital learning strategy should be firmly rooted in evidence-based, effective pedagogical approaches that can
be adapted depending on the strengths and opportunities inherent in each mode, and that is responsive to program context and the needs of specific student cohorts. Ideally, technology should ultimately fade into the background for both students and instructors, as more mature technology does with in-person courses. There should be definitions regarding modes of delivery to ensure a common understanding. Finally, all modes of digital learning, including those created by academic support units providing resources to learners, should have access to appropriate levels of digital learning design and development support.

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

**Recommendations:**

a. Define official digital modalities offered at Waterloo (on-campus, blended, and online; synchronous and asynchronous) and communicate information regarding each mode and related learner expectations (e.g., in-person and online time commitments) to students via scheduling and course selection information.

b. Establish University-level principles and guidelines to ensure that baseline requirements for digital learning are met and that Waterloo students have consistent, high quality digital learning experiences.

c. Provide support for all modes of digital learning design, from individual digital assets to full online courses, by expanding access to appropriate services.

d. Ensure that academic support units (ASUs) involved in student learning are themselves supported in delivering digital services to students.

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

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

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

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

Open Educational Resources (OERs)

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

Recommendations:

a. The University should establish a standing committee on digital learning, with representatives from each Faculty, staff, and students.

b. The University should review intellectual property policy (Policy 73) with special regard to teaching materials, with the goal of making digital assets created in the course of one’s employment readily available for reuse within the institution (e.g., for use in core course, large multi-section courses, or courses serving several programs or Faculties).
c. The EDTECH governance structure should ensure that the appropriate processes and technology are in place to support the creation, sharing, and life cycle management of digital teaching and learning assets, including a platform that facilitates the sharing and reuse of digital course assets within the University of Waterloo.

d. The University should incentivize the development of digital materials that can be shared within the University of Waterloo community and, when appropriate, more widely as open educational resources (OERs).

e. The University should commit to ongoing support for digital learning. This could include funding for students to help co-create digital learning experiences (e.g., online learning assistants during pandemic).

f. The University should commit to ongoing resourcing in areas such as copyright, accessibility, privacy, security, and digital asset management in ways suited to supporting the important roles each plays in digital teaching and learning.

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

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

Supporting local innovation

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

Recommendations:

a. The University utilizing three tiers of institutional tools: 1) a suite of centrally supported core systems, 2) Faculty-based purchased and supported tools, and 3) instructor-selected and supported special
purpose course tools to help achieve a balance between consistency for students and instructor autonomy.

b. The new EDTECH governance structure should define a clear, responsive process for the identification, vetting, and implementation of tools, with an ongoing commitment to support current and future central acquisitions. The structure should also assign responsibility and include a mechanism for identifying, researching, and recommending new teaching and learning technologies.

c. The University should review its procurement process to ensure that it is suited to the efficient selection of optimal technology within the rapidly shifting EDTECH marketspace.

d. The University should have a team dedicated to support the development, customization, and integration of in-house EDTECH systems for digital learning. This could involve ASU and Faculty collaboration and pooling of resources.

e. The selection of future tools, such as the learning management system (LMS), should consider both current and future needs, pedagogic frameworks and strategic directions (e.g., WatSEE, the Future Ready Talent Framework, WatSPEED/lifelong learning).

f. The University should commit to ongoing investment in campus infrastructure to support digital learning on campus (e.g., Wi-Fi, flexible teaching and learning spaces) and develop classroom standards and specifications based on room capacity and function to be employed in new builds or retrofits irrespective of space ownership or management to foster a more consistent technological and functional experience.

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

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

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

Champions of Teaching and Learning

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

Recommendations:

a. Employ the credentials framework currently under development to digitally deliver micro-credentials that allow for shorter, stand-alone but stackable credits, which could also be made available to non-student audiences via open enrolment.

b. Continue to expand WatSPEED digital lifelong learning offerings to cater to the greater demand for online offerings, as well as accessing new markets and repurposing existing (credit course) digital assets where appropriate.

c. Develop digital learning resources and co-curricular opportunities that support career readiness, particularly for graduate students.

d. Develop a student dashboard that tracks all for-credit and experiential learning, e.g., the Future Ready Talent Framework competencies that occur in co-op work placements.

e. Implement a digital wallet to authenticate digital micro-credentials and competencies.

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

Teaching is a fundamental component of Waterloo’s mission. Policies 76 and 77 highlight the importance of teaching in hiring, tenure, and promotion. With the increased use of educational technology and demand for digital literacy, Waterloo’s instructors should be supported in their pursuit
of excellence in digital teaching and learning. Ideally, technology should be intuitive, integrated, and supported by a team of specialists who make it possible for instructors to focus on pedagogy and let the technology fade into the background. Faculties should determine what models are appropriate within their organization and culture.

Recommendations:

a. Recognize the time required to develop and integrate digital tools, content, and strategies into teaching and factor this into the equitable assignment of duties.

b. Develop a certificate in digital teaching and learning for instructors and graduate students.

c. Expand each Faculty’s Teaching Fellows program to provide capacity, support, and reach for digital initiatives.

Coordinating Support

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

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

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

An intentional approach to increased digital opportunities is key to expanding Waterloo’s global reach and reputation. Digital learning allows us to overcome limits in space and time and open the Waterloo experience to those who are not able or looking to participate in a traditional residential experience. A robust catalogue of online course and program offerings coupled with a strong marketing and brand development for Waterloo in this space will provide access to global non-traditional learners. Within
existing curricula, structured collaborative opportunities within face-to-face and online courses can support linkages and partnerships with other institutions, and foster internationalization.

**Targeted Global Programs**

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

**Collaborative Online International Learning (COIL)**

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

**Recommendations:**

a. Identify key markets which are underserved in Waterloo’s areas of strength; develop and market scalable online programs, including course-based graduate degrees.

b. Promote and grow international enrollment of traditional and life-long learners via a strong catalogue of digital offerings.

c. Create opportunities for every student to engage in intercultural co-curricular linkages, e.g., via Collaborative Online International Learning (COIL) initiatives

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

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

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

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

Meeting New Accessibility Standards

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

Recommendations:

a. All areas of the University should utilize digital learning as an important (but not exclusive) means of supporting Universal Design for Learning (UDL) campus initiatives, recognizing that the availability of digital formats and the flexibility afforded by digital teaching and learning go a long way in supporting UDL goals.
b. The University should provide centralized support for achieving AODA post-secondary education standards.
c. The University should promote flexible pathways to underserviced, international, and non-traditional students in order to recruit more underrepresented students.
d. The University should develop digital modules in EDI-R that can be embedded in the curriculum or offered as micro-credentials.
e. Programs should leverage digital formats as a means of introducing indigenous elements into the curriculum, including providing the flexibility to do so, and the University can use online modules as a means promote awareness and action regarding indigenization and reconciliation.
f. Programs should use digital tools to bring more underrepresented voices into the classroom (e.g., guest lecturers, advisors, mentors, etc.)
3.11 Strategic Direction 11: Lead in teaching and learning that exploits the combined and unique strengths of technology and human interaction.

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

**Recommendations:**

a. The University should provide structure and support for digital teaching innovation and make fostering digital teaching innovation one of the foci of the Teaching Innovation Incubator.

b. The University should ensure that there is ongoing proactive exploration and research into emerging technologies and their potential application in teaching and learning (e.g., AR/VR, AI driven tools).

c. The University should develop better mechanisms for recognizing and diffusing innovation across the institution (e.g., faculty community of practice, digital learning exemplar website). Evaluation of success should be a required component of any University-supported project.

d. The University should define institutional objectives and key results (OKRs) as appropriate for the recommendations in this report, including measures of student success and student satisfaction (e.g., from student course perceptions surveys, NSSE results, term surveys).

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

A digital learning strategy needs to be embedded within a larger institutional digital transformation to Waterloo as a digitally enabled campus. Digital learning will be most successful if other student supports and services are available in a flexible manner. Many of the recommendations above also pertain to all the digital interactions our students have with the University (applying, registering, communicating, etc.)
There should be consistency among University systems and the user experience should be as seamless as possible. The digital learning technology ecosystem needs to work with other institutional systems and processes, and the ability to access and share data across the institution is a key enabler of this interoperability, as well as enhancing overall institutional efficiency, optimization, and informed decision-making.

**Recommendations**

a. Improve sharing of institutional data and establish open data standards.

b. Continue gathering data on current and prospective students’ needs, preferences, and drivers of success.
4. Conclusion and Next Steps

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

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

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

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

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<tr>
<th></th>
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<tbody>
<tr>
<td>Jill Knight</td>
<td>Student representative</td>
<td>Waterloo Undergraduate Student Association</td>
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<tr>
<td>Jordan Daniels</td>
<td>Student representative</td>
<td>Waterloo Undergraduate Student Association</td>
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<tr>
<td>Tolulope Alayande</td>
<td>Student representative</td>
<td>Graduate Student Association</td>
</tr>
<tr>
<td>Anton Mosunov</td>
<td>Faculty representative</td>
<td>Mathematics</td>
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### Appendix B: Summary of Consultations

<table>
<thead>
<tr>
<th>Stakeholder group</th>
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<tr>
<td><strong>Students</strong></td>
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<td>Undergraduate students</td>
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<td>Focus groups</td>
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<tr>
<td>Graduate students</td>
<td>Focus groups</td>
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<td>Centre for Extended Learning (CEL)</td>
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<td>Group discussions with: University Library, Print and Retail Services, AFIW Libraries, Executive Team</td>
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<td>Writing and Communications Centre</td>
<td>Small group consultation with Clare Bermingham and Elise Vist</td>
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<tr>
<td>WatSPEED</td>
<td>Individual consultation with Sanjeev Gill</td>
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<td></td>
<td>Individual consultation with Peter Carr</td>
</tr>
<tr>
<td>Work-Learn Institute</td>
<td>Individual consultation with Anne Fannon</td>
</tr>
<tr>
<td>Centre for Work-Integrated Learning</td>
<td>Individual consultation with Andrea Prier</td>
</tr>
<tr>
<td>Academic Integrity and Quality Assurance</td>
<td>Individual consultation with Amanda McKenzie</td>
</tr>
<tr>
<td>Information Systems &amp; Technology (IST)</td>
<td>Group discussion with IST Exec (Directors, Chief Information Officer, Executive Officer)</td>
</tr>
<tr>
<td></td>
<td>Group Discussion, Instructional Technologies and Media Services (ITMS) group</td>
</tr>
<tr>
<td></td>
<td>Group discussion (open invite) for other IST staff</td>
</tr>
<tr>
<td>Faculty Computing User Support Group (FACCUS) and Computing Technologies Services Committee (CTSC)</td>
<td>Email invite to combined group for discussion</td>
</tr>
<tr>
<td>Student Success Office</td>
<td>Group discussion with Heather Westmorland, Mike Chee, Angela Rooke</td>
</tr>
<tr>
<td>MUR</td>
<td>Small group discussion with Kari Pasick Stewart and Jody Berringer</td>
</tr>
<tr>
<td>Keep Learning (CTE, ITMS, Library and CEL)</td>
<td>Small group discussion with Keep Learning team</td>
</tr>
<tr>
<td><strong>Instructional faculty/staff</strong></td>
<td></td>
</tr>
<tr>
<td>Arts</td>
<td>Surveys (n=38)</td>
</tr>
<tr>
<td></td>
<td>Individual consultations and small group interviews (n=10)</td>
</tr>
<tr>
<td></td>
<td>Focus group session (n=15)</td>
</tr>
<tr>
<td>Science</td>
<td>Surveys (n=50)</td>
</tr>
<tr>
<td></td>
<td>Group discussion (n=13)</td>
</tr>
</tbody>
</table>
| Environment | Surveys (n=20)  
Group discussion (n=13)  
Individual consultations (n=2) |
|-------------|----------------|
| Engineering | Surveys (n=59)  
Individual consultation (n=1)  
Group meetings with Faculty Operations Advisory Committee (FOPS) (Associate Deans: Undergrad; Co-op Education; Outreach, Diversity and Equity; Teaching; Director of Admissions, academic program leads, liaisons; n=21)  
Group discussions with: Teaching-Learning Champions (n=9), 3 group discussion sessions (n=8, n=12, n=11), email responses (n=3)  
Note: group discussions included a mix of students, faculty, technicians. |
| Math | Group discussions (n=33)  
Individual consultations (n=9)  
Email consultations (n=2)  
Note: sessions included instructional support coordinators |
| Health | Surveys (n=1)  
Individual consultations (n=4)  
Email consultations (n=1) |
| Faculty Leadership |  |
| Deans | Individual consultations with Lili Liu, Mary Wells, Bob Lemieux, Bruce Frayne, Jean Andrey, Mark Giesbrecht |
| Faculty of Arts leadership | Group consultation with Sheila Ager, Marty Cooke, Anna Esselment, Robert Park |
| Associate Deans, Undergrad (and related) | Individual consultations with Brendon Larson, Monica Barra, Laura Deakin, Leeann Ferries, Benoit Charbonneau, Peter Wood, Dan Davison |
| Associate Deans, Grad | Individual consultations with Peter Deadman, Martin Ross, Bertrand Guenin, Brian Laird, Siva Sivothaman |
| Associate Deans, Computing | Group consultation with UCIST subgroup: Stefan Idziak, Marek Stastna, Robert Park, Fred Zhu |
| AFIWs | Individual consultations with Kristiina Monteiro (Renison), Carol Anne MacGregor (St. Jerome’s) |
| Senior Leadership |  |
| AVP International | Individual consultation with Ian Rowlands |
| AVP Academic | Individual consultation with David De Vidi |
| AVP Graduate Studies and Postdoctoral Affairs | Individual consultation with Jeff Casello |
| AVP Innovation | Individual consultation with Sanjeev Gill |
| AVP Cooperative and Experiential Education | Individual consultation with Norah McRae |
| Special Advisor to the Provost, WatSEE | Individual consultation with Marlee Spafford |
Chief Information Officer | Individual consultation with Bruce Campbell
Registrar | Small group consultation with Cathy Newell-Kelly and Jennifer Coghlin

Secondary Data from Previous Surveys

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

Student Survey Data
- Spring 2020
- Winter 2021
- WUSA Fall 2020 FINAL Teaching and Course Quality Survey Report
- WUSA flexible_remote_options winter_2022
Appendix C: Environmental Scan

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

Strategies were broadly categorized as addressing:

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

<table>
<thead>
<tr>
<th>U15 Universities</th>
<th>Status</th>
<th>Type of Strategy</th>
<th>Initiated by</th>
<th>Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>U Alberta</td>
<td>Yes (2013)</td>
<td>Digital teaching and learning</td>
<td>President</td>
<td>SWOT analysis</td>
</tr>
<tr>
<td>U British Columbia</td>
<td>In progress</td>
<td>Digital teaching and learning</td>
<td>Provost and Vice-President, Academic</td>
<td>Consultations</td>
</tr>
<tr>
<td>U Calgary</td>
<td>In progress</td>
<td>Virtual learning</td>
<td>Institute for Teaching &amp; Learning</td>
<td>n/a</td>
</tr>
<tr>
<td>Dalhousie U</td>
<td>Yes (2021)</td>
<td>Digital campus</td>
<td>Provost and Vice-President, Academic</td>
<td>Consultations</td>
</tr>
<tr>
<td>U Laval</td>
<td>No</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>U Manitoba</td>
<td>No</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>McGill U</td>
<td>Yes (2020)</td>
<td>Digital campus</td>
<td>IT unit</td>
<td>n/a</td>
</tr>
<tr>
<td>McMaster U</td>
<td>In progress</td>
<td>Teaching &amp; learning strategy</td>
<td>Provost and Vice-President, Academic</td>
<td>Consultations</td>
</tr>
<tr>
<td>U Montréal</td>
<td>No</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>U Ottawa</td>
<td>In progress</td>
<td>Digital campus</td>
<td>Information Technology unit</td>
<td>Consultations</td>
</tr>
<tr>
<td>Queen’s U</td>
<td>Yes (2018)</td>
<td>Digital campus</td>
<td>Unclear</td>
<td>Environmental scan Consultations</td>
</tr>
<tr>
<td>U Saskatchewan</td>
<td>Yes (2018)</td>
<td>Digital teaching and learning</td>
<td>Learning Technologies unit</td>
<td>n/a</td>
</tr>
<tr>
<td>U Toronto</td>
<td>In progress</td>
<td>Digital teaching and learning</td>
<td>Digital Learning Innovation unit</td>
<td>n/a</td>
</tr>
<tr>
<td>Western U</td>
<td>Yes (2020)</td>
<td>Virtual learning</td>
<td>Provost</td>
<td>Environmental scan</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ontario Universities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brock U</td>
</tr>
<tr>
<td>Carleton U</td>
</tr>
<tr>
<td>Lakehead U</td>
</tr>
<tr>
<td>University</td>
</tr>
<tr>
<td>-----------------------------</td>
</tr>
<tr>
<td>Laurentian U</td>
</tr>
<tr>
<td>Nipissing U</td>
</tr>
<tr>
<td>OCAD U</td>
</tr>
<tr>
<td>Ontario Tech U (UOIT)</td>
</tr>
<tr>
<td>Toronto Metropolitan U</td>
</tr>
<tr>
<td>Trent U</td>
</tr>
<tr>
<td>U Guelph</td>
</tr>
<tr>
<td>U Windsor</td>
</tr>
<tr>
<td>York U</td>
</tr>
</tbody>
</table>
### STRATEGIC DIRECTION 1:
The University should be intentional and evidence-based about the design and application of digital learning across curricula and programs.

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Related recommendations</th>
<th>Responsibility</th>
<th>Time frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Faculties should incorporate digital learning into their Strategic Plans in a manner that reflects the Digital Learning Strategy recommendations.</td>
<td>1b, 1c, 1d</td>
<td></td>
<td>IP</td>
</tr>
<tr>
<td>b. Program-level planning decisions should support flexible pathways for students and consider how to employ digital strategies appropriately to enhance flexibility.</td>
<td>2a, 2b</td>
<td></td>
<td>SR</td>
</tr>
<tr>
<td>c. Curriculum committees should review programs and map course modalities to optimize the student experience and progression through the program (e.g., the balance of online, blended and in-person offerings; the ideal fit of modes of delivery to courses) and periodically revisit this through the curricular review process. Course delivery modes should be determined by this plan and remain consistent, visible to students, and predictable from term to term, year to year.</td>
<td>1a, 2c, 4a</td>
<td></td>
<td>MR</td>
</tr>
<tr>
<td>d. The University should consider how digital competencies can be reflected in institutional degree-level expectations, and these in turn would</td>
<td>1a, 1c, 7b</td>
<td></td>
<td>LR</td>
</tr>
<tr>
<td>STRATEGIC DIRECTION 2: Develop and provide students with flexible pathways through curricula.</td>
<td></td>
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<td>---</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>a. Continue to develop blended and online courses to intentionally develop flexible pathways.</td>
<td>1b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Make flexible pathways consistently available and easily identifiable to students.</td>
<td>1b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Create course and scheduling options that allow for more flexibility, such as decreased in-person contact time, and alternate course structures beyond the traditional 0.5 credit weight course (e.g., block courses, non-standard credit-weight courses).</td>
<td>1c, 3c, 7a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Implement a system of open enrolment that allows non-degree learners to enroll in selected courses (e.g., those without or with few prerequisites, likely to be of general interest, that can perhaps be bundled into a credential or that serve as an alternative pathway to admission), providing expanded opportunity for access, especially to fully online courses.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STRATEGIC DIRECTION 3: Learner-centredness and student success should guide the application of digital learning.</td>
<td>a. Inform the application of digital learning with evidence, research and established best practices. Strategies should focus on promoting active learning and other high impact practices, achievement of institutional goals (e.g., retention, access, and engagement), and achieving key learner competencies (e.g., as articulated in WatSEE and the Future Ready Talent Framework).</td>
<td>1b, 1d</td>
<td></td>
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<tr>
<td>---</td>
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<td></td>
</tr>
<tr>
<td>b. Continue to develop self-efficacy and a digital learning culture among students, including best practices for time management, collaboration, interaction, academic integrity, and respectful and ethical behaviour in digital environments. This should be done at the institutional and Faculty level, including programs and academic support units.</td>
<td>2a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Continue to encourage and support the increased use of evidenced-based blended and flipped modes of learning, supported through the Blended Learning Initiative and other projects, with the goal of utilizing in person time more effectively and increasing active learning in the classroom.</td>
<td>2c</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Ensure students have access to the academic and non-academic supports, training, learning tools and technologies required for their success</td>
<td>1a</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
as digitally enabled learning becomes more ubiquitous (e.g., institutional site licenses for core educational software, remote access to labs and specialized technology; spaces on campus that allow students to participate in virtual classes or access virtual supports while on campus; remote access to mental health and student success supports).

e. Develop institutionally supported digital communities that provide opportunities for students to safely communicate and connect locally and globally for learning and communication, and to enhance and expand the on-campus experience.

<table>
<thead>
<tr>
<th>STRATEGIC DIRECTION 4: Ensure a consistently high quality of learning experience across the institution regardless of the mode of delivery.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Define official digital modalities offered at Waterloo (on-campus, blended, and online; synchronous and asynchronous) and communicate information regarding each mode and related learner expectations (e.g., in-person and online time commitments) to students via scheduling and course selection information.</td>
</tr>
<tr>
<td>b. Establish University-level principles and guidelines to ensure that baseline requirements for digital learning are met and that Waterloo students have consistent, high quality digital learning experiences.</td>
</tr>
<tr>
<td>c. Provide support for all modes of digital learning design, from individual</td>
</tr>
</tbody>
</table>

7c, 3e
<table>
<thead>
<tr>
<th>Digital Learning Strategy Working Group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STRATEGIC DIRECTION 5:</strong> Implement a model of digital learning that is sustainable, efficient, and effective.</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>d. Ensure that academic support units (ASUs) involved in student learning are themselves supported in delivering digital services to students.</td>
</tr>
<tr>
<td>STRATEGIC DIRECTION 5: Implement a model of digital learning that is sustainable, efficient, and effective.</td>
</tr>
<tr>
<td>a. The University should establish a standing committee on digital learning, with representatives from each Faculty, staff, and students.</td>
</tr>
<tr>
<td>b. The University should review intellectual property policy (Policy 73) with regard to teaching materials, with the goal of making digital assets created in the course of one’s employment consistently available for reuse within the institution (e.g., for use in core course, large multi-section courses, or courses serving several programs or Faculties).</td>
</tr>
<tr>
<td>c. The EDTECH governance structure should ensure that the appropriate processes and technology are in place to support the creation, sharing, and life cycle management of digital teaching and learning assets, including a platform that facilitates the sharing and reuse of digital course assets within the University of Waterloo.</td>
</tr>
<tr>
<td>d. The University should incentivize the development of digital materials that can be shared within the University of</td>
</tr>
</tbody>
</table>
Waterloo community and, when appropriate, more widely as open educational resources (OERs).

e. The University should commit to ongoing support for digital learning. This could include funding for students to help co-create digital learning experiences (e.g., online learning assistants during pandemic).

f. The University should commit to ongoing resourcing in areas such as copyright, accessibility, privacy, security, and digital asset management in ways suited to supporting the important roles each plays in digital teaching and learning.

**STRATEGIC DIRECTION 6:** Continue to advance an agile, technology-enabled learning ecosystem that supports high-quality digital learning options.

a. The University utilizing three tiers of institutional tools: 1) a suite of centrally supported core systems, 2) Faculty-based purchased and supported tools, and 3) instructor-selected and supported special purpose course tools to help achieve a balance between consistency for students and instructor autonomy.

b. The new EDTECH governance structure should define a clear, responsive process for the identification, vetting, and implementation of tools, with an ongoing commitment to support current and future central acquisitions. The structure should also assign

<table>
<thead>
<tr>
<th>1d</th>
<th>University</th>
</tr>
</thead>
<tbody>
<tr>
<td>5c, 6c, 6d</td>
<td>EDTECH Governance</td>
</tr>
</tbody>
</table>

5c
<table>
<thead>
<tr>
<th>Responsibility</th>
<th>6a</th>
<th>University</th>
</tr>
</thead>
<tbody>
<tr>
<td>c. The University should review its procurement process to ensure that it is suited to the efficient selection of optimal technology within the rapidly shifting EDTECH marketspace.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. The University should have a team dedicated to support the development, customization, and integration of in-house EDTECH systems for digital learning. This could involve ASU and Faculty collaboration and pooling of resources.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. The selection of future tools, such as the learning management system (LMS), should consider both current and future needs, pedagogic frameworks and strategic directions (e.g., WatSEE, the Future Ready Talent Framework, WatSPEED/lifelong learning).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. The University should commit to ongoing investment in campus infrastructure to support digital learning on campus (e.g., Wi-Fi, flexible teaching and learning spaces) and develop classroom standards and specifications based on room capacity and function to be employed in new builds or retrofits irrespective of space.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ownership or management to foster a more consistent technological and functional experience.

<table>
<thead>
<tr>
<th>STRATEGIC DIRECTION 7: Leverage digital strategies to enhance and expand work-integrated and life-long learning.</th>
<th>a. Employ the credentials framework currently under development to digitally deliver micro-credentials that allow for shorter, stand-alone but stackable credits, which could also be made available to non-student audiences via open enrolment.</th>
<th>2c</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. Continue to expand WatSPEED digital lifelong learning offerings to cater to the greater demand for online offerings, as well as accessing new markets and repurposing existing (credit course) digital assets where appropriate.</td>
<td>1d</td>
<td></td>
</tr>
<tr>
<td>c. Develop digital learning resources and co-curricular opportunities that support career readiness, particularly for graduate students.</td>
<td>3e</td>
<td></td>
</tr>
<tr>
<td>d. Develop a student dashboard that tracks all for-credit and experiential learning, e.g., the Future Ready Talent Framework competencies that occur in co-op work placements.</td>
<td>1e, 10d</td>
<td></td>
</tr>
<tr>
<td>e. Implement a digital wallet to authenticate digital micro-credentials and competencies.</td>
<td>1d, 8d</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STRATEGIC DIRECTION 8: Identify and support faculty professional and</th>
<th>a. Recognize the time required to develop and integrate digital tools, content, and strategies into teaching</th>
<th>Faculties</th>
</tr>
</thead>
</table>
### Pedagogical Development Needs for Digital Teaching and Learning

<table>
<thead>
<tr>
<th>Pedagogical Development Needs for Digital Teaching and Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>and factor this into the equitable assignment of duties.</td>
</tr>
<tr>
<td><strong>b. Develop a certificate in digital teaching and learning</strong> for instructors and graduate students.</td>
</tr>
<tr>
<td><strong>8d</strong></td>
</tr>
<tr>
<td><strong>c. Expand each Faculty’s Teaching Fellows program</strong> to provide capacity, support, and reach for digital initiatives.</td>
</tr>
<tr>
<td><strong>7e</strong> Faculties</td>
</tr>
<tr>
<td><strong>d. Continue the collaboration among key teaching and learning related academic support units through Keep Learning as a means to coordinate and streamline access to resources and support for instructors. Keep Learning should continue to provide guidance and support for overall directions set by University leadership, Teaching Fellows, and related advisory bodies.</strong></td>
</tr>
<tr>
<td><strong>8b</strong> Academic Support Units</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>STRATEGIC DIRECTION 9: Expand our global reach and reputation using digital strategies.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a. Identify key markets which are underserved in Waterloo’s areas of strength; develop and market scalable online programs, including course-based graduate degrees.</strong></td>
</tr>
<tr>
<td><strong>3e</strong></td>
</tr>
<tr>
<td><strong>b. Promote and grow international enrollment of traditional and life-long learners via a strong catalogue of digital offerings.</strong></td>
</tr>
<tr>
<td><strong>3e</strong></td>
</tr>
<tr>
<td><strong>c. Create opportunities for every student to engage in intercultural co-curricular linkages, e.g., via</strong></td>
</tr>
<tr>
<td><strong>3e</strong></td>
</tr>
<tr>
<td>STRATEGIC DIRECTION 10: Employ digital-enabled approaches to support equity, representation, inclusion, and anti-racism goals and initiatives.</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td><strong>a.</strong> All areas of the University should utilize digital learning as an important (but not exclusive) means of supporting Universal Design for Learning (UDL) campus initiatives, recognizing that the availability of digital formats and the flexibility afforded by digital teaching and learning go a long way in supporting UDL goals.</td>
</tr>
<tr>
<td><strong>b.</strong> The University should provide centralized support for achieving AODA post-secondary education standards.</td>
</tr>
<tr>
<td><strong>c.</strong> The University should promote flexible pathways to underserviced, international, and non-traditional students in order to recruit more underrepresented students.</td>
</tr>
<tr>
<td><strong>d.</strong> The University should develop digital modules in EDI-R that can be embedded in the curriculum or offered as micro-credentials.</td>
</tr>
<tr>
<td><strong>e.</strong> Programs should leverage digital formats as a means of introducing indigenous elements into the curriculum, including providing the flexibility to do so, and the University can use online modules as a means to promote awareness and action regarding indigenization and reconciliation.</td>
</tr>
<tr>
<td>STRATEGIC DIRECTION 11: Lead in teaching and learning that exploits the combined and unique strengths of technology and human interaction.</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>f. Programs should use digital tools to bring more underrepresented voices into the classroom (e.g., guest lecturers, advisors, mentors, etc.)</td>
</tr>
<tr>
<td>a. The University should provide structure and support for digital teaching innovation and make fostering digital teaching innovation one of the foci of the Teaching Innovation Incubator.</td>
</tr>
<tr>
<td>b. The University should ensure that there is ongoing proactive exploration and research into emerging technologies and their potential application in teaching and learning (e.g., AR/VR, AI driven tools).</td>
</tr>
<tr>
<td>c. The University should develop better mechanisms for recognizing and diffusing innovation across the institution (e.g., faculty community of practice, digital learning exemplar website). Evaluation of success should be a required component of any University-supported project.</td>
</tr>
<tr>
<td>d. The University should define institutional objectives and key results (OKRs) as appropriate for the recommendations in this report, including measures of student success and student satisfaction (e.g., from student course perceptions surveys, NSSE results, term surveys).</td>
</tr>
<tr>
<td>STRATEGIC DIRECTION</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>12: Engage in a broader transformation initiative and develop a vision for a fully digitally enabled university that appropriately leverages technology to enhance all university services.</td>
</tr>
</tbody>
</table>
Item Identification:

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

Summary:

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

Recommendation/Motion:

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

Governance Path:

Department-level vote, online February 13-17, 2023
Engineering Faculty Council vote, April 18, 2023
Deans Council (plus PVP), May 31, 2023

Previous Action Taken:

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

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

Documentation Provided:

- Briefing note: Motion for Department Name Change
FOR APPROVAL

Department Name Change

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

Rationale:

The Department of Management Sciences was founded in 1969 when it launched its graduate programs that are still running today: our course-based Master of Management Sciences (MMSc) programs and our research-based MASc & PhD programs. In 1998, the department launched the first online graduate program in Canada, initially named Management of Technology at a Distance (MOT@Distance), which was expanded to include topics in Operations Research and Information Systems and renamed to the MMSc Online program. In 2007, we introduced a Bachelor of Applied Science (BASc) in Management Engineering, a unique accredited engineering undergraduate program which has been an outstanding success. We also offer an Option in Management Sciences at the undergraduate level. More recently, we have expanded our programs to include a graduate diploma in data analytics (GDDA), which is offered both to our Master of Management Sciences (MMSc) students, and starting in Fall 2024, will be offered as a standalone program.

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

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

- Direct consultation with 30 faculty members
- Direct consultation with 7 staff members
- Data collection from surveys from 227 alumni (83 MGTE undergraduate alumni, 67 MMSc course-based graduate alumni, and 77 MASc/PhD thesis-based graduate alumni)
- Meetings with 80+ current graduate students (MMSc: 34 online, 60+ in-person; MASc/PhD: 18 online, 20+ in-person)
- Meetings with 120+ current undergraduate students (120 online, 100+ in-person)
• Direct consultation with 2 Faculty of Engineering staff and 2 retired department chairs

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

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

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

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

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

**Environmental scan:**

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

**Industrial Engineering in Canada:**

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

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

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

The most relevant counterpart that we have globally is Stanford’s Management Science & Engineering Department. Our proposed name matches Stanford’s department name and would be recognizable internationally as having significant overlap.
Agenda Item Identification: 9(a). Report – Senate Graduate & Research Council: Graduate Studies Academic Calendar Revisions

Summary:

Senate Graduate & Research Council met on 12 June 2023 and agreed to forward this item to Senate for approval as part of the Regular agenda.

Recommendation/Motion:

To approve revisions to the co-operative education section of the Graduate Studies Academic Calendar (GSAC) to include Graduate Work-integrated Learning definitions and content. To approve and add a new Community and Industry Research Projects (CIR) course component to the GSAC and Quest glossary of terms.

Jurisdictional Information:

This item is being submitted to Senate in accordance with Senate Bylaw 2; section 4.03(a): “Make recommendations to Senate with respect to the governance, direction and management of, or any changes in rules, regulations or policies for graduate studies and research in the University”.

Governance Path:

Review by Graduate Operations Committee, review by GradWIL Steering Committee, approval by Graduate & Research Council, approval by Senate.

Previous Action Taken:

1. GradOps review date: 04/18/23
2. GradWIL Steering Committee review date: 05/08/23
3. SGRC approval date: 06/12/23
Highlights/Rationale:

The University’s strategic commitment towards developing talent for a complex future includes expanding Work Integrated Learning (WIL) opportunities at the graduate level. This is a signature objective towards the goal of enhancing graduate studies. Within this “GradWIL” initiative, an identified challenge is in tracking where and how graduate WIL activities take place. That is, currently, there is inconsistency in terminology as well as how similar activities are recorded across graduate programs. The purpose of this Calendar language is to provide structure and consistency for how programs label/record their WIL offerings such that this information can be tracked institutionally (or by individual programs). The proposed Calendar language also identifies other forms of WIL beyond the current description, which only identifies co-operative education. Consultations, which included this proposed structure, have been ongoing (involving Faculty graduate groups, graduate students, CEE leaders, GSPA, RO, individual graduate programs, etc.).

Next Steps:

To be included in the Fall 2023 Graduate Studies Academic Calendar.

Documentation Provided:

Program Revision Template - Appendix A
May 30, 2023

TO: Tim Weber-Kraljevski, Governance Officer, Senate Graduate and Research Council

FROM: Jeff Casello, Associate Vice-President, Graduate Studies and Postdoctoral Affairs (GSPA)
      Liz Nilsen, Assistant Vice-President, GSPA
      Marianne Simm, Director, GSPA

RE: Graduate Studies Academic Calendar (GSAC) changes

Items for approval:

Updating and expanding the co-operative education section to include Graduate Work-integrated Learning definitions and content. Adding a new Community and Industry Research Projects (CIR) course component to the GSAC and Quest glossary of terms.

Description and rationale for proposed changes:

The University’s strategic commitment towards developing talent for a complex future includes expanding Work Integrated Learning (WIL) opportunities at the graduate level. This is a signature objective towards the goal of enhancing graduate studies. Within this “GradWIL” initiative, an identified challenge is in tracking where and how graduate WIL activities takes place. That is, currently, there is inconsistency in terminology as well as how similar activities are recorded across graduate programs. The purpose of this Calendar language is to provide structure and consistency for how programs label/record their WIL offerings such that this information can be tracked institutionally (or by individual programs). The proposed Calendar language also identifies other forms of WIL beyond the current description, which only identifies co-operative education.

Consultations, which included this proposed structure, have been ongoing (involving Faculty graduate groups, graduate students, CEE leaders, GSPA, RO, individual graduate programs, etc.).

Proposed effective date: Term: Fall Year: 2023

Current Graduate Studies Academic Calendar (GSAC) page (include the link to the web page where the changes are to be made):

https://uwaterloo.ca/graduate-studies-academic-calendar/general-information-and-regulations/co-operative-education

https://uwaterloo.ca/graduate-studies-academic-calendar/general-information-and-regulations/glossary-terms

<table>
<thead>
<tr>
<th>Current Graduate Studies Academic Calendar content:</th>
<th>Proposed Graduate Studies Academic Calendar content:</th>
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<tbody>
<tr>
<td><strong>Co-operative education</strong></td>
<td><strong>Graduate Work-integrated Learning</strong></td>
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<tr>
<td>Some departments within the University make provision for co-operative work terms at the Master’s or the PhD level. Normally, two terms of co-op work terms are required for this option. Students admitted to co-operative degree.</td>
<td>Work-integrated learning (WIL) opportunities are provided to students across numerous graduate programs at the University of Waterloo. Adopting the Co-operative and Work-Integrated Learning Canada (CEWIL) definition,</td>
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</table>
Current Graduate Studies Academic Calendar content:

Programs register part-time for their work terms. Check with your department/school to see whether the co-op option is available.

Proposed Graduate Studies Academic Calendar content:

WIL is a form of curricular experiential education that formally integrates a student’s academic studies with quality experiences within a workplace or practice setting. WIL experiences include an engaged partnership of at least: an academic institution, a host organization, and a student. WIL can occur at the course or program level and includes the development of student learning objectives and outcomes related to: employability, agency, knowledge and skill mobility and life-long learning.

WIL allows for theoretical learning to be integrated with practice, promoting deeper understanding of theory through practical application. Graduate programs offering WIL opportunities should follow best-practices through the inclusion of the following key WIL components: pedagogy (curricular elements that include when the activity occurs, duration/intensity, and training); experience (ensuring meaningful activities and alignment with the WIL definition); assessment (of activities based on identified learning outcomes); and reflection (on what constitutes purposeful work for each student). Regardless of how WIL is structured, activities should align with Graduate WIL (GradWIL) learning development process. (See below for GradWIL learning development process text, included for reference).

At the University of Waterloo, there are different WIL models that provide consistency in how WIL experiences are offered and recorded across academic programs. While there may be some WIL activities that do not fall within one of the models (as well as accreditation requirements for professional programs), academic units should use one of the following WIL models to facilitate standardization and institutional tracking of experiences.

1. **Course-level WIL** is delivered in the context of a course (either required or elective) and activities are typically facilitated through a course instructor. Students receive course credit for the activity, with the unit weight being determined by the intensity/duration of...
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<th>Current Graduate Studies Academic Calendar content:</th>
<th>Proposed Graduate Studies Academic Calendar content:</th>
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<tr>
<td>activities. Course-level WIL comes in the form of the following models: a) Community and Industry Research Projects (CIR) or b) Practicums:</td>
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**a) Community and Industry Research Projects (CIR):**
Supporting the course objectives, CIR consist of a project or assignment within the course wherein students engage with a partner organization either individually or in teams. The course project/assignment would occur in or with external organizations, with examples being consulting projects, design projects, program evaluations. When a course involves CIR, the activity would be identified with a secondary (or tertiary) component using the course component CIR.

**b) Practicums (PRA):** Practicums are a work-integrated learning experience that form the basis of the course and provide students with intensive, hands-on experience in a setting relevant to their subject of study (paid or unpaid). Practicums are typically supervised within the external setting by identified person(s) who are approved by the program (based on their professional and other competencies). Practicum hour requirements are established by the program, vary across different programs and courses. Practicums are denoted as a primary component using the course component PRA. Practicums are usually graded as credit/no-credit.

**2. Program-level WIL** is delivered as a required component of the program with associated WIL activities typically facilitated through the academic unit, often in partnership with Co-operative and Experiential Education (CEE).
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<th>Current Graduate Studies Academic Calendar content:</th>
<th>Proposed Graduate Studies Academic Calendar content:</th>
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| Program-level WIL comes in the form of the following models: a) Co-operative Education or b) Internship. Program-level WIL would be identified through the program name, plan code, and corresponding milestone(s). In both models, the WIL activity provides experience in a practice/workplace setting related to the student’s field of study. Typically the WIL activity would occur at a time in the student’s academic program to allow for an integration of learning between the WIL experience and academic/research activities. As program-level WIL typically involves full-time activity, students would be required to have a change of enrollment status during their experience(s). | a) **Co-operative Education (Co-op):** Co-op is full-time, paid work experience in a workplace setting that is related to the student’s area of study and career interest. Co-op programs typically include completion of a professional development course prior to a work term (COOP 6012), work term(s), and reflective and/or work reports as required by the graduate program. In masters-level programs with co-op designations, students are required to successfully complete a minimum of one standard work-term and, if specified by their program, one additional work term (standard or flexible work-terms). Co-op doctoral programs require a minimum of three standard work-terms and, if specified by their program, additional work terms (standard or flexible work-terms).  

b) **Internships:** Internships are supervised work-integrated learning experiences that are discipline-specific and directly align with the graduate program’s learning |
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<th>Current Graduate Studies Academic Calendar content:</th>
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<tr>
<td>Internships require approval by the graduate program. Internships vary in length and intensity, but are typically between 4 months to 12 months of full-time work experience (that is paid or unpaid), and supervised within the external setting by identified persons who are approved by the graduate program (based on their professional and other competencies).</td>
<td>Separate from course or program-level offerings, many graduate students are involved in discipline-specific research activities that constitute WIL either as part of degree requirements (e.g., thesis or Master’s Research Paper) or as additional research projects during their graduate training (i.e., during a time when they have active enrollment status). Such research would involve an industry or community partner and an identified faculty collaborator (in most cases, the research supervisor). For research activities to be considered WIL, there must be co-creation of the research objectives by the external partner and the student/faculty member, active engagement and interaction between the student and external partner, and the external partner should have a role in providing feedback to and/or assessment of the student activity.</td>
</tr>
<tr>
<td>1 There are other types of experiential learning courses that take place in a setting outside the classroom [e.g., Labs (LAB), Field Studies (FLD), Studio (STU)]. The key distinction between these types of courses and those that denote WIL is that, for the former, a meaningful partnership with an external/host organization is not required. If criteria for WIL is met, courses should be identified as CIR or PRA.</td>
<td>2 COOP 601 does not count towards home program degree course requirements.</td>
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<tr>
<th>Current Graduate Studies Academic Calendar content:</th>
<th>Proposed Graduate Studies Academic Calendar content:</th>
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<tbody>
<tr>
<td><strong>Glossary of terms</strong></td>
<td><strong>Glossary of terms</strong></td>
</tr>
<tr>
<td>N/A</td>
<td>Community and Industry Research Projects (CIR): This is a secondary or tertiary component</td>
</tr>
</tbody>
</table>

1 There are other types of experiential learning courses that take place in a setting outside the classroom [e.g., Labs (LAB), Field Studies (FLD), Studio (STU)]. The key distinction between these types of courses and those that denote WIL is that, for the former, a meaningful partnership with an external/host organization is not required. If criteria for WIL is met, courses should be identified as CIR or PRA.

2 COOP 601 does not count towards home program degree course requirements.
Current Graduate Studies Academic Calendar content: | Proposed Graduate Studies Academic Calendar content:
---|---
that involves student engagement in research that occurs primarily in or with external organizations (including consulting projects, design projects, program evaluations). This component is only used at the graduate-level.

**GradOps review date:** 04/18/23  
**GradWIL Steering Committee review date:** 05/08/23

### Additional information

**NOTE:** The content below will *not* be added to the GSAC but will be included on a separate GradWIL resource page. It is included here because it is referenced within the proposed calendar text.

### GradWIL Learning Development Process

GradWIL Learning Development Process has been designed to help guide how WIL is offered at the University of Waterloo, such that learning outcomes (i.e., based on program-specific [graduate degree level expectations](#) and/or [future ready talent framework](#)) can be supported. This learning development process is provided to help shape decision-making, and, as a collective, create the conditions for purposeful work.

**Prior to their experience students will have had the opportunity to:**
- **Evaluate** the level of their current knowledge, skills, and abilities
- **Reflect** on their values, needs and the strengths/gaps in their current knowledge, skills, and abilities
- **Plan** how to utilize strengths and improve upon gaps in knowledge, skills, and abilities while on an experience

**While on experience students will have had the opportunity to:**
- ** Develop** and/or **implement** research, evidence-informed solutions and/or other work reflecting their depth and breadth of discipline and context specific knowledge
- **Collaborate** and **build** professional relationships with industry and/or community partners
- **Reflect** on their current work experience, demonstrating evolution in their knowledge, skills, and abilities, a deeper understanding of their values and needs, and an appreciation for differences in workplace cultures

**Following their experience students will have had the opportunity to:**
- **Illustrate** how their values, knowledge, skills and abilities are connected to their career identity (i.e. overall career goals, interests, and motivations)
- **Reflect** on how their career identity can contribute to academia, government, and/or private and public sectors to impact people, teams, organizations, and communities
- **Integrate** their career identity, experiences, and competencies into a post-graduation action plan
Item Identification:

10(a). Annual update to Senate on the evolution of Teaching Assessment Processes.

Summary:

Annually since at least 2016 Senate has received an update in the spring about evolution of teaching assessment processes. The report includes updates on progress on a range of processes, including student perception surveys and peer reviews of teaching, and on research carried out by the teaching assessment processes office.

Recommendation/Motion:

None: the item is for information.

Governance Path:

None. The report describes actions taken in response to decisions and endorsements by Senate in the past.

Previous Action Taken:

N/A

Highlights:

The report includes a brief introductory summary by the Associate Vice-President, Academic. The report describes ongoing research to support the evolution of teaching assessment processes at Waterloo, and descriptions of progress in the implementation of the cascaded student course perception tool approved by Senate in 2019 and the Peer Review of Teaching and Teaching Dossier tools developed in response to the work of the Complementary Teaching Assessment Processes Team (CAPT) set up in response to a Senate motion in 2019 and appointed by the AVPA in consultation with the FAUW President.

Documentation Provided:

Introductory memo and report from the Teaching Assessment Processes Office.
Annual Report of Progress with respect to Assessment of Teaching

David DeVidi, Associate Vice-President, Academic

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

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

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

Teaching Effectiveness Framework

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

Student Course Perception Surveys

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

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

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

Cascaded model

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

Response rates

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

Complementary Methods

The report updates progress on implementing the recommendations from CTAPT:

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

Steps for the future

1. The TAP Office has only two extremely diligent members and, as can be seen even from this summary document, is attempting to move many projects forward at once. It is not uncommon
that the Office receives questions of the general form “when can we expect X?” or more bluntly “why are we still waiting for Y?”

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

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

The purpose of these annual reports is to provide a transparent and comprehensive summary of the key developments as we work toward a holistic model for the assessment of teaching. With such a many-faceted and sometimes contentious project, our goal is to keep stakeholders informed. Consultations are at the heart of this work. We remain committed to the goal of developing and implementing a holistic model for teaching assessment that is aligned with the institutional Teaching Effectiveness Framework and that provides meaningful and fair assessment of teaching effectiveness.
Assessment of Teaching: Overview
Update to Senate, May 2023

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

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Background: Teaching Assessment Processes

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

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

Teaching Assessment Processes at the University of Waterloo

<table>
<thead>
<tr>
<th>Overarching Goal</th>
<th>PART Recommendation #19</th>
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<tbody>
<tr>
<td>To mitigate the impact of systemic biases on the teaching component of UW’s merit, tenure &amp; promotion process by including multiple sources of information.</td>
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<th>Objectives</th>
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<tr>
<td>Gradually eliminate single source teaching assessment practices</td>
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<tr>
<td>Advance progress toward holistic assessment (Senate endorsed)</td>
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<tr>
<td>Demonstrate leadership in teaching assessment</td>
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<tr>
<td>Provide evidence that drives improvements in teaching quality, contributing to improved student outcomes, engagement, satisfaction, perceptions.</td>
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</tbody>
</table>

Foster increased equity in teaching assessment
Continuous development and improvement of systems and processes

Ongoing Development & Implementation

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

- Implementing recommendations from the Complementary Teaching Assessment Processes Team (CTAPT) for Peer Review of teaching (PRT) and Teaching Dossiers (TD) to provide useful and feasible methods for gathering information about teaching that is complementary to that which can be gathered from SCPs.
- Developing tier-two Faculty-level questions for the SCP survey cascaded model in consultation with the Faculties.
- Developing tier-four survey questions for the SCP survey cascaded model (forthcoming Fall 2023)
- Ongoing quantitative analysis of the SCP survey results with a specific focus on how SCP scores are associated with factors identified in the literature, with a specific focus on
racial and gender identity. Winter 2022 analysis is complete with Winter 2023 analysis underway.

- Qualitative analysis of the open-ended responses on SCPs. This is the first ever institutional study of its type (the research literature is also sparse) that offers a further contribution to the TAP office’s commitment to implement a holistic assessment model that is comprehensive, equitable, defensible, and offers a protective resistance against the impacts of systemic biases on teaching assessment.

- Socializing the Teaching Effectiveness Framework and ensuring holistic assessment methods are aligned with this framework. The purpose of the TE framework is to identify aspects of teaching that are simultaneously important and valued aspects of good teaching to both instructors and students at Waterloo and consistently identified in the research literature on teaching and learning as important aspects of effective teaching. The framework identifies aspects of teaching that UW values and hopes to incentivize. It will also help clarify appropriate uses of different sources of information about teaching when assessments of teaching performance are carried out. For instance, no single tool provides useful assessment of all the valued aspects of teaching included in the framework, so having the framework in place can help prevent over-reliance on any one source (such as the SCP).

- Developing methods for assessing the quality of student supervision. The Office of Graduate Studies and Postdoctoral Affairs is leading a process to develop such methods, with the hope that there might be systematic sources of useful information beyond just numbers of students supervised by a given faculty member.

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

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

The TAP office has proposed that a Summative Working Group (SWG) be struck by the Provost. The SWG will include individuals with relevant experience and expertise to develop reasoned,
sound, and equity-informed recommendations on the use of holistic teaching assessment data for summative purposes.¹

**Included in This Report**

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

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

¹ Members of the committee will be appointed by the Provost on advice from the Deans and AVPA and in consultation with the President of FAUW and the AVP GSPA.
We outline here key developments with respect to Student Course Perception (SCP) surveys.

**SCP Core Questions**

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

This analysis involved numerous statistical tests to examine how various instructor characteristics (racial identity, sex, time in Canada, and appointment type) and course
attributes (class size, Faculty of course offering, course type) are associated with Winter 2022 student responses to SCP surveys. The full report is found here: TAP Office Reports

**Winter 2023 SCP Core Questions Quantitative Study**

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

**Cascaded Model: Additional tiers of survey questions Update**

**Overview**

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

**Instructors’ Voices Heard**

**Calls for Course-Level Questions (tier 4 SCP)**

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

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2 Access the guidebooks here: Academic Administrator Guidebook and Instructors (note, pdf versions are available).
3 Access the surveys here: Academic Administrator Survey and Instructor Survey
Sonya Buffone, Director, TAP, Gordon Stubley, former Associate Dean, Teaching (Engineering) and a 3M National Teaching Fellow, and Kathy Becker, Specialist, TAP, took this request very seriously, bringing it to the attention of Leadership (AVPA & Provost). As a result, **the TAP office is excited to officially begin development of tier-four SCP survey questions.**

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

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

**SCPs From the Top-down**

*The Cascaded SCP Model: What is it?*

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

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

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

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

In June 2022, Senate endorsed the decision of Deans’ Council to accept the institutional Teaching Effectiveness Framework. This framework serves as the fundamental foundation for developing UWs holistic teaching assessment processes (SCPs, Peer Review, Teaching Dossiers and Student Supervision methods) and is depicted below.
The institutional Teaching Effectiveness Framework informed development of the teaching and learning priority map outlined below. This priority map helps us to clearly map out how the core SCP survey questions are grounded in key principles of the Teaching Effectiveness Framework.

<table>
<thead>
<tr>
<th>Areas of Focus</th>
<th>Planning Framework</th>
<th>Design</th>
<th>Implementation</th>
<th>Learning Experience</th>
<th>Professional Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview</td>
<td>Alignment at planning level</td>
<td>Design to action</td>
<td>Student perceptions of their learning experience</td>
<td>Activities supporting growth as instructor/supervisor</td>
<td></td>
</tr>
<tr>
<td>Areas of Focus</td>
<td>Planning Framework</td>
<td>Communication Promotion of student engagement Variety of teaching strategies/practices Assessments/feedback</td>
<td>Rapport Responsiveness Engagement with learning Diversity/inclusivity</td>
<td>Reflection Continuous improvement Collaboration, mentorship, leadership</td>
<td></td>
</tr>
<tr>
<td>Examples of Possible Indicators</td>
<td>Learning objectives</td>
<td>One-on-one/small group/large group interactions Synchronous/asynchronous instructional activities</td>
<td>Classroom environment Outside-of-class (i.e., interaction with instructor/supervisor)</td>
<td>Refinement of instructional materials/approaches Workshops &amp; conferences (participation/leadership) Scholarship of Teaching &amp; Learning Mentorship (colleagues/students)</td>
<td></td>
</tr>
</tbody>
</table>
In July 2020, Sonya Buffone, TAP Director, and Gordon Stubley, former Associate Dean, Teaching (Engineering) and a 3M Teaching Fellow, began consultations with the Faculties to design tier-two SCP survey questions grounded in Faculty-specific teaching & learning priorities. Progress in each Faculty to-date is highlighted below.

**Expected Student Outcomes (not measured with SCP)**

Deep learning occurs from experiences that encourage learners to make connections, apply knowledge in new contexts, engage in learning activities and analytical thinking on their own and with others, and retain their learning. Lifelong learning occurs from experiences that teach students to think about their thinking, become self-aware as learners, take responsibility for their learning, and self-assess their learning.

**Course Attributes (measured with SCP)**

Alignment in design occurs when outcomes that are focused on learning are made explicit for learners in courses and programs, the assessments of learning match the outcomes, and the incorporated activities prepare learners for the assessments. Motivation occurs when learning experiences, inside and outside the classroom, are relevant and of value to learners, provide them with choice, and feel achievable yet appropriately challenging. Inclusivity occurs when learning environments and experiences engage learners with differences respectfully and are designed to enable all to learn.
<table>
<thead>
<tr>
<th>Faculty</th>
<th>Start Date</th>
<th>Priority Map Status</th>
<th>Tier two Question(s) Status</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering</td>
<td>July 2020</td>
<td>Completed</td>
<td>Indefinite Pause</td>
<td>Faculty decision to pause process due to lack of consensus on proposed tier 2 items.</td>
</tr>
<tr>
<td>Environment</td>
<td>December 2020</td>
<td>Completed</td>
<td>Pending/Paused</td>
<td>Tier-two items have been proposed and pending Faculty-level approvals prior to pilot-testing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The Faculty is waiting for a decision on the use of these survey questions before proceeding.</td>
</tr>
<tr>
<td>Health</td>
<td>March 2022</td>
<td>Completed</td>
<td>Pending</td>
<td>Tier-two items have been proposed and are pending Faculty-level approvals prior to pilot-testing.</td>
</tr>
<tr>
<td>Math</td>
<td>March 2022</td>
<td>Completed</td>
<td>Pending</td>
<td>Tier-two items have been proposed and are pending Faculty-level approvals prior to pilot-testing.</td>
</tr>
<tr>
<td>Arts</td>
<td>TBD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td>TBD</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Teaching & Learning Priority Maps by Faculty**

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

1. Spans the Faculty (captures all the diversity of the Faculty);
2. Evidence exists that it is a teaching priority (e.g., it is grounded in the strategic plan);
3. Fits into the institutional teaching and learning priority map and either
   a. Broadens; or
   b. Deepens key priorities; and
4. Will be monitored at the Faculty level (e.g., fits into an Associate Dean’s accountability/mandate).

**Engineering Teaching & Learning Priority Map**

**Environment Teaching & Learning Priority Map**
Health Teaching & Learning Priority Map

Math Teaching & Learning Priority Map

1. Experiential education includes a broad spectrum of authentic learning activities.
2. Interdisciplinary study is a priority for all Health programs. The degree of applicability may vary at the course level.
Responses to open-ended questions Winter 2023 Qualitative Study

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

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

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

Proposed Timelines for 2023 Qualitative Analysis

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

...marginalised groups within academia receive the highest number of abusive comments, a veracity of comment rarely experienced by more privileged groups, and receive lower SET results for conducting the same level of work.” Heffernan, T. 2022
SCP Response Rates

Overview

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

Data Sources

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

To Keep in Mind

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

Response Rates: Past Four Years

As a first step, response rate data was plotted by term for the past four academic years: Fall 2018 to Spring 2022. Figure 1 shows that there is termly variability in response rates, with Fall terms generally experiencing the highest overall response rate in any academic year.
We then considered response rates by Faculty (see Figure 2 and Table 1). While all Faculties experienced declining response rates during this period, two Faculties stand out: Engineering and Mathematics. Engineering began and ended this four-year period with the highest overall response rate: above 60% in 2018-2019 and above 40% in 2021-2022. And Mathematics stands out because of a jump (roughly 3%) in overall response rate in the 2020-2021 academic year.

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

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

Table 1: Response rates (%) for each Faculty by academic year, with 4-year change
Change in Number of Course Evaluations Administered

We wondered whether respondent burden, or survey fatigue\(^4\) more specifically, was impacting response rates, so we looked at the number of course evaluations being administered over this period. Figure 3 and Table 1 show the count of course evaluations being administered in each academic year. Both show that half of UW Faculties administered more course evaluations over the past four academic years, while half remained relatively consistent. Notably, Arts and Engineering asked their student body to complete roughly 25% more course evaluations over this period, and Mathematics increased the number of course evaluations administered by about 10%.

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

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

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

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

\(^4\) (Porter et al., 2004)
Change in Enrolment

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

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

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

Change in Course Evaluation Load

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

And as noted in Figure 2, Mathematics experienced a nearly 3% response rate jump in 2020-2021, during which year there was also a drop in the average number of course evaluations per FTE student. These differences led us to look more closely for any association between course evaluations per FTE student and response rate.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts</td>
<td>10.3</td>
<td>11.6</td>
<td>11.9</td>
<td>11.9</td>
<td>1.5</td>
</tr>
<tr>
<td>Engineering</td>
<td>8.8</td>
<td>8.8</td>
<td>10.1</td>
<td>10.2</td>
<td>1.4</td>
</tr>
<tr>
<td>Environment</td>
<td>6.7</td>
<td>6.9</td>
<td>6.7</td>
<td>7.2</td>
<td>0.5</td>
</tr>
<tr>
<td>Health</td>
<td>7.1</td>
<td>6.8</td>
<td>7.1</td>
<td>6.8</td>
<td>-0.3</td>
</tr>
<tr>
<td>Mathematics</td>
<td>8.5</td>
<td>8.8</td>
<td>8.1</td>
<td>8.8</td>
<td>0.3</td>
</tr>
<tr>
<td>Science</td>
<td>8.2</td>
<td>7.7</td>
<td>7.3</td>
<td>7.9</td>
<td>-0.3</td>
</tr>
</tbody>
</table>

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

Changes in Course Evaluation Load and Response Rate

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

<table>
<thead>
<tr>
<th></th>
<th>change in # of course evaluations per student</th>
<th>change in response rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts</td>
<td>1.5</td>
<td>-18.3%</td>
</tr>
<tr>
<td>Engineering</td>
<td>1.4</td>
<td>-19.8%</td>
</tr>
<tr>
<td>Environment</td>
<td>0.5</td>
<td>-16.8%</td>
</tr>
<tr>
<td>Health</td>
<td>-0.3</td>
<td>-13.0%</td>
</tr>
<tr>
<td>Mathematics</td>
<td>0.3</td>
<td>-20.6%</td>
</tr>
<tr>
<td>Science</td>
<td>-0.3</td>
<td>-19.6%</td>
</tr>
</tbody>
</table>

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

But the largest change in response rate occurred in Mathematics (-20.6%), where the number of course evaluations per FTE student increased by a smaller amount (0.3). And while both Science and Health reduced the number of course evaluations per FTE student (-0.3), Health experienced the smallest change in response rate (-13.0%), while Science experienced a large
change in response rate (-19.6%). These results are less supportive of a simple interaction between course evaluation load and response rate. So we decided to add a column to examine the initial (2018-2019) average number of course evaluations per FTE student (Table 6) to consider another possible association.

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

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

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

<table>
<thead>
<tr>
<th>Faculty</th>
<th>2018-2019 # of course evaluations per student</th>
<th>4-Year Change in # of course evaluations per student</th>
<th>4-Year Change in Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts</td>
<td>10.3</td>
<td>1.5</td>
<td>-18.3%</td>
</tr>
<tr>
<td>Engineering</td>
<td>8.8</td>
<td>1.4</td>
<td>-19.8%</td>
</tr>
<tr>
<td>Environment</td>
<td>6.7</td>
<td>0.5</td>
<td>-16.8%</td>
</tr>
<tr>
<td>Health</td>
<td>7.1</td>
<td>-0.3</td>
<td>-13.0%</td>
</tr>
<tr>
<td>Mathematics</td>
<td>8.5</td>
<td>0.3</td>
<td>-20.6%</td>
</tr>
<tr>
<td>Science</td>
<td>8.2</td>
<td>-0.3</td>
<td>-19.6%</td>
</tr>
</tbody>
</table>

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

One interpretation could be that in Faculties with smaller initial numbers of course evaluations per FTE student, even small changes to the number of course evaluations administered per FTE student negatively impacted response rates.
• In Faculties with smaller initial course evaluation loads (Environment and Health), small increases in the number of course evaluations administered per student resulted in small decreases in response rate.
• In Faculties with larger initial course evaluation loads (Arts, Engineering, and Mathematics), even small increases in the number of course evaluations administered per student resulted in large decreases in response rate.

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

Overall Change in Course Evaluation Load and Response Rate

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

Conclusion

This analysis was completed to examine changes in response rates. Findings suggest that a combination of factors may be at play:
• Response rates have been declining for some time.
• The sudden shift to remote learning in Winter 2020, which had profound impacts on many aspects of higher education, may have further impacted response rates.
• Findings suggest that small increases in the number of course evaluations administered over this period (+0.8 surveys per student) may also be contributing to declining response rates.
Next Steps

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

Faculty and Department SCP Survey Administrators

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

Course Instructors

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

Support for SCP Administrators and Course Instructors

Contact Kathy Becker, Teaching Assessment Processes Specialist, for support as needed.

Reference

Update: Peer Review of Teaching

Summary: Peer Review of Teaching

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

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

**History of PRT**

**Winter 2018**

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

**March 2021**

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

**Endorsement of PRT**

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

**May 2020:**

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

June 2022:

- Senate endorsed the decision of Deans’ Council to accept the institutional Teaching Effectiveness Framework.
- Senate received the final report of recommendations from CTAPT.

TAP Office Role in PRT

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

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

Details of TAP Office PRT Tasks

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

**Scheduling Considerations**

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

**Immediate Next Steps**

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

**Next Steps Requiring Consultation**

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

Summary: Teaching Dossiers

BLUE = Teaching Dossiers are primary source
GREEN = both Teaching Dossiers and Peer Review of Teaching are sources
PURPLE = both Teaching Dossiers and Student Course Perception Survey are sources
Steps Towards Implementation

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

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

Teaching Dossiers & Performance Review Updates

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

TAP Logic Model Draft

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

Please note the two figures that follow are in-progress draft versions of the TAP office working model.
## Goal
Implement a holistic teaching assessment framework at the University of Waterloo that is aligned with the institutional **Teaching Effectiveness Framework** and that is comprehensive, equitable, defensible, and offers a protective resistance against the impacts of systemic biases on teaching assessment.

## Objectives

<table>
<thead>
<tr>
<th>Initiatives</th>
<th>Student Course Perception Survey Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fully implement revised Student Course Perception (SCP) Surveys</td>
<td></td>
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<tr>
<td>2. Implement Peer Review of Teaching</td>
<td></td>
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<tr>
<td>3. Implement Teaching Dossier</td>
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<tr>
<td>4. Implement Student Supervision Framework</td>
<td></td>
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<tr>
<td>5. Strike Summative Working Group (SWG)</td>
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</tr>
<tr>
<td><strong>Student Course Perception Surveys</strong></td>
<td><strong>Peer review of Teaching</strong></td>
</tr>
<tr>
<td>• Test questions in all tiers (Conduct quantitative and qualitative analyses)</td>
<td>• Develop scheduling &amp; administration platform (with CEL)</td>
</tr>
<tr>
<td>• Test student engagement strategies</td>
<td>• Identify &amp; prepare assessors</td>
</tr>
<tr>
<td>• Develop improved reports</td>
<td>• Produce supporting materials</td>
</tr>
<tr>
<td>• Develop good practices for SCP survey administration</td>
<td>• Ensure merit, tenure and promotion committees are prepared</td>
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<tr>
<td>• Gather user feedback</td>
<td>• Peer review of Teaching</td>
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<tr>
<td>• Improve user guides</td>
<td>• Improve admin system, training, supporting materials</td>
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<tr>
<td>• Improve platform</td>
<td></td>
</tr>
<tr>
<td><strong>Student Course Perception Surveys</strong></td>
<td><strong>Teaching Dossier</strong></td>
</tr>
<tr>
<td>• Ensure merit, tenure and promotion committees are prepared</td>
<td>• Develop training (with CTE)</td>
</tr>
<tr>
<td><strong>Peer review of Teaching</strong></td>
<td><strong>Student Supervision</strong></td>
</tr>
<tr>
<td>• Develop PRT report for assessors (with CTE)</td>
<td>• User feedback: surveys and/or focus groups</td>
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<tr>
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<tr>
<td><strong>Teaching Dossier</strong></td>
<td><strong>Summative Working Group</strong></td>
</tr>
<tr>
<td>• Develop TD section for APR/BPR forms</td>
<td>• Recommend actions to Senate</td>
</tr>
<tr>
<td>• Support Faculties updating PR forms to align with CTAPT rec’s</td>
<td>• Provide advice to Deans, Associate Deans, Chairs and T&amp;P committees on interpreting teaching assessment scores with equity lens.</td>
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</tbody>
</table>

## Initiatives

<table>
<thead>
<tr>
<th>Student Course Perception Survey Development</th>
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</thead>
<tbody>
<tr>
<td>• Develop questions for remaining tiers</td>
</tr>
<tr>
<td>• Assess open-ended comments</td>
</tr>
<tr>
<td>• Implement student engagement strategies</td>
</tr>
</tbody>
</table>

<table>
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<table>
<thead>
<tr>
<th>Teaching Dossier</th>
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<tbody>
<tr>
<td>• Develop training (with CTE)</td>
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<tr>
<td>• Strike committee (with GSPA)</td>
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<tr>
<td>• Develop assessment approach</td>
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</tbody>
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<thead>
<tr>
<th>Summative Working Group</th>
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<tbody>
<tr>
<td>• Develop recommendations on triangulation of teaching assessment data for use in merit, tenure &amp; promotions</td>
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<td>• Analysis of aggregate data</td>
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<tr>
<td>• Analysis of aggregate data</td>
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<table>
<thead>
<tr>
<th>Student Supervision</th>
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</thead>
<tbody>
<tr>
<td>• Consulations &amp; communications with stakeholders</td>
</tr>
<tr>
<td>• Ensure instructors are prepared</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Summative Working Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Provide advice to Deans, Associate Deans, Chairs and T&amp;P committees on interpreting teaching assessment scores with equity lens.</td>
</tr>
</tbody>
</table>
TAP Office Activities in Each Area

Student Course Perception Surveys
- Communication & Engagement
  - Consultations & communications with stakeholders
- Qualitative and quantitative analyses
  - User feedback: surveys and focus groups
- Response rate tracking
- Development & Customization
  - Develop questions for remaining tiers
  - Monitor and support response rates
  - Develop good practices for SCP survey administration
  - Develop improved results reports
  - Develop process for handling abusive SCP comments
  - User guide improvements
- Platform improvement
  - Develop PRT reports
  - Send notifications and record completion
  - Establish scheduling & administration platform
  - Ensure merit, tenure & promotion committees are prepared

Peer Review of Teaching
- Communication & Engagement
  - Consultations & communications with stakeholders
- Analysis of aggregate data
  - User feedback: surveys and focus groups
- Evaluation
  - User feedback: surveys and focus groups
- Development & Customization
  - Develop supporting materials
  - Organize PRT reports
  - Develop PRT report for T&P
  - Develop PRT report for assessors (with CTE)
  - Develop an observation worksheet for assessors (with CTE)

Teaching Dossier
- Communication & Engagement
  - Consultations & communications with stakeholders
- Evaluation
  - User feedback: surveys and focus groups
- Development & Customization
  - Develop Standard TD report for T&P
  - Develop training for assessors (with CTE)
  - Develop training (with CTE)
  - Support Faculties updating PR forms to align with CTAP recs
- Streamline TDs for T&P & Teaching Awards
  - Ensure merit, tenure & promotion committees are prepared

Student Supervision
- Communication & Engagement
  - Consultations & communications with stakeholders
- Analysis of aggregate data
  - User feedback: surveys and focus groups
- Development & Customization
  - Support Faculties updating PR forms to align with CTAP recs
  - Develop TD section for APR/BPR
  - Streamline TDs for T&P & Teaching Awards
  - Ensure merit, tenure & promotion committees are prepared
  - Develop forms to align with CTAP recs
- Strike committee (with GSPA)
  - Recommend actions to Senate

Summative Working Group (Provost)
Conclusion

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

Appendix A: Teaching Effectiveness Framework: Defining the Categories

*Design*

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

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

*Implementation*

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

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

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

**Assessments and feedback**

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

**Learning experience**

**Rapport**

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

**Responsiveness**

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

**Diversity**

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

**Engagement and learning**

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

**Professional development**

**Reflection**

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

**Growth and continuous improvement**

- Participates in professional development activities
- Makes thoughtful and deliberate changes to practices or develops innovations in response to new information about best practices or to other opportunities as they arise
• Regularly revises or updates course content, assignments, format, or teaching strategies in response to feedback and reflection

Collaboration, mentorship, and leadership

• Demonstrates leadership related to teaching and learning within the University and in the broader educational community
• Interacts and works with colleagues around teaching and learning
• Provides and receives mentorship related to teaching, including with teaching assistants
• Contributes to the Scholarship of Teaching and Learning
Appendix B: Template for Teaching Section in Faculty Performance Review Forms

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

<table>
<thead>
<tr>
<th>Course and Term</th>
<th>Type (UG/GR/Other)</th>
<th>Credit (R/O/F/D)</th>
<th>Enrollment</th>
<th>Notes</th>
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<tbody>
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Notes:

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

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

<table>
<thead>
<tr>
<th>Student Name</th>
<th>Type (UG/M/PhD/Other)</th>
<th>Period of Time and Time Commitment</th>
<th>Notes</th>
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</table>

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

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

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

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

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

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

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

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

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

Where possible, refer to Waterloo’s Framework for Teaching Effectiveness (https://uwaterloo.ca/teaching-assessment-processes/holistic-model/teaching-effectiveness-
and/or teaching goals from previous years, and provide a small number of specific examples and/or some specific evidence from you, your students, and/or your peers.

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

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To: Senate

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

Presenter: Aldo Caputo, Director, Centre for Extended Learning
Contact Info: acaputo@uwaterloo.ca

Date of Meeting: June 19, 2023

Item Identification:

10(b). Digital Learning Principles and Guidelines

Summary:

The Associate Vice-President, Academic (AVPA) is bringing a Digital Learning Principles and Guidelines framework forward to address some needs that have become evident since the start of the COVID-19 pandemic.

The framework articulates a set of Principles and Guidelines that are intended to serve as both baseline and guidelines for digital teaching and learning at Waterloo. The goal is to ensure that digital teaching and learning is done in a manner that complies with university policies and Canadian law, meets Waterloo’s standards for quality, and clearly communicates to students the expectations around mode of delivery.

The framework also supposes a process for approving online (ONLN) course offers that will be developed by Faculties, working with the Centre for Extended Learning and other academic support units as needed. Such processes would be procedural matters and do not require approval by Senate.

Recommendation/Motion:

To approve the Principles and Guidelines for Digital Learning, effective September 1, 2023, as presented.

Jurisdictional Information:

This item is being submitted to Senate in accordance with Senate Bylaw 2; section 4.03(c) and 5.03(e).
Governance Path:

1. UOPS (12 April 2021): Aldo Caputo (Director, Centre for Extended Learning; CEL), presents the concept of developing a framework and the rationale to UOPS and receives support to proceed.
2. CEL works internally to develop the first draft of framework; Keep Learning Team is consulted and helps revise the draft.
3. AVPA provides feedback.
4. UOPS (23 June 2022): framework presented; UOPS recommends progression to SUC.
5. SUC (4 October 2022): framework presented for discussion; SUC provides feedback and supports motion to recommend to Senate the approval of the framework *Principles and Definitions* (subject to minor edits in response to SUC discussion and possibly to SGRC feedback).
6. Framework refined based on SUC feedback.
9. Presented and discussed at Senate November 21, 2023 (tabled)
10. Further consultations were held with subgroup of the Copyright Advisory Committee, and individual senators, resulting in revisions to the original motion.
11. Returned to Deans’ Council (May 24, 2023) for further review and discussion of the changes, resulting in minor wording adjustments.
12. Discussion with subgroup of SEC (June 12, 2023), resulting in an amendment to the final version.

Previous Action Taken:

Described above in section entitled “Governance Path”.

Highlights/Rationale:

The need for such a framework has become clear because of the greater prevalence of digital learning since the Covid-19 pandemic. Historically, the University has been largely relying on the fact that most of the digital learning on campus has taken place in online courses developed in partnership with CEL, which ensured compliance with the hitherto unarticulated principles and framework as a matter of course. As the forms of digital learning and the manner in which they are developed have become more diverse, including through ad hoc support such as CEL’s Agile Development team or entirely instructor-led efforts, it has become clear that it is important that Waterloo adopt an explicit framework of the sort proposed (which is also supported via a recommendation in the Digital Learning Strategy coming to Senate). The Principles and Guidelines address concerns expressed by students during the period of remote instruction during the pandemic and which are the subject of ongoing advocacy by student leadership, as well as promote awareness of our legal and policy requirements and better position us to meet them. Providing greater clarity to both instructors and academic leaders will facilitate the continued expansion of digital learning in a manner consistent with Waterloo’s overall strategies and standards.

Next Steps:

1. This item is being submitted to the June 19, 2023 Senate agenda.
2. Subsequent to the motion being approved, each Faculty and affiliated institution, working with
their constituents, will determine a process consistent with their internal governance practices for approving online course offers and defining academic standards. As appropriate, they will also work with the Centre for Extended Learning and other academic support units such as the Library, CTE, ITMS, Legal Services, AccessAbility Services, and others to define their roles in supporting this process and the achievement of the Principles & Guidelines.

Documentation Provided:

1. Digital Learning Principles and Guidelines
Digital Learning Principles and Guidelines

General Principles

These principles apply to any use of digital technology and materials for teaching and learning, including within on-campus, blended, and online modalities.

1. Learning materials and delivery platforms must abide by all relevant University policies, including:
   1.1. Waterloo’s Guidelines for Third-party resources and Ministry of Colleges and Universities Ancillary Fee protocol
   1.2. Information Risk Assessment requirements
   1.3. Course Outline requirements

2. Platforms and materials must comply with the Ontarians Disability Act (AODA) Post-secondary requirements and related Waterloo accessibility guidelines and policies.

3. Learning materials must conform to Canadian Copyright law and Waterloo Copyright guidelines.

4. Platforms used for instruction should have both instructor and student supports available. Tiers include centrally (university) supported, Faculty/Department/Program-supported, instructor-supported, or vendor-supported tools that meet all other requirements described herein. The most commonly used supported tools should be prioritized to help foster consistency in the teaching and learning experience.

5. Learning materials are subject to Policy 73 (see brief https://uwaterloo.ca/associate-vice-president-academic/remote-teaching-and-learning-intellectual-property) unless covered by separate development agreement or licensing (e.g., Creative Commons or Ontario Open License). In keeping with the spirit of Policy 73, the sharing and reuse of digital learning materials created at Waterloo is encouraged, as is the use of high-quality third-party open educational materials (OERs), in order to reduce costs to students and the institution, while increasing efficiency and maintaining quality.

* Legal Framework: The Principles and Guidelines for Digital Learning, including platforms and learning materials, will be construed in accordance with applicable law:

- Accessibility for Ontarians with Disabilities Act, 2005, S.O. 2005, c. 11 (AODA) and its regulations
- Copyright Act, R.S.C. 1985, c. C-42

If any of these legal provisions are modified, abrogated, superseded, or added to, the Principles and Guidelines for Digital Learning will be interpreted in accordance with the new legal framework.
Principles for an ONLINE class:

An Online Class refers to a specific offer and section of a course offered in this mode (i.e., other sections or classes of the same course may be offered in different modes).

1. is indicated in the schedule as “ONLN” and uses the appropriate components and scheduling.
2. can be completed remotely via digital delivery and does not require in-person activity or on-campus presence, except for in-person final exams (which may be supported in the student’s geographic location), although some online programs may have a short on-campus requirement (e.g., an orientation session or capstone).
3. has approval in principle to be offered in online mode from the Dean or delegate or Vice-President Academic & Dean (VPAD) before development proceeds.
4. is recognized as equivalent to all other offers of the same course in terms of course credit, learning outcomes, and academic rigor, and meets the academic standards of the Faculty.†
5. involves overall instructor efforts equivalent to sections of the same course delivered by all other modalities (i.e., is considered equivalent in terms of instructor workload).
6. provides regular and timely access to instructors, as well as opportunities for meaningful interaction with instructors, other students, and content.
7. has a schedule that conforms to the academic calendar for the term, including start and finish dates and any study breaks, and provides milestones and due dates for activities, assignments, and assessments.
8. uses the appropriate modality (asynchronous or synchronous) for the course content and learning outcomes, with consideration of the needs of the prospective/intended students. Waterloo encourages asynchronous delivery as it offers the greatest flexibility and access, among other benefits.

† Online Principles 4 and 5 were established by the UW Online Learning Task Force, 2008
Guidelines for Specific Online Modes

**An asynchronous ONLN class:**
1. has no scheduled meets.
2. may include limited synchronous elements, for which alternatives and/or flexible options exist.
3. has key content prepared sufficiently in advance of the course offer to a) ensure sufficient time to achieve compliance with the above principles, and b) to ensure that students have timely access to necessary content during the course.
4. has either been fully developed in partnership with CEL as a scheduled project, or undergoes a process as defined by the Faculty or affiliated institution that satisfies the approver (Dean or VPAD, or delegate, with input as defined in the process) that both the Principles & Guidelines and the academic standards of the Faculty or affiliated institution will be upheld, before they grant final approval for the course offer to proceed.

**A synchronous ONLN class:**
1. is primarily facilitated through regular (usually weekly) live online meets using a synchronous tool (e.g., Zoom or Teams) and scheduled in Quest.
2. as appropriate, provides flexible alternatives for students who miss occasional individual classes (e.g., recording of lectures).
3. has a course design and delivery plan that satisfies the approver (Dean or VPAD, or delegate, with input as defined in the process) that both the Principles & Guidelines and the academic standards of the Faculty or affiliated institution will be upheld, before they grant final approval for the course offer to proceed.
Summary:

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

On behalf of Senate, the following items were approved:

1. Graduate Awards
Council approved the following:

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

2. Curricular Submissions
Council approved new courses and minor program revisions for:

   a. Faculty of Health (Health; Recreation and Leisure Studies)
   b. Faculty of Science (Biology; Chemistry)
   c. Graduate Studies (Graduate Studies)

Jurisdictional Information:
As provided for in Senate Bylaw 2, section 4.03, council is empowered to make approvals on behalf of Senate for a variety of operational matters:

   (e) Consider, study and review all proposals for new graduate programs, the deletion of graduate programs, major changes to existing graduate programs, arrange for internal appraisals as the council shall see fit, and make recommendations to Senate thereon.
(f) On behalf of Senate, consider and approve all new graduate courses, the deletion of graduate courses, and proposed minor changes to existing graduate courses and programs, and provide Senate with a brief summary of council's deliberations in this regard. Any matter of controversy that might arise may be referred to Senate.

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

For Information                  Consent Agenda                  Open Session
To: Senate

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

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

Date of Meeting: June 19, 2023

Agenda Item Identification: 12. Report – Senate Undergraduate Council

Summary:
Senate Undergraduate Council met on May 9, 2023 and agreed to forward the following items to Senate for information as part of the consent agenda.

On behalf of Senate, the following items were approved:

Minor Plan & Curricular Modifications
Council approved minor plan changes, new courses, course changes, and course inactivations for:

a. **Faculty of Engineering** (chemical engineering; complementary studies electives; examination and promotions; geological engineering; management engineering; computing option; computer engineering option; management engineering; management sciences option; rules; school of architecture; software engineering option)

b. **Faculty of Mathematics** (bmath data science plan; business administration and mathematics double degree; combinatorics and optimization joint honours; computer science; finance specialization; human computer interaction specialization; joint pure mathematics; mathematics/business administration; mathematics/information technology management; software engineering specialization)

c. **Renison University College** (undergraduate communication requirement)

d. **Software Engineering** (software engineering)

e. **Registrar’s Office** (architectural engineering; aviation; biomedical engineering; business, entrepreneurship and technology; computer science; electrical and computer engineering; environment; environment and business; environment, resources and sustainability; environmental engineering; general engineering; geography; geological engineering; gerontology; health; international development; kinesiology; knowledge integration; management sciences; materials and nano-sciences; mechanical engineering; mechatronics engineering; nanotechnology engineering; optometry; pharmacy; planning; public health sciences; pure mathematics; recreation and leisure studies; school of architecture; sexuality, marriage, and family studies; society, technology and values)
Jurisdictional Information:
As provided for in Senate Bylaw 2; section 5.03; council is empowered to make approvals on behalf of Senate for a variety of operational matters:

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

(e) Consider; study and review briefs on any aspect of undergraduate studies from members of the university.
Senate Undergraduate Council

For Approval

To: Senate

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

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

Date of Meeting: June 19, 2023

Agenda Item Identification: 12a. Report – Senate Undergraduate Council:
Academic Regulation Revision to Admission for the Faculty of Engineering

Summary:
Senate Undergraduate Council met on May 9, 2023 and agreed to forward the following items to Senate for approval as part of the consent agenda.

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

Jurisdictional Information:
As provided for in Senate Bylaw 2, section 5.03, council is empowered to make approvals on behalf of Senate for a variety of operational matters:

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

Governance Path:
Engineering Undergraduate Studies Committee approval date (mm/dd/yy): 03/23/23
Faculty approval date (mm/dd/yy): 04/18/23
Senate Undergraduate Council approval date (mm/dd/yy): 05/9/23

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

Senate
Proposed Changes:

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

**Admission**

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

The following can be found in this Calendar:

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

**Admission for Applicants Not Currently Completing Ontario Secondary School**

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

**Admission to Advanced Standing**

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

Any student admitted to the 3A term will be required to enrol in the winter term, and to complete satisfactorily the final four academic terms, and the final three work terms and work reports.
Credit for previous work experience can be applied only to those work terms preceding the level of admission and cannot exceed three work terms. Students who are readmitted to an engineering plan are required to clear all previous failures.

**Admission of Applicants with a Technical Degree**

Applicants who already possess an undergraduate degree in a technical area such as engineering, science, or mathematics will normally be considered for admission into an undergraduate engineering plan only if space remains after all other qualified applicants have been considered. Postgraduate or graduate studies may be more appropriate for these applicants.
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Summary:
Senate Undergraduate Council met on May 9, 2023 and agreed to forward the following items to Senate for approval as part of the consent agenda.

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

Jurisdictional Information:
As provided for in Senate Bylaw 2, section 5.03, council is empowered to make approvals on behalf of Senate for a variety of operational matters:

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

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

**Admissions Fraud**

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

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

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

To: Senate

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

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

Date of Meeting: June 19, 2023

Agenda Item Identification: 12c. Report – Senate Undergraduate Council: Academic Regulation Revision for Admission Requirements

Summary:
Senate Undergraduate Council met on May 9, 2023 and agreed to forward the following items to Senate for approval as part of the consent agenda.

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

Jurisdictional Information:
As provided for in Senate Bylaw 2, section 5.03, council is empowered to make approvals on behalf of Senate for a variety of operational matters:

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

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

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

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

**Admission Requirement Revision:**
A subscore of 110 in both Literacy and Production be added to the pilot period of Duolingo test score acceptance.
Office of the Vice President, Research and International

For Discussion

To: Senate

Sponsor: Charmaine Dean, Vice President Research and International
Contact Information: vpri@uwaterloo.ca

Presenter: Charmaine Dean, Vice President Research and International
Contact Information: vpri@uwaterloo.ca

Date of Meeting: June 19, 2023

Agenda Item Identification: 13. Awards, Distinctions, Grants, Waterloo International Engagements

Summary:

Presenting the Vice-President, Research and International Report to Senate for June 2023. This report to Senate highlights successful research, international and entrepreneurial outputs and outcomes for the period April-May 2023 by the thematic areas as outlined in Waterloo’s Strategic Plan 2020-25.

Documentation Provided:

- Vice-President, Research and International Report to Senate for June 2023
**Introduction**

This report to Senate highlights successful research and international outputs and outcomes for the period April-May 2023 by the thematic areas as outlined in Waterloo’s Strategic Plan 2020-25.

**ADVANCING RESEARCH FOR GLOBAL IMPACT**

**R1 - Research strengths to solve real-world problems.**

**Awards and Distinctions**


- Dr. Berry received the most influential paper award at REFSQ 2023 along with former PhD student Sri Fatimah for their paper “The Design of SREE — A Prototype Potential Ambiguity Finder for Requirements Specifications and Lessons Learned.”

**Robin Cohen** (Computer Science) - Lifetime Achievement Award from Computer Science Canada Informatique Canada.

- These awards recognize outstanding and sustained contributions to computing over a researcher’s career. Dr. Cohen “stands out among all others through the unmatched recognition that her Masters and PhD students have achieved under her supervision” as well as with her foundational work in artificial intelligence and computational linguistics.

**Mohamed Elmasry** (Electrical and Computer Engineering) - Life Member of the Royal Society of Canada.

- Fellows to the Royal Society of Canada are distinguished Canadians who have made remarkable contributions to learning within their field and is attained after 25 years of membership. Dr. Elmasry has had a distinguished career contributing to academia and industry in the area of digital integrated circuits and systems, particularly in VLSI microelectronics.

**Pierre Filion** (Professor emeritus, School of Planning) - Fellow of the Prestigious College of Fellows with Canadian Institute of Planners.

- The fellow distinction is awarded to individuals who exemplify planning’s best values and recognizes excellence in professional practice, community service, teaching, or conducting planning and community research. Dr. Filion is “one of
Canada’s leading scholars, whose teaching and research has made significant contributions to planning practice in Canada and abroad.”

**Ian Goldberg** (Computer Science) - Senior Member of the Institute of Electrical and Electronics Engineers (IEEE).

- Dr. Goldberg has been named a Senior Member of the IEEE. Only 10 per cent of IEEE’s more than 400,000 members receive this designation, an honour conferred to those who have experience reflecting professional maturity, professional practice experience of at least ten years, and significant achievements. Dr. Goldberg exemplifies this award through his research in cryptography, security and privacy.

**Ravi Mazumdar** (Electrical and Computer Engineering) – Fellow of the Asia-Pacific Artificial Intelligence Association (AIAA).

- Elected as a fellow of the Asia-Pacific Artificial Intelligence Association (AAIA), Dr. Mazumdar has made significant contributions to AI and machine learning through his applied probability and stochastic analysis research, which focuses on applications in complex networks, network science, randomized algorithms and wireless systems.

**John McPhee** (Systems Design Engineering) - Canada Research Chair in Biomechatronic Systems Dynamics, Systems Design Engineering, Gold Medal, Professional Engineers of Ontario)

- Dr. McPhee is the 2023 recipient of the OPEA Gold Medal, the society’s highest honour. He is the first recipient of this award from the University of Waterloo in over 33 years.

**Simron Singh** (School of Environment, Enterprise and Development) - Faculty of Environment Research Award.

- The Faculty of Environment's annual Faculty Research Award recognizes faculty and staff for their commitment and excellence in research. Dr. Singh is a globally recognized expert in socio-ecological metabolism who has pioneered the field of island industrial ecology that analyses and leverages resource-use patterns in island systems as an adaptation strategy to climate change impacts.

**Philippe Van Cappellen** (Earth and Environmental Science) – 2022 J. Tuzo Wilson Medal with the Canadian Geophysical Union.

- The J. Tuzo Wilson Medal is given annually to recognize scientists who make outstanding contributions to the advancement of knowledge in any research area of the Union. Dr. Van Cappellen was selected as a “scientist who has made outstanding, career-long contributions to the advancement of knowledge in earth and hydrologic sciences in Canada.”

**Justin Wan** (Cheriton School of Computer Science) - Arthur Beaumont Award from the Canadian Applied and Industrial Mathematics Society (CAIMS).
- This prestigious award recognizes outstanding contributions to the society or to the field of applied mathematics in Canada. Dr. Wan is being recognized for both his outstanding impact to CAIMS as secretary and for his research leadership: “combining ideas and theories from mathematical modelling and numerical computation, he and his students develop advanced, robust and efficient numerical techniques to solve complex problems arising in science, engineering, finance and economics.”

**Alexander Wong** (Systems Design Engineering) - Canada Research Chair in Artificial Intelligence and Medical Imaging

- Dr. Wong is the 2023 recipient of the OPEA Engineering Medal – Entrepreneurship. Wong is internationally recognized for his ground-breaking contributions to operational artificial intelligence and computational medical imaging.
- Dr. Wong has been selected as a new Institute of Physics (IOP) fellow. Wong’s election as a fellow is the highest accolade the IOP presents to reflect a person’s exceptional services and contributions to physics in their chosen field.

**NSERC Alliance**

- **David Del Rey Fernandez (Applied Mathematics),** “Provably stable methods for ice accretion problems,” **$82,264** over 3 years (+ $83,076 cash and $108,000 in-kind from partner contributions recognized for cost sharing)
- **Chul Min Yeum (Civil & Environmental Engineering),** “Development of an Image-based Surface Roughness Measurement System,” **$88,600** over 2 years (+ $88,600 cash and $11,200 in-kind from partner contributions recognized for cost sharing)
- **James Tung (Mechanical & Mechatronics Engineering),** “Advancing Brain Computer Interfaces (BCI) for wheelchair control: investigating cognitive fatigue effects in free-living conditions,” **$22,333** over 1 years (+ $11,167 cash and $15,000 in-kind from partner contributions recognized for cost sharing)
- **Norman Zhou (Mechanical & Mechatronics Engineering),** “Towards high performance thin-film flexible sensors,” **$407,999** over 4 years (+ $204,001 cash and $285,000 in-kind from partner contributions recognized for cost sharing)
- **Norman Zhou (Mechanical & Mechatronics Engineering),** “Metallurgical study of robotic laser and laser-arc hybrid brazing of coated advanced high strength steels using Cu-based filler materials,” **$330,000** over 3 years (+ $150,000 cash and $70,500 in-kind from partner contributions recognized for cost sharing)
- **Cliff Butcher (Mechanical & Mechatronics Engineering),** “Advanced Plasticity Characterization and Modelling of Next Generation High Strength
Aluminum Alloys for Vehicle Lightweighting,” $325,731 over 4 years (+ $162,864 cash and $206,900 in-kind from partner contributions recognized for cost sharing)

**NSERC Alliance Mitacs (joint program)**

- **Marianna Polak (Civil & Environmental Engineering),** “Novel designs of GFRP reinforced concrete for safety and sustainability,” $106,380 over 3 years (+45,000 cash from Mitacs, +$69,150 cash and $113,400 in-kind from partner contributions recognized for cost sharing)
- **Shane McIntosh (School of Computer Science),** “Pragmatic Identification of High-Impact Software Anomalies,” $116,500 over 4 years (+105,000 cash from Mitacs, +$119,950 cash and $53,760 in-kind from partner contributions recognized for cost sharing)

**Waterloo International Agreements**

Between **April 1 and May 31, 2023** Waterloo International facilitated the signing of one agreement as follows:

- Strathclyde, United Kingdom, MOU agreement. This is an institutional level agreement that was signed between Waterloo and Strathclyde that builds on previous agreements between both institutions and is intended to catalyze possibilities for cooperation and collaboration on academic and research activities of mutual interest to both institutions.

**Waterloo International Achievements**

- Waterloo International is leading a response to calls for input into the federal government’s International Education Strategy. Crafted once every five years, consultations are currently underway on a new version. As currently drafted, pillars to the Strategy are as follows: Digital marketing; Scholarships; Diversification; and Education agents. Waterloo’s response was discussed at the 25 May meeting of the International Operations Council, and the 31 May Government Relations call.

- In May 2023 Waterloo International successfully launched a customized workflow automation for their safety abroad predeparture registration processes using the Creatio business process management software system. This change allows for the improved automation of registering travelers engaged in travel safety and security predeparture activities, significantly increase processing efficiencies. The system is successfully communicating between various systems including WCMS, LEARN, and the Anvil Travel tracking system.
Waterloo Ventures Highlights

- **Velocity Health** officially launched: [https://uwaterloo.ca/news/velocity-health-launches](https://uwaterloo.ca/news/velocity-health-launches)
- **Velocity Health 2022** results: **40+ health tech companies** supported, **$70,000,000 capital** raised, **$36,000,000 sales**, **110 patents** filed.
- **Maclean's** magazine has named **Faizan Sheikh** and **Pablo Molina**, founders of Velocity company **Avidbots Corp.**, on its **Top 10 AI Trailblazers** list: [https://macleans.ca/rankings/the-power-list-2023/](https://macleans.ca/rankings/the-power-list-2023/)
Item Identification:
14. Report of the Provost - University Research Chairs

Summary:

The 2023 University Research Chairs appointed through the faculty nomination/selection process are: Krzysztof Czarnecki (electrical and computer engineering), Sharon Kirkpatrick (public health sciences), Lap Chi Lau (computer science), Simron Singh (environment, enterprise, and development), Solomon Tesfamariam (civil and environmental engineering), and Chris Yakymchuk (earth and environmental sciences). In addition, David Blowes (earth and environmental sciences), will receive a University Research Chair through the nomination/selection process related to exemplary trajectory after the second term of a Tier 1 Canada Research Chair.

Since 2004, Waterloo has granted 129 University Research Chair awards, including this year’s recipients.

University of Waterloo owes much of its reputation and stature to the quality of its professors and their scholarly accomplishments. University of Waterloo recognizes exceptional achievement and pre-eminence in a particular field of knowledge through the designation 'University Research Chair'.

More information can be found on the URC website: University Research Chairs | Provost Office (uwaterloo.ca)

Recommendation/Motion:

This item is being brought forward for information.

Governance Path:

Deans Council (plus PVP) discussion, May 24, 2023
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Office of the Vice-President, Academic and Provost

For Information
To: Senate
Sponsor: James W.E. Rush, Vice-President, Academic and Provost
Contact Information: provost@uwaterloo.ca
Presenter: James W.E. Rush, Vice-President, Academic and Provost
Contact Information: provost@uwaterloo.ca
Date of Meeting: June 19, 2023
Agenda Item Identification: 15. Report of the Provost – Faculty Appointments, Leaves

Summary:
The Faculty Reports for Senators’ information regarding the variety of appointments, reappointments, special appointments, leaves, and other matters of interest about individuals in the Faculties are available at the Senate agenda page¹.

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For Information

To:
Senate

Consent Agenda

Sponsor:
Cathy Newell Kelly, Registrar
cnkelly@uwaterloo.ca

Contact Information:

Sponsor:
Jeff Casello, Associate Vice-President, Graduate Studies and Postdoctoral Affairs
casello@uwaterloo.ca

Contact Information:

Presenter:
Cathy Newell Kelly, Registrar
cnkelly@uwaterloo.ca

Contact Info:

Date of Meeting:
June 19, 2023

Item Identification:
16. List of Graduands – Spring 2023 Convocation

Summary:

At the April 17, 2023 meeting of Senate the following motion was carried:

That Senate approve the delegation of its authority for the approval of the roster of graduands jointly to the chair and vice-chair of Senate, for convocation ceremonies scheduled in June 2023 and October 2023 and that a full report on the complete roster of graduands be presented for information to the Senate meeting following the relevant convocation.

Congruent with Senate’s approval and having been furnished with the lists of graduands for Spring 2023 convocation, on 2 June 2023 the chair and vice-chair of Senate confirmed approval of the lists of graduands as attached to this report.

Documentation Provided:

- Spring 2023 Convocation Early Degrees Granted
- Spring 2023 Convocation Conferment of Degrees
- Fall 2022 Convocation Revisions to Conferment of Degrees
One Hundred and Twenty-Sixth Convocation
Early Conferment of Degrees

June 13th to 17th, 2023
We hereby certify with the authority delegated to us by Senate, we have confirmed the eligibility of the names on this list for graduate and undergraduate degrees, diplomas and certificates from the University of Waterloo and have issued to the same an early diploma.

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

Catheine Newell Kelly
University Registrar
Early Degrees Granted

This is a listing of the degrees, diplomas and certificates granted to students prior to the 2023 Spring Convocation. These students will also appear in the Conferment of Degrees document.

**Undergraduate**

**Bachelor of Applied Science**

<table>
<thead>
<tr>
<th>Name</th>
<th>Date Granted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nathan Collin Allen</td>
<td>May 09, 2023</td>
</tr>
<tr>
<td>Michael Christopher Andary</td>
<td>May 09, 2023</td>
</tr>
<tr>
<td>Manbir Singh Arora</td>
<td>May 12, 2023</td>
</tr>
<tr>
<td>Gursimmer Banwait</td>
<td>May 08, 2023</td>
</tr>
<tr>
<td>Leo Bao</td>
<td>May 24, 2023</td>
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<tr>
<td>Gabriel Euzebio Chirico Baranoski</td>
<td>May 09, 2023</td>
</tr>
<tr>
<td>Benjamin James Beazley</td>
<td>May 09, 2023</td>
</tr>
<tr>
<td>Charlie Cai</td>
<td>May 09, 2023</td>
</tr>
<tr>
<td>Alex Chen Chen</td>
<td>May 08, 2023</td>
</tr>
<tr>
<td>Elijah Yilang Chen</td>
<td>May 12, 2023</td>
</tr>
<tr>
<td>Adrian Hei Tung Chow</td>
<td>May 18, 2023</td>
</tr>
<tr>
<td>Thomas Edward Cojocar</td>
<td>May 08, 2023</td>
</tr>
<tr>
<td>Karan Dahiya</td>
<td>May 09, 2023</td>
</tr>
<tr>
<td>Harsimran Singh Darhan</td>
<td>March 21, 2023</td>
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<tr>
<td>Elizabeth Margaret Drew</td>
<td>May 09, 2023</td>
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<tr>
<td>Ji Yuan Feng</td>
<td>May 09, 2023</td>
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<tr>
<td>Aidan Ronald Gordon Foster</td>
<td>May 24, 2023</td>
</tr>
<tr>
<td>Tristan Pierre Gervais</td>
<td>May 09, 2023</td>
</tr>
<tr>
<td>Selina Hsu</td>
<td>May 08, 2023</td>
</tr>
<tr>
<td>Chun-De Hu</td>
<td>May 16, 2023</td>
</tr>
<tr>
<td>Daniel Igino Ingriselli</td>
<td>May 09, 2023</td>
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<tr>
<td>Alexander Jabbour</td>
<td>May 12, 2023</td>
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<tr>
<td>Hadi Khadra</td>
<td>May 09, 2023</td>
</tr>
<tr>
<td>Muhammad Ayan Khan</td>
<td>May 12, 2023</td>
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<tr>
<td>Larry Li</td>
<td>May 16, 2023</td>
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<tr>
<td>Jacky Liang</td>
<td>May 12, 2023</td>
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<tr>
<td>Kaiwen Liao</td>
<td>May 08, 2023</td>
</tr>
<tr>
<td>Branden Alexander Lisk</td>
<td>May 09, 2023</td>
</tr>
<tr>
<td>Kimberly Kim Yen Liu</td>
<td>May 16, 2023</td>
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<tr>
<td>Shu Yan Liu</td>
<td>May 09, 2023</td>
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<tr>
<td>Aleksi Aaron Luoma</td>
<td>May 24, 2023</td>
</tr>
<tr>
<td>Kyle Fraser Macdonald</td>
<td>May 16, 2023</td>
</tr>
</tbody>
</table>
Chintan Sureshkumar Mistry  Granted May 12, 2023
Ivanseth Solis Ong  Granted May 09, 2023
Sebastian Elo Ouslis  Granted May 24, 2023
Abhijeet Pande  Granted May 24, 2023
Neil Parikh  Granted October 28, 2022
Samarth Vimarshkumar Patel  Granted May 12, 2023
Tirth Manoj Patel  Granted May 01, 2023
Younes Reda  Granted May 09, 2023
Joshua John Klapwyk Roorda  Granted May 12, 2023
Rohan Saxena  Granted May 09, 2023
Rajkumar Senthilkumar  Granted May 09, 2023
Logan Seu  Granted May 10, 2023
Grishma Shah  Granted May 09, 2023
Ahsan Navaid Shamsee  Granted May 09, 2023
Nikhil Singh  Granted May 09, 2023
Chang Su  Granted May 12, 2023
Manasi Tirukachi  Granted May 12, 2023
Kodey Lloyd Vance  Granted May 09, 2023
Oceane Vandame  Granted May 08, 2023
Stefan Noah Vercillo  Granted May 12, 2023
Harris Vijayagopal  Granted May 26, 2023
Lei Wang  Granted May 09, 2023
Leon Wang  Granted May 15, 2023
Bill Wu  Granted May 12, 2023
Zewen Wu  Granted May 09, 2023
Simon Zijian Yan  Granted May 12, 2023
Gary You  Granted May 08, 2023
Syed Ali Haider Zaidi  Granted May 12, 2023
Haorui Zhang  Granted May 12, 2023
Jianxing Zhang  Granted May 12, 2023
Hanqi Zhao  Granted May 09, 2023

Bachelor of Arts
Michael Robert Clubine  Granted May 07, 2023
Evan Thomas Leeson  Granted March 01, 2023
Zheng Ma  Granted March 15, 2023

Bachelor of Computer Science
Kevin Yunlong Chu  Granted January 10, 2023
Bill Sage DuGe  Granted May 18, 2023
Ahsan Rakeeb Hossain  Granted May 15, 2023
Joseph Hu
Edward Yeduo Jiang
Jihyun Kim
Kevin Li
Kevin Li
Rolf Li
Ruizhe Li
Simon Li
Anna Lok
Daniel Luan
Aashrit Luthra
Shalin Alpeshkumar Patel
Simran Rajpal
Siddhant Sharma
Amanda Tang
Manvi Hardikbhai Thakore
Colin Wang
Ruixuan Wang
Daniel Weintraub
Allen Wu
Hancheng Wu
Jennifer Yu Hsueh Wu
Andrew Dongtian Yang
Liangkai Yu

Bachelor of Environmental Studies
Andrew Yekyaw Aung Kirkwood
Jianqiao Zhou

Bachelor of Mathematics
Yu Qi Bian
Laura Yu-Shen Dang
Shu Fan Du
Junyao Duan
Wanghan Feng
Shui Yao Jiang
Heewon Moon
Dasni Senara Samarasena
Kamal Dev Uppal
Ruixuan Wu
Qianxun Xu
Xiaoling Yang

Granted January 10, 2023
Granted May 12, 2023
Granted January 10, 2023
Granted May 09, 2023
Granted May 09, 2023
Granted May 09, 2023
Granted January 10, 2023
Granted January 12, 2023
Granted May 09, 2023
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Granted January 10, 2023

Granted May 09, 2023
Granted May 09, 2023

Granted May 09, 2023
Granted May 09, 2023
Granted January 10, 2023
Granted November 07, 2022
Granted February 27, 2023
Granted January 23, 2023
Granted January 10, 2023
Granted February 10, 2023
Granted March 31, 2023
 Granted May 26, 2023
Granted May 09, 2023
Granted January 10, 2023
Bachelor of Science
Miliya
Granted January 17, 2023
Nicole Carolina Diaz Ortiz
Granted January 30, 2023
Jonathan George Lanteigne
Granted January 16, 2023
Qirui Liu
Granted May 16, 2023
Aadhira Sriram
Granted January 09, 2023
Wing Tung Tang
Granted January 23, 2023
David Felipe Tello Yepes
Granted January 12, 2023
Xiaojun Zeng
Granted February 09, 2023

Bachelor of Software Engineering
Haydn Keung
Granted May 10, 2023
Kevin Ye Jie Li
Granted May 10, 2023
Jin Yang Liu
Granted May 10, 2023
Amanda Susan Margaret Morin
Granted December 06, 2022
Saman Singh Sandhu
Granted May 10, 2023
Sherwin Varkiani
Granted May 16, 2023
Jerry Rundong Yu
Granted May 12, 2023

Diploma in Creative Writing
Hancheng Wu
Granted May 09, 2023

Certificate in Co-operative Education in Research
David Felipe Tello Yepes
Granted January 12, 2023

Graduate
Doctor of Philosophy
Mustafa Alhusain
Granted November 29, 2022
Haya Almutairi
Granted April 20, 2023
He Bai
Granted March 14, 2023
Ezgi Demircan Ozelcaglayan
Granted November 25, 2022
Zejian Deng
Granted January 12, 2023
Hossein Golzar
Granted February 10, 2023
Puttarak Jai-akson
Granted October 12, 2022
Farzaneh Kaji
Granted March 28, 2023
Zhelun Li
Granted January 03, 2023
Peng Shi
Granted March 22, 2023
Chen Sun
Granted January 03, 2023
Xinyuan Yang
Granted March 06, 2023
Taha Younes
Granted December 16, 2022

Master of Applied Science
Cyrus Xu Cerkauskas
Granted March 06, 2023
Pouya Kananian  Granted November 23, 2022
William Charles Thibault  Granted May 02, 2023

Master of Architecture
Maulshree Gupta  Granted March 27, 2023
Chinenye Michelle Ogbo  Granted April 20, 2023

Master of Data Science and Artificial Intelligence
Tashrish Patel  Granted March 14, 2023

Master of Digital Experience Innovation
Wing Gee Lee  Granted May 09, 2023

Master of Engineering
Azza Iqbal  Granted March 06, 2023
Ziyue Li  Granted May 25, 2023
Taha Malik  Granted May 25, 2023

Master of Environmental Studies
Yi Yang  Granted September 21, 2022

Master of Mathematics
Vega Kapoor  Granted January 31, 2023
Arash Moayyedi  Granted February 10, 2023
Licheng Zhang  Granted October 26, 2022

Master of Science
Lu Bai  Granted February 06, 2023

Graduate Certificate
Razan Amoud  Granted December 16, 2022
Marina Chugunova  Granted December 14, 2022
Amanda Doggett  Granted September 14, 2022
Sushma Dusowoth  Granted March 24, 2023
Can Ergen  Granted September 14, 2022
Giuseppe William Femia  Granted April 24, 2023
Carina Teresa Filice  Granted April 24, 2023
Britney Lynn Firth  Granted December 20, 2022
Isidora Gievski-Sidorovska  Granted September 14, 2022
Lowine Stella Hill  Granted December 26, 2022
Sondus Jamal  Granted April 24, 2023
Hari Har Jnawali  Granted September 14, 2022
Dahlia Khajeei  Granted December 14, 2022
<table>
<thead>
<tr>
<th>Name</th>
<th>Granted Date</th>
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</thead>
<tbody>
<tr>
<td>Rebecca Sophia Koroll</td>
<td>September 29, 2022</td>
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<tr>
<td>Clara Laratta</td>
<td>February 17, 2023</td>
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<td>Miti Mazmudar</td>
<td>December 14, 2022</td>
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<td>Emma Deirdre McDougall</td>
<td>September 14, 2022</td>
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<td>Michelle Marie McKnight</td>
<td>September 21, 2022</td>
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<td>Sadaf Mollaei</td>
<td>October 04, 2022</td>
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<tr>
<td>Upasana Pandey</td>
<td>December 16, 2022</td>
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<tr>
<td>Brendan Luke Pinto</td>
<td>March 27, 2023</td>
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<tr>
<td>Sanaz Saadatmand Hashemi</td>
<td>March 27, 2023</td>
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<td>Yadurshana Sivashankar</td>
<td>April 24, 2023</td>
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<tr>
<td>Kayleigh Emily Swanson</td>
<td>December 15, 2022</td>
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<tr>
<td>Weikai Tan</td>
<td>April 24, 2023</td>
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<tr>
<td>Ramy Nicolas Tannous</td>
<td>April 24, 2023</td>
</tr>
<tr>
<td>Ece Uereten</td>
<td>March 27, 2023</td>
</tr>
</tbody>
</table>
One Hundred and Twenty-Sixth Convocation
For the Conferment of Degrees
June 13\textsuperscript{th} to 17\textsuperscript{th}, 2023
We hereby certify that all appropriate administrative procedures have been followed to confirm the eligibility of the names on this list for graduate and undergraduate degrees, diplomas and certificates from the University of Waterloo.

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

Catherine Newell Kelly
University Registrar
FACULTY OF ARTS

DOCTOR OF PHILOSOPHY

Brey, Elizabeth (English)
"Digital Dialogism: Space, Time, and Queerness in Video Games"

Kampherm, Monique Elizabeth Mary (English)
"Masks and Caricatures: Prosopopoeia, Ethopoeia, and the Effect of Social Media on Canadian Political Leaders’ Debates"

Li, Yixuan (Applied Economics)
"Essays on Portfolio Selection, Continuous-Time Analysis, and Market Incompleteness"

Mayberry, Thomas Ray (English)
"Queen of the Academy: Academic Drag as Pedagogy and Praxis"

Morton, Robert Travis (English)
"Alone, Together: Convergence Culture and the Slender Man Phenomenon"

Pearl, Zachary Nathan (Applied Economics)
"Fictocritical Cyberfeminism: A Paralogical Model for Post-Internet Communication"

Yang, Xinyuan (Applied Economics)
"An Analysis of Optimal Agricultural Fertilizer Application Decisions in the Presence of Market and Weather Uncertainties and Nutrient Pollution"

MASTER OF ARTS

Amenyo, William Dickson (Economics)

Azevedo, Matthew Quinn (Economics)

Behro, Ayaka (Economics)

Brackenridge, Lisa Joan Yolanda (English - Experimental Digital Media)

Dasilva Furtado, Andrew (Public Issues Anthropology)

De Heuvel, Rebecca (English - Literary Studies)

Do, Tam (Economics – Co-operative Program)

Dong, Yi (Economics – Co-operative Program)

Eustace, Heather Jane (English - Experimental Digital Media)

Farley, Elijah Jordan (Economics)

Fernandes, Shaun McLyd (Economics – Co-operative Program)

Gu, Yujie (Economics – Co-operative Program)

Homerski, Nathan Alexander (Public Issues Anthropology)

Jafari, Syeda Mahum (English - Rhetoric and Communication Design – Co-operative Program)

Jodway, Danielle Griffin (English - Rhetoric and Communication Design)

Khan, Furqan (Economics – Co-operative Program)

Kozak, Natasha Rosalind (Economics)

Lee, Chan (Economics – Co-operative Program)

Lenz, Grace Olivia (Public Issues Anthropology)

Li, Zhixiang (Economics – Co-operative Program)

Lin, Lanlan (Economics – Co-operative Program)

Liu, Jin (Economics – Co-operative Program)

Ma, Sirui (Economics – Co-operative Program)

Macedo, Andrey Ribeiro (Economics – Co-operative Program)

Mao, Yajun (Economics)

Martin, Alexander Frank (English - Rhetoric and Communication Design)

Matthews, Carey Elizabeth (Public Issues Anthropology)

Obrovac, Luka (Economics – Co-operative Program)

Sandal, Ravdeep Singh (Economics – Co-operative Program)

Savage, Madeleine Rachelle (English - Rhetoric and Communication Design – Co-operative Program)

* – Distinction
† – Dean’s Honours
<table>
<thead>
<tr>
<th>Name</th>
<th>Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shaw, Heather</td>
<td>(English - Rhetoric and Communication Design)</td>
</tr>
<tr>
<td>Slater, Moira Mardelle</td>
<td>(English - Rhetoric and Communication Design – Co-operative Program)</td>
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<tr>
<td>Sun, Rui</td>
<td>(Economics – Co-operative Program)</td>
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<td>Traore, Boukary</td>
<td>(Economics)</td>
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<td>Vulić, Jelena</td>
<td>(English - Experimental Digital Media)</td>
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<tr>
<td>Xiang, Yibo</td>
<td>(Economics – Co-operative Program)</td>
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<td>Xu, Alice</td>
<td>(Public Issues Anthropology)</td>
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<td>Yigit, Muhammed</td>
<td>(Economics)</td>
</tr>
<tr>
<td>Yue, Liuyuan</td>
<td>(Economics – Co-operative Program)</td>
</tr>
</tbody>
</table>

**MASTER OF CATHOLIC THOUGHT**

ST. JEROME’S UNIVERSITY

Kedzior, Edward
Orlanski, Andrew Christopher
Schmidt, Susannah Rachel

**MASTER OF DIGITAL EXPERIENCE INNOVATION**

Akinbade, Danielle Olorunisola
Anaekwe, Yvonne Chidinma
Brulotte, Mia
Cao, Jintong
Dalby, Colin Daniel
Dhaliwal, Noor
Dhuliya, Shweta
Doo, Erica
Fedorenko, Oksana
Fetterly, Olivia
Lee, Wing Gee
Li, Jenna
Maw, Natalie Elizabeth
Ngo, Mimi
Osowska, Julia
Pabon, Ephren Andre Balane
Pardy, Brynn Julia
Plourde, Eric Alexander
Poch, Jirina Katerina
Saad, Zamara
Sanchez Sardon, Manuel Augustin
Shah, Hayati
Tsai, Yi-Ling
Valerio Pena, Carla Maite
Van Hezewyk, Victoria Rose Craig
Wang, Xin
Zhao, Yahui

**MASTER OF FINE ARTS**

De Vuono, Christine Carmen  
(Studio Art)

* – Distinction
† – Dean’s Honours
MASTER OF THEOLOGICAL STUDIES
CONRAD GREBEL UNIVERSITY COLLEGE

Chambers, Rosemarie
Haycraft, Jacqueline McClure
Moua, Mollee
Van Oordt, Peter Michael
Vander Meulen, Jared

GRADUATE DIPLOMA

Anand, Samridhi  (Computational Data Analytics for the Social Sciences and Humanities)
Aria, Hana  (Computational Data Analytics for the Social Sciences and Humanities)
Belanger, Samantha Lauren  (Computational Data Analytics for the Social Sciences and Humanities)
Chung, Edith Yuen Ting  (Computational Data Analytics for the Social Sciences and Humanities)
Do, Tam  (Computational Data Analytics for the Social Sciences and Humanities)
Ernest, Jeremy  (Computational Data Analytics for the Social Sciences and Humanities)
Farley, Karen Lisa  (Computational Data Analytics for the Social Sciences and Humanities)
Filatava, Anastasiya  (Computational Data Analytics for the Social Sciences and Humanities)
Khan, Furqan  (Computational Data Analytics for the Social Sciences and Humanities)
Li, Zhixiang  (Computational Data Analytics for the Social Sciences and Humanities)
Ma, Sirui  (Computational Data Analytics for the Social Sciences and Humanities)
Macedo, Andrey Ribeiro  (Computational Data Analytics for the Social Sciences and Humanities)
Obrovac, Luka  (Computational Data Analytics for the Social Sciences and Humanities)
Pulera, Daniel Luca  (Computational Data Analytics for the Social Sciences and Humanities)
Reeve, Brendan Alexander  (Computational Data Analytics for the Social Sciences and Humanities)
Selwood, Julia Marie Emily  (Computational Data Analytics for the Social Sciences and Humanities)
Sun, Rui  (Computational Data Analytics for the Social Sciences and Humanities)
Tong, Jocelyn Sierra  (Computational Data Analytics for the Social Sciences and Humanities)
Traore, Boukary  (Computational Data Analytics for the Social Sciences and Humanities)
Wong, Peter Chihow  (Computational Data Analytics for the Social Sciences and Humanities)
Xiang, Yibo  (Computational Data Analytics for the Social Sciences and Humanities)

GRADUATE CERTIFICATE

Femia, Giuseppe William  (University Teaching)
Laratta, Clara  (University Teaching)

BACHELOR OF ARTS
ST. JEROME'S UNIVERSITY

GENERAL PROGRAM – Three Year
Martin, Jaime Nikole  (Social Development Studies)

HONOURS PROGRAM
Casaccia, Alicia Rose  (Social Development Studies – Social Work Specialization & Education Specialization & Diversity and Equity Specialization – Psychology Minor)
Chen, Tristan Joshua Shi Dian  (Visual Culture – Political Science Minor, Digital Arts Communication Minor)
Firmi-Medensky, Brigg Harry  (Economics & Honours Arts and Business)
Froud, Erin Christine  (English-Rhetoric, Media, and Professional Communication & Honours Arts and Business – Co-operative Program) †

* – Distinction
† – Dean’s Honours
Harper, Ashley Nicole  
(Fine Arts Studio Practice & Honours Arts and Business – Co-operative Program)

Lam, Sheung Chi Claudia  
(English-Rhetoric, Media, and Professional Communication – Digital Media Studies Specialization)

Mackay, Ainsley Rheanne  
(Social Development Studies – Legal Studies Minor)

Rose, Nicola Desana Carrady  
(English-Rhetoric, Media, and Professional Communication & Honours Arts and Business – Co-operative Program) †

Safieh, Rhiana Denise  
(English-Rhetoric, Media, and Professional Communication – Sociology Minor – Co-operative Program) †

Siebel-Achenbach, Ellen Marguerite  
(Visual Culture & Honours Medieval Studies – Fine Arts Studio Minor, Church Music and Worship Minor) †

Townes, Aspen Grace  
(English-Literature and Rhetoric – Social Development Studies Minor) *

**BACHELOR OF ARTS**

**RENISON UNIVERSITY COLLEGE**

**GENERAL PROGRAM – Three Year**

Ayala-Dominguez, Daniel Alfredo  
(Social Development Studies – Social Work Specialization – Psychology Minor)

Bauman, Ashleigh  
(Social Development Studies – Social Work Specialization) †

Booker, Eva Catharine  
(Social Development Studies – Social Work Specialization – Peace and Conflict Studies Minor) †

Bowen, Genesis  
(Social Development Studies – Social Work Specialization) †

Bretz, Mackenzie Lee  
(Social Development Studies – Fine Arts Studio Minor)

Brown, Kayla Louise  
(Social Development Studies)

Cadogan, Keyaira Sharday  
(Social Development Studies – Social Work Specialization)

Campbell, Jennifer Lee  
(Social Development Studies – Social Work Specialization) *

Carr, Christina Joan  
(Social Development Studies – Social Work Specialization) *

Dawson, Margaret Dianne  
(Social Development Studies – Social Work Specialization) †

Dettrich, Caitlyn  
(Social Development Studies – Social Work Specialization)

Devlin, Kaitlyn Rae King  
(Social Development Studies) †

Downes, Shirley Elizabeth  
(Social Development Studies – Education Specialization) *

Fell, Lexi Laurene  
(Social Development Studies – Social Work Specialization) †

Freingruber, Dawn  
(Social Development Studies – Social Work Specialization) †

Frost, Kennedy Alexander  
(Social Development Studies – Social Work Specialization) †

George, Sylwia  
(Social Development Studies – Social Work Specialization) *

Gray, Sarah Heather  
(Social Development Studies – Social Work Specialization) *

Gregory, Renea Nandy Sheeroya  
(Social Development Studies – Social Work Specialization)

Habel, Mishia Jammie  
(Social Development Studies – Education Specialization)

Harris, Mackenzie Mae  
(Social Development Studies – Social Work Specialization) *

Jowett, Danielle  
(Social Development Studies)

Keating, Deanna Marie  
(Social Development Studies – Social Work Specialization – Psychology Minor) †

Larochelle, Kira Stephanie  
(Social Development Studies)

MacDonald, Rachel Elizabeth  
(Social Development Studies)

MacMillan, Tanya Patricia  
(Social Development Studies – Social Work Specialization) *

Mathew, Sajamol  
(Social Development Studies – Social Work Specialization)

McGeachy, Shannon Kristy  
(Social Development Studies – Social Work Specialization) *

Mitchell, Clare  
(Social Development Studies – Social Work Specialization)

Prizeman, Emma Jane LizAnn  
(Social Development Studies – Social Work Specialization)

Roth, Lindsay  
(Social Development Studies – Social Work Specialization)

Shantz, Heidi Ella  
(Social Development Studies – Social Work Specialization) †

* – Distinction
† – Dean’s Honours
HONOURS PROGRAM

Barritt, Michael Charlesworth Daly  
(Social Development Studies – Education Specialization – Psychology Minor)

Belza, Kristen Nicole  
(Social Development Studies – Social Work Specialization & Diversity and Equity Specialization) †

Biersteker, Kiera Danielle  
(Social Development Studies – Education Specialization – French Minor, Peace and Conflict Studies Minor) †

Bilgesu, Tuba Begum  
(Social Development Studies – Social Work Specialization)

Bradley, Jennifer Luann  
(Social Development Studies – Education Specialization & Social Policy and Social Action Specialization – Sociology Minor) †

Brown, Dylan Joseph  
(Social Development Studies – Psychology Minor) *

Crovetto, Julia Margaret  
(Social Development Studies) †

Cunningham, Anna Elisabeth  
(Social Development Studies – Social Work Specialization) †

Daniels, Krista Tara  
(Social Development Studies & Honours Fine Arts Studio Practice)

Davis, Alyssa Bethany  
(Social Development Studies – Education Specialization – History Minor) *

Elias, Karoline  
(Social Development Studies – Social Work Specialization)

Ferguson, Emaleen Anne  
(Social Development Studies – Social Work Specialization – Sexuality, Marriage, and Family Studies Minor, Psychology Minor) *

Groves, Erika Jaye  
(Social Development Studies – Individual Well-Being and Development Specialization & Diversity and Equity Specialization – Peace and Conflict Studies Minor) †

Hartman, Alyssa Brooke  
(Social Development Studies – Education Specialization & Diversity and Equity Specialization & Social Work Specialization – Psychology Minor) †

Henry, Anna Renee  
(Social Development Studies – Psychology Minor, Sociology Minor) †

Heurter, Alexis Lenie Ann  
(Social Development Studies – Social Work Specialization & Education Specialization & Individual Well-Being and Development Specialization – Psychology Minor) *

Javier, Tiana Diane Wowk  
(Social Development Studies – Social Work Specialization – Psychology Minor) *

Kanthan, Kobigaa  
(Social Development Studies – Individual Well-Being and Development Specialization & Social Work Specialization & Education Specialization & Social Policy and Social Action Specialization) *

Lee, Rachel  
(Social Development Studies – Social Work Specialization) †

Lisy, Meghan Kyla  
(Social Development Studies – Social Work Specialization & Individual Well-Being and Development Specialization – Psychology Minor) †

Mathew, Amy Georgina  
(Social Development Studies) *

Maw, William Macvicar  
(Social Development Studies) *

Mucker, Jeevan  
(Social Development Studies – Social Work Specialization)

Mullings, Asia Belle  
(Social Development Studies – Digital Arts Communication Minor) †

O'Drowsky, Julia Bethany  
(Social Development Studies – Education Specialization – Psychology Minor) *

Peebles, Simon Harrison Ross  
(Social Development Studies – Social Work Specialization & Social Policy and Social Action Specialization – Psychology Minor) †

Plater, Morgan Elizabeth  
(Social Development Studies – Education Specialization) †

Robertson, Elizabeth Faith  
(Social Development Studies & Honours Peace and Conflict Studies & Honours Arts and Business – Co-operative Program) †

* – Distinction
† – Dean’s Honours
Shafer, Dana Maitlyn  
(Social Development Studies – Individual Well-Being and Development Specialization)

Shipley, Cassandra Lynn 
(Social Development Studies – Education Specialization & Social Work Specialization)

Sitnovska, Ivana 
(Social Development Studies) †

Tan, Teresa 
(Social Development Studies – Education Specialization & Individual Well-Being and Development Specialization & Honours Arts and Business – Co-operative Program) †

Tavares, Vanessa Anne DaCosta Soares 
(Social Development Studies – Social Work Specialization – Religious Studies Minor) †

Thepmanivong, Aenoy 
(Social Development Studies – Social Work Specialization & Individual Well-Being and Development Specialization & Education Specialization & Social Policy and Social Action Specialization) †

Thompson, Bailey Hannah 
(Social Development Studies – Social Work Specialization) †

Tokmurzina, Yasmin 
(Economics – Finance Specialization & Honours Arts and Business – Co-operative Program)

Van Dyke, Brooke Cassidy 
(Social Development Studies – Social Work Specialization & Diversity and Equity Specialization & Individual Well-Being and Development Specialization & Social Policy and Social Action Specialization) *

Vander Hoek, Meagan Joy 
(Social Development Studies – Diversity and Equity Specialization & Honours Peace and Conflict Studies) *

Waddell, Kassy Eileen 
(Social Development Studies – Diversity and Equity Specialization & Individual Well-Being and Development Specialization & Social Policy and Social Action Specialization – Peace and Conflict Studies Minor) †

Watson, Emma Joan 
(Social Development Studies – Social Policy and Social Action Specialization & Diversity and Equity Specialization) †

Weber, Cecilia Joanna 
(Social Development Studies – Social Work Specialization & Individual Well-Being and Development Specialization – Peace and Conflict Studies Minor; Psychology Minor) †

Zettle, Jenna Danielle 
(Social Development Studies – Honours Psychology) †

Zhao, Mishuo 
(Social Development Studies – Social Work Specialization & Social Policy and Social Action Specialization)

**BACHELOR OF SOCIAL WORK**

RENISON UNIVERSITY COLLEGE

HONOURS PROGRAM

Bigornia, Bettina Del Rosario

Chumbley, Bethany Chantel

Davis, Arielle-Marie Summer

Densa, Ashley Anne

Levac, Stephanie Lynn

Lopez, Alexis

Mann, Ashneet

Molto Palika, Rachelle Elaine

Nabeel, Nazish

Robertson-Virgilio, Sarah Marie

Shearer, John

Shortt, Boni Tegan

Suteu, Denisa

Ten Napel, Adrianna Sietske

Thompson, Miriam

Tran, Steven

**BACHELOR OF ARTS**

UNIVERSITY

GENERAL PROGRAM – Three Year

Arunika, Mehar  
(Fine Arts - General Studio Art – Digital Arts Communication Minor) *

* – Distinction

† – Dean’s Honours
<table>
<thead>
<tr>
<th>Name</th>
<th>Program</th>
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<tbody>
<tr>
<td>Beschia, Ana-Sanziana</td>
<td>(English-Literature and Rhetoric – International Studies Minor) †</td>
</tr>
<tr>
<td>Gariepy, Kelly Ann</td>
<td>(English-Rhetoric, Media, and Professional Communication)</td>
</tr>
<tr>
<td>Harb, Ryan Robert</td>
<td>(English Language and Literature)</td>
</tr>
<tr>
<td>Ibrahim, Najmah Abdirashid</td>
<td>(English Language and Literature)</td>
</tr>
<tr>
<td>Kargacin Yanez, Vanessa</td>
<td>(Visual Culture)</td>
</tr>
<tr>
<td>Kominar, Miriam</td>
<td>(English Language and Literature – Creative Writing Specialization) *</td>
</tr>
<tr>
<td>Little, Emma Tristan</td>
<td>(Fine Arts - General Studio Art – English Language and Literature Minor) †</td>
</tr>
<tr>
<td>McGregor, Laurie Gilda</td>
<td>(Fine Arts - General Studio Art) *</td>
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<tr>
<td>Murray, David Scott</td>
<td>(English Language and Literature)</td>
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<tr>
<td>Pellejera, Matthew Anthony</td>
<td>(English-Rhetoric, Media, and Professional Communication – Digital Media Studies Specialization)</td>
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<tr>
<td>Tan, Yingying</td>
<td>(Social Development Studies) *</td>
</tr>
<tr>
<td>Truemann, Robynne Kendra</td>
<td>(English-Rhetoric, Media, and Professional Communication) *</td>
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<tr>
<td>Wilson-Kulik, Laura Fay</td>
<td>(English Language and Literature – International Studies Minor) *</td>
</tr>
<tr>
<td>Zhang, Zeyu</td>
<td>(Fine Arts - General Studio Art)</td>
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<td><strong>GENERAL PROGRAM – Four Year</strong></td>
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<tr>
<td>Alnashe, Mahdi Mohamed Saleh Ahmed Is</td>
<td>(Economics)</td>
</tr>
<tr>
<td>Chau, Wayne Chi</td>
<td>(Economics – Finance Specialization – Management Studies Minor)</td>
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<tr>
<td>El Refai, Omar</td>
<td>(English-Rhetoric, Media, and Professional Communication)</td>
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<tr>
<td>Gordon, Lam Lam</td>
<td>(Social Development Studies – Social Work Specialization)</td>
</tr>
<tr>
<td>Kalaichelvan, Pavitra</td>
<td>(Economics – Finance Specialization)</td>
</tr>
<tr>
<td>Mohan, Anil</td>
<td>(English Language and Literature – Philosophy Minor) †</td>
</tr>
<tr>
<td>Sam-Soon, Steven Colin Lee Shih Liam</td>
<td>(Economics – Finance Specialization)</td>
</tr>
<tr>
<td>Singh, Nicholas</td>
<td>(Economics – Finance Specialization – Management Studies Minor)</td>
</tr>
<tr>
<td><strong>HONOURS PROGRAM</strong></td>
<td></td>
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<tr>
<td>Anand, Vani</td>
<td>(Economics – Finance Specialization &amp; Honours Arts and Business – International Trade Minor – Co-operative Program)</td>
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<tr>
<td>Arora, Lakshay</td>
<td>(Mathematical Economics – Econometrics Specialization – Co-operative Program)</td>
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<tr>
<td>Ashcroft, Shae</td>
<td>(English-Literature and Rhetoric - Intensive English Specialization &amp; Technical Writing Specialization – History Minor)</td>
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<tr>
<td>Babhuta, Arushi</td>
<td>(Economics – Finance Specialization &amp; Honours Arts and Business – Human Resources Management Minor – Co-operative Program)</td>
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<td>Bhattachan, Melina</td>
<td>(English-Rhetoric, Media, and Professional Communication – Co-operative Program)</td>
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<tr>
<td>Bhullar, Amol</td>
<td>(Economics – Econometrics Specialization &amp; Honours Arts and Business – Co-operative Program) *</td>
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<tr>
<td>Bi, Junheng</td>
<td>(Economics) †</td>
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<tr>
<td>Brailsford, Lachlan Grant</td>
<td>(English-Literature and Rhetoric) *</td>
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<tr>
<td>Bray, Alexandra Mary Kohana</td>
<td>(Economics &amp; Honours Arts and Business – Co-operative Program) *</td>
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<tr>
<td>Bugajny, Jacob Alex</td>
<td>(Economics – International Trade Minor)</td>
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<tr>
<td>Chen, Shi Long</td>
<td>(Economics &amp; Honours Arts and Business – Co-operative Program) *</td>
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<tr>
<td>Chen, Vicky</td>
<td>(Mathematical Economics – Econometrics Specialization – Co-operative Program) *</td>
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<tr>
<td>Chen, Weixi</td>
<td>(Economics – Finance Specialization – Co-operative Program)</td>
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<tr>
<td>Chen, Yuru</td>
<td>(Visual Culture &amp; Honours Arts and Business – Philosophy Minor)</td>
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<tr>
<td>Chopra, Akankshita</td>
<td>(Economics – Management Studies Minor – Co-operative Program)</td>
</tr>
<tr>
<td>Choudhury, Irsah Reza</td>
<td>(Economics – Finance Specialization – Earth Sciences Minor)</td>
</tr>
<tr>
<td>Chowdhury, Lameena</td>
<td>(Economics – Finance Specialization – International Trade Minor) *</td>
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<tr>
<td>Christensen, Renee Jensen</td>
<td>(Fine Arts Studio Practice – Entrepreneurship Minor)</td>
</tr>
</tbody>
</table>

* – Distinction
† – Dean’s Honours
Creelman, Leah Grace (Fine Arts Studio Practice & Honours Arts and Business – Co-operative Program) *
Cruz, Lyn Michelle (Fine Arts Studio Practice & Honours Arts and Business – Co-operative Program)
Dani, Isahaan (Economics & Honours Arts and Business – Co-operative Program)
Dani, Ned Drini (Economics – Finance Specialization & Honours Arts and Business – Co-operative Program)
Dar, Sara Shaffiq (Social Development Studies – Social Policy and Social Action Specialization & Honours Arts and Business – Legal Studies Minor – Co-operative Program) †
Dhandhi, Ritwik (English-Literature and Rhetoric – Creative Writing Specialization – Digital Arts Communication Minor – Co-operative Program)
Dobocan, Marina Andreea (English-Rhetoric, Media, and Professional Communication – Biology Minor – Co-operative Program) †
Doyle, Emily Elaine (English-Rhetoric, Media, and Professional Communication & Honours French – Co-operative Program) *
Dufton, Megan Elizabeth (English-Rhetoric, Media, and Professional Communication – Digital Arts Communication Minor – Co-operative Program)
Feng, Linqing (Mathematical Economics) †
Fennell, Jessica Eileen (Economics – Finance Specialization & Honours Arts and Business)
Formisano, Nadia (English-Literature and Rhetoric – Creative Writing Specialization – Applied Language Studies Minor, Italian Studies Minor) †
Fu, Yingjie (Mathematical Economics) †
Fu, Yingxuan (Mathematical Economics) *
Galecki, Nicole (English-Literature and Rhetoric & Honours Arts and Business)
Girodat, Christian James (Economics – Finance Specialization & Honours Arts and Business – Co-operative Program)
Gourley, Graham Garnet (Economics – Political Science Minor, Public Policy and Administration Minor – Co-operative Program)
Gupta, Aarushi (Economics – Public Policy Specialization & Honours Arts and Business – International Trade Minor – Co-operative Program) *
Gupta, Paramveer (Economics – Finance Specialization & Joint Honours Mathematics) †
Gupta, Varun (Mathematical Economics – Finance Specialization – Co-operative Program)
Hallan, Archit (Economics)
Hassan, Ahmad (Economics – Finance Specialization & Honours Arts and Business – Co-operative Program)
Helleiner, Nels Laurence Clapp (Economics & Honours Political Science – International Trade Minor – Co-operative Program) †
Hexamer, Riley Avril (Fine Arts Studio Practice & Honours Arts and Business – Digital Arts Communication Minor – Co-operative Program) *
Hodgins, Jolene Elizabeth (Economics – Finance Specialization – Co-operative Program)
Ibay, Angelic-Gail (English Literature – East Asian Studies Minor)
Ilgnor, Emelia Grace (English-Rhetoric, Media, and Professional Communication – Political Science Minor – Co-operative Program) †
Jackson, Bryanna Kobe (Social Development Studies – Social Work Specialization)
Jajodia, Nandini (Economics – Econometrics Specialization & Honours Arts and Business – Co-operative Program)
Jeanson, Natalie Rae (Fine Arts Studio Practice – Legal Studies Minor) *
Jhamtani, Pravesh (Economics – Finance Specialization & Honours Arts and Business – English Language and Literature Minor – Co-operative Program) *
Ji, Yu (Fine Arts Studio Practice & Honours Arts and Business – Event Management Minor) *
Jia, Jia (Economics – Computing Minor) †
Johnson, Sidney Elizabeth (Economics – Entrepreneurship Minor – Co-operative Program)
Jou-ter Woort, Rachel Heather (English-Literature and Rhetoric – Sexuality, Marriage, and Family Studies Minor – Co-operative Program) *
Jung, Rachel Lily (Fine Arts Studio Practice & Honours Arts and Business – Co-operative Program) †
Kaffka, Ingrid Elise (English-Rhetoric, Media, and Professional Communication – Technical Writing)

* – Distinction
† – Dean’s Honours
Karaaslan, Arda (Economics – Finance Specialization & Honours Arts and Business – Co-operative Program) *
Khalid, Mohammad Umair (Economics – Finance Specialization & Honours Arts and Business – Co-operative Program)
Khan, Taniya (Economics – Finance Specialization & Honours Arts and Business – Co-operative Program)
Kim, James Jae Hyun (English-Rhetoric, Media, and Professional Communication – Digital Arts Communication Minor – Co-operative Program) †
Kirpal, Aakarshika (Economics – Finance Specialization & Honours Arts and Business – Co-operative Program)
Kleist, Sophie Kyla (Fine Arts Studio Practice – Digital Arts Communication Minor, Visual Culture in a Global Context Minor) †
Koo, Ryan Nicholas (Economics & Honours Arts and Business – Computing Minor – Co-operative Program)
Laskar, Samuel Sullivan William (Economics – Econometrics Specialization & Honours Arts and Business – Co-operative Program) *
Leeson, Evan Thomas (Economics & Honours Arts and Business)
Lei, Dongyun (Mathematical Economics)
Leung, Megan Teresa (Economics – Management Studies Minor) *
Li, Melinda Yuqi (Economics & Honours Arts and Business – Co-operative Program)
Li, Shi Xian (English-Rhetoric, Media, and Professional Communication & Honours Legal Studies)
Li, Shuyao (Mathematical Economics – Co-operative Program) *
Li, Wen (Fine Arts Studio Practice - Intensive Studio Specialization) †
Lima, Alexia Luisa (English-Literature and Rhetoric - Intensive English Specialization & Creative Writing Specialization – Gender and Social Justice Minor) †
Liu, Jiaxu (Mathematical Economics) †
Lumax, Victoria Eve (English-Rhetoric, Media, and Professional Communication & Honours Peace and Conflict Studies – Co-operative Program) †
Luo, Qingwen (Economics – Co-operative Program)
Luu, Tiffany (Economics – Finance Specialization & Honours Arts and Business – Human Resources Management Minor – Co-operative Program) *
Ma, Zheng (Economics – Co-operative Program) *
MacLean, Connor Alexander (Economics – Management Studies Minor)
Mak, Sheung-Yan Lawrence (Economics – Finance Specialization &Honours Arts and Business – Co-operative Program)
Martos, Blake (Economics – Finance Specialization) †
Massina, Tchaou Antonio (Economics – Finance Specialization & Honours Arts and Business – Co-operative Program)
Mcclelan, Christine Anne (Anthropology & Honours Arts and Business – Co-operative Program) *
Mei, Xue (Economics & Honours Arts and Business – Co-operative Program) *
Memon, Safiyyah Alma (Economics – Public Policy Specialization – Urban Studies Minor)
Munasinghe, Hirumal (English-Rhetoric, Media, and Professional Communication - Intensive English Specialization – Co-operative Program)
Narang, Aryan (Economics & Honours Arts and Business – Co-operative Program) *
Nararidh, Nisha (English-Literature and Rhetoric & Honours History – Global Interactions Specialization – Human Resources Management Minor)
Ng, Janice Ching Yin (Economics – Management Studies Minor – Co-operative Program)
Nguyen, Britney (Fine Arts Studio Practice)
Nicholas, Jazlin Angelia (Fine Arts Studio Practice – Fine Arts - Teaching Preparation Specialization – English Language and Literature Minor)
Niel, Barnaba John (English-Rhetoric, Media, and Professional Communication – Human Resources Management Minor)
Nizarahamed, Syed Hesham Afridi (Economics – Finance Specialization & Honours Arts and Business – Political Science Minor – Co-operative Program)
O'Donnell, Sarah Stephanie (English-Rhetoric, Media, and Professional Communication – History Minor, Knowledge Integration Minor) †

* – Distinction
† – Dean’s Honours
Oni, Abisola  
(Visual Culture – Fine Arts Studio Minor – Co-operative Program) †

Ou, Jianzhao  
(Economics – Finance Specialization & Honours Arts and Business – Co-operative Program)

Pan, Yan  
(Economics - Intensive Economics Specialization & Finance Specialization – Mathematics Minor) †

Parvez, Wajiha  
(English-Literature and Rhetoric & Honours Arts and Business – Co-operative Program) †

Patel, Bhavi  
(Mathematical Economics – Co-operative Program)

Patel, Roshan  
(Economics – Finance Specialization & Honours Arts and Business – Co-operative Program)

Patterson, Katherine Grace  
(Social Development Studies – Social Work Specialization & Individual Well-Being and Development Specialization & Social Policy and Social Action Specialization & Diversity and Equity Specialization)

Paul, Noel Tom  
(Economics – Finance Specialization & Honours Arts and Business – Mathematics Minor – Co-operative Program)

Pham, Lisa Luu  
(Economics & Honours Arts and Business – Co-operative Program) *

Pujara, Daksh  
(Mathematical Economics – Finance Specialization – Co-operative Program)

Puri, Ritika  
(English-Literature and Rhetoric & Honours Arts and Business – Co-operative Program) †

Quezon, Shandee Bondoc  
(Economics & Honours Arts and Business – Human Resources Management Minor – Co-operative Program) *

Rabban, Michael  
(Economics – Econometrics Specialization & Honours Arts and Business – Co-operative Program) *

Rajasegar, Vishaali  
(Economics & Honours Arts and Business – Co-operative Program) *

Restrepo, Sofia  
(Anthropology & Honours Arts and Business – Human Resources Management Minor – Co-operative Program) *

Reynolds, Claire Elise  
(Anthropology – History Minor) *

Ross, Victoria  
(Fine Arts Studio Practice & Honours Arts and Business – Co-operative Program)

Salamanca, German H  
(Fine Arts Studio Practice)

Salas, Emilio Guillermo  
(Economics & Honours Arts and Business – Psychology Minor)

Salem, Nour Ahmed  
(Fine Arts Studio Practice – Management Studies Minor)

Sanmugavadivel, Navinaa  
(Economics – Finance Specialization & Honours Arts and Business – Co-operative Program)

Saqib, Sama  
(English-Literature and Rhetoric & Honours Arts and Business – International Studies Minor – Co-operative Program)

Sarna, Prishita  
(Economics & Honours Arts and Business – Co-operative Program)

Shao, Qianqian  
(Economics – Management Studies Minor – Co-operative Program)

Sharma, Jyoti Prakash  
(Economics – Finance Specialization – Co-operative Program)

Sharma, Navya  
(Economics – Finance Specialization & Honours Arts and Business – Co-operative Program)

Sharma, Niharika  
(Economics – Finance Specialization & Honours Arts and Business – Co-operative Program)

Shen, Zehui  
(Economics)

Shergill, Kirit  
(English-Literature and Rhetoric – History Minor – Co-operative Program) *

Singh, Anhadvir  
(Mathematical Economics – Co-operative Program)

Singh, Gursimran  
(Economics)

Smith, Nicholas Bradley  
(Economics – Finance Specialization & Honours Arts and Business – Co-operative Program)

Stocks, Jessica Louise  
(English Literature – Fine Arts Studio Minor)

Sukhija, Pahul Kaur  
(Economics) *

Sun, Caiwei  
(Economics & Honours Arts and Business – Co-operative Program) *

Sun, Quanlin  
(Mathematical Economics) †

Sun, Yuxuan  
(Economics – International Trade Minor)

Susevski, Anthony Eli  
(Economics & Joint Honours Mathematics – Computer Science Minor – Co-operative Program)

Szeto, Joanne  
(English-Rhetoric, Media, and Professional Communication & Honours Arts and Business – Co-operative Program)

Tambe, Parul  
(Economics – Finance Specialization & Honours Arts and Business – Co-operative Program)

* – Distinction
† – Dean’s Honours
Villanueva, Karl Angelo Gonzales  
(Wconomics – Public Policy Specialization – Co-operative Program) *

Walker-Garcia, Cailin Sierra  
(Social Development Studies – Social Work Specialization – Peace and Conflict Studies Minor) *

Wan, Fangyuan  
(Visual Culture)

Wang, Chen  
(Mathematical Economics) †

Wang, Haoxuan  
(Economics – Management Studies Minor, International Trade Minor)

Wang, Jun Jie  
(Economics – Econometrics Specialization & Honours Arts and Business – Psychology Minor – Co-operative Program) †

Wang, Terry Tianyuan  
(Economics – Finance Specialization – Management Studies Minor) †

Wang, Xinyi  
(Mathematical Economics) †

Wang, Zian  
(Economics & Joint Honours Mathematics)

Wang, Zizhuo  
(Economics – Econometrics Specialization)

Warda Rashid, Asma  
(Mathematical Economics)

Wassan, Karanpreet Singh  
(Economics – Finance Specialization & Honours Arts and Business – Co-operative Program)

Watson, Faith Aaliyah  
(Social Development Studies – Social Work Specialization)

Wen, Lanbin  
(Fine Arts Studio Practice)

Wong, Albert Yung  
(Economics – Finance Specialization – Co-operative Program) *

Wong, Raegan Yuen Lam  
(Economics & Honours Arts and Business – Co-operative Program)

Woo, Jasmine Lydia  
(Fine Arts Studio Practice & Honours Arts and Business – Human Resources Management Minor – Co-operative Program) *

Wu, Fei  
(Mathematical Economics) †

Xiang, Renli  
(Economics) *

Xie, Zhikun  
(Mathematical Economics) †

Xu, Xianyu  
(Economics – Finance Specialization – Computing Minor – Co-operative Program)

Ye, Meijun  
(Economics & Honours Arts and Business – Co-operative Program)

Yu, Hanyi  
(Mathematical Economics) *

Zha, Yue  
(Fine Arts Studio Practice & Honours Arts and Business)

Zhan, Hening  
(Mathematical Economics) *

Zhang, Jiaqi  
(Economics & Honours Arts and Business – Co-operative Program)

Zhao, Baolin  
(Economics & Honours Arts and Business – Psychology Minor – Co-operative Program)

Zhao, Yimeng  
(Mathematical Economics – Co-operative Program)

Zheng, Xiaomin  
(Economics & Honours Arts and Business)

Zielinsky, Alexandria Katherine  
(English-Rhetoric, Media, and Professional Communication – Psychology Minor) *

BACHELOR OF GLOBAL BUSINESS AND DIGITAL ARTS

UNIVERSITY

HONOURS PROGRAM

Ajeti, Albiona  
†

Balakumar, Thamilini  
*

Baron, Hannah Mai  
*

Barrelli, Namaya  
†

Bhaskar, Rohan  
*

Birch, Riley Benjamin

Birer, David Robby  
†

Carbone, Lia Rachel  
*

Carbone, Zoë Germaine Vitina  
†

Chakravarthi, Megha Sudarshan  
*

Chan, Justin Ka Shuen  
(Computing Minor) *

* – Distinction
† – Dean’s Honours
Chau, Yenvy Dang
Chee, Haryun
Cheung, Dylan
Choi, David
Choi, Grace
Chung, Tsoi Hang
Code, Adam Russell
Dabhi, Meera Manish

Dajani, Riad Amr (Cognitive Science Minor) †
Dayno, Christian Jacob
De Guzman, Hillary Joy Bautista

Du, Amanda Tianyue †
Duff, Joshua Alan *
Durrer, Gracie Cecilia *
Enns, Grace Warkentin †
Esparza Cano, Romina Anahí †
Espejo, Gabrielle Amanda †
Fang, Junjie *
Fernandes, Tricia Barbara
Gibbons, Charles Andrew †
Gibson, Kelly Elizabeth (Computing Minor) *
Gill, Eliza
Harlley, Kezia Patience Selorm *
He, Runyi †
Herbert, Todd Kyle †
Honoridez, Samantha Marie †
Hoo, Veronica Noelle †
Horne, Allison Claire *
Howes, Joshua Dwight Robert *
Huynhton, Melody Tuyet Anh †
Isaac, Meaghan Emily (International Studies Minor) *
Jack, Austin William Clarke †
Jaffer, Suhaif Fayaz †
James, Brendan Patrick *
Javier, Christine
Jenkins-Moss, Michaela Kerin
Jiang, Anne Gina *
Josephs, Sierra Mikayla
Kanekar, Disha Rajendra †
Kanji, Justin Farid
Kapoor, Tanishka *
Kasprov, Benjamin Alexander Rees †
Kim, Ha-Won
Kodikara, Chatumini Crystal †
Kotsos, Katherine Nicole †
Kulkarni, Esha Dnyanesh †

* – Distinction
† – Dean’s Honours
Lai, Daphne Quyen †
Lan, Chong *
Law, Jonathan (Entrepreneurship Minor) †
Laxdal, Reid Douglas Campbell
LeBlanc, Cassidy Briar *
Lee, Elliot Jin
Lee, Jieun †
Lee, Victoria Yeabin *
Lennox, Adam Rigby †
Lepage, Evan Rhys
Leung, Carter Matthew Jia Ming *
Levak, Elisha Lily Fanrong †
Li, Jesse
Li, Jiewen *
Li, Linyin *
Li, Tian Ke (Computing Minor) †
Lin, Winnie *
Linh, Jaycie †
Liu, Yuhan
Lott, Ryan Jordan †
Ly, Isabelle Ai-Linh (Computing Minor) †
Lynds-Martin, Caleb Robert †
Makhmudova, Amina †
Malek, Iqra †
Man, Ashley *
Mar, Jordan Nicholas *
Mariano, Jacquelyne Diana
Masseo, Lauren Stephanie *
Mattu, Raaj
McKeand, James Joseph Cabral
McReynolds, Reece Robert Blair †
Mehdi, Murtaza Muhammad *
Miranda, Taynaya *
Morassutti, Sarah Marie †
Muir, Thomass George †
Mulhall, Michael Brennan *
Nguyen, Amelia *
Nguyen, Angela †
Okutinyang, Abasiannam Ajiroghene *
Olayinka, Abimbola Elizabeth †
Oliver, Megan Marie †
Owusu-Amoah, Eunice Adubea †
Patel, Vedant †
Phan, Minh Triết †
Pike, Brooklyn Ericka Marlene
Pirani, Aqil Taj †

* – Distinction
† – Dean's Honours
Powell, Laura May*
Powders, Brittany Lynn*
Rahman, Zaeem Ajwad
Rivera, Amanda Maria Rose (Entrepreneurship Minor) †
Romano, Sabrina Rose †
Romero, Amanda Rose *
Rosart, Ariel Tang *
Scheiner, Edan
Sedik, Mariam Ahmed Okasha (Computing Minor) *
Shaik, Deeba Zain *
Shete, Aditi Bahubali *
Shorinde, Julia Modurotulwa †
Sihra, Manjot Kaur *
Smith, Elyssa Erin †
Sodhi, Agamjot Singh
Stevens, Makenzie Maureen (Entrepreneurship Minor) †
Tabaza, Mira Moh'd Raid S.
Talwar, Ishika *
Tang, Tiffany †
Tran, Angelina Kim (Computing Minor) †
Tsang, Colman †
Vasudev, Gorja (Entrepreneurship Minor)
Vuong, Sherry
Vyas, Shreya
Wu, Sherry (Psychology Minor) †
Xu, Rachel †
Yan, Maxwell Zhi-Yuan *
Yunusova, Tomiris *
Zhang, Andrea *

DIPLOMA IN CHURCH MUSIC AND WORSHIP
Garnham, Craig

DIPLOMA IN FRENCH LANGUAGE I
Chopra, Akankshita
Hallan, Archit

DIPLOMA IN FRENCH LANGUAGE II
Formisano, Nadia

DIPLOMA IN GERONTOLOGY
Winfield-Ward, Alyssa Baolan

DIPLOMA IN JAPANESE LANGUAGE I
Ebisuzaki-Mackay, Bryce William
Kalaichelvan, Pavitra

* - Distinction
† - Dean’s Honours
DIPLOMA IN KOREAN LANGUAGE I
Ibay, Angelic-Gail
Kalaichelvan, Pavitra
Wang, Danrong

DIPLOMA IN SPANISH LANGUAGE I
Formisano, Nadia

CERTIFICATE IN EXPERIENTIAL EDUCATION
Ly, Isabelle Ai-Linh
Rivera, Amanda Maria Rose
Tran, Angelina Kim
Vasudev, Gorja

CERTIFICATE IN GLOBAL EXPERIENCE
Baron, Hannah Mai
Lai, Daphne Quyen
Li, Tian Ke
Ly, Isabelle Ai-Linh
Masseo, Lauren Stephanie
Memon, Safiyyah Alma
Owusu-Amoah, Eunice Adubea
Tran, Angelina Kim

* – Distinction
† – Dean’s Honours
DOCTOR OF PHILOSOPHY

Abbott, Jesse (History)
"The Art of Getting Drunk: Martial Masculinity, Alcohol, and the British Army in the Canadas in the War of 1812"

Bacso, Sarah Allisa (Psychology)
"The Role of Executive Functions and Emotion Knowledge in Children’s Communication Repair"

Capobianco, Kevin Philip (Psychology)
"Development of an Efficient and Broadly Applicable Measure of Case Conceptualization Quality"

Cater, Evan (History)
"Stand Fast for Peace & Freedom: A Study of Foreign Policy of the British Labour Party in Opposition 1931 to 1940"

Dusowoth, Sushma (French Studies)

Evans, Rochelle (Psychology)
"The Idea of a Follower: An Investigation of Implicit Followership Theories and Their Correlates"

Kandjii, Jennifer (Global Governance)
"Xenophobic Citizenship, Unsettling Space, and Constraining Borders: Assembling Refugee Exclusion in South Africa’s Everyday"

Lukaszczyszk, Artur (Sociology)
"Towards a Cyber Jus Ad Bellum: Bridging Legal Gaps within Cyberwar Governance"

Perks, Matthew (Sociology)
"Developing a Community-Qualitative Approaches to Understanding the Role of Community Engagement in Gameswork"

Schram, Brian Richard (Sociology)
"Surveilling Queerness and Queering Surveillance: The Techno-Social Making of Queer Identity in the U.S. and Canada, 1939-Present"

Sutherland, Siobhan Elizabeth (Psychology)
"The Interpersonal Context of Desire: Exploring Associations Between Sexual Desire, Relationship Satisfaction, and Sexual Satisfaction in Romantic Relationships"

Wilson, McLennon (Psychology)
"Temperament, Attention, and the Social World: New Empirical Approaches to the Study of Shyness and Attention in Middle Childhood"

MASTER OF APPLIED SCIENCE

Carroll, Taylor Alexandra (Industrial and Organizational Psychology)

MASTER OF ARTS

Abdulhah, Yaseen Baher (Global Governance)
Ali, Eisha (Political Science – Co-operative Program)
Alizada, Murad (History)
Al-Saeed, Maram (Sociology)
Behdarvandi Almasi, Maryam (Social and Legal Studies)
Bettis, Patricia Jennifer Diane (History)
Birju, Anushka Arianna (French Studies)
Cameron St Pierre, Rebecca Leah (Global Governance)
Campos-Ordonez, Pamela (Psychology)
Chen, Shi (Classical Studies)
de Milliano, Julia Nicole (Classical Studies)
De Sasio, Joseph Jeffrey (Global Governance)
Dubrule, Justine Valerie (French Studies)
Eigl, John MacKinlay (History)
Falcone, Giovanni Jonathan (Political Science – Co-operative Program)
Festin, Jennifer (Social and Legal Studies – Co-operative Program)
Freiburger, Troy Alexander (Philosophy)
Gordon-Ridenour, Virginia Holly Dorothy (Classical Studies)
Grenier, Francis (Global Governance)
Hall, Kristopher Michael (Political Science – Co-operative Program)

* – Distinction
† – Dean’s Honours
Hamedi, Ahmad (Political Science)
Hill, Rachel Esther Fey (Classical Studies)
Imam, Syed Abbas (Global Governance)
Imran, Robain Ali (Political Science – Co-operative Program)
Jagoda, Nidhu (Global Governance)
Jang, Jamie Evelyn (Political Science – Co-operative Program)
Johnson Poon, Anya (Global Governance)
Kat, Regan (Intercultural German Studies)
Kull, Sandra Nathalie (Intercultural German Studies)
Kumar, Roniksha (Sociology)
LaMantia, Samantha C (History)
Leclaire, Mackenzie Elizabeth (Sociology)
Lustig-Bruce, Luke Nathaniel (Global Governance)
Mackenzie-Freeman, Susannah Isabel (Philosophy)
Manners, Laura Kaylin (Global Governance)
Mekonen, Eden Grace (Sociology)
Miller, Emily Ann (Global Governance)
Murynka, Anna (Psychology)
Namachchivaya, Anura Andrea (Social and Legal Studies – Co-operative Program)
Nettinga, Jamie Inez (Psychology)
O'Connor, Shawn Zachary (Global Governance)
Parkhomenko, Anton (History)
Poirier, Tyler Joseph (Social and Legal Studies – Co-operative Program)
Radojicic, Jelena (French Studies)
Rieger, Stephen (German and History)
Roberts-Dodd, Caleb (History)
Scott, Hannah Rainey (Political Science – Co-operative Program)
Skinner, Benjamin Jose (Global Governance)
Snopek, Ryan Charles (History)
Soma, Saya (Global Governance)
Stafa, Alma (Global Governance)
Stroubakis, George (Philosophy)
Suzor, Natalie Marie (Global Governance)
Therrien, Megan Amber (Social and Legal Studies – Co-operative Program)
Thoutenhoofd, Sarah (Global Governance)
Tracey, Hope Elizabeth Lee (Political Science – Co-operative Program)
Trickey, Jessica (Psychology)
Uncao, Brandon Luis (History)
White, Mackenzie Linda Anne (Global Governance)
Yee, Jacklyn (Global Governance)
Zaheer, Fathima Bushra (Global Governance)

MASTER OF PEACE AND CONFLICT STUDIES

Alvi, Qudsia Hussain
Atkin, Fariba
Bejarano, Nicholas Jerome

* – Distinction
† – Dean’s Honours
<table>
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<th>Name</th>
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<tr>
<td>Abubaker, Asha</td>
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<td>Mohanathas, Sameera</td>
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<td>Moore, Astrid Isabella</td>
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* – Distinction
† – Dean’s Honours
Pierce, Stephen David Joseph (Co-operative Program)
Pulera, Daniel Luca (Co-operative Program)
Raymond, Brayden Allan James (Co-operative Program)
Reeve, Brendan Alexander (Co-operative Program)
Salvati, Alessandra (Co-operative Program)
Selwood, Julia Marie Emily (Co-operative Program)
Singh, Amandeep Kaur (Co-operative Program)
Taasnuva, Sharah (Co-operative Program)
Thevarajan, Praveen (Co-operative Program)
Tong, Jocelyn Sierra (Co-operative Program)
Turcotte, Kaleb Elliot (Co-operative Program)
Viegas, Cameron Graham (Co-operative Program)
Wei, Xinyi (Co-operative Program)
Wong, Peter Chihow (Co-operative Program)
Yajnik, Shivam (Co-operative Program)
Zai Tu, Iang Mawi (Co-operative Program)
Zai Tu, Rin Mawi (Co-operative Program)

GRADUATE CERTIFICATE
Dusowoth, Sushma (University Language Teaching)
Jnawali, Hari Har (University Teaching)
Sivashankar, Yadurshana (University Teaching)

BACHELOR OF ARTS
ST. JEROME’S UNIVERSITY
GENERAL PROGRAM – THREE YEAR
Anglin, Natalie Isabel Andersen (Liberal Studies – Classical Studies Minor) *
Constable, Abigail (Liberal Studies)
Cung, Jeremy Andrew (Liberal Studies) *
King, Jessica Dawn-Marie (Liberal Studies – Human Resources Management Minor)
Macintosh, Zara (Liberal Studies – Digital Arts Communication Minor)
Mohring, Gloria Jean (Religious Studies)
Ogorek, Jaden Elijah Taylor (Liberal Studies)
Scarfone, Nicholas Michael (Liberal Studies)

GENERAL PROGRAM – FOUR YEAR
Ferenczy, Tristan Samil (Liberal Studies)
Laforest, Ruby Marcia (Sexuality, Marriage, and Family Studies)
Leone, Eva Loredana (Liberal Studies)
WANG, XI (Psychology)
Yung, Olivia (Music – Management Studies Minor)

HONOURS PROGRAM
Adzija, Anders Robert (Political Science – Co-operative Program) *
Belkwell, Jillian Rose (History – Fine Arts Studio Minor) †
Bernick, Dana Nicole (Psychology – English Language and Literature Minor – Co-operative Program) *
Bester, Lindsay Danielle (Psychology – Fine Arts Studio Minor)
Boudreau, Emily (Psychology - Research Intensive Specialization – English Language and Literature Minor) †

* – Distinction
† – Dean’s Honours
Causton, Noelle
(Communication Studies & Honours Arts and Business – Co-operative Program)

Chan, Christie Yan Tung
(Psychology – English Language and Literature Minor – Co-operative Program)

Clubine, Michael Robert
(Liberal Studies – French Minor, English Language and Literature Minor) *

Cormier, Nicholas Ryan
(Political Science & Honours Arts and Business – Human Resources Management Minor)

Correa, Bethany Constance
(Legal Studies & Honours Arts and Business – Co-operative Program) †

Cropley, Stéphanie Lara
(History & Honours Arts and Business – Co-operative Program) *

Cyrus, Nasiah Gabrielle
(Psychology)

D’Arrigo, Antonella
(Sociology – Peace and Conflict Studies Minor)

Diemert, Ryan John
(Liberal Studies)

Durdle, Megan
(Psychology – Co-operative Program) *

Ebeid, Elaria
(Psychology - Research Intensive Specialization & Honours Sexuality, Marriage, and Family Studies – Co-operative Program) *

Ehlebracht, Rachel Katharina
(Sexuality, Marriage, and Family Studies – Legal Studies Minor)

Feliciano, Angelo Manuel
(Legal Studies & Honours Arts and Business – Theatre and Performance Minor – Co-operative Program) †

Fernandes, Lizardia Rosaria
(Psychology & Honours Social Development Studies – Education Specialization) †

Guillemette, Jessica Ann
(Sociology – Legal Studies Minor) *

Han, Bethany
(Psychology & Honours Arts and Business – Co-operative Program) *

Hedrick, Tessa Elizabeth
(French – French Teaching Specialization – Music Minor) †

Henhoeffer, Victoria Joy
(Medieval Studies & Honours Classics) †

Hill-Zeesman, Eliana
(Sexuality, Marriage, and Family Studies – Sociology Minor, Psychology Minor) *

Kap, Annika Elizabeth Koop
(Sexuality, Marriage, and Family Studies)

Kerr, Easton Daniel Alvin
(History & Honours Arts and Business – Public Policy and Administration Minor)

Mah, Tiyah Jael
(Psychology – Applied Language Studies Minor) †

Neil, Alexandra Mackenzie
(Sociology – Human Rights Minor) *

Nguyen, Joey Duy
(Psychology & Honours Arts and Business – Legal Studies Minor – Co-operative Program) *

Nunes, Benjamin
(Psychology & Honours Arts and Business – Communication Studies Minor – Co-operative Program) †

Pfefferkorn, Matthew Christopher
(Communication Studies & Honours Arts and Business – Human Resources Management Minor – Co-operative Program) *

Pratt, Jaime Lynn
(Sociology & Honours Legal Studies – Co-operative Program)

Preiss, Mathew Roy
(Sexuality, Marriage, and Family Studies – Legal Studies Minor, Sociology Minor)

Qamar, Mohammed Usman
(Psychology - Research Intensive Specialization & Honours Philosophy) *

Radcliffe, Emily Ashton
(Theatre and Performance & Honours Arts and Business – Co-operative Program) †

Reilly, Sarah Marie
(Liberal Studies)

Ribeiro, Haley Victoria
(Sexuality, Marriage, and Family Studies - Intensive Research Specialization & Counselling Specialization – Psychology Minor)

Rooney, Megan Leigh
(Psychology & Honours Sexuality, Marriage, and Family Studies)

Satchell, Kaitlyn Belle
(Communication Studies & Honours Arts and Business – Human Resources Management Minor – Co-operative Program) *

Schindler-Currie, Colin Patrick
(History – Anthropology Minor) *

Sill, Katharine Therese
(Theatre and Performance & Honours Sociology) †

St Onge, Irelyn Anna
(Political Science & Honours Arts and Business – Human Resources Management Minor)

Temnewo, Nazret
(Psychology - Research Intensive Specialization & Honours Sexuality, Marriage, and Family Studies – Counselling Specialization)

Todino, Gabriela Marie
(Legal Studies – History Minor, Psychology Minor) *

Vandehogen, Riley Adrian
(Psychology – Research Intensive Specialization) *

* – Distinction
† – Dean’s Honours
VENTURA APARICIO, LEA RASHELL
(Legal Studies)

WEIGEL-MOHAMED, ISABELLE JOYCE
(Psychology - Research Intensive Specialization – Co-operative Program) †

WENTZLAAF, PAYTON KENNEDY
(Communication Studies & Honours French) †

WOESCHKA, MARGARET CATHERINE ELIZABETH
(French – History Minor, Religious Studies Minor) †

XING, IRIS
(Psychology - Research Intensive Specialization & Honours Arts and Business – Human Resources Management Minor – Co-operative Program) †

BACHELOR OF ARTS
RENIson UNIVERSITY COLLEGE
GENERAL PROGRAM – THREE YEAR

Echevarria-Porter, Rachel Ainsley
(History – Studies in Islamic and Arab Cultures Minor) *

Ruppert, Benjamin Albert John
(Psychology)

HONOURS PROGRAM

Knipfel, Victoria
(Psychology – Applied Language Studies Minor, East Asian Studies Minor)

Young, Kathryn
(Psychology – Sexuality, Marriage, and Family Studies Minor, East Asian Studies Minor)

BACHELOR OF ARTS
UNIVERSITY
GENERAL PROGRAM – THREE YEAR

Al-Obaidi, Hoda
(Peace and Conflict Studies)

Archer, Darlene
(Liberal Studies) *

Bennett, Sarah Elizabeth
(History)

Campos, Mario
(Liberal Studies – Management Studies Minor, Psychology Minor)

Chung, Gavin Ka Wang
(Liberal Studies – Management Studies Minor)

Dada-Phillips, Oreoluwa Margret
(Political Science – Economics Minor) †

Dano, Lennan Sara
(Liberal Studies – Environment, Resources and Sustainability Minor)

Dasinghahi, Gobind
(Philosophy)

Dewar, Alexander James Benjamin
(Liberal Studies – Anthropology Minor)

Dudman, Murray Raymond
(Liberal Studies) *

Gathatharan, Ram
(Liberal Studies – Digital Arts Communication Minor)

Hoch, Rebecca Sarah
(Psychology) *

Huang, Walter
(Liberal Studies – Economics Minor)

Hwang, Daniel
(Liberal Studies)

Jegatheesan, Kirusan
(Liberal Studies)

Joseph, Kaela Renee
(Liberal Studies – Human Resources Management Minor)

Kaufmann-Snoddon, Katarina Lydia
(Psychology) *

Kawshy, Edress
(Political Science – Politics and Business Specialization)

Khan, Sana Ali
(Liberal Studies)

Kwon, Hyunil Brian
(Psychology)

Leung, Allison Carmen
(Liberal Studies)

Liou, Lennium
(Liberal Studies – Economics Minor)

Logan, Ellesene Valerie
(Liberal Studies)

Luo, Zihan
(Liberal Studies – Economics Minor)

MacKinnon, Jeffrey Warren
(Liberal Studies – Economics Minor)

McCaig, Jennifer Mary
(Liberal Studies) *

Nefulda, Alen Charles
(Philosophy) *

Ng, Sabrina
(Liberal Studies – Management Studies Minor) *

* – Distinction
† – Dean's Honours
Osman, Yusuf M A  
(Political Science) *

Patel, Niki  
(Liberal Studies)

Prospero, Katherine  
(Liberal Studies)

Rajeevan, Sneha  
(Liberal Studies)

Robinson, Lindsey Frances  
(Psychology)

Seeguya, Arnold  
(Liberal Studies)

Soggie, Neil  
(Liberal Studies)

Spangler, Christian Matthew  
(Liberal Studies – English Language and Literature Minor) †

Sultana, Rachel Maureen  
(Liberal Studies)

VanDongen, Kevin Andrew  
(Sociology) *

Ventura, Peggy  
(Liberal Studies)

Yu, Aldwin  
(Liberal Studies – Economics Minor)

Zhang, Zhijun  
(Sociology)

Zhao, Yutong  
(Psychology)

**GENERAL PROGRAM – FOUR YEAR**

Abbasi, Munazza  
(Sociology)

Anil, Navdha  
(Liberal Studies – Gender and Social Justice Minor)

Anonna, Asmiyat Yasmeen  
(Communication Studies – Digital Arts Communication Minor)

Bockholt, Hans Jurgen  
(Liberal Studies)

Chahal, Anmol  
(Legal Studies)

Chen, Britteny  
(Sociology – Management Studies Minor, Human Resources Management Minor)

Erdogan, Elif  
(Liberal Studies)

Iredale, Samantha Ann  
(Psychology)

Kangeyan, Kajanthan  
(Psychology)

Kaur, Jasmein  
(Legal Studies)

Kwan, Shannon  
(Sociology)

Mckay, Benjamin  
(Religious Studies – Philosophy Minor)

Nguyen, Peter  
(Liberal Studies/Computing Option)

Perera, Hayshan Udara  
(Sociology)

Poopalarajah, Chowmiah  
(Sociology)

Rose, Kylee Abigail  
(Sociology – Legal Studies Minor, Sexuality, Marriage, and Family Studies Minor)

Van Schubert, Jonathan James  
(History – Legal Studies Minor)

Wilson, Kayla Tristin  
(Psychology)

**HONOURS PROGRAM**

Abate, Lily  
(Political Science – Legal Studies Minor – Co-operative Program) †

Abdel-Samad, Sohayla Ayman  
(History & Honours Arts and Business) *

Abdullah, Tooba  
(Psychology) †

Adams, Madeleine Mary  
(Sociology – Anthropology Minor)

Ahluwalia, Harkirat Singh  
(Sociology)

Ahmed, Hussein Hanif  
(Legal Studies)

Ahmed, Sara  
(Psychology - Research Intensive Specialization – Addictions, Mental Health and Policy Minor – Co-operative Program) †

Ahmed, Sarita  
(Communication Studies & Honours Arts and Business – Co-operative Program) *

Akhter, Aresha  
(Communication Studies & Honours Arts and Business – Human Resources Management Minor) *

Akter, Yasmin  
(Peace and Conflict Studies & Honours Arts and Business – Legal Studies Minor, Human

---

* – Distinction
† – Dean’s Honours
Ali, Ayesha  
(Psychology – Human Resources Management Minor, Management Studies Minor – Co-operative Program) *

Ali, Lauryn Beverley Rose  
(Psychology & Honours Arts and Business) *

Allan, Julia Lynn  
(Legal Studies – Sociology Minor) †

Alves, Kacie Lynne Marie  
(Communication Studies & Honours Arts and Business)

Anupam, Ananya  
(Political Science – International Relations Specialization & Honours Arts and Business – International Studies Minor – Co-operative Program)

Arroyo, Khristian Emmanuel  
(Legal Studies)

Asante-Yirenkyi, Benita Ayesua  
(Sociology & Honours Arts and Business – Human Resources Management Minor – Co-operative Program)

Ashraf, Adil Mahmood  
(Liberal Studies – International Studies Minor) *

Ayena, John Ciguang  
(Communication Studies & Honours Arts and Business – Co-operative Program)

Baboolal, Evan Duval  
(Sociology & Honours Arts and Business) †

Balaji, Aditya  
(Liberal Studies & Honours Arts and Business – Economics Minor – Co-operative Program)

Bali, Divya  
(Legal Studies) *

Bangash, Sarah Shamayel  
(French – Medieval Studies Minor) †

Barros, Juliana Vieira  
(Legal Studies – History Minor)

Bhatnagar, Kartiki  
(Psychology & Honours Communication Studies – Co-operative Program) †

Brah, Tajanpreet Singh  
(Legal Studies & Honours Arts and Business – Co-operative Program) *

Braley, Robert Leslie Frederic  
(Psychology)

Braun, Paige Elizabeth DeBeyer  
(Psychology & Honours Arts and Business – Co-operative Program) †

Brazier, Madeline Miao  
(Psychology – History Minor)

Briglio, Hailey Anne  
(Psychology - Research Intensive Specialization – Gender and Social Justice Minor) *

Brissett, Tyrese Ja-Shae  
(Liberal Studies & Honours Arts and Business – Economics Minor)

Brock, Teagan St. John Wallace  
(Legal Studies & Honours Sociology) †

Brown, Benjamin Robert James  
(Psychology - Research Intensive Specialization – Co-operative Program) *

Brown, Brianna Alexia  
(Legal Studies & Honours Arts and Business – Human Resources Management Minor – Co-operative Program)

Brown, Robert Ian  
(Political Science – International Relations Specialization)

Bucholtz, Alexander  
(Classical Studies & Honours Medieval Studies – History Minor)

Bunde, Kayla Anna  
(Political Science – History Minor) *

Butt, Mohammed Hamza Zahoor  
(Legal Studies – Co-operative Program)

Campbell, Michelle N  
(Liberal Studies) *

Carlisle, Sara Emily  
(Peace and Conflict Studies & Honours Arts and Business – Human Resources Management Minor)

Carty, Jeanelle Braiden  
(Sociology & Joint Honours Environment, Resources and Sustainability – Co-operative Program) †

Cestnick, Sarah Riel Joy  
(Communication Studies & Honours Arts and Business) †

Chaikin, Noah Jack  
(Legal Studies)

* – Distinction
† – Dean’s Honours
Chan, Ashley  (Legal Studies – Peace and Conflict Studies Minor)
Chan, Jennifer ZhiXuan (Sexuality, Marriage, and Family Studies & Honours Arts and Business – Co-operative Program)
Chase, Emilie Ruth (Psychology & Honours Arts and Business – Peace and Conflict Studies Minor – Co-operative Program) †
Chen, Pin-Tong (Legal Studies & Honours Arts and Business – Sociology Minor) †
Chhibber, Hiya (Legal Studies)
Chopra, Neha (Legal Studies & Honours Psychology) †
Chubarova, Irina (Communication Studies & Honours Arts and Business – Co-operative Program)
Chui, Tiffany Wing Hei (Legal Studies & Honours Arts and Business – Co-operative Program) *
Chung, Yun Sheen Alias Pauline (Legal Studies & Honours Arts and Business – Sociology Minor – Co-operative Program) †
Clarin, Kristine Nicole Escaño (Communication Studies & Honours Arts and Business – Psychology Minor) *
Clark, Renée (Psychology – Digital Arts Communication Minor) *
Clarke, Robyn Marie (History – Revolution, War, and Upheaval Specialization – Tourism Minor – Co-operative Program) †
Codini, Jack (Political Science – Co-operative Program)
Condotta, Alexis Victoria (Communication Studies & Honours Arts and Business – Digital Arts Communication Minor – Co-operative Program) †
Coulter, Summer Nicole (Psychology & Honours Arts and Business – Human Resources Management Minor)
Crasovan, Andreea Christina (Legal Studies & Honours Arts and Business – Political Science Minor – Co-operative Program) *
Creighton, Philip Terence Evangelos (Psychology - Research Intensive Specialization)
Crossett, Cole Gordon (Sociology) *
Cvetkovic, Ana (Legal Studies – French Minor)
Dau, Leah Elizabeth (Music – French Minor) *
Davis-Lloret, Savannah Shadiah (Legal Studies & Honours Arts and Business – Co-operative Program) *
Davitt, Olivia Kathleen (Psychology) †
Deeskaran, Aiyshwinni (Sociology & Honours Arts and Business – Human Resources Management Minor – Co-operative Program)
Delos Reyes, Jewel Marie (Music – Music in Global Context Specialization & Honours Arts and Business – Human Resources Management Minor) *
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Dhamer, Adam (Liberal Studies & Honours Arts and Business) *
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Eatough, Rachel Anastasia (Legal Studies & Honours Sociology) †
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<td>(Political Science – International Relations Specialization &amp; Honours Legal Studies – Co-</td>
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* – Distinction
† – Dean’s Honours
Rempel, Callum Mac (History)
Rizvi, Areej Syed (Psychology - Research Intensive Specialization & Honours Sociology) *
Rogers, Ashley Kiara (Psychology & Honours Arts and Business – Cognitive Science Minor – Co-operative Program) *
Roopram, Alexandrea Elizabeth (Liberal Studies & Honours Arts and Business – Economics Minor) †
Ruhnke, Haley Audrey (Psychology – Sociology Minor) *
Sahi, Gurkirat Singh (Psychology – Social Development Studies Minor, Technical Writing Minor)
Saigal, Suhani (Political Science & Honours Arts and Business – Fine Arts Studio Minor)
Santhakumar, Zharuban (Legal Studies & Honours Arts and Business – Economics Minor)
Sayed Ahmad, Yara (Psychology - Research Intensive Specialization – Co-operative Program)
Scheifley, Caytie Audrey (French - French Teaching Specialization – Mathematics Minor) †
Schlef, Michael Tobias (Legal Studies & Honours Arts and Business) *
Scott, Caitlin Paige (Sexuality, Marriage, and Family Studies – Counselling Specialization) *
Sehl, Alexandra Nicole (Classics) *
Shea, Erika Rose (Peace and Conflict Studies – Co-operative Program) †
Shetty, Rhea Sandeep (Psychology - Research Intensive Specialization) †
Shevchyk, Veronica Cecilia (Political Science – International Relations Specialization & Joint Honours Environment, Resources and Sustainability) *
Shpeer, Kimberly (Legal Studies & Honours Arts and Business – Co-operative Program)
Simonot, Emma-Leigh Michelle Renée (Theatre and Performance) †
Singh, Jashan (Legal Studies & Honours Arts and Business – Cognitive Science Minor) *
Singh, Tejal (Psychology & Honours Arts and Business – Social Development Studies Minor – Co-operative Program) †
Sinnathamby, Bavethra (Legal Studies & Honours Arts and Business – Co-operative Program)
Siu, Teresa Yan Yu (Legal Studies & Honours Arts and Business – Human Resources Management Minor – Co-operative Program) †
Skoog, Lauren Elizabeth (Communication Studies & Honours Arts and Business – Human Resources Management Minor – Co-operative Program) †
Skorski, Evan Mark (Psychology - Research Intensive Specialization) †
Slack, Jazlyn Carol Elizabeth (Psychology – Sociology Minor)
Snyder, Meaghan Blair (Psychology) *
Soni, Kanupreet (Psychology – Sexuality, Marriage, and Family Studies Minor)
Srirajasingam, Charanija (Legal Studies & Honours Arts and Business – Human Resources Management Minor) *
Steingart, Aaron James (Psychology) *
Stevens, Henry Walter (Political Science – International Relations Specialization – History Minor – Co-operative Program)
Straehl, Monica Helen (Psychology – Sociology Minor, Cognitive Science Minor) *
Stube, Leila May (Psychology - Research Intensive Specialization) *
Sua, Nicklas Tyrone (Sociology)
Sullivan, Kristen Lyn (Psychology - Research Intensive Specialization) *
Sun, Chenyang (Liberal Studies – East Asian Studies Minor, Sociology Minor)
Szczepanek, Daniel Christopher (Legal Studies & Honours Arts and Business – Economics Minor)
Tam, Tyler Kingsley Long (Liberal Studies & Honours Arts and Business – Economic Theory Minor – Co-operative Program)
Taylor, Mackenzie Long (Liberal Studies – Psychology Minor, Human Resources Management Minor, Communication Studies Minor)
Thomas, Kuel Kuel (Sociology & Honours Legal Studies)

* – Distinction
† – Dean’s Honours
Thukral, Kulpreet Kaur (Psychology & Honours Arts and Business – Co-operative Program) *
Toor, Simrat Kaur (Legal Studies & Honours Arts and Business) †
Tran, Jennifer Christine (Psychology & Honours Arts and Business – Co-operative Program)
Tran, Kelly Ho (Psychology & Honours Arts and Business) *
Tran, Mylinh (Legal Studies & Honours Arts and Business – Sociology Minor)
Tran, Ryan (Political Science – International Relations Specialization – History Minor, Legal Studies Minor – Co-operative Program)
Tutt, Sunjeevan Kaur (Legal Studies – Sociology Minor) †
Uitvlugt-Rafuse, Hannah Athena (German – Applied Language Studies Minor) *
Uttley, Melissa Iris (Legal Studies & Honours Arts and Business – Sociology Minor – Co-operative Program) *
Van Kessel, Kate Rebecca (Psychology - Research Intensive Specialization – Human Resources Management Minor) †
Van Tent, Sierra Rayne (Political Science – Legal Studies Minor, Peace and Conflict Studies Minor) *
Vanderlinde, Nicholas William (French - French Teaching Specialization) *
Vannieuwenhuizen, Josephine Reta (Music)
Vargas, Sean Christopher Bender (Communication Studies – English Language and Literature Minor)
Venner, Megan (Psychology & Honours Arts and Business – Human Resources Management Minor – Co-operative Program) †
Vigh, Emily Renee (Psychology – Social Development Studies Minor) *
von Krause, Letitia (Classical Studies – English Language and Literature Minor) *
Vuong, Jonathan (Psychology) *
Wagg, Danielle Amanda (Sociology)
Wang, Anchen (Political Science)
Wang, Xintong (Psychology – Music Minor – Co-operative Program)
Watson, Hannah (French - French Teaching Specialization & Professional French Specialization – Psychology Minor) †
Webb, Carson Bud (Psychology & Honours Arts and Business – Co-operative Program)
Wei, Lu (Sexuality, Marriage, and Family Studies)
Wells, James Allan (Legal Studies – Political Science Minor, Sociology Minor) *
Wing, Meghan Alicia (Legal Studies & Honours Arts and Business – Human Resources Management Minor – Co-operative Program)
Wong, Nicholas Andrew (Legal Studies & Honours Arts and Business – Co-operative Program) *
Wong, Nicole (Psychology & Honours Arts and Business – Co-operative Program) †
Woodcock, Jonathan Brock (Philosophy)
Xu, Han (Psychology & Honours Arts and Business – Digital Arts Communication Minor – Co-operative Program) *
Xu, Rio (Legal Studies)
Xu, Yang Yang (Psychology – English Language and Literature Minor)
Yan, Jasmine Megan (Psychology)
Yang, Amanda Xueni (Psychology) *
Yau, Katharine (Communication Studies & Honours Arts and Business – Co-operative Program)
Ye, Qian Ying (Political Science & Honours Arts and Business – Human Resources Management Minor – Co-operative Program)
Yip, Evangel Tsz Yau (Communication Studies & Honours Arts and Business – Human Resources Management Minor – Co-operative Program) *
Zacarias-Ponce, Felipe (Political Science & Honours Arts and Business)
Zavadskaya, Anna (Psychology - Research Intensive Specialization) †
Zekan, Ruth HaEun (French - French and Francophone Literatures and Cultures Specialization & Professional French Specialization)
DIPLOMA IN CHINESE LANGUAGE II
Chui, Tiffany Wing Hei

DIPLOMA IN EAST ASIAN STUDIES
Vuong, Jonathan

DIPLOMA IN ENGLISH FOR MULTILINGUAL SPEAKERS
Zhang, Zhijun

DIPLOMA IN FRENCH LANGUAGE I
Siu, Teresa Yan Yu

DIPLOMA IN FRENCH LANGUAGE II
Cropley, Stéphanie Lara

DIPLOMA IN HUMAN RESOURCES MANAGEMENT
Palmer, Nichole Karolyn
Zammit, Rachel Elises

DIPLOMA IN JAPANESE LANGUAGE II
Miao, YanWei

DIPLOMA IN SUSTAINABILITY
Peden, Emily

CERTIFICATE IN EXPERIENTIAL EDUCATION
Akter, Yasmin
Bester, Lindsay Danielle
Chen, Pin-Tong
Delos Reyes, Jewel Marie
Temnewo, Nazret

CERTIFICATE IN GLOBAL EXPERIENCE
Chui, Tiffany Wing Hei
Vuong, Jonathan

* – Distinction
† – Dean’s Honours
DOCTOR OF PHILOSOPHY
Patterson, Katharine Elizabeth  (Accounting)
"Calibration Committees and Rating Distribution Guidance Effects on Leniency Bias in Subjective Performance Evaluations"

MASTER OF TAXATION
Akoua, Tchira Marie Josee
Anemi, Anthony Vito
Bag, Kyeong Hoon Hoon
Blasi, Philippe Francesco
Chen, Zhe
Ding, Yueqi
Fleisher, Paley
Jiang, Xueyan
Kim, Jeong In
Liu, Yangyang
Roopra, Harpreet Singh
Ruan, Yinwen
Schnurr, Cooper
Song, Ailin
Wang, Yifan
Wu, Jennifer Sophia
Zhang, Shaohui
Zhang, Zhuo
Zhu, Jiawen

GRADUATE DIPLOMA
Fang, Yiming  (Taxation)
Li, MUYUAN  (Taxation)

BACHELOR OF ACCOUNTING AND FINANCIAL MANAGEMENT
HONOURS PROGRAM
Abanto, Christine Jael Dy  (Professional Accountant Specialization – Co-operative Program) †
Abdellatif, Sultan  (Co-operative Program)
Agueci, Nicholas Francesco Antonio  (Professional Accountant Specialization – Co-operative Program) †
Ahluwalia, Khushboo  (Co-operative Program) *
Ahmad, Anoosha  (Professional Accountant Specialization – Co-operative Program) *
Ahuja, Shlok Rajesh  (Professional Accountant Specialization – Co-operative Program)
Alex, Liya Elza  (Professional Accountant Specialization – Sociology Minor – Co-operative Program) *
Ali, Mahnoor  (Professional Accountant Specialization – Co-operative Program) *
Ali, Onaizah  (Professional Accountant Specialization – Co-operative Program) *
Alneama, Ahmed Khaled Omar Abbas  (Professional Accountant Specialization – Co-operative Program) †
Amin, Ayushi  (Professional Accountant Specialization – Co-operative Program)
Angeline, Michelle  (Professional Accountant Specialization – Co-operative Program) *
Annedi, Samanvitha  (Professional Accountant Specialization – Co-operative Program) *
Ark, Gurkaren  (French Minor – Co-operative Program) *
Arora, Maanveer Singh  (Co-operative Program) *

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Arulesan, Nivethan  
Atwaul, Navan Singh  
Ayala, Matthew Carter  
Babaran, Roberto De Lumen  
Bahirathan, Vaishaaly  
Bains, Udai Singh  
Balani, Sonia  
Bamra, Sameep  
Bansal, Dhruv  
Belokurova, Kateryna  
Bhardwaj, Rohun  
Bhuyan, Mehek  
Bian, Jia Yan  
Boyd, Julia  
Boyd, Megan  
Brown, Ryan Christopher  
Bulovas, Ethan Valdemar Paul  
Cahyadi, Michael  
Cai, Jinfeng  
Campbell, Alexander Adonis  
Cao, Minghao  
Cao, Tracey  
Carnegie, Brayden Scott James  
Carpino, Chloe  
Carusi, Stephen Paul  
Cassio, Joseph Gerard  
Chahil, Karnvir  
Chan, Philbert Chuen-Yiu  
Chang, Nigel  
Chen, Bowen  
Chen, Clifford Chih-Jen  
Chen, Jocelyn  
Chen, Kevin Nan  
Chen, Olivia Rosalie  
Cheung, Brian Hok Yan  
Cheung, Christopher Lok Hang  
Cheung, Victoria Steffini  
Chiu, Ivan Chi Ho  
Chiu, Tyler Lawrence  
Choi, Ji Woo  
Chu, Laura  
Chui, Jina Cin Yee  
Chung, Hee-Yun  
Clutton, Alyssa Nicole  
Cotoc, Damaris

* – Distinction  
† – Dean’s Honours
Criminisi, Nicholas Carmelo (Professional Accountant Specialization – Co-operative Program)  
Dai, Andrew (Co-operative Program) †  
Dai, Matthew (Professional Accountant Specialization – Co-operative Program) †  
Dai, Zhi Jun (Co-operative Program) *  
Debergh, Kayleigh James (Professional Accountant Specialization – Co-operative Program)  
De Sousa, Angela Ana (Professional Accountant Specialization – Co-operative Program)  
Dewani, Armaan (Professional Accountant Specialization – Co-operative Program) *  
Dhillon, Gursimran (Financial Markets Specialization – Economics Minor – Co-operative Program) †  
Dhillon, Noor (Professional Accountant Specialization – Human Resources Management Minor – Co-operative Program) *  
Dhillon, Pavitar Singh (Co-operative Program)  
Dooks, Isaac Samuel (Professional Accountant Specialization – Co-operative Program) †  
Doucette, Owen James (Professional Accountant Specialization – Co-operative Program) *  
Egan, Brianna Elena (Professional Accountant Specialization – Co-operative Program) *  
Ejaz, Syed (Professional Accountant Specialization – Co-operative Program)  
Evans, Matthew McAuley (Economics Minor – Co-operative Program)  
Fahmy, Nervana Adel (Professional Accountant Specialization – Co-operative Program) *  
Fan, Michelle Chongmin (Professional Accountant Specialization – Co-operative Program)  
Fatima, Mahnoor (Professional Accountant Specialization – Co-operative Program) *  
Feng, Patrick (Economics Minor – Co-operative Program)  
Feng, Qinghui (Professional Accountant Specialization – Co-operative Program) †  
Fernando, Mihiri Yashodara (Professional Accountant Specialization – Co-operative Program) †  
Ficele, Lucas (Professional Accountant Specialization – Co-operative Program) *  
Flanagan-Tordjman, Steven Micael (Professional Accountant Specialization – Co-operative Program) †  
Foo, Amanda Catherine (Professional Accountant Specialization – Co-operative Program) †  
Fox, Abbey Jayne (Professional Accountant Specialization – Human Resources Management Minor – Co-operative Program) *  
Fu, Karen Jiarong (Music Minor – Co-operative Program) †  
Fung, Yiwald Wilfred (Professional Accountant Specialization – Co-operative Program) *  
Gagliardi, Lucas (Professional Accountant Specialization – Co-operative Program) *  
Gan Kok Shing (Professional Accountant Specialization – Co-operative Program) †  
Gandhi, Ishaan (Professional Accountant Specialization – Co-operative Program) †  
Ganeshalingam, Abirna (Professional Accountant Specialization – Co-operative Program) *  
George, Rachel (Professional Accountant Specialization – Co-operative Program)  
Gerber, Walter Jackson (Professional Accountant Specialization – Co-operative Program)  
Geum, Kyung min (Professional Accountant Specialization – Co-operative Program)  
Ghuman, Parkashdeep Singh (Professional Accountant Specialization – Co-operative Program) *  
Gill, Mantej Singh (Professional Accountant Specialization – Co-operative Program) *  
Gong, Shiqi (Professional Accountant Specialization – Co-operative Program) †  
Gopal, Loonesh (Professional Accountant Specialization – Economics Minor – Co-operative Program)  
Greaves, Allison Margaret Yu Fang (Professional Accountant Specialization – Co-operative Program)  
Greaves, Katherine Emily Yu Fen (Professional Accountant Specialization – Co-operative Program) *  
Haase, Stefania Danuta Figiel (Professional Accountant Specialization – Co-operative Program) *  
Hamati, Zoher (Professional Accountant Specialization – Co-operative Program)  
Hamodi, Basma (Professional Accountant Specialization – Co-operative Program) †  
Hart, Samuel Zoher (Co-operative Program) †  
Heier, Santiago Lindsay (Professional Accountant Specialization – Entrepreneurship Minor – Co-operative Program) *  

* – Distinction  
† – Dean’s Honours
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<td>La, Frances</td>
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<td>Lai, Ziqin</td>
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<td>Lam, Charmaine Chin May</td>
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<td>Lam, Janis Chor Tung</td>
<td>(Professional Accountant Specialization – Economics Minor – Co-operative Program)</td>
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<td>Lam, Matthew Tuan Minh</td>
<td>(Financial Markets Specialization – Co-operative Program) †</td>
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<td>Lawrencepillai, Sharon</td>
<td>(Business Analytics Specialization &amp; Professional Accountant Specialization – Co-operative Program)</td>
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<td>Le, Britney Michelle</td>
<td>(Professional Accountant Specialization – Human Resources Management Minor – Co-operative Program)</td>
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<td>Lee, Claire</td>
<td>(Professional Accountant Specialization – Computing Minor – Co-operative Program) *</td>
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<td>Lee, Emily Yuk Sun</td>
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<td>Lee, Pamela</td>
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<td>Mathur, Deven Prasad</td>
<td>(Financial Markets Specialization – Economics Minor – Co-operative Program) *</td>
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<td>Meurs, Chase Tyler</td>
<td>(Professional Accountant Specialization – Co-operative Program)</td>
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<tr>
<td>Mittal, Arshya</td>
<td>(Professional Accountant Specialization – Co-operative Program)</td>
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</tbody>
</table>

* – Distinction
† – Dean’s Honours
Mittal, Skand (Professional Accountant Specialization – Co-operative Program)
Mo, Daniel (Professional Accountant Specialization – Economics Minor – Co-operative Program) †
Mohan, Marilena Gabrielle (Professional Accountant Specialization – Co-operative Program)
Moores, Luke Christopher (Financial Markets Specialization – Co-operative Program) †
Mubashshira, Nabiha (Professional Accountant Specialization – Co-operative Program) *
Muraleetharan, Rahulan (Professional Accountant Specialization – Co-operative Program) *
Nagaratnam, Kiran (Co-operative Program) *
Naz, Tahira (Professional Accountant Specialization – Co-operative Program)
Nelson, Nathan Peter Ross (Professional Accountant Specialization – Co-operative Program) *
Ng, Alex (Professional Accountant Specialization – Co-operative Program) †
Ng, Jonathan (Professional Accountant Specialization – Economics Minor – Co-operative Program) †
Ng, Queena Cheuk Kwan (Professional Accountant Specialization – Economics Minor – Co-operative Program)
Ngai, Valerie (Professional Accountant Specialization – Co-operative Program) *
Nguyen, Christina (Professional Accountant Specialization – Human Resources Management Minor – Co-operative Program)
Noor, Fatima (Professional Accountant Specialization – Human Resources Management Minor – Co-operative Program) *
Oh, Seungyeol (Co-operative Program) †
Pacifico, Caitlyn Joy (Professional Accountant Specialization – Co-operative Program)
Panchal, Keven (Professional Accountant Specialization – Economics Minor – Co-operative Program) *
Parthipan, Krishni (Professional Accountant Specialization – Human Resources Management Minor – Co-operative Program) *
Parthigulasoman, Harini (Professional Accountant Specialization – International Trade Minor, International Studies Minor – Co-operative Program)
Patel, Aarya (Economics Minor – Co-operative Program)
Patel, Ashna Lissa (Professional Accountant Specialization – Co-operative Program) *
Patel, Riya (Professional Accountant Specialization – Co-operative Program) *
Patel, Saloni Miteshkumar (Professional Accountant Specialization – Co-operative Program) †
Patterson, Blake Fredrick Alexander (Co-operative Program) *
Pavalarajah, Apinaash (Professional Accountant Specialization – Co-operative Program)
Phan, Kristen Mei-lum (Professional Accountant Specialization – Co-operative Program)
Pifanio, Aaron Duke (Professional Accountant Specialization – Co-operative Program)
Priffer, Samantha Leigh (Professional Accountant Specialization – Co-operative Program)
Puckrin, Warner Steven (Professional Accountant Specialization – Co-operative Program) †
Qin, Fan Qi (Co-operative Program) *
Quinlin, Brendan Paul (Professional Accountant Specialization – Co-operative Program) *
Ragavan, Harishvar (Professional Accountant Specialization – Co-operative Program) *
Ramachandra, Aarabi (Professional Accountant Specialization – Co-operative Program) *
Ramnani, Ritvik (Professional Accountant Specialization – Co-operative Program) †
Rasoul, Mohammad Sadollah (Professional Accountant Specialization – Co-operative Program) *
Reid, Thomas Kennedy (Professional Accountant Specialization – Co-operative Program) *
Reitzel, Garrett Roy (Professional Accountant Specialization – Co-operative Program) *
Ren, Si Nan (Professional Accountant Specialization – Co-operative Program) *
Ren, Xinyi (Professional Accountant Specialization – Co-operative Program)
Rishi, Jatin (Professional Accountant Specialization – Co-operative Program)
Rizzo, Curtis Steven (Professional Accountant Specialization – Co-operative Program) *
Roopnauth, Ryan Shivdhan (Professional Accountant Specialization – Co-operative Program) †

* – Distinction
† – Dean’s Honours
Rozin, Eitan Aaron  
   (Professional Accountant Specialization – Co-operative Program) †
Ruan, Gary  
   (Professional Accountant Specialization – Co-operative Program) *
Sadiq, Muhammad  
   (Economics Minor – Co-operative Program)
Saltz, Benji Mathew  
   (Professional Accountant Specialization – Co-operative Program) *
Saraff, Darshan Venkataram  
   (Professional Accountant Specialization – Co-operative Program)
Sathiaseelan, Dhanusha  
   (Professional Accountant Specialization – Economics Minor – Co-operative Program) †
Saunders, David Harold  
   (Professional Accountant Specialization – Co-operative Program) *
Scarlato, Yolanda  
   (Professional Accountant Specialization – Co-operative Program) †
Sehgal, Rahul  
   (Professional Accountant Specialization – Co-operative Program) *
Selvadurai, Asha  
   (Professional Accountant Specialization – Co-operative Program) †
Shah, Jaip Jigneshkumar  
   (Professional Accountant Specialization – Co-operative Program) *
Shah, Kushal Piyush  
   (Professional Accountant Specialization – Co-operative Program) †
Sharma, Abhishek  
   (Economics Minor – Co-operative Program)
Sharma, Vikrant Shridhar  
   (Professional Accountant Specialization – Co-operative Program)
Shin, Thomas  
   (Professional Accountant Specialization – Co-operative Program)
Shokar, Gurvir  
   (Professional Accountant Specialization – Co-operative Program) †
Simon, Zachary  
   (Co-operative Program)
Singh, Jordan Elizabeth  
   (Professional Accountant Specialization – Economics Minor – Co-operative Program) †
Sirin, Ebubekir  
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Sivabalan, Shangavei  
   (Professional Accountant Specialization – Co-operative Program) †
Sivakuganandan, Abishake Sivakuganandan  
   (Professional Accountant Specialization – Co-operative Program)
Sivasuntharam, Sathusia  
   (Professional Accountant Specialization – Co-operative Program)
Smallman, Jane Charlotte Ho  
   (Professional Accountant Specialization – English Language and Literature Minor – Co-operative Program) †
Soares, Aidan Haley  
   (Professional Accountant Specialization – Co-operative Program) *
Song, Cuiyan  
   (Professional Accountant Specialization – Economics Minor – Co-operative Program)
Song, Zhe-Ning  
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Sran, Simran Kaur  
   (Professional Accountant Specialization – Human Resources Management Minor – Co-operative Program) *
Stachura, Brian James  
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Su, Tie Hong  
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Suri, Anchita  
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Tai, Baldwyn Au Heng  
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Tang, Justin Pak Hei  
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Tamowski, Zachary Doran  
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Teng, Tianjiao  
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Thakur, Ritvik  
   (Co-operative Program) †
Thasan, Nila  
   (Economics Minor – Co-operative Program) *

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Thevakumar, Keshika  
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Thirukkumaran, Arthika  
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Tran, Felix Sui  
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Tran, Nathan  
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Uthayakumaran, Archchenaa  
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Van Wart, Benjamin Germane Wayne  
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Wang, Shanshan  
(Professional Accountant Specialization – Co-operative Program) †

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Winces, Lanish  
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Ye, Vicky Jia Hui  
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Zaidi, Syed Ali Murtaza  
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Zhang, Anlei  
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(Professional Accountant Specialization – Mathematics Minor, Economics Minor – Co-operative Program) *

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Zhang, Ze Xin  
(Professional Accountant Specialization – Co-operative Program)

Zhao, Lisa Mingfei  
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Zhao, Yanqi  
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Zhou, Yumeng  
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Zhu, Joyce  
(Professional Accountant Specialization – Co-operative Program) †

**BACHELOR OF COMPUTING AND FINANCIAL MANAGEMENT**

**HONOURS CO-OPERATIVE PROGRAM**

Chen, Lilian  *

Gao, Haiyue  *

Ilersich, Anthony Nicola Taddio

Jin, Esther  †

Ju, Benjamin  *

Kamran, Ammar  †

Kamran, Ayman  *

Kong, Aaron Weiqi  †

Law, Evelyn  †

Li, Xinyi

Lingertat, Oliver James  (Computational Mathematics Minor, Combinatorics and Optimization Minor) *

Ma, Shiqi  (Combinatorics and Optimization Minor) †

Mehta, Navya Jayesh  (Statistics Minor) †

Rao, Dhairya Rajen  *

Shang, Zuorong

Shi, Phoebe  †

Sin Fai Lam, Audrey Xiao Yuli  †

Xia, Yiqing  †

Zhu, Zhengnan  *

**DIPLOMA IN FRENCH LANGUAGE I**

Ho, Jenny

Hu, Linda

Yang, Yong Zhe

**DIPLOMA IN FRENCH LANGUAGE II**

Khan, Leena Yasmin

Ngai, Valerie

**CERTIFICATE IN GLOBAL EXPERIENCE**

Chu, Laura

* – Distinction

† – Dean’s Honours
FACULTY OF ENGINEERING

DOCTOR OF PHILOSOPHY

Ahusain, Mustafa (Mechanical and Mechatronics Engineering)
"Three-Dimensional CT Imaging and Microstructural Mechanical Modeling of Corrosion and Freeze-Thaw Damage of Concrete"

Bhatt, Neel Pratik (Mechanical and Mechatronics Engineering)
"Socially and Spatially Aware Motion Prediction of Dynamic Objects for Autonomous Driving"

Chakraborty, Apratim (Mechanical and Mechatronics Engineering)
"Fabrication of Hard-To-Process Ni-Based Superalloy Thin-Wall Parts Made by Laser Powder Bed Fusion"

Cheng, Zhi (Mechanical and Mechatronics Engineering)
"Flow Dynamics and Aeroacoustics of Flow-Induced Vibration of Bluff Bodies"

Courtney, Matthew Ryan (Mechanical and Mechatronics Engineering)
"Free-Flow Counterflow Gradient Focusing for Protein Fractionation"

Deng, Zejian (Mechanical and Mechatronics Engineering)
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Farag, Heba Elsayed (Mechanical and Mechatronics Engineering)
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Ghatei Kalashami, Ali (Mechanical and Mechatronics Engineering)
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Kaj, Farzaneh (Mechanical and Mechatronics Engineering)
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Khamooshi, Mobin (Mechanical and Mechatronics Engineering)
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Khan, Muhammad Shehryar (Mechanical and Mechatronics Engineering)
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Kumar, Parichit (Mechanical and Mechatronics Engineering)
"Development of a Magnetic Levitation System for Additive Manufacturing Processes"

Lacombe, Francis (Mechanical and Mechatronics Engineering)
"Stability of Compressible Boundary Layers in Presence of Smooth Roughness and Wall Temperature Effects"

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"Monitoring and Control of Metal Additive Manufacturing Processes Using Ultrasound"

Misra, Sirshendu (Mechanical and Mechatronics Engineering)
"Wetting & Capillarity: From Thin Film Mediated Processes to Droplet-Surface Interactions"

Mohammadbagher, Ehsan (Mechanical and Mechatronics Engineering)
"Self-Localization for Autonomous Driving Using Vector Maps and Multi-Modal Odometry"

Musikhin, Stanislav (Mechanical and Mechatronics Engineering)
"Microwave Plasma Synthesis of Graphene and its Laser-Optical In Situ Characterization"

Ramachandiran, Nivas (Mechanical and Mechatronics Engineering)
"Structure - Property Correlation in Additive Manufactured Ti-5553 Components"

Shahidi, Ali (Mechanical and Mechatronics Engineering)
"Model Predictive Controller Weight Tuning and Real-Time Learning-Based Weight Selection"

Sun, Chen (Mechanical and Mechatronics Engineering)
"Operational Design Domain Monitoring and Augmentation for Autonomous Driving"

Tangestani, Reza (Mechanical and Mechatronics Engineering)
"Multi-Scale Modeling of Laser Powder Bed Fusion Process for Superalloys"

Wang, Chia-Pei (Mechanical and Mechatronics Engineering)
"Virtual Model Building for Multi-Axis Machine Tools Using Field Data"

Wang, Jeremy Chan-Hao (Mechanical and Mechatronics Engineering)
"Riemann Solvers With Non-ideal Thermodynamics: Exact, Approximate, and Machine Learning Solutions"

Zarringhalam, Reza (Mechanical and Mechatronics Engineering)
"Sensor Fault Detection and Fault-Tolerant Estimation of Vehicle States"

MASTER OF APPLIED SCIENCE

Banjo, Stephen Adewunmi (Mechanical and Mechatronics Engineering)

Baranovsky, Alex (Mechanical and Mechatronics Engineering)

Boulis, Raphael (Mechanical and Mechatronics Engineering)

Boychuk, Roman (Mechanical and Mechatronics Engineering)

* – With Distinction
† – Dean’s Honours List
Budnick, Dylan  
Colpitts, Alyson  
Dasari, Yashesh  
Eccestone, Edward Joseph  
Gao, Tianyi  
Gupta, Pratishtha  
Gutierrez, Jon Edward  
Jones, Joshua Taylor  
Kamalpreet Kaur  
Khan, Muhammad Fasahat  
Kim, Tori Yeonjin  
Li, Joey Zheqiang  
Li, Lanyu  
Lim, Mark  
MacCallum, Ben  
Mahdi, Anas  
Mao, Ningyue  
Mostafa, Kareem Ahmed WafaaEldeen  
Nagorski, Michael Christopher  
Pastula, Christopher  
Patel, Meet  
Song, Shiyuan  
Srinivaasappa Indira, Raj Arjun  
Stewart, Curtis Vinai  
Stothart, Alexander  
Thibault, William Charles  
Tolofari, Tamuno-Ibim  
Wei, Wei  
Xia, Yuwei  
Yuan, Shuying  
Zhou, Jansen  
Zhou, Yongzan

**MASTER OF ENGINEERING**

Arslan, Sheikh Muhammad  
Bhanushali, Adarsh Anilbhai  
Chang, Luke  
Chen, Lingfei  
Chougule, Sanketh  
DAK, RAHKLUMAR SURESHCHANDRA  
Ding, Liping  
Elankannan, Chandrasekar  
Keshri, Nitish  
Kocher, Tyler James  
Li, Yanhui

* – With Distinction  
† – Dean’s Honours List
Malik, Taha  (Mechanical and Mechatronics Engineering – Co-operative Program)
Manohar, Ajay Krishna  (Mechanical and Mechatronics Engineering)
Marino, Anthony John  (Mechanical and Mechatronics Engineering)
Navdeep, Navdeep  (Mechanical and Mechatronics Engineering)
Nedumaran, Kishore  (Mechanical and Mechatronics Engineering)
Nwokotubo, Malcolm Ugochukwu  (Mechanical and Mechatronics Engineering – Co-operative Program)
Pai, Prajwal Prakash  (Mechanical and Mechatronics Engineering)
Pai Lotliker, Aaditya  (Mechanical and Mechatronics Engineering)
Pervez, Ibtehaj  (Mechanical and Mechatronics Engineering)
Pillai, Pranav Balachandran  (Mechanical and Mechatronics Engineering)
Rahmani, Reza  (Mechanical and Mechatronics Engineering)
Roy, Roshan  (Mechanical and Mechatronics Engineering)
Shah, Jinesh Atulbhai  (Mechanical and Mechatronics Engineering)
Shah, Nisarg Umang  (Mechanical and Mechatronics Engineering)
Shah, Shivangi Jayrajbhai  (Mechanical and Mechatronics Engineering)
Shah, Tejas Prakash  (Mechanical and Mechatronics Engineering)
Shrestha, Bhimsen  (Mechanical and Mechatronics Engineering)
Sidhu, Manrajjit Singh  (Mechanical and Mechatronics Engineering)
Thallani Kamalaksha, Suman Kumar  (Mechanical and Mechatronics Engineering)
Wadhawan, Arjun  (Mechanical and Mechatronics Engineering)
Wang, Chenyu  (Mechanical and Mechatronics Engineering)

GRADUATE DIPLOMA
Arslan, Sheik Muhammad  (Green Energy)
Bhanushali, Adarsh Anilbhai  (Design Engineering – Co-operative Program)
Chang, Luke  (Fire Safety)
Chougule, Sanketh  (Design Engineering – Co-operative Program)
DAK, RAHULKUMAR SURESHCHANDRA  (Green Energy)
Freiburger, Troy Alexander  (Cognitive Science)
Keshri, Nitish  (Design Engineering – Co-operative Program)
Kocher, Tyler James  (Fire Safety)
Lenos, Jared Nikolai  (Software Engineering)
Manohar, Ajay Krishna  (Design Engineering – Co-operative Program)
Marino, Anthony John  (Design Engineering – Co-operative Program)
Navdeep, Navdeep  (Design Engineering – Co-operative Program)
Nedumaran, Kishore  (Design Engineering – Co-operative Program)
Nwokotubo, Malcolm Ugochukwu  (Green Energy)
Pai, Prajwal Prakash  (Design Engineering)
Pai Lotliker, Aaditya  (Green Energy)
Pillai, Pranav Balachandran  (Design Engineering – Co-operative Program)
Rahmani, Reza  (Green Energy)
Roy, Roshan  (Green Energy)
Shah, Jinesh Atulbhai  (Design Engineering – Co-operative Program)
Shah, Shivangi Jayrajbhai  (Design Engineering – Co-operative Program)
Shrestha, Bhimsen  (Green Energy)
Thallani Kamalaksha, Suman Kumar  (Design Engineering – Co-operative Program)

* – With Distinction
† – Dean’s Honours List
## BACHELOR OF APPLIED SCIENCE

### MECHANICAL ENGINEERING

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<tr>
<th>Name</th>
<th>Option</th>
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<td>Wadhawan, Arjun</td>
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<td>Physical Sciences Option</td>
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Deol, Harsukh Kaur *
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Dsouza, Snehal Ashlyn *
Duan, Rui Jia *†
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Jia, Chengyu *
Johanna, Sarah (Management Sciences Option) *
Joseph, Evan Rea (Welding and Joining Specialization) *
Kagaya, Michio *†
Kalia, Nikhila (Entrepreneurship Minor) *
Karunarathne, Dinil Demetrius Perera *
Keating, Lauren Louise *†
Kenjic, Nikola (Welding and Joining Specialization) *
Kenneweg, Christopher James *†
Khadra, Hadi *
Khan, Tahmid Ahmed *
Kim, Jae Hyung *
Kim, Tae Hun *
Kishorchandra, Ankitha *
Klarer, Connor James *
Knibutat, Carly Alexandria (Software Engineering Option) *

* – With Distinction
† – Dean’s Honours List
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Patel, Vaibhav Nilesh
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Poon, Bryan Chi-Ho
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Shaw, Joshua Allister Hiram
Singh, Lovepreet
Singh, Nikhil
Singh, Shawn Rohan
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Tanary, Ryan (Mechatronics Option)
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Tran, Kenton
Tran, Tommy

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Wallace, Mark Elliott  (Welding and Joining Specialization)  
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Wang, Justin Fangzhi  
Wang, Lei  
Wang, Rui Qin  (Management Sciences Option)  *  
Watson, Scott Tong  
Werbowski, Drew Michael  †  
Westrik, Spencer John  
Wey, Tze Sheun Vincent  
Wong, Victor Hsiang-Yu  
Wren, Malcolm Isaac  
Wright, Toluwalope Oreoluwa David  (Management Sciences Option)  
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Yoo, Seungwoo  
You, Gary  †  
Yu, Yao  
Zaman, Fardeen Tausif  (Mechatronics Option)  
Zhang, Andrew Changan  (Mechatronics Option)  *  
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Zhao, Nina Ranran  
Zhou, Jim Tong  

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Agrahari, Abhinav  †  
Ahamed, Kamran Karim  
Alnader, Hashem  (Artificial Intelligence Option)  
Atif, Hunnain  (Management Sciences Option & Computing Option)  *  
Bai, Tonghe  (Artificial Intelligence Option)  *  
Baksh, Aidan Khaleel  †  
Banwait, Gursimmer  (Artificial Intelligence Option)  *  
Baribeau, Julia Nicole Nixon  
Barlow, Andrew James  (Artificial Intelligence Option)  †  
Bearne, Christopher Lewis Hiroshi  (Biomechanics Option)  *  
Bhatt, Shivam  
Bird, Joshua Robert  (Artificial Intelligence Option)  †  
Black, Micah Jonathan  
Blake, Leif  (Physics Minor)  *  
Blatt, Joshua Alexandor  (Computing Option)  *  
Borromeo, Joseph Anthony  
Brett, Caleb Ian  
Broekhoven, Derek Louis  
Cai, Charlie  

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Chakma, Andrea (Management Sciences Option & Computing Option) *
Chau, Mackenzie Brian *
Chauhan, Advait Singh *
Chen, Michael *
Chiang, Eric Shun-Li *
Cho, Avery Ye-Jin *†
Cho, Seonghan *
Clark, Liam Edward *
Cui, Yuanlong *
Dao, Eric-Khang Tan *
Darhan, Harsimran Singh (Biomechanics Option) *
del Rosso, Matthew Anthony *
Dellosa, Joshua Raymund *†
Diao, Ziyang *
Divecha, Keahn Rushad *
Docker, Colin Alexander *
Doria, Luke Domenic *†
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Faryna, Daniel *
Fearon, Joshua *
Feng, Ji Yuan (Artificial Intelligence Option) *
Fisher, Charles Randolph (Computing Option) *†
Gallant, Trevor Jason *
Gans, Ariel *
Gencher, Matthew Evan *
Ghosh, Ayush (Artificial Intelligence Option) *†
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Gopaul, Kavir Darron (Management Sciences Option) *
Gupta, Nihit (Computing Option) *
Gupta, Tushar *
Han, Daeun (Computing Option) *
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Hariharan, Saharsh *
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Hashi, Laila *
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Hernandez, David Lorenzo *†
Hillcoat, Sophie Rachel *†
Hsu, Selina *
Hu, Chu Qing (Artificial Intelligence Option) *
Huang, Jimmy Ximing *
Huynh, Vu Julian Hoa-Chau (Computing Option) *

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Itua, Itohansose Elaine
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Jain, Prashuk
Ju, Jerry Tian Jian
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Kamal, Ahmad Nabil Youssef
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Khan, Riyad Rafiq
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Khan, Wohsumoe Soyazhe
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Kim, Ihn Hwan
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Kim, Ryun
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Kim, Youngbin
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Kirton, Chad Anthony Cavour
Kitaev, Alexander
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Klassen, Nathan Daniel Steinmann
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Kletke, Dawson Walker
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Lai, Frank Yifeng
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Lam, Adrian Chun Wing
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Le, Jane
Le, Tuan Quang Minh
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Lee, Chun Hei Jeffrey
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Lee, David
Lee, Eric Younghoon
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Leung, Daniel J
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Li, Junsong
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Liu, George Yilong
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Liu, Shu Yan
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Lumibao, John Michael
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Ma, Wei Min
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Mali, Aashmika
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Manani, Dhruv
  (Artificial Intelligence Option) *†
Manley, Thomas Allan Major
Manohara, Nirosan
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Manoj Kumar, Kiran
  (Computing Option) *
Mathiaraasu, Ganesh Krishna
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Mears, Zachariah Henry Howden
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Mehta, Jainish Manojkumar
  (Artificial Intelligence Option) *
Mei, Caitlyn
Minhas, Pritika
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Mittal, Ayush
  (Artificial Intelligence Option & Computing Option) *
Moffett-Steinke, Kaelan Shane
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Mok, Gabriel Nicholas
Mourcos, Andrew
  (Computing Option) *
Murugathas, Thamilmaaran
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Naik, Sameeksha
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Nanji, Azum
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* – With Distinction
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Tan, Zhuohua
Tang, Lyndon Elliot
Terisno, Lania Philia
Thiessen, Natalie Nicole Brawn
Tims, Nigel
Tiou-Fat, Jason Eric Haoshan
Tipold, Glenn Masao
Tran, Celine Yen Phuong
Trehan, Aryan
Truong, Ian
Unrau, Joshua Paul
Vijikaran, Gobishan
Von Friedl, Kathrine Elizabeth
Vora, Hanz Jitendra
Walia, Kunal
Wang, Bill
Wang, Siyi
White, David Daniel
White, James Clermont Christopher
Montana
Windhaus, Brian Anthony
Winter, Maximillian Thomas
Wong, Felix KaHin
Wong, Jillian Claire
Wong, Yanni Chun Yen
Wu, Peixin
Wu, Xiaofei
Wu, Zewen
Xiao, George
Yu, Jason Da Wei
Yu, Xinyue
Zanker, Teva
Zaryab, Mahad
Zhang, Mu En
Zhao, Yuchi
Zheng, Huanpeng
Zhou, Haoyu
Zwiebel, Joshua Jack

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CERTIFICATE IN CO-OPERATIVE EDUCATION IN RESEARCH
Annosantini, Adam Stuart Sante

CERTIFICATE IN GLOBAL EXPERIENCE
Itua, Itohansose Elaine
DOCTOR OF PHILOSOPHY

Ahmadloo, Fatemeh (Electrical and Computer Engineering)
"Control Loop Interactions and Their Mitigation Schemes in VSC-HVDC Systems"

Alsharman, Mohammad Khaled (Electrical and Computer Engineering)
"Towards Learning Feasible Hierarchical Decision-Making Policies in Urban Autonomous Driving"

Barbosa de Queiroz, Rodrigo (Electrical and Computer Engineering)
"Scenario Modeling and Execution for Simulation Testing of Automated-Driving Systems"

Córdova Sota, Samuel Alejandro (Electrical and Computer Engineering)
"Operation of Microgrids with Conventional and Virtual Energy Storage Systems"

Devadiga, Anurag Anand (Electrical and Computer Engineering)
"Analysis of Transformer Insulation Under High-Frequency Transients"

Fouladi Azarnaminy, Arash (Electrical and Computer Engineering)
"High-Performance Piezoelectric Resonators and Filters for RF Frontend Applications"

Gul M Khan, Omniyah (Electrical and Computer Engineering)
"Congestion Management in Active Distribution Networks and its Cyber Security"

Hussein, Abdalla Mohamed Abdelaziz Mahmoud (Electrical and Computer Engineering)
"Operating Multi-User Transmission for 5G and Beyond Cellular Systems"

Jarrar, Ibrahim Marwan Mousa (Electrical and Computer Engineering)
"A Study on Turn-to-Turn Insulation of Medium Voltage Motors Fed by Variable Frequency Drives"

Khaira, Navjot Kaur (Electrical and Computer Engineering)
"Reconfigurable Cryogenic Microwave Devices Using Low Temperature Superconducting rf-SQUIDs"

Khan, Asif Abdullah (Electrical and Computer Engineering)
"High-Performance Piezoelectric Nanogenerators Based on Hybrid Perovskite Nanomaterials for Energy-Harvesting"

Li, Zhuoran (Electrical and Computer Engineering)
"Visual Content Characterization Based on Encoding Rate-Distortion Analysis"

Mao, Chunyu (Electrical and Computer Engineering)
"Scaling Permissioned Blockchains via Sharding"

Matar, Amr Salaheldin Hashem (Electrical and Computer Engineering)
"Resource and Interference Management in UAV-Cellular Network"

Miyoshi, Teppei (Electrical and Computer Engineering)
"Theoretical Studies on Terahertz Quantum Cascade Lasers for Device Design Guideline"

Parsapour, Mahsa (Electrical and Computer Engineering)
"Understanding Feedforward Feedback Controller Components In Human Movement Through Optimization-Based Approaches"

Peralta Moarry, Dario Andres (Electrical and Computer Engineering)
"Modeling and Operation of Ground Source Heat Pumps in Electricity Markets Considering Uncertainty"

Pil Ali, Abdullah (Electrical and Computer Engineering)
"Grating Technology and System Development for High-Resolution X-Ray Phase-Contrast Imaging"

Stangherlin, Kleber Hugo (Electrical and Computer Engineering)
"Secure and Unclonable Integrated Circuits"

Tekcan, Burak (Electrical and Computer Engineering)
"III-V Semiconductor Nanowire Avalanche Photodiodes"

Van Kasteren, Bradley Edward (Electrical and Computer Engineering)
"Emerging Semiconductor Nanostructure Materials for Single-Photon Avalanche Diodes"

Vera Solorzano, Enrique Gabriel (Electrical and Computer Engineering)
"Planning of Multi-Microgrids Considering Uncertainties and Spatial Characteristics"

Wang, Siyi (Electrical and Computer Engineering - Nanotechnology)
"Thermal Dynamic Imaging and Thermal Management for Quantum Cascade Lasers"

Xue, Liang (Electrical and Computer Engineering)
"Privacy-Preserving and Regulation-Enabled Mechanisms for Blockchain-Based Financial Services"

Yazdani, Farzad (Electrical and Computer Engineering)
"Investigations Into Impedance Tuners for the Next Generation of Communication Systems"

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Abdelkareem, Youssef Abdelrahman Fathi Ahmed (Electrical and Computer Engineering)

Aghamohammadi, Hamid (Electrical and Computer Engineering)

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(Bahrkhoudar-pour, Hoda  
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(Cai, Yifan  
(Cai, Zhiping  
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(Elghalhoud, Omar Mahmoud Rida  
(Connor Rahman  
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(Yigzaw, Samuel Mulatu  
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**MASTER OF ENGINEERING**

(via)  
(Farhad, Tanvi  
(Agrawal, Sheena  

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* – With Distinction  
† – Dean’s Honours List
Mistry, Chintan Sureshkumar
Monga, Gurubaani Priya
Naguleswaran, Girujan
Natesh, Chandra Kumar Ashish
Nesarajah, Shane Ashanth
Ni, Chu Han
Ni, Quancong
Niu, Bryan
Nogueira Serafim de Araujo, Lucas
Pande, Abhijeet
Panigrahy, Yatharttha
Parthasarathy, Harish
Patel, Fenil Kumar
Patel, Rushil Anilkumar
Patel, Samarth Vimarshkumar
Patel, Samruddha Dhiren
Patel, Shyam
Patel, Vishwesh Rohitkumar
Pathak, Riya
Pattanaik, Satwik
Peng, Andrew S
Pinto, Kyle Ryan
Qin, Chenyong
Qin, Qin
Radwan, Khalid Medhat
Rahman, Amio Mahmudur
Rahman, Iram
Ratnarajah, Nirosh
Rehman, Faizaan Haneef
Ren, Andy
Roorda, Joshua John Klapwyk
Ryu, Kyunghan
Saha, Puranjoy
Sanchez, Sergio
Save, Shanay
Sawyer, Michael John Felix
Shah, Tayef Mahmud
Shapkota, Shusil
Sharma, Madhur Kumar
Sharma, Raghav
Shen, Tony
Shi, Emily
Shi, Ryan Dingrui
Shikder, Efaz Aumee
Shim, Hyunnam
Sidhu, Agamjyot Singh

* – With Distinction
† – Dean’s Honours List
Singh, Arnav
Singhal, Siddhant
Sirimanna, Akash Induwara
Siu, Gabriel Christian
Srivatsa, Shreyas
Su, Chang
Su, Rebecca
Sweet, Connor Seamus (Artificial Intelligence Option)
Tang, Darren Chun Ho
Tanveer, Tayyaab
Tayal, Anushka (Entrepreneurship Option)
Thukral, Pratham
Tien, Adriene Tin-Sing
Tirukachi, Manasi
Tran, Andrew
Tse, Kaitlyn Wingyan
Udun, Muradil Uygur
Vallejo Cevallos, Steven David
Van Den Hoven, Daniel Joseph
Varone, Dillon Michael
Varriale, Christian Joseph
Vemulapalli, Rupakeerthana
Vercillo, Stefan Noah
Verma, Naman
Victorkumar, Richmond
Wan, Anson
Wang, Anne
Wang, Conan
Wang, Guanyu
Wang, Jiaxi (Management Sciences Option)
Wang, Sibo
Wang, Yongkang
Wei, Jiamou
Wei, Yun Kai
Wu, Bill
Wu, Darryl Jiayin
Wu, Ivas
Wu, Qianyi
Wu, Shuangqi
Wu, Yiru
Xia, Raymond
Xiao, Julie Zhu
Xing, Kehan
Xu, Jintao
Xu, Qiang
Yan, Simon Zijian

* – With Distinction
† – Dean’s Honours List
Yang, Haolong  
Yang, Jia Rui  
Ye, Alice (Management Sciences Option & Artificial Intelligence Option)  
Ye, James ZiJie  
Yin, Ruohao  
Yu, Daniel Shanming  
Zhang, Enting  
Zhang, Gerald HZ  
Zhang, Haorui  
Zhang, Jianxing  
Zhang, Jiarui  
Zhang, Nicole Jia-Wen  
Zhang, Richard Long  
Zhang, Tianyi  
Zhang, Yifan  
Zhao, Heng  
Zhao, Jason  
Zhao, Pei An  
Zheng, Haochen  
Zhou, Kevin  
Zhou, Yi Xuan  
Zhou, Yikai  
Zhu, Lixiang  
Zhu, Max (Entrepreneurship Option)  
Zhuang, Ziyi  

ELECTRICAL ENGINEERING  
Alant, Johan  
Aneke, Ojorumi Oluwadamilare  
Asan, Feyza Nur (Artificial Intelligence Option)  
Birbal, Vinai Daryl  
Bojcev, Vojdan  
Chambers, Francis Alan (Communication and Signal Processing Specialization)  
Chandan, Kunal  
Dobre, Florin Daniel  
Doering, Devinn Joseph  
Du, Bingjian  
Fahmy, Yehia  
Fan, Ziqian (Entrepreneurship Option)  
Fediw, Alexander Stefan  
Ganapathy Senthilkumar, Shunethra  
Gu, Liufang  
Guarisma, Yrina  
Hardy, David Fernando  
Ho, Charmaine  
Hu, Chun-De  

* – With Distinction  
† – Dean’s Honours List
Hu, Dingjie
Hussain, Ahmad Abrar
Jones, Colin Jonathan Clark
Joung, Seong Hyeon
Kakade, Rishikesh
Kochhar, Rohit
Lee, Sandy Yikay
Li, Yuhai
Lisk, Branden Alexander
Liu, Marley
Mroczek, Jakub Leonard (Computing Option)
Newton, Brian Theodore
Ouslis, Sebastian Elo
Overton, Kiersten Ainsley (Communication and Signal Processing Specialization)
Paquin, Nicholas Alexander
Paraschuk, Thomas William
Petersen, Caleb Raymond
Rosehart, Thomas William
Salahuddin, Jawaad (Artificial Intelligence Option)
Sharma, Sarvatth
Simard, Audrée
Singh, Jonathan Bhagwan
Sood, Rajan
Sookoo, Naveela Nandini (Communication and Signal Processing Specialization)
Srinivasan, Aditya
Steblyk, Kateryna Tarasi
Stracovsky, Roy
Wang, Ningxuan
Wang, Zizhuo
Wu, Qinying
Yu, Shiu-Chung
Zaman, Zahin Mohammed (Artificial Intelligence Option)
Zargari, Shadi Saba
Zhang, Luqi
Zhang, Wanting
Zhang, Xiaofei

CERTIFICATE IN CO-OPERATIVE EDUCATION IN RESEARCH
Chandan, Kunal
Liu, Ziqian

* – With Distinction
† – Dean’s Honours List
DOCTOR OF PHILOSOPHY

Abou Chacra, David (Systems Design Engineering)
"Modern Object and Visual Relationship Detection in Images from a Critical, Cognitive and Data Perspective"

Afshari, Mehdi (Systems Design Engineering)
"Spatially Constrained Compound Magnification Framework for Histopathology Whole Slide Images"

Almarzoogi, Khalfan (Chemical Engineering)
"Graphene Based Membranes for High Salinity, Produced Water Treatment by Pervaporation Separation"

Cheraghi, Ebrahe (Systems Design Engineering)
"Fabrication and Evaluation of Polymer Nanocomposites for Space Radiation Shielding Application"

Duggins, Peter (Systems Design Engineering)
"Learning and Decision Making in Social Contexts: Neural and Computational Models"

Ebrahimian, Arash (Systems Design Engineering)
"Human Middle Ear: Material Characterization, Analysis of Effects of Uncertainties, and Investigation of Impacts of Medical-Device Attachment"

G Menon, Kavitha (Chemical Engineering)
"Scheduling Process Operations Under Uncertainty and Integration with Long Term Planning"

Gao, Xiguang (Chemical Engineering - Nanotechnology)
"Using Polymers to Improve the Performance of Sulfur and Organic Cathodes"

Heydari Beni, Nargess (Systems Design Engineering)
"Extracting ECG-Based Cardiac Information from the Upper Arm"

Hosseini, Maryam (Systems Design Engineering)
"Secure Computation and Proportionally Fair Collaboration in Federated Learning of Histopathology Images"

Jubinville, Dylan (Chemical Engineering)
"Highly Filled, Durable, and Sustainable Wood-Plastic Composites from Recycled Thermoplastics"

Kim, A-Reum (Chemical Engineering - Nanotechnology)
"Interface Dynamics of Soft Solids With Liquids, Solids, and Gels"

Lee, Yebin (Chemical Engineering - Nanotechnology)
"Design of Functional Coating on Cellulose Nanocrystals for Advanced Applications"

Li, Zhelun (Chemical Engineering)
"Polydopamine-Based Thin Film Composite Membranes for Pervaporation Concentration of Potassium Acetate Solution"

Liu, Jiayu Alexander (Systems Design Engineering)
"Improvements in Yield Emission Properties of Carbon Nanotube Field Emitters"

Misaghian, Niloofar (Chemical Engineering)
"Multiphysics Pore Network Simulation of Electrochemical Devices as a Design Tool"

Nasr, Ali (Systems Design Engineering)
"Design, Dynamics, and Control of Active-Passive Upper-Limb Exoskeleton Robots"

Sabtan, Bader (Systems Design Engineering)
"Human Factors in Esports: Investigating Performance Measures, Coaching Practice, and Stress Training in League of Legends"

Vitelli, Michael Joseph (Chemical Engineering)
"Improving Productivity in Bioreactors Through Control of Cell Heterogeneity"

Wang, Jiaqi (Systems Design Engineering - Nanotechnology)
"Nanocomposite Based Infrared Photo Thermo Electric Detectors"

Zarshenas, Kiyomars (Chemical Engineering)
"Advanced Membrane for Desalination and Ion Separation Application"

MASTER OF APPLIED SCIENCE

Abdel Hameed, Marawan (Systems Design Engineering)

Afzal, Daniel (Chemical Engineering)

Bell, Sydney Marie (Systems Design Engineering)

Bouzari, Negin (Chemical Engineering)

Caldwell, Adam Winston (Systems Design Engineering)

Cleland, Keith (Chemical Engineering)

Duranova, Ekaterina (Systems Design Engineering)

Emir, Ebru (Systems Design Engineering)

Ferguson, Peter Spencer George (Systems Design Engineering)

Flynn, Scott Martens (Chemical Engineering - Nanotechnology)

Fu, Haoyu (Chemical Engineering)

* – With Distinction
† – Dean’s Honours List
<table>
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<th>Department</th>
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<tr>
<td>Izquierdo Martinez, Alfonso</td>
<td>Chemical Engineering</td>
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**MASTER OF ENGINEERING**

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* – With Distinction
† – Dean’s Honours List
GRADUATE CERTIFICATE

Saadatmand Hashemi, Sanaz  (University Teaching)
Uereten, Ece  (University Teaching)

BACHELOR OF APPLIED SCIENCE

BIOMEDICAL ENGINEERING

Ali, Faraz Ghayas  (Computing Option)  †
Attias, Cedric  (Sports Engineering Specialization)  *
Azmal, Sadia Salwa  *
Brezner, Tomer  (Management Sciences Option)  *
Bui, Catherine  (Computing Option)  *
Butt, Nicholas Eric Roland  (Computing Option)  *
Chang, Teng Hung  *
Chen, Ke Xin  (Neural Engineering Specialization/Computing Option)  *
Chennan Kunnath, Aarzoo  *
Christensen Anderson, Kirsten Leigh  *
Clayton, Benjamin Hamilton  (Management Sciences Option & Computing Option)  †
Deen, Hanaan Hussein Zainulab  *
Deol, Simranjot Singh  (Neural Engineering Specialization/Computing Option)  *
Deveau, Julianna Augusta  *
Dhillon, Jodh Singh  *
Ehlers, Kirsten Elizabeth  †
Fricke, Alexander Jeffrey  †
Galaszewicz, Milena  *
Groves-Wylie, Rebecca Margaret  *
Huggard, Benjamin Robert Gautreau  (Computing Option)  *
Hughes, Vanessa Italia Anne  *
Janes, Elizabeth Laura  †
Ji, Christina  (Computing Option)  †
Joseph, Shania Maria  *
Joshi, Akanksha  (Computing Option)  *
Kaetheeswaran, Jathushan  (Computing Option)  *
Kheiri, Soha Osama  (Computing Option)  †
Kothiyal, Naomi  (Computing Option)  †
Kurbis, Andrew Garrett Ziegler  *
Lam, Michael Sze Wai  †
Langdon, Matthew Cole  *
Le, Cathy  (Computing Option)  *
Lee, Matthew Kenyon  (Computing Option)  *
Li, Yunqing  *
Lin, Elizabeth  *
Lin, Zhuoyun  (Psychology Minor)  *
MacDougall, Camryn Hazel  *
MacQuarrie, Kathryn Anderson  †
Maloney, Patrick Barry  (Computing Option)  †

* – With Distinction
† – Dean’s Honours List
Manawadu, Venuri Kithara (Software Engineering Option) *†
Marotta, Teresa Diamante *
McKibbon, Pierson James MacKenzie (Computing Option) *
Nazarali, Zarifa *
Ng Tang Fui, Leeam Siow Ying (Computing Option) *
Pandiajaranu, Surya (Neural Engineering Specialization/Computing Option) *
Patel, Sonali Ashvin *†
Pearce, Taylor *
Pinzon-Corral, Karla Ennette *
Pothier, Sydney Emma *
Quinto, John Rafael Ranieces (Computing Option) *
Rahman, Marwan A (Computing Option) *
Richer, Megan Frances *
Ryoo, Hee-Woon (Computing Option) *
Saradhi, Srikar (Neural Engineering Specialization/Computing Option) *
Sohani, Muiz Ali *†
Song, Jessy Jia (Neural Engineering Specialization/Computing Option) *
Sparkes, Sarah Mae *†
Tanner, Breah Kathleen (Computing Option) *
Taylor-Debeau, Ethan Patrick *
Terhijan, Naomi Skye (Computing Option) *
Tien, Abigail Rei-Ting (Management Sciences Option & Computing Option) *
Ting, Kayley Noelle (Computing Option) *
Varenbut, Nick *
Veldhuis, Leah Nicole *
Vijayagopal, Harris (Neural Engineering Specialization/Computing Option) *
Wang, Kendra Manting (Computing Option) *
Wang, Leon (Computing Option) *
Wang, Michael (Computing Option) *
Watson, Michelle Alicia (Artificial Intelligence Option & Computing Option) *
Yan, Tom Liangze-Li (Computing Option) *
Ye, Jennifer Ai (Artificial Intelligence Option & Computing Option) *
Yu, Yue chen (Computing Option) *†

CHEMICAL ENGINEERING
Adamson, Emily Karen Joan (Materials and Manufacturing Processes Specialization) *
Affi, Ali Hasan Majed (Materials and Manufacturing Processes Specialization) *
Ahmad, Faique Faraz (Chemical Process Modelling, Optimization and Control Specialization) *
Ahmed, Aryan (Materials and Manufacturing Processes Specialization) *
Ahmed, Muhammad Mahir (Materials and Manufacturing Processes Specialization) *
Akhand, Aamer *
Al Katanani, Yazan Ismail Mohammad (Chemical Process Modelling, Optimization and Control Specialization)
Aldovino, Fatima Patricia Sevilla (Materials and Manufacturing Processes Specialization) *
Alikiotis, Periklis Dimitrios (Materials and Manufacturing Processes Specialization) *
Ariawan, Antonius Wiseley *
Asrani, Zain (Energy and Environmental Systems and Processes Specialization) *

* – With Distinction
† – Dean’s Honours List
Bae, Sunho *(Materials and Manufacturing Processes Specialization) *
Balaji, Arvind *(Physical Sciences Option) *
Baun, Matthew Alexander (Physical Sciences Option) *
Brake, Jarrid Bishop *(Chemical Process Modelling, Optimization and Control Specialization/Management Sciences Option) *
Buskell, Jason Brady *
Byers, Jared Brian *(Energy and Environmental Systems and Processes Specialization – Economics Minor)
Catly, Jazmine Joy *(Materials and Manufacturing Processes Specialization) *
Chan, Ching-Yuan *(Materials and Manufacturing Processes Specialization) *
Chaudhary, Rithik *(Energy and Environmental Systems and Processes Specialization)
Chen, Yige *(Materials and Manufacturing Processes Specialization) †
Cho, Elliot Zachary *
Choi, Dong Wook *(Energy and Environmental Systems and Processes Specialization)
Choi, Yun Woo *(Chemical Process Modelling, Optimization and Control Specialization) *
Chughtai, Arsalan Ali *(Chemical Process Modelling, Optimization and Control Specialization) *
Crow, Andrea Gayle *(Energy and Environmental Systems and Processes Specialization)
Cuba Coltssmann, Marianna Isabella *
Cui, Songbo *(Materials and Manufacturing Processes Specialization) *
Dauz, Irene Joy *
Dave, Param Ravin †
d'Entremont, Sawyer *(Energy and Environmental Systems and Processes Specialization) †
Dhaliwal, Jasnain Kaur *
Diaz Contreras, Harumi Andrea *(Energy and Environmental Systems and Processes Specialization) *
Dima, Alexander Stephan *(Chemical Process Modelling, Optimization and Control Specialization/Entrepreneurship Option)
Ding, Yuhan *(Chemical Process Modelling, Optimization and Control Specialization/Statistics Option) †
Dudding, Casey Louise *(Materials and Manufacturing Processes Specialization) *
Dutaud, Matthew Theodore Steven †
Feng, Alice Xue Ying †
Foell, Adrian Martin *(Materials and Manufacturing Processes Specialization) *
Garcia-Marroquin, Sebastian Adriel *(Chemical Process Modelling, Optimization and Control Specialization) *
Gnanachandran, Aranjann *
Good, Cassidy Alyssa *(Materials and Manufacturing Processes Specialization) *
Grech, Darby Jayne *
Greuel, Peter Everest *
Harrison, Craig Thomas *
Hasan, Syeda Farisa *(Materials and Manufacturing Processes Specialization) *
Hufton, Gregory Stephen *(Energy and Environmental Systems and Processes Specialization) *
Hurd, Ryan William *(Energy and Environmental Systems and Processes Specialization) *
Jayakody, Jason *(Management Sciences Option)
Jindal, Priyanka †
Joyce, Idamae Elizabeth *(Materials and Manufacturing Processes Specialization) *
Kanade, Siddharth Dipak *(Chemical Process Modelling, Optimization and Control Specialization/Management Sciences Option)
Kang, Dong Hyun *(Materials and Manufacturing Processes Specialization) *
Kapadia, Aaliyan Afroz *
Kaur, Amrita *(Materials and Manufacturing Processes Specialization) *

* – With Distinction
† – Dean’s Honours List
<table>
<thead>
<tr>
<th>Name</th>
<th>Specialization/Option</th>
</tr>
</thead>
</table>
| Khan, Irfan Naved             | (Energy and Environmental Systems and Processes Specialization)  *
| Khan, Muhammad Rahim         | (Energy and Environmental Systems and Processes Specialization)  *
| Kim, Daniel                  | *                                                 |
| Kim, Hyunseo                 | (Materials and Manufacturing Processes Specialization)  *
| Kim, Soobin                  | (Chemical Process Modelling, Optimization and Control Specialization)  *
| Kiszka, Michael Robert       | (Chemical Process Modelling, Optimization and Control Specialization & Materials and Manufacturing Processes Specialization/Management Sciences Option)  *
| Li, Chenxin                  | (Materials and Manufacturing Processes Specialization)  *
| Liang, Jacky                 | (Energy and Environmental Systems and Processes Specialization)  *
| Liu, Jingtian                |                                                   |
| Liu, Yiran                   | (Chemical Process Modelling, Optimization and Control Specialization/Management Sciences Option)  *
| Lozano Castillo, Mariana     | (Chemical Process Modelling, Optimization and Control Specialization)  *
| Luoma, Aleksi Aaron          | *                                                 |
| Luu, Victor                  | (Materials and Manufacturing Processes Specialization)  *
| Mackay, Elizabeth Anne       | (Materials and Manufacturing Processes Specialization)  *
| Magro, Kendall Lynn          | (Energy and Environmental Systems and Processes Specialization)  *
| Malakooti, Cyrus Amir        | (Materials and Manufacturing Processes Specialization)  *
| McNeil, Shannon Katherine Pearsall | (Chemical Process Modelling, Optimization and Control Specialization)  *
| Melanson, Joshua Robbie Noël | (Chemical Process Modelling, Optimization and Control Specialization/Statistics Option & Management Sciences Option)  *
| Muthalathu, Rithu            | *                                                 |
| Nguyen-Dang, Angeline Hoang-An | (Materials and Manufacturing Processes Specialization)  *
| Nia, Tina                    | (Materials and Manufacturing Processes Specialization)  *
| Nicholson, Alexa Catherine   | (Materials and Manufacturing Processes Specialization)  *
| Ohaka, Tobechukwu Joshua     | (Materials and Manufacturing Processes Specialization)  *
| O’Hara, Guenevere Glory      | (Materials and Manufacturing Processes Specialization)  *
| Ohl, Robert                  | (Materials and Manufacturing Processes Specialization)  *
| Okoronkwo, Tarela Chinyere   | (Energy and Environmental Systems and Processes Specialization)  *
| Olatunbosun, Olamide Chukwudubem | (Energy and Environmental Systems and Processes Specialization/Management Sciences Option)  *
| Ou, Loria                    | (Chemical Process Modelling, Optimization and Control Specialization/Management Sciences Option)  *
| Pandey, Shraddha             | (Energy and Environmental Systems and Processes Specialization)  *
| Patel, Tirth Manoj           | (Energy and Environmental Systems and Processes Specialization)  *
| Pun, Jason Lok Tin           | (Chemical Process Modelling, Optimization and Control Specialization & Materials and Manufacturing Processes Specialization/Management Sciences Option)  *
| Raj, Shiani                  | (Materials and Manufacturing Processes Specialization)  *
| Remes-Gavin, Kael            | (Energy and Environmental Systems and Processes Specialization)  *
| Rizvi, Syed Haider           | (Energy and Environmental Systems and Processes Specialization)  *
| Romagnoli, Luca              | *                                                 |
| Rowntree, Faith Marie        | (Energy and Environmental Systems and Processes Specialization)  *
| Rutyna, Amber Marie          | (Materials and Manufacturing Processes Specialization)  *
| Salvatore, Alexa Margaret    | (Materials and Manufacturing Processes Specialization)  *
| Sharma, Sayjal               | (Energy and Environmental Systems and Processes Specialization)  *
| Skidmore, Jeffrey Evan       | (Energy and Environmental Systems and Processes Specialization)  *
| Smyth, Emily Helen           | (Energy and Environmental Systems and Processes Specialization/Management Sciences Option)  *

* – With Distinction
† – Dean’s Honours List
Staines, Jakob Christopher Duarte (Energy and Environmental Systems and Processes Specialization) *
Sultana, Nusayba (Materials and Manufacturing Processes Specialization) *
Sun, Duo (Materials and Manufacturing Processes Specialization/Life Sciences Option) *†
Swaminathan, Adithya (Chemical Process Modelling, Optimization and Control Specialization) *
Thapa, Bishal (Materials and Manufacturing Processes Specialization) *
Thevasagayam, Eveline (Management Sciences Option) *†
Tinline, Darian Alan *
Tong, Alice (Materials and Manufacturing Processes Specialization/Management Sciences Option) *
Tong, Jason Jiacheng (Materials and Manufacturing Processes Specialization/Management Sciences Option) *
Tran, Chris (Chemical Process Modelling, Optimization and Control Specialization & Materials and Manufacturing Processes Specialization/Management Sciences Option) *
Tse, Alexander Tin Yin (Energy and Environmental Systems and Processes Specialization)
Varghese, Abin Anil (Materials and Manufacturing Processes Specialization) *
Villa Lema, Fabian Ismael (Chemical Process Modelling, Optimization and Control Specialization) *
Villeneuve, Alexandra Louise (Materials and Manufacturing Processes Specialization) *
Vinzon, Danielle Joy Lamasan (Materials and Manufacturing Processes Specialization) *
Wang, Hao (Chemical Process Modelling, Optimization and Control Specialization) *†
Wortman, Joseph (Energy and Environmental Systems and Processes Specialization/Management Sciences Option) *

Yang, Chelsea
Yang, Xinge *
Yau, Jeng Haw (Energy and Environmental Systems and Processes Specialization/Environmental Engineering Option) *
Ye, Zhen (Chemical Process Modelling, Optimization and Control Specialization) *
Zhang, Hao Yu (Materials and Manufacturing Processes Specialization) *
Zhu, Jin Yun *†

NANOTECHNOLOGY ENGINEERING
Aldina, Alina *
Allan, Raegan Gilmour *†
Bakbak, Haneen (Computing Option) *
Bernstein, Hannah Rachel *
Bobtchev, George Simeonov *
Brodie, Pritika *
Cancellara, Cecilia Natalina *
Chausse, Jacob *
Chen, Elijah Yilang (Computing Option) *
Chen, Houfu *
Choi, Robert Ellis *
Chong, Kellie (Life Sciences Option & Computing Option) *
Con, Austin Jarrod (Computing Option) *†
Davis, Caleb Shepherd *
Dawson, Megan Mei *†
Dean, Cameron Lucas *†
Deng, Cynthia (Physical Sciences Option) *
Dimeck, Terese Magdalena *
Fakhouri, Adnan *

* – With Distinction
† – Dean’s Honours List
Farfan, Paul Joshua
Fernandes, Gaëlle
Firmani, Christopher Tyler (Computing Option) *
Gao, William Zechao (Computing Option)
Gharabaghi, Nick Nolan (Physical Sciences Option) *†
Graham, Scott David Moran *
Grovu, Tristan Bradley *
Habashy, Karim *
Hafenberg, Patrick Andreas *
Hanneson, Joshua Scott *
Harabin, Andrew Tadeusz *
Hawkins, Connor Phillip *
Hawkins, Liam Gregory *
Henriques, Samuel Franco *
Ho, Victoria Xin-Yue Chantal (Management Sciences Option) *
Hsiao, Jeriann Lauryn *†
Hu, Lihe (Entrepreneurship Option)
Hung, Minren (Computing Option) *
Jiao, Yixuan *†
Klassen, Brandon William *
Kunihiro, Joshua Ken Ito *
Kurseja, Pavitra Deepak *
Lee, Brian Byungjun *
Leon, Alyssa Mariana *
Levinski, Nicholas Anthony *
Maurice, Jacob Thomas *†
McCarthy, Christopher Ouyang (Computing Option) *
Moin, Muneeb Bin (Computing Option)
Murphy, Claire Theresa
Naidoo-Edwardson, Kiran *
Newport, Matthew Otis *
Park, Paul Jonghyuk *
Patel, Tirth
Pautler, Justin David *
Pearson, Kate Elizabeth *†
Piercey, Ethan Kristopher *
Potnis, Setu (Computing Option) *
Qudsi, Yazan Hani Mohammad *
Rukavina-Nolsoe, Anna Grace *
Saini, Agosh Singh *
Scaini, Shakira Isaacs *
Shan, Saad Shafqat (Management Sciences Option) *
Shaw, Benjamin David
Shen, Paul (Artificial Intelligence Option & Entrepreneurship Option) *
Shi, Mia (Mathematics Minor) *
Siddiqui, Mohammad Musaab (Computing Option) *

* – With Distinction
† – Dean’s Honours List
Singh, Angad
Soni, Yashveer Viral
Spinazze, Michael Ross
Syed, Mustapha
Tang, Teresa Siyun
Thompson, Etido Emmanuel
Torrance, Skye Kristen
Turkiewicz, Luca
Vandame, Océane
Verma, Priyanka
Wu, Dihan
Xu, Alexander Haoyan
Zala, Brijrajsinh Dharmendrasinh
Zhang, Zijian
Zheng, Joyce Yiran

SYSTEMS DESIGN ENGINEERING
Almawi, Ahmad
Ang, Cooper Ka-Ming
Ayyanan, Sasipriya
Bhatt, Ishaan
Cao, Jiaru
Carr-Pries, James Thomas
Chaudhry, Ahmad Tahir
Chen, Jennifer
Cheng, Bernadette Ho-Sum
Chiang, Jianying
Cho, Hyunjun
Cho, Yongwon
Chu, Carol Ran
Chudasama, Abhaysinh Dharmendrasinh
Dales, Alexander Charles Kyte
Debebe, Yonael Miheret
Dey, Aunosua
Doleweerd, Kaitlyn Mary Louise
Drak Sibai, Burhan
Dugan, Jeffrey Terrence
Go, Yzabelle To
Gurnsey, Flynn James Barber
He, Jing Yi
He, Tian Ying
Ho, Jonathan Benedict
Howard, Phoebe Elizabeth
Inglis, Katherine
Islam, Seeam Nizamul

* – With Distinction
† – Dean’s Honours List
Kalia, Chetan
Khalid, Aaiza
Khew, Paulina Grace (Software Engineering Option)
Kim, Daniel Hayoung (Computing Option)  †
Kim, Lynn  *
Landy, Alexandra Mackenzie (Society, Technology and Values Option & Management Sciences Option)  †
Lee, Carmen
Li, Carman  *
Li, Sara Lok-Na  *
Liu, Yuxuan (Computing Option)  *
Ly, Erin  *
Malton, Margaret Anne  *
Matulis, Lucina Anna  *
McGinnis, Cindy Lee
McPhee, Mary Rennie Shaw
Mehrotra, Aadit Sandeep (Management Sciences Option)
Monga, Rohan
Morenos, Seth Villaruz  *
Muir, Jess Douglas  *
Nagri, Hussein Zulfikar (Management Sciences Option & Computing Option)  *
Ng, Jeffrey Chiu-Hang (Computing Option)  †
Nguyen, Kha Hoang (Management Sciences Option & Computing Option)
Nguyen, Lena  *
Oh, Nathan Michael
Olive Jr, David Matacot
Park, Joon Young  *
Patel, Kiera Neena  *
Pena, Ainley Abigail  *
Pittman, Emily Faith  †
Qiao, Justin Cheng (Computing Option)  *
Rajwani, Aliya  *
Ramamani, Sweta  *
Ramezani, Hooman
Rao, Surin Tejas  *
Rehders, Emma Katherine
Rivers, Hannah Elizabeth (Music Minor)
Robens-Paradise, Samuel (Computing Option)  *
Rooke, Clayton James  †
Ruegg, Matthew James
Semin, Roman
Seto, Vanessa  *
Seu, Logan (Computing Option)  *
Shah, Amay Keval
Shah, Dhrumil Ketul
Sharma, Neil (Management Sciences Option)
Sun, Yizheng

* – With Distinction
† – Dean’s Honours List
Truong, Timmy
Tsai, Carelynn Jialin *
Van Hemmen, Stephen Joseph *†
Wang, Emily *
Wang, Jenna *
Wang, Zi Yu *
White, Arden Ruby Milsom *
Wiese, Haydn John *
Wilkinson, Joshua Jeffrey *
Williamson, James Quinn *
Wu, Yi Xuan (Computing Option)
Xie, Elodie *†
Xue, Youming *
Zerbs, Jakob Alexander *
Zerbs, Thomas Gabriel *
Zhao, Andrew Chen Zhang
Zhu, Christopher Yuanlong
Zou, Xinyi (Cognitive Science Minor) *†

CERTIFICATE IN CO-OPERATIVE EDUCATION IN RESEARCH
Bernstein, Hannah Rachel
Cancellara, Cecilia Natalina
Chen, Ke Xin
Jiao, Yixuan
Manawadu, Venuri Kithara
O’Hara, Guenevere Glory
Shen, Paul

CERTIFICATE IN GLOBAL EXPERIENCE
Shen, Paul

* – With Distinction
† – Dean’s Honours List
DOCTOR OF PHILOSOPHY

Akbarpour Safsari, Shaghayegh (Civil Engineering - Water)
“Using Machine Learning to Understand the Hydrologic Impacts of Permafrost Thaw-Driven Land Cover Change”

Almutairi, Haya (Civil Engineering)
“Investigating Solutions for Self-Healing and Crack Mitigation of Flexible Pavement Materials”

Aurilio, Roberto (Civil Engineering)
“Investigating and Developing Fatigue-Healing Characterization of Asphalt Materials”

Awe, Olukayode (Civil Engineering)
“Cured-in-Place Pipe Pressure Liner Experimental Study”

Barbi, Paula Sutherland Rolim (Civil Engineering)
“An Enhanced Mechanistic Analysis Framework for Designing Resilient Airfield Pavements”

Chehrazi, Ali (Civil Engineering)
“Testing and Fretting Fatigue Analysis of Bridge Stay Cable Wires at Saddle Supports”

Chopra, Shivangi (Management Sciences)
“Gender Differences in Engineering: A Data-Driven Study”

Demircan Ozelcaglayan, Ezgi (Civil Engineering - Water)
“Evaluation of a Novel Beta-Cyclodextrin Functionalized Nano Adsorbent for Removal of Pharmaceuticals”

Kabir, Tamanna (Civil Engineering)
“Development of Porous Rubber Pavement for the Canadian Climate”

Kafi Farashah, Mehran (Civil Engineering)
“Development of Sustainable Asphalt Mix Solution for Use in Approach Intersection Pavements in Southern Ontario”

Liao, Hui (Civil Engineering)
“Optimizing the Performance of Asphalt Mixes With High Reclaimed Asphalt Pavement Content Using Rejuvenators”

Oyeyi, Abimbola Grace (Civil Engineering)
“Lightweight Cellular Concrete as Flexible Pavement Subbase Material: Field Performance and Sustainability Study”

Qabur, Ali Hussain I (Civil Engineering)
“Optimization of the Use of Post-Industrial Recycled Multilayer Plastic Packaging (MPP) as Asphalt Modifier”

Taheri, Mahkameh (Civil Engineering - Water)
“Upscaling Fill-and-Spill Hydrologic Processes”

Terry, Jacob Ross (Civil Engineering)
“Analyzing the Competitiveness of Transit-Integrated Ridesourcing Systems”

Wang, Rui (Civil Engineering)
“Direct Method of Generating Floor Response Spectra for Structures Under Earthquake Excitations at Multiple Supports”

Younes, Taha (Civil Engineering)
“The Impact of Portland Cement on the Performance of Cold-In-Place Recycled Pavement”

Zarei, Mohammad (Civil Engineering)
“Improving Predictive Models for Road Safety Screening: Cost-Benefit Data Analytics and Deep Generative Models”

Zhang, Linbo (Civil Engineering)
“Bracing Requirements for Multi-Column Systems with Nonuniform Stiffness and Semi-Rigid Connections”

Zhao, Dandi (Civil Engineering)
“Development and Evaluation of Testing Protocols for Fatigue Damage and Crack-Healing of Bituminous Mixtures”

MASTER OF APPLIED SCIENCE

Anwar, Ahmed (Management Sciences)

Carroll-Woolery, Lannois (Management Sciences)

Chu, Kington (Civil Engineering)

Lin, Simon Guan Min (Civil Engineering - Water)

McLaren, William Charles (Civil Engineering - Water)

Mohseni Kiasari, Peyman (Management Sciences)

Quosai, Peter Thomas (Civil Engineering)

Raeisi, Shamim (Management Sciences)

Rafiee Pour Alavi Alavijeh, Ali (Management Sciences)

Rendel, Rudi Alexander (Civil Engineering)

Taylor, Alannah Rebeckah (Civil Engineering - Water)

Vakili Tahami, Amir (Management Sciences)

* – With Distinction
† – Dean’s Honours List
Yang, Shelley Hui Juan  
(Civil Engineering)

**MASTER OF ARCHITECTURE**

Alnabelseya, Safaa  
Chuang, Vincent  
D’Sa, Bhadra Dhisana  
Dunn, Angus Emery David  
Gupta, Maulshree  
Ip, Pui Yue Iris  
Jabbarimoghaddam, Tala  
Joseph, Ashwati Teresa  
Kiernan, Giulia Paige  
Lee, Bogyeong  
Lee, Salina Victoria  
Leung, Audrey  
Li, Zhen  
Li, Zhi  
Lin, Weeney  
McNeil, Alison  
Mema, Iva  
Ogbru, Chinenye Michelle  
Paranthahan, Mayuri  
Patange, Poorna S  
Puersten, Nicholas Michael  
Reinhart, Madeleine  
Saad, Esraa Mohamed Mahmoud  
(So-operative Program)  
Sermol, Alexandra  
Shehab, Hania Assem  
Trivett, Martha  
Varshosaz, Parastoo  
Wang, Shiying  
Wang, Yidan  
Yeh, Nancy  
Young, Stephanie

**MASTER OF ENGINEERING**

Arbuckle, Spencer David  
Attaluri, Ramvinay Durgaprasad  
Burchell, Gregory Robert  
Çako, Elisabeta  
Gade, Stephen James  
Gindodia, Yashraj Sanjay  
KarimianTaheri, Arman  
Modi, Siddhant Dipak  
Wakhale, Kaustubh Jayant  
(Civil Engineering)
MASTER OF MANAGEMENT SCIENCES

Saurav  (Co-operative Program)
Acikel, Yildirim
Adil, Arish  (Co-operative Program)
Ajadi, Oluwapelumi Emmanuella
Akinlembiola, Oloruntoba Joseph  (Co-operative Program)
Bai, Jiahui  (Co-operative Program)
Chhabra, Pavneet Singh  (Co-operative Program)
Christopher, Allan Emmanuel  (Co-operative Program)
Dalal, Sambhav
Dave, Meet Hemang
Elkhatib, Abdel Rahman
Fox, Nicole Elizabeth
Ganeshan, Naina  (Co-operative Program)
Gaur, Pranjal  (Co-operative Program)
Ghorbani Siyavashani, Elnaz  (Co-operative Program)
González Arévalo, Tania Lorena  (Co-operative Program)
Gupta, Avantika  (Co-operative Program)
Hegde, Ashik  (Co-operative Program)
Hinds, Tiffany
Javaid, Roshan  (Co-operative Program)
Jayakumar, Trupti  (Co-operative Program)
Jiang, Lei  (Co-operative Program)
Kakade, Rachel Gajanan  (Co-operative Program)
Kardash, Jeremy Samuel  (Co-operative Program)
Kaur, Damanpreet
Koshe, Archish  (Co-operative Program)
Liao, Xin Yu
Liu, Xingyu  (Co-operative Program)
Liu, Xiyue  (Co-operative Program)
Lyu, Weiyu  (Co-operative Program)
Mehta, Mukesh Chautharam  (Co-operative Program)
Misra, Trinayani Kishan
Mittal, Shubham  (Co-operative Program)
Nadeem, Taha  (Co-operative Program)
Nagpal, Devansh  (Co-operative Program)
Nagwekar, Ronit Shashank  (Co-operative Program)
Padaki, Pradyumna Bhimrao  (Co-operative Program)
Pandey, Vibhum  (Co-operative Program)
Patel, Dharmik Ashishbhai
Patel, Dhruvkumar Dahyabhai
Patel, Tithi Hitesh  (Co-operative Program)
Pitek, Kaitlyn Jean
Prakash, Meghana  (Co-operative Program)
Rajalingam, Vishnu
Sawant, Omkar  (Co-operative Program)

* – With Distinction
† – Dean’s Honours List
Saxena, Shishir  (Co-operative Program)
Sehgal, Mohit  (Co-operative Program)
Sehgal, Rakshak  (Co-operative Program)
Shah, Advait Rajeshkumar
Sharma, Ankit  (Co-operative Program)
Shetty, Tanya  (Co-operative Program)
Singh, Praveer  (Co-operative Program)
Singh, Raju Rhicha  (Co-operative Program)
Singla, Rohan
Sondhi, Arushi  (Co-operative Program)
Soni, Kartik  (Co-operative Program)
Thyagarajan, Shobana Shree  (Co-operative Program)
Tovar Hidalgo, Wilfredo Alejandro
Vasisht, Lakshya Raj  (Co-operative Program)
Vazdeksis, Samer
Vemuri, Vineesh  (Co-operative Program)
Wang, Lixin  (Co-operative Program)
WU, XINYUAN
Yang, Yiwen  (Co-operative Program)
Ye, Tiantian
Yu, Xueyan  (Co-operative Program)
Zhang, Qiwei  (Co-operative Program)
ZHENG, YICHEN  (Co-operative Program)

GRADUATE DIPLOMA
Dave, Meet Hemang  (Data Analytics)
Rajalingam, Vishnu  (Data Analytics)
Shah, Advait Rajeshkumar  (Data Analytics)

GRADUATE CERTIFICATE
Jamal, Sondus  (University Teaching)
Pandey, Upasana  (University Teaching)

BACHELOR OF APPLIED SCIENCE
ARCHITECTURAL ENGINEERING
Adebiyi, Adebola Opeoluwa  (Building Systems Specialization)
Akhavan Tabassi, Rose  (Building Structures Specialization)  *
Angkiriwang, Patrick Andersen  (Building Systems Specialization)  *
Arruda, Kaitlyn Marie  (Building Structures Specialization & Building Systems Specialization)
Bigelow, Drew Thomas Walter  (Building Systems Specialization)  *
Cao, Jocelyn  (Building Systems Specialization)
Chan, Brian Edward  (Building Structures Specialization)  †
Chan, Megan  (Building Systems Specialization)  *
Chen, Dylan
Chen, Gerry  (Building Structures Specialization)  †
Choi, Youngjin  (Building Systems Specialization)  *
Chow, Jonathan Eugene  (Building Systems Specialization)  †

* – With Distinction
† – Dean’s Honours List
<table>
<thead>
<tr>
<th>Name</th>
<th>Specialization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clement, Vincent Roy</td>
<td>Building Systems Specialization</td>
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<tr>
<td>Coons, Susannah Julia Anne</td>
<td>Building Systems Specialization *</td>
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<tr>
<td>Dabrowski, Jan Jakub</td>
<td>Building Structures Specialization</td>
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<td>Daviau, Maxime Adrien</td>
<td>Building Systems Specialization *†</td>
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<td>DeLorenzis, Maria Luisa</td>
<td>Building Systems Specialization</td>
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<tr>
<td>Dowling, Marley Kathleen Loft</td>
<td>Building Structures Specialization &amp; Building Systems Specialization *</td>
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<tr>
<td>Elmaghrabi, Omar Khaled Mokhtar</td>
<td>Building Systems Specialization/Management Sciences Option *</td>
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<tr>
<td>Feng, Zi Rui</td>
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<td>Fleming, Julia Marita</td>
<td>Building Structures Specialization *†</td>
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<td>Frise, Charles Taylor</td>
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<td>Furtado-Herzig, Sarah M Rose</td>
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<td>Gu, Fangming</td>
<td>Building Systems Specialization *</td>
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<td>Hioe, Michael Alexander</td>
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<td>Howie, Kaitlyn Joanna</td>
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<td>Kam, Serena Puiying</td>
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<td>Kassab Hassan, Ibaa</td>
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<td>Kovacs, Tristan Christopher</td>
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<td>LeBrun, Mackenzie Noelle</td>
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<td>Leung, Cheuk Fung</td>
<td>Building Systems Specialization *</td>
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<td>Li, Augusta</td>
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<tr>
<td>Liao, Jessica</td>
<td>Building Structures Specialization *†</td>
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<td>Markwart, Amy Catherine</td>
<td>Building Structures Specialization</td>
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<td>Martin, Jillian Rose</td>
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<td>Mathanamohan, Sharuja</td>
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<td>Mei, Yutao</td>
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<td>Nathaniel, Joyceline Anne</td>
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<td>Neals, Thomas James</td>
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<tr>
<td>Ngilinga De Carvalho, Mapendo Pierre</td>
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<tr>
<td>Oliver, Lacey Samantha</td>
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<td>Paquette, Ethan Michael</td>
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<td>Poon, Joanna</td>
<td>Building Systems Specialization</td>
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<tr>
<td>Purcell, Robert Gideon James</td>
<td>Building Structures Specialization</td>
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<tr>
<td>Quattrococichi, Alexa Julia</td>
<td>Building Structures Specialization *†</td>
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<td>Rabinovich, Sean</td>
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<tr>
<td>Ramesh, Kanishk</td>
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<td>Rana, Dilroz</td>
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<td>Rankovic, Stefan Marko</td>
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<td>Ryan, Ayden Grace</td>
<td>Building Structures Specialization</td>
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<tr>
<td>Sang, Xiaqi</td>
<td></td>
</tr>
</tbody>
</table>

* – With Distinction
† – Dean’s Honours List
Saunders-Henning, Shein Rose (Building Systems Specialization)
Sebastian, Cathy (Building Systems Specialization)
Siciliano, Serena Louise (Building Systems Specialization) *
Siddiqui, Jawaad Khawar (Building Systems Specialization)
Stakheiko, Maria *
Su, Jason (Building Structures Specialization & Building Systems Specialization) †
Wu, Xiao Rui (Building Systems Specialization) *
Xu, Ya Ting (Building Systems Specialization)
Xue, Yan Xin (Building Systems Specialization) *
Zafar, Balaaj (Building Structures Specialization & Building Systems Specialization)
Zhu, Carrie (Building Systems Specialization)

CIVIL ENGINEERING
Abdelmessih, Ezzat (Structural Specialization) †
Aggarwal, Madhvi (Structural Specialization) †
Ahmed, Aasil (Structural Specialization) *
Akpata, Emmanuel Omorose (Structural Specialization)
Alexander, Jacob Francis (Structural Specialization)
Alhassan, Sarra Hassan (Management Sciences Option) †
Ali, Azaan (Structural Specialization) *
Alimi, Eklil (Geotechnical Specialization & Structural Specialization)
Alvarez, Riber Elenilson (Structural Specialization) *
Amero, Ethan Timothy *
Anandappa, Tiana Nicole (Geotechnical Specialization)
Balles, Nicole Antoinette (Structural Specialization/Management Sciences Option) *
Bradley, Martin David (Transportation Specialization) †
Brzyski, Kamil Daniel (Transportation Specialization) *
Busca, Benjamin Robert (Structural Specialization) *
Camarda, Tyler Allan (Transportation Specialization) *
Campos, Ana Lia Ruiz (Water Resources Specialization) *
Chan, Louisa Hau Yu (Structural Specialization) *
Charky, Thomas George Edward (Structural Specialization) *
Chaudhry, Noah Ali (Structural Specialization) †
Chen, Harry Haosong (Transportation Specialization) *
Chen, Shaowen *
Chen, Xin (Transportation Specialization) *
Cheng, Dayi (Transportation Specialization)
Chingadu, Yovin Heylan (Structural Specialization) *
Cimino, Anthony Ryan (Structural Specialization) *
Coelho Martins, João Pedro (Structural Specialization) *
Collins, Troy Alexander (Geotechnical Specialization) *
Corrado Lopez, Jesus Antonio (Structural Specialization)
Cunanan, Gilbert (Structural Specialization) *
Davis, Kyle Eric Robinson *
Deng, Jessica (Transportation Specialization) *
Dyce, Russel Frank (Structural Specialization) *

* – With Distinction
† – Dean’s Honours List
Ermers, Noah David  
(Fracture Specialization) *

Fang, Lefu  
(Transportation Specialization) †

Ferazzutti, Anthony  
(Transportation Specialization) *

Frankovich, Luka Vincent  
(Structural Specialization)

Fu, Yifang  
(Transportation Specialization) †

Garcha, Chirjivan Singh  
(Structural Specialization) *

Ghobrial, Joshua  
(Structural Specialization) *

Ghotra, Manpreet Singh  
(Structural Specialization) *

Golebiowski, Claudia  
(Transportation Specialization) *

Gordon, Andrew MacKay  
(Structural Specialization) †

Gou, Zhi Peng  
*

Grewal, Manraj Singh  
(Structural Specialization) †

Guirguis, David Ehab  
(Structural Specialization)

Guirguis, Kerstin Hossam  
(Structural Specialization)

Hakimi, Soleman  
(Structural Specialization/Management Sciences Option) *

Han, Yu Chen  
(Structural Specialization/Management Sciences Option) *

Hannah, Kelly Philomena  
(Structural Specialization) *

Harper, George William Scott  
(Structural Specialization)

Hassan, Mazen  
*

Hu, Xiaoge  
†

Illum, Walter Ricardo  
(Structural Specialization & Transportation Specialization) *

Jamieson, Nathan David  
(Structural Specialization/Management Sciences Option) *

Janzen, Ryan Peter  
(Structural Specialization) *

Jeyakumar, Jonathan Kanna  
(Structural Specialization/Management Sciences Option)

Khalid Khan, Labeeb  
(Structural Specialization) *

Khan, Aiman  
(Transportation Specialization) *

Khosa, Jaskaran Singh  
(Structural Specialization) *

Kim, Brian Hojung  
(Transportation Specialization)

Klassen, Benjamin Luke  
(Structural Specialization) *

Kool, Jordan Willem Alan  
(Transportation Specialization)

Kurtz, Stefanie Anne  
(Geotechnical Specialization & Structural Specialization) *

Lee, Jeseung  
(Structural Specialization)

Li, Herman  
(Structural Specialization) †

Liu, Abby Jia Hui  
(Transportation Specialization) *

Liu, Phillip YiMei  
(Transportation Specialization)

Ly, Jacob  
(Transportation Specialization) †

MacIsaac-Sun, Madeleine Frances  
(Water Resources Specialization) *

McParland, Matthew Peter  
(Geotechnical Specialization & Transportation Specialization) †

Miranda, John  
(Structural Specialization) *

Mizzen, Connor Matthew  
(Water Resources Specialization) *

Moondi, Harkiran Kaur  
(Structural Specialization) †

Morrison, Dominique Noella Margaret  
(Water Resources Specialization) †

Mortillaro, Luca  
(Structural Specialization/Management Sciences Option) *

Muhammad, Shaheer  
(Geotechnical Specialization & Structural Specialization) *

Muiruri, Kamande  
(Structural Specialization) *

Mujadidi, Ahmad Tariq  
(Structural Specialization) *

* – With Distinction
† – Dean’s Honours List
Mullally, Farid James (Transportation Specialization) *†
Ngo, Kelly (Transportation Specialization) *
Nicol, Owen Patrick (Transportation Specialization) *
Nim, Somi (Transportation Specialization) *
Pandya, Devarshi Jayeshkumar (Structural Specialization)
Park, Se Joon (Transportation Specialization)
Peng, Yifei (Structural Specialization) *†
Podgorniak, John Paul (Structural Specialization)
Postma, Jaden Noah (Structural Specialization)
Prinsen, Levi Andrew (Water Resources Specialization) *
Qin, Jiayu (Structural Specialization) *
Rust, Rebecca Anna *
Rywak, Adam (Transportation Specialization)
Said Hassan, Sahra (Transportation Specialization)
Sakthivel, Sarojan
Saxena, Rohan (Structural Specialization)
Shah, Kavin (Structural Specialization) *
Shin, Yoonhwan (Transportation Specialization) *
Simone, Adrian Marco Paul (Structural Specialization)
Skantharajah, Shawn Vishnu (Geotechnical Specialization & Structural Specialization) *
Smadi, Hamzah Mamoon (Geotechnical Specialization & Structural Specialization) *
So, Benny (Structural Specialization) *
Sy, Liam Jacob (Structural Specialization) *
Tan, Denis Xi (Water Resources Specialization) *†
Taylor, Jack Ian (Structural Specialization/Management Sciences Option) *
Thampaiyah, Ahiesh (Structural Specialization)
Tran, Michael Nicholas (Structural Specialization & Transportation Specialization/Management Sciences Option) *
Truman, Ethan Thomas *
Wang, Emeline Yi (Water Resources Specialization) *†
Waseem, Mahnoor (Structural Specialization)
Westrik, James Andrew *
Winger, Joshua Avery (Structural Specialization) *†
Wong, Brandon *†
Wong, Jason Tsz Chun (Structural Specialization)
Wong, Yuk Ying (Water Resources Specialization) *
Yokhana, Catherine L (Transportation Specialization) *
Yuen, Shalom (Structural Specialization)
Zhang, Michelle (Structural Specialization/Management Sciences Option) *
Zhao, Ge (Structural Specialization) *
Zhou, Chenghao (Structural Specialization) *†

ENVIRONMENTAL ENGINEERING
Aspin, Joshua Dennis Norman *
Calder, Liam *
Chan, Nicolas Hiu Nam (Pollution Treatment and Control Specialization)
Chen, Yingqi (Water Resources Option – Earth Sciences Minor) *

* – With Distinction
† – Dean’s Honours List
<table>
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* – With Distinction  
† – Dean’s Honours List
Vigneswaran, Sujeethan (Management Sciences Option) *
Wolfsohn, Joshua Paul Schwartz *
Yun, Mathew Tian Yang (Hydrology Specialization & Pollution Treatment and Control Specialization) *
Zhao, Yili (Energy Specialization) †

GEOLOGICAL ENGINEERING
Cristello, Robert Michael *
Luong, Nathan
Peterka, Chester William (Soil, Rock and Structures Specialization)
Trask, Matthew Jeffrey *
White, Natalie Anne (Hydrogeology Specialization) *
Zhao, Ruowen (Hydrogeology Specialization & Soil, Rock and Structures Specialization) *

MANAGEMENT ENGINEERING
Abou Sawan, Nicolas (Computing Option) *
Abu-Dumedah, Rawanna *
Adil, Ashba (Computing Option) *
Afros, Sheila (Computing Option) *
Ahillan, Tharani (Computing Option) †
Archer, Justine Sarah (Computing Option) *
Bacalear, Daniil (Computing Option) *
Barnard, Francois (Computing Option) †
Bhalla, Gunchica (Statistics Option & Computing Option)
Bora, Vatsal (Computing Option) *
Burke, Paul Liam *
Burns, Edward Dylan (Computing Option)
Cao, Ming Xun (Computing Option & Artificial Intelligence Option) *
Chen, Tyler Jinn-Lung (Computing Option) *
Chidella, Shivani (Computing Option) †
Chow, Vincent Jonathan (Computing Option) †
Creasy, Benjamin Thomas Sharp (Computing Option) *
Curalli, Julian Alexander (Computing Option) †
El-Refai, Lama (Computing Option) *
Exconde, Jillian Dawn (Computing Option) *
Farag, Tala (Computing Option) *
Farrahi, Delaram (Computing Option) †
Fisseha, Bethlehem *
Fraser, Scott Stephen (Computing Option) *
Gao, Ming (Statistics Option) †
Geist, Ethan †
Gupta, Rohan (Computing Option) *
Hirji, Jenna (Entrepreneurship Minor) *
Huang, Zhi Ming Adam (Computing Option) *
Issac, Anand Zacharia (Computing Option) *
Jiang, Darren Han-Jun (Computing Option) *
Jones, Timothy Francis Marc (Computing Option)
Khan, Usman Amin (Computing Option) *

* – With Distinction
† – Dean’s Honours List
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<td>Prasad, Karthik</td>
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</tbody>
</table>

**BACHELOR OF ARCHITECTURAL STUDIES**

**HONOURS PROGRAM**

Chang, Ardy

* – With Distinction
† – Dean’s Honours List
Chen, Nicole Wing
daCosta, Alexandra Mariko
Forte, Jordan Thomas
Kallow, Salma

**DIPLOMA IN ARABIC LANGUAGE I**
Abou Sawan, Nicolas

**DIPLOMA IN FRENCH LANGUAGE II**
Abou Sawan, Nicolas

**DIPLOMA IN GERMAN LANGUAGE**
Abou Sawan, Nicolas

**DIPLOMA IN SUSTAINABILITY**
Balles, Nicole Antoinette
Grenapin, Cedric
Ma, William Graham
Thampaiyah, Ahiesh

**CERTIFICATE IN GLOBAL EXPERIENCE**
Hu, Xiaoge
DOCTOR OF PHILOSOPHY

Aguilar Vargas, Francisco Ignacio (Social and Ecological Sustainability)  

Badewa, Emmanuel Adedamola (Social and Ecological Sustainability)  
"The Impact of Bio-based Residues on Soil Health and Greenhouse Gas Emissions Under a Changing Climate"

Buttazzoni, Adrian Nicholas (Planning)  
"Urban and Architectural Design for the Young Mind: An Ecological Investigation of the Relationship Between Urban Form and Adolescent Mental Health"

Caceres, Renato (Geography)  
"Adaptive Capacity, Collaboration, and Adaptive Governance: The Galapagos Small-Scale Fishing Sector"

Cook, Julie Linda (Social and Ecological Sustainability)  
"Success and Failure in Social Marketing Programs: A Qualitative Exploration"

Dhakal, Anil (Sustainability Management)  
"Remittances, Household Food Security, and Entrepreneurship Development: A Case Study of Mzuzu, Malawi"

Dordi, Truzaar (Sustainability Management)  
"Investing for Climate Action: The Role of Capital Markets in Enabling a Low-Carbon Transition"

Felix Martin del Campo, Francisco Xavier (Sustainability Management)  
"Islands at Risk: Analyzing Resource-Use Dynamics From a Socio-Metabolic Research Perspective"

Gievski-Sidorovska, Isidora (Planning)  
"Responding to COVID-19: Characteristics and Outcomes of Strategic Planning in Social-Service Nonprofits"

Giles, Richard Eugene (Social and Ecological Sustainability)  
"Under the Skin: Assessing the Ideological Underpinnings and Material Reality of Cultured Meat"

Hinton, Lucy Beth (Global Governance)  
"Front-of-Pack Labelling in the Caribbean Community: Power and Policy in Regional Standard Setting"

Joynt, Amanda (Geography)  
"Analysis of an Urban Food System Through the Lens of Multi-Level Governance: A Case Study of Mzuzu, Malawi"

King, Fraser Dennis Murray (Geography)  
"Developing a Radar-Based Machine Learning Snowfall Retrieval Algorithm"

Korsah, Percy Erasmus (Geography)  
"Effects of Seismic Lines on Peatland Carbon Cycling in Boreal Alberta, Canada"

Minano, Andrea (Geography)  
"Evaluating Flood Risk Governance With Geospatial Technologies"

Mohat, Niloofar (Planning)  
"Attaining Climate Justice Through the Adaptation of Urban Form to Climate Change: Flood Risks in Toronto"

Mollaei, Sadaf (Sustainability Management)  
"An Analysis of Canadian Young Adult’s Eating Behaviours Towards Sustainable Food Choices"

Murfitt, Justin Charles (Geography)  
"Forward Modelling of Multifrequency SAR Backscatter of Snow-Covered Lake Ice: Investigating Varying Snow and Ice Properties Within a Radiative Transfer Framework"

O’Hearn, Shawna Anne (Geography)  
"Place-Based Experiences in the Work Environment During the Menopausal Transition: A Case Study of Canadian Physiotherapists"

Pradhan, Sisir Kanta (Sustainability Management)  
"Social-Ecological Systems Analysis of the Dried Fish Value Chain for Community Wellbeing in the Bay of Bengal Coast of Odisha and West Bengal, India"

Sanniti, Sophia Rose (Social and Ecological Sustainability)  
"Re/Organizing Toronto Households During COVID-19 Lockdown: A Case Study on an Imposed Degrowth Scenario"

Silburt, Aviva (Global Governance)  
"Mapping the Complexity of Mining & Peacebuilding in Guatemala"

MASTER OF ARTS

Barcellos, Natalie Isobel DeBloeme (Planning)

Cameron, Marilyn Frances (Planning)

Moss, Dana Avery (Geography)

Scott-Frater, Charlotte Leigh (Planning)

Skidmore, Jason Robert (Planning)

* – Distinction
† – Dean’s Honours
Westerhof, Colin J  
Wilson, Brayden James Richard  
Wong, Man-Juk Bryan  
Zhang, BiYe

(Planning)

Dean's Honours

**MASTER OF CLIMATE CHANGE**

Cirstet, Victor
Collins, Trudi
Fjarlie, Jess Erika
Freedberg, Hannah Dorothy
Hawz, Yasmine Waseela
Ho, Alexandra Jane
Jamal, Iqbal Badruddin
Santa Maria, Amanda
Sheikh, Bilal
Sopel, Scott
Tulipano, Stephanie Nicole

**MASTER OF DEVELOPMENT PRACTICE**

Beg, Aminah Fasahat
Burke, Calyssa Nikita
Chalmers, Duncan James Wade
Cheung, Sau Fong
Chow, Rebecca Wai Yi
Feng, Tiankai
Han, Yawei
Ibeanusi, Chiamaka Nkechinyere
Kane, Madina
Mbielu, Blessing Debbie
Ochana, Mary Anwar
Sada, Aisha
Sun, Zhouyuan
Tasnim, Ayesha Zerin
Tufail, Hijab
Weinberger, Mikayla Chantelle
Zaman, Tashfia Rifa

**MASTER OF ECONOMIC DEVELOPMENT AND INNOVATION**

Bains, Simran
Dajani, Lana
Ennin, Yaw Kwabiah
Meunier-Geoffroy, Alexandre

**MASTER OF ENVIRONMENT AND BUSINESS**

Corway, Samantha Laura
Gaeta, Sarah
Macdonald, Katelyn Jennifer

* – Distinction
† – Dean’s Honours
MacIsaac, Caileigh Deanna
Min, Jie
O'Rourke, Sarah Rose
Rogers, Samantha Leigh

MASTER OF ENVIRONMENTAL STUDIES

Ahmed, Muhammad  (Sustainability Management)
Akomolafe, Bayode Andrew  (Sustainability Management)
Bahari, Kimiya  (Sustainability Management)
Brierley, Tatianna Marie  (Sustainability Management)
Bright, Brittany  (Sustainability Management)
Chen, Qi-Sheng  (Geography)
Cox, Elaina  (Sustainability Management)
Farley, Karen Lisa  (Sustainability Management)
Gokkaya, Onurcan  (Sustainability Management)
Hamilton, Shawna Amie  (Geography)
Hundal, Harkirat  (Social and Ecological Sustainability)
Khaniya, Bhabishya  (Sustainability Management - Water)
Krueger, Rachel Judith Gold  (Sustainability Management - Water)
Laidlaw, Caitlin Alyssa  (Geography)
Le, Vu Quynh Trang  (Social and Ecological Sustainability - Water)
Madhanaroopan, Shenali  (Sustainability Management)
McCarthy, Gwenyth Grace  (Planning)
Mikhail, Monika  (Sustainability Management)
Mirza, Mustafa  (Geography)
Neveroff, Collin Andre  (Sustainability Management)
Pfeffer, Jordan Elizabeth  (Social and Ecological Sustainability)
Phoenix, Jason Ian  (Social and Ecological Sustainability)
Richards, Graham Anthony  (Planning)
Sanchez Castilio, Juan Sebastian  (Social and Ecological Sustainability)
Saunders, Mark Daniel  (Social and Ecological Sustainability - Water)
Tan, Jingtian  (Geography)
Timberg, Laina Isabella George  (Sustainability Management - Water)
Vanderbeek, Bailey A  (Sustainability Management)
Yang, Yi  (Sustainability Management)

MASTER OF PLANNING

Brown, Cory
Chan, Calvin
Dagenais, Taylor Kristian
Farrell, Conor
Khan, Amanda
Morris, Michelle Nicole
Ntim, Nana
Rieu, Adam Kyle
Shackles, Kevin Raymond

* – Distinction
† – Dean's Honours
MASTER OF SCIENCE
Chau, Sheryl Hei Man
Fines, Robert
Francescangeli, Brittany Ann
Mugunthan, Jaya Sree
Nikolić, Natalija
Noyes, Isaac William
Pegler, Stephanie Adriana
Samo, Lauren Jessica

(Geography - Water)
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(Geography)

GRADUATE DIPLOMA
Abrha, Snit
Brewer, Nicholas Arthur
Goubanova, Svetlana
Guzman, Carlos
Jangid, Prachi
Leung, Leann Edith
Newell, Robert
Parle, Jean-Michel

(Climate Risk Management)
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GRADUATE CERTIFICATE
Gievski-Sidorovska, Isidora
Hill, Lowine Stella
McDougall, Emma Deirdre
Mollaei, Sadaf
Swanson, Kayleigh Emily
Tan, Weikai

(University Teaching)
(University Teaching)
(University Teaching)
(University Teaching)
(University Teaching)
(University Teaching)

BACHELOR OF ENVIRONMENTAL STUDIES
GENERAL GEOGRAPHY AND ENVIRONMENTAL MANAGEMENT – Three Year
Agbelogode, Maxwell
Ayyappan, Aakash Varman
Coleman, Graham Ross
Dodanli, Okan
Fisher, Ethan Alexander
Hewitt, Kelsey
Lu, Jinhong
Mathew, Nevin Joseph
Simmons, Kenneth John
Sukhai, Sebastian Kyle
Valaitis, Matthew Cole
Vilensky, Michelle
Wilson, Brendan Robert
Zhang, Zihao

* – Distinction
† – Dean’s Honours
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**HONOURS ENVIRONMENT, RESOURCES AND SUSTAINABILITY**

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* – Distinction
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Succar, Justin Chukri (Geography and Environmental Management Minor, Entrepreneurship Minor – Co-operative Program) *

Suthar, Dharti (Geography and Environmental Management Minor – Co-operative Program)

Sutton, Brendan (Geography and Environmental Management Minor – Co-operative Program) †

Thompson, Caitlin Margaret (Geography and Environmental Management Minor – Co-operative Program) †

Tibbett, Jade Patricia (Parks Minor) *

Van Veen, Sarah Maaike (Co-operative Program) †

Vandendries, Emma Suzanne (Legal Studies Minor – Co-operative Program) †

Vuillier-Devillers, Clara Marie (Psychology Minor, Parks Minor – Co-operative Program) *

Wu, Kathryn Rebeccah (Classical Studies Minor – Co-operative Program) *

HONOURS GEOGRAPHY AND AVIATION

Aravind, Tridha (Climate Change and Environment Specialization) †

Brown-Hozjan, Elena Claire (Climate Change and Environment Specialization) †

Crawford, Andrew Ross (Geomatics Specialization) *

Cummins, John James

D'Amico, Adam Daniel *

Dunne, Kyle Thomas †

El Shaboury, Eslam Abdou (Climate Change and Environment Specialization)

Farrell, Casey Kevin

Galushka, Anthony Daniel

Harwood, Johnathan Garett (Geomatics Specialization) *

Maddick, Garrett Jeffrey *

Mouland, Benjamin Andrew †

Shaheen, Ahmed Hesham

Skorzewski, Samuel Antony *

Taylor, Ryan Trent †

To, Giao Hoang Phuong (Geomatics Specialization) †

Yu, Hoi Chun Sam †

HONOURS GEOGRAPHY AND ENVIRONMENTAL MANAGEMENT

Allan, Jessica Irene Audrey (Biology Minor – Co-operative Program)

Carpenter, Aidan (Public Policy and Administration Minor) †

Cheng, Xuhan

Croft, James Rex (Climate Change and Environment Specialization – Urban Studies Minor – Co-operative Program)

DeFreitas, Breanna Nicole (Climate Change and Environment Specialization – Co-operative Program) †

Drummond, Isabel Margaret (Economy & Society Specialization)

Du, Yun Yi (Earth Systems Science Specialization – East Asian Studies Minor – Co-operative Program)

Gallagher, Peter James (Climate Change and Environment Specialization) †

Hellreich, Kaleb Kolt

Ingosi, Gerrit (Geomatics Specialization – Co-operative Program)

Jiang, Yijie

Li, Leroy (Climate Change and Environment Specialization – Co-operative Program) †

Manocha, Simran (Aviation Specialization – Psychology Minor – Co-operative Program)

Marasigan, Warren Daniel (Co-operative Program)

Marnika, Nicholas Zvonimir (Aviation Specialization) *

Mecitoglu, Salih (Aviation Specialization – Management Studies Minor) †

* – Distinction
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### HONOURS GEOMATICS

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Yang, Justin Jacky (Computing Minor – Co-operative Program)
Zheng, Yufan (Co-operative Program)

HONOURS INTERNATIONAL DEVELOPMENT
Bonsma, Jannelle Erinne (Research Specialization – Urban Studies Minor) *
Rasheed, Samreen (Research Specialization/Business Option)

HONOURS PLANNING
Aliu, Adrian (Economics Minor – Co-operative Program) †
Ao, Yushi (Philosophy Minor – Co-operative Program) *
Boyce, Noah James (Environmental Planning and Management Specialization – Geography and Environmental Management Minor – Co-operative Program) †
Brar, Jasdeep Kaur (Land Development Planning Specialization – Co-operative Program) *
Budiwarman, Ray Nathan (Co-operative Program)
Burnett, Alexander Edward (Environmental Planning and Management Specialization & Land Development Planning Specialization – Co-operative Program) *
Calabrese, Emily Catherine (Land Development Planning Specialization – Geography and Environmental Management Minor – Co-operative Program)
Campbell, Scott Craig Keith (Geography and Environmental Management Minor – Co-operative Program)
Chan, Sabrina (Urban Studies Minor – Co-operative Program)
Chee, Adrian (Decision Support and Geographical Information Systems Specialization & Land Development Planning Specialization – Geography and Environmental Management Minor – Co-operative Program) †
Chen, Amber (Co-operative Program) *
Chen, Weiye (Geography and Environmental Management Minor – Co-operative Program)
Cheung, Pak Yin (Land Development Planning Specialization – Geography and Environmental Management Minor – Co-operative Program) †
Cheung, Sze Jet (Co-operative Program)
Chiu, Taylor Shawn (Geography and Environmental Management Minor – Co-operative Program) *
Clarkson, Emily Jean (Urban Design Specialization – Geography and Environmental Management Minor – Co-operative Program) *
Cook, Noah Samuel (Co-operative Program)
Dalpati, Reeya Chetan (Land Development Planning Specialization & Urban Design Specialization – Co-operative Program) *
Dawson, Nyan (Urban Design Specialization – Co-operative Program)
D'Cruze, Elizabeth Victoria (Urban Design Specialization – Legal Studies Minor – Co-operative Program) *
Dhanani, Mika'il Arif Hassanali (Urban Design Specialization – Geography and Environmental Management Minor – Co-operative Program) *
Dieleman, Andrew James (Decision Support and Geographical Information Systems Specialization – Geography and Environmental Management Minor – Co-operative Program) *
Donaldson, Andrew James (Co-operative Program)
Fluit, Katrina Marie (Environmental Planning and Management Specialization – Co-operative Program) †
Garrard, Garrett Charles (Land Development Planning Specialization – Co-operative Program)
Gonsalves, Meaghan Angelina (Environmental Planning and Management Specialization – Environment, Resources and Sustainability Minor – Co-operative Program)
Greco, Melissa Jade (Decision Support and Geographical Information Systems Specialization & Urban Design Specialization – Co-operative Program) †
Guo, Jianbang (Urban Design Specialization – Co-operative Program) *
Halum, Danica Morgia (Co-operative Program) *
Hao, Ruohong (Urban Studies Minor, Geography and Environmental Management Minor – Co-operative Program)

* – Distinction
† – Dean's Honours
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* – Distinction
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Razee, Abrar Jawad-Al  
(Urban Design Specialization – Co-operative Program) *

Rosatone, Stefano Domenico  
(Urban Design Specialization – Geography and Environmental Management Minor – Co-operative Program) *

Salyajivin-James, Tayvin Christopher  
(Urban Design Specialization – Geography and Environmental Management Minor – Co-operative Program) *

Secnik, Janey  
(Environmental Planning and Management Specialization & Land Development Planning Specialization – Co-operative Program) †

Sluga, Owen William  
(Urban Design Specialization – Co-operative Program) *

Soldo, Alyssa Marie  
(Land Development Planning Specialization – Geography and Environmental Management Minor – Co-operative Program) †

Spencer, Nolan Lawrence  
(Urban Design Specialization – Co-operative Program) *

Su, Simmy  
(Geography and Environmental Management Minor – Co-operative Program)

Switzer, Samuel Jonathan  
(Environmental Planning and Management Specialization – Urban Studies Minor – Co-operative Program)

Syed, Ahasar Asghar  
(Urban Design Specialization – Co-operative Program) *

Tam, Michael James  
(History Minor – Co-operative Program) †

Tasnádi, Melinda  
(Land Development Planning Specialization – Co-operative Program) †

Thokchom, Pikru Singh  
(Geography and Environmental Management Minor – Co-operative Program) *

Vandermeulen, Peter Edward  
(Urban Design Specialization – Co-operative Program)

Vegter, Jared Aerik  
(Land Development Planning Specialization – Co-operative Program)

Willock, Samantha Grace  
(Land Development Planning Specialization – Environment, Resources and Sustainability Minor – Co-operative Program) *

Woodward-Caradonna, Rebecca Mary Josephine  
(Land Development Planning Specialization – Co-operative Program) *

Xue, Danny  
(Land Development Planning Specialization – Co-operative Program) †

Yong, Brendon  
(Co-operative Program)

Young, Rachel Mary  
(Geography and Environmental Management Minor – Co-operative Program) †

Yu, Matthew  
(Geography and Environmental Management Minor – Co-operative Program) †

Zhao, Linda Jiahui  
(Land Development Planning Specialization & Urban Design Specialization – Music Minor, Geography and Environmental Management Minor – Co-operative Program) †

Zhou, Jianqiao  
(Co-operative Program) *

Zigante, Adam Dejan  
(Urban Design Specialization – Geography and Environmental Management Minor – Co-operative Program)

BACHELOR OF KNOWLEDGE INTEGRATION

Dalglish, Luke  
(Collaborative Design Specialization & Science, Technology & Society Specialization – Environment, Resources and Sustainability Minor) †

Betel Miri, Setareh  
(Environment, Resources and Sustainability Minor)

Brubacher, Ashley Marie  
(Psychology Minor) †

Dale, Meghan Elizabeth  
(Science, Technology & Society Specialization – Anthropology Minor, Mathematics Minor) †

Daugavietis, Julie Kathryn  
(International Development Minor)

Faulkner, Sam Jones  
(Psychology Minor, Philosophy Minor) †

Fieguth, Anya  
(Peace and Conflict Studies Minor, Psychology Minor) †

Hannides Rajapakse, Alexander  
(Knowledge Integration & Joint Honours Mathematics) *

Harrington, Abby Grace  
(Environment, Resources and Sustainability Minor) †

Jinargyros, Spiros  
(Business Option) *

Martin, Kathleen Emily  
(Knowledge Integration & Joint Honours Psychology) †

Mather, Sarah Katherine  
(Collaborative Design Specialization – Psychology Minor) *

Miedema, Ian  
(Peace and Conflict Studies Minor)

* – Distinction
† – Dean’s Honours
Moore, Zoe Gale  
(Science, Technology & Society Specialization – Human Resources Management Minor, Management Studies Minor) †

Oka, Zoe Clara Sachiko  
(Psychology Minor)

Paolini, Hannah Marie  
(Legal Studies Minor) *

Richardson, Sophia Marie Florence  
(Science, Technology & Society Specialization – Environment, Resources and Sustainability Minor) †

Saeed, Imaan Fatima  
(Cognitive Science Minor, Psychology Minor, Philosophy Minor) *

Tywonek, Stephanie Jillianne  
(Science, Technology & Society Specialization – Philosophy Minor) *

**DIPLOMA IN CHINESE LANGUAGE I**

Amer, Dalia

**DIPLOMA IN ECOLOGICAL RESTORATION AND REHABILITATION**

Harrington, Abby Grace
Johnson, Trisa Rachelle Kalli
Khan, Aalia Irshad
Lawrence, Zoë Jade
Naday, Baxter Mannix
Price, Samantha Anne
Wu, Kathryn Rebbecca

**DIPLOMA IN ENGLISH FOR MULTILINGUAL SPEAKERS**

Guzmán Pichogagón, Yuly Patricia

**DIPLOMA IN ENVIRONMENTAL ASSESSMENT**

Al-khasawneh, Haneen Mohanad
Ayu, Msendoo Osinimu
Bauman, Justin Nicholas
Bonsma, Jannelle Erinne
Boyes, Noah James
Brar, Jasdeep Kaur
Brown, Whistler
Chen, Keying
Clarke, Alison Carol-Lynn
Elliott, Natalie Paige
Eves, Erika Lynn
Gallant, Bennett Paul
Garby, Olivia Mary
Gonsalves, Meaghan Angelina
Guzmán Pichogagón, Yuly Patricia
Hou, Yi Tao
Huang, Leping
Johnston, Ethan Patrick
Khan, Aalia Irshad
Khan, Amna
Kim, Doe Hyun
Kumbhkarni, Mehika

* Distinction
† Dean’s Honours
Lee, Damian Jacob
Lee, Julian
Li, Chengzu
Li, Reuben
Lightfoot, Jacob Paul
Lukic, Nikola
Mittelstaedt, Maya Rose
Muller, Carissa Tamara Lin
Naday, Baxter Mannix
Pahwa, Vaibhav
Payne, Steven Joseph
Raitano, Ryan Alessandro
Ramos, Vanessa Judith
Rashid, Zoha
Rendalkar, Pranav
Singh, Jasdeep
Slater, Sofia Somani
Sluga, Owen William
Succar, Justin Chukri
Sukker, Akashdeep Singh
Suthar, Dharti
Vandendries, Emma Suzanne
Williamson, Elizabeth Katherin
Willock, Samantha Grace
Wood, Elizabeth Mae
Young, Matthew Ka Chun
Young, Rachel Mary
Zhou, Bo

DIPLOMA IN FRENCH LANGUAGE II
Poblete, Pia Colynn
Slater, Sofia Somani
Williamson, Elizabeth Katherin

DIPLOMA IN FUTURE CITIES
Tywonek, Stephanie Jillianne

DIPLOMA IN SPANISH LANGUAGE I
Andratis, Alexandra Xelaju

DIPLOMA IN SUSTAINABILITY
Dalpati, Reeya Chetan
Johnson, Trisa Rachelle Kalli
Ramos, Vanessa Judith
Santia, Veronica
Solimano, Franco
Wood, Elizabeth Mae

* – Distinction
† – Dean’s Honours
DIPLOMA OF EXCELLENCE IN GEOGRAPHIC INFORMATION SYSTEMS

Ao, Yushi
Chapman, Dorothy Lynn
Diniz, Gabriel Sun
Goyal, Siddhant
Kim, Hamin
Meyer, Marcus Ronald Angelo
Singh, Paramvir
Yeung, Yuki Ching Yee
Zhao, Linda Jiahui

CERTIFICATE IN EXPERIENTIAL EDUCATION

Andratis, Alexandra Xelaju
Daugavietis, Julie Kathryn
Rasheed, Samreen
To, Giao Hoang Phuong

CERTIFICATE IN GLOBAL EXPERIENCE

Slater, Sofia Somani
DOCTOR OF PHILOSOPHY

Amoako, Joyceline (Public Health Sciences)
"Exploring the Impacts of Precarious Work and Family Caregiving on the Health of African Immigrant Women Amidst the COVID-19 Pandemic in Ontario, Canada"

Armstrong, Daniel Paul (Kinesiology)
"Understanding Personal Determinants of Lifting Strategy to Inform Movement Focused Ergonomic Interventions"

Basharat, Aysha (Kinesiology (Aging, Health and Well-Being))
"Maltotriose Integrative Processes and Aging"

Battista, Katelyn Victoria (Public Health Sciences)
"Using Decision Trees to Examine the Influence of the School Environment on Youth Mental Health"

Beaudry, Kayleigh Michelle (Kinesiology)
"Does Sex or Exercise Modality Influence Post-Exercise Glucose Handling or Insulin Sensitivity"

Carleton, Nicole (Kinesiology)
"Through the Ups and Downs: Workers' and Families' Experiences With Seasonal Resource Employment in a Prairie Province"

Chung, William (Kinesiology)
"Sensory Conflict: Effects on the Perceived Onset of Motion and Cybersickness in Virtual Reality"

Crouch, Meghan Kathleen (Public Health Sciences)
"Coworking Through the Pandemic: Flexibly Yours"

Doggett, Amanda (Public Health Sciences)
"Body Mass Index and Missing Data: Examining the Levels, Patterns, and Impacts of Missing Data in a Large Cohort Study of Canadian Youth"

Drysdale, Mallory Elizabeth Brennan (Public Health Sciences)
"Human Biomonitoring of and Determinants of Biomarker Levels for Contaminants and Nutrients in Old Crow, Yukon Territory"

Edet, Christine Imaobong (Public Health and Health Systems)
"Food Insecurity in a Tobacco Growing Region in Zambia"

Fataar, Fathima (Public Health Sciences)
"Cannabis Use, Retail Availability and Legal Sanctions in Canada: Differences by Neighbourhood Deprivation, Individual Socioeconomic Factors, and Race/Ethnicity"

Gauthier, Robert Peirce (Public Health Sciences)
"Computational Thematic Analysis of Online Communities"

Khan, Tauhid Hossain (Public Health Sciences)
"Self-Employment, Health, Illness, and Social Security Among Solo Self-Employed Workers"

Laudanski, Annemarie (Kinesiology)
"Development of a Wearable Sensor-Based Framework for the Classification and Quantification of High Knee Flexion Exposures in Childcare"

Leighton, Jaylyn Joanne (Recreation and Leisure Studies)
"Opportunities for Redress: Re-Imagining Relations, Restorations, and Leisure for Uniformed Bodies Serving as First Responders"

Marasinghe, Keshini Madara (Public Health Sciences - Aging, Health and Well-Being)
"The Impact of Assistive Devices on Community-Dwelling Older Adults and Their Informal Caregivers"

McIlroy, Robert Evans (Kinesiology)
"Visual Determinants of Postural Control and Perception During Physical and Virtual Motion"

Mutumba Nakalembe, Margaret Joanita (Public Health Sciences)
"A Multi-Level Analysis on Implementation of Low-Cost IVF in Sub-Saharan Africa: A Case Study of Uganda"

Nazia, Nushrat (Public Health Sciences)
"Spatial Epidemiology of a Highly Transmissible Disease in Urban Neighbourhoods: Using COVID-19 Outbreaks in Toronto as a Case Study"

Njungu, Mwimanenwa (Public Health Sciences - Water)
"Applying a Systems Thinking Approach to Health Care for Women & Children in the Flood Plains of Western Zambia"

Zehr, Jackie Doreen (Kinesiology)
"History-Dependent Changes to the Structure, Properties, and Function of the Cartilaginous Endplate"

MASTER OF ARTS

Browne, Karin Alexandra (Recreation and Leisure Studies)

Crane, Nathaniel James (Recreation and Leisure Studies)

Edwards, Graham Julian (Recreation and Leisure Studies)

Fortin, Kendra Elizabeth (Recreation and Leisure Studies)

Gonzalia Diaz, Noramy (Recreation and Leisure Studies)
MASTER OF HEALTH EVALUATION
Barbosa, Marissa Duarte
Budair, Bilal Salah Mohammed
Carroll, Eleanor Brooke-Anne
Connolly, Kendra
Deb, Barsha
Deb, Bristi
Ferguson, Crystal Rose D.
Garay, Ninfa Arlen
Gough, Judith
Laughton, Angela
Mulligan, Natasha
Nijjar, Jashandeep Kaur
Regala, Erin Karen Deang
Van Rooyen, Carlone

MASTER OF HEALTH INFORMATICS
Ahmed, Junaid
Ahmed, Rjaa
Ates, Christine
Elsarty, Hagar Ashraf
Fears, Acrifa Nekeiba
Huang, Shih-Hsio
Joseph, Jermain R
Kannapiran, Vishnugha
Mendez, Mariam
Pararasasingam, Kobika
Saini, Saloni Preet Singh
Wei, Wei

MASTER OF PUBLIC HEALTH
Schurter, Aletta Christine

MASTER OF SCIENCE
Bacciaglia, Meagan (Public Health Sciences)
Bai, Lu (Kinesiology)
Chambers, Sophie Ann (Kinesiology)
Faerman, Michelle Valentine (Kinesiology)
Homagain, Abhijesh (Kinesiology)
Imanzi, Liza (Public Health Sciences)
Khan, Madison Emily Reese (Kinesiology)
Mathias, Karen Dawn Angela (Kinesiology)
Monakhova, Svetlana (Public Health Sciences)
Norouzian, Pershia (Kinesiology)
Ochwat, Sandra Kinga (Public Health and Health Systems)
Reis, Logan (Public Health Sciences)

* – Distinction
† – Dean’s Honours
Taqvi, Urooj Zehra  
Thompson, Benjamin Pearce  
Veerasammy, Sanjay  
Weeks, Terri  
Wei, Cindy  
Williams, Tabitha  
Woo, Rachel Samantha  
Zuljevic, Matea  

**MASTER OF SOCIAL WORK**

Maruthaiyinar, Vaithoure  
Petrova, Olena  

**GRADUATE CERTIFICATE**

Doggett, Amanda  
Ergen, Can  
Khajeei, Dahlia  
Koroll, Rebecca Sophia  
Pinto, Brendan Luke  

**BACHELOR OF ARTS**

**GENERAL RECREATION AND LEISURE STUDIES – Four Year**

Kidwai, Raneem  
Sim, Jessica Lynn  
Tse, Darren Waifu  

**HONOURS RECREATION AND LEISURE STUDIES**

Cao, Xuanrui  
Chen, Lee-Young  
Chow, Yuet Tung  
Colantonio, Rebecca Lena  
Courtney, Auden Charles Warren  
Hoerner, Alexander Andreas  
Howlett, Elizabeth June  
Hutson, Megan Grace  
Jonker, Cassondra Christine  
Lowrie, Brendan John  
Magat, Victoria Akiko  
McBride, Micaela Mengyue Patricia  
Metz, Brandon  
Nguyen, Hung Quoc  
Pires, Justine Aurora  
Qasim, Anooshae  
Seguna, Samantha Cassandra  
Sin, Joey Ho Yi  
Tang, Xiru  
Truffen, Justin William Kelly  

* – Distinction  
† – Dean’s Honours
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<td>(Event Management Minor – Co-operative Program) †</td>
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Sime, Julian John  
Sripathybalamuraleetharan, Ananthavarunan

Steeneveld, Abbey Marie  
Sutherland, Liam Vincent  
Vincent, Tyler Grant  
Wight, Lily  
Woznuk, Ellora Lakshman  
Young Lao, Aaron Ahing

HONOURS THERAPEUTIC RECREATION
Babici, Sofia  
Bell, Ryley Hannah Grace  
Bender, Katrin Jonina  
Bhola, Shalinie  
Busato, Danielle Marie  
Caplan, McKenna  
Cargill, Crystal-Jade  
Charbonneau, Katherine Mathilde  
Comeau, Rebecca  
Darling, Mikayla Anne  
Del Genio, Rebecca Anne  
Deverell, Maddison Skye  
Ducharme, Emma Grace  
Flaherty, Emily Marie  
Hamilton, Sydney Amelia  
Heidrich, Haley Chen  
Hogan, Taylor Lynne Kathleen  
Mitton, Sydney Elizabeth  
Mullins, Andrea  
Nagendran, Bonita  
O'Brien, Faye Helen  
Paghubasan, Irene Nagahara  
Shantz, Ashlyn Mckayla  
Smith, Caitlynn Marie  
Valencia-Mendez, Elizabeth Eunice  
Yu, Andrew

HONOURS TOURISM DEVELOPMENT
Ahmed, Karim Kamal  
Fujii, Travis Weilong  
Molloy, Kellen  
Robinson, Jacob Roy-Anthony  
Shikaze, Cassandra

BACHELOR OF PUBLIC HEALTH

* – Distinction  
† – Dean’s Honours
HONOURS PROGRAM

Abu, Efuaie Eseose (Co-operative Program) *
Alrubaie, Malak †
Arigu, Annaeya Emmanuella (French Minor – Co-operative Program)
Bai, Zhuolin (Public Policy and Administration Minor – Co-operative Program) *
Beshay, Jessica (Co-operative Program) †
Billias, Nicole Katherine Grace (Psychology Minor – Co-operative Program) †
Brassel, Sara
Carmichael, Meilin Yuanfei Stitt (Gerontology Minor) †
Cheung, Christine Cheuk-Ying (Health Informatics Option – Co-operative Program) †
Daniel, Kathleen Jazmine (Psychology Minor)
Dawamneh, Leen †
Dhaliwal, Komal Kaur (Gerontology Minor – Co-operative Program) *
Dixon, Sarah Lynn (Psychology Minor – Co-operative Program) †
Gagnon, Jasmine Jayna Veda (Medical Physiology Minor – Co-operative Program) *
Gobran, Mark Emad
Habte, Merhawi Girmay (Aging Studies Option – Psychology Minor) †
Haddad, Martin Paul
Halpenny, Laura Mary (Psychology Minor – Co-operative Program) †
Hand, Samantha Ann (Addictions, Mental Health and Policy Minor) †
Hasan, Shifa (Co-operative Program)
Hashmi, Ayman *
Kajura, Lavinia †
Kalra, Kishika *
Kani, Aaron Duah
Khalid, Fatima (Aging Studies Option – Public Policy and Administration Minor – Co-operative Program) *
Kim, Doyoon (Pre-Clinical Specialization – Co-operative Program) *
Knutson, Vivike Anne †
Lim, Maicy (Aging Studies Option – Co-operative Program) †
Lytle, Anne Shirley (Gerontology Minor – Co-operative Program) *
McDonald, Nicole Jewelle (Social Development Studies Minor – Co-operative Program)
Muhammad, Manal (Aging Studies Option – Co-operative Program) †
Nathoo, Sarina (Gerontology Minor, Political Science Minor – Co-operative Program) *
Noor, Hayyum (Co-operative Program) †
Oenputera, Briana Nicole (Aging Studies Option) *
Opoka, Victoria Maria (Addictions, Mental Health and Policy Minor)
Pandey, Riya (Gerontology Minor) *
Parvaiz, Alina (Gerontology Minor)
Rajani, Fizah Afzal (Aging Studies Option – Co-operative Program) *
Rattansi, Nilusha (French Minor – Co-operative Program) †
Sajid, Dawood
Sibomana, Aliny
Sipley, Melissa Katherine (Health Research Specialization) †
Sivaharan, Arrani (Co-operative Program) *
Sivanathan, Harisha (Addictions, Mental Health and Policy Minor) †
Soltan, Salma Ahmed (Gerontology Minor) *

* – Distinction
† – Dean’s Honours
Susiwala, Aatif (Co-operative Program) *
Tang, Phuong Bich *
Tran, Karen (Gerontology Minor – Co-operative Program) †
Vowels, Paige Amanda (Gerontology Minor – Co-operative Program) †
Weatherby, Jessica Frances (Gerontology Minor) †
Wenger, Sarah Rose †
Yu, Jiapie *

BACHELOR OF SCIENCE
GENERAL KINESIOLOGY PROGRAM – Four Year
Butt, Joshua Brian
Johnston, Catherine (Rehabilitation Sciences Specialization)
Taylor, Connor John
Wang, Yi Lin

HONOURS HEALTH SCIENCES
Abbasi, Rida †
Alsefaou, Moaad Abdualla (Co-operative Program) †
Beshay, Abanoub Samy †
Charette, Victor Raphael †
Choy, Shuk-Wah Vanessa (Health Research Specialization – Management Studies Minor – Co-operative Program) †
Doan, Sara (Pre-Clinical Specialization) *
Estanbouly, Delal *
Farah, Bahja (Health Research Specialization – Gerontology Minor) †
Fatima, Mahnoor (Pre-Clinical Specialization) †
Gashi, Elsa (Gerontology Minor – Co-operative Program) *
Gathatharan, Shyam (Health Research Specialization – Co-operative Program) †
Gauld, Sonia Naomi (Aging Studies Option – Co-operative Program) †
Gupta, Udbhav (Pre-Clinical Specialization/Aging Studies Option – Co-operative Program) *
Hidebranth Alavez, Tanya *
Hoffman, Leora Kayla Nathania *
Jaiswal, Twinkle Rajeevkumar (Pre-Clinical Specialization – Medical Physiology Minor – Co-operative Program) *
Kapoor, Mannat †
KAUR, SARGUN
Khan, Inayah (Pre-Clinical Specialization – Co-operative Program) *
Khan, Maria (Addictions, Mental Health and Policy Minor) †
Kotwall, Taronish Jamsheed (Pre-Clinical Specialization) †
Lalani, Rabeea (Gerontology Minor – Co-operative Program) †
Loku Galappaththi, Sashini Upeksha (Health Research Specialization – Co-operative Program) †
Long, Amy (Psychology Minor) †
Maheswaran, Keshi (Health Research Specialization – Co-operative Program) †
McClenann, Sarah Nicole (Psychology Minor) †
Mirza, Asma Liaquat (Pre-Clinical Specialization – Psychology Minor – Co-operative Program) †
Mo, Christa Cheuk-Yan (Co-operative Program) †
Mohamed, Zahra (Addictions, Mental Health and Policy Minor) †
Mylvaganam, Dennis (Gerontology Minor – Co-operative Program)
Newalkar, Priyanka Sanjay (Pre-Clinical Specialization – Co-operative Program)

* – Distinction
† – Dean’s Honours
Pervaiz, Myra Anjum  
Purba, Tasmeen  
(Pre-Clinical Specialization) *  
Randhawa, Tanveer Kaur  
(Pre-Clinical Specialization – Medical Physiology Minor – Co-operative Program) *  
Sahota, Sanjit Kaur  
(Aging Studies Option) †  
Saragadam, Ashish  
(Pre-Clinical Specialization – Medical Physiology Minor – Co-operative Program) †  
Suarez, Mary Alyssa Natividad  
(Health Research Specialization – Co-operative Program) †  
Truong, Taylor Mckenzie  
(Gerontology Minor) *  
Van Leemput, Flore  
(Pre-Clinical Specialization – Gerontology Minor) †  
Vanama, Manasvi Sai  
(Health Research Specialization – Gerontology Minor – Co-operative Program) †  
Vaz, Desiree Denica  
(Health Research Specialization – Gerontology Minor – Co-operative Program) †  
Vigneswaran, Shankavi  
(Pre-Clinical Specialization – Gerontology Minor – Co-operative Program) †  
Wilson, Vanessa Veronica  
(Pre-Clinical Specialization – Medical Physiology Minor) †

HONOURS HEALTH STUDIES

Abdallah, Lama  
(Health Research Specialization – Gerontology Minor) †  
Abistado, Arnold Dian Jr Kayanan  
(Medical Physiology Minor – Co-operative Program)  
Abouiznied, Hamza Azmi  
†  
Abraham, Zachary  
†  
Adil, Maisha  
(Health Research Specialization – Co-operative Program) †  
Al-Hammadi, Mawj Maad  
(Health Research Specialization/Aging Studies Option – Co-operative Program) *  
Ali, Xiaoli Abdirahman  
(Health Research Specialization – Co-operative Program) *  
Almaw, Rachel Dagim  
(Gerontology Minor – Co-operative Program) †  
Arai, Emiko Jordan  
(Pre-Clinical Specialization) †  
Arunkumar, Krishna Priya  
(International Studies Minor) †  
Atacan, Can  
(Health Research Specialization/Aging Studies Option) †  
Augustine, Treina  
(Pre-Clinical Specialization) †  
Bartlett, Cayley Ann  
(Health Research Specialization – Co-operative Program) †  
Beairsto, Kayden Bella Kendra  
(Health Research Specialization/Aging Studies Option) †  
Blommaert, Scott Matthew  
(Health Research Specialization – Co-operative Program) †  
Braga, Jovelyn Joy  
(Health Research Specialization – Co-operative Program) †  
Brar, Karanpal Singh  
†  
Bretzlaff, Jocelyn Kendra  
(Pre-Clinical Specialization) †  
Cheung, Kelly Shum Yuet  
(Gerontology Minor – Co-operative Program) †  
Chudasama, Nabeel Jayesh  
(Pre-Clinical Specialization) †  
Cole, Cayli Venus Jean  
(Gerontology Minor) †  
Collins, Emma  
(Pre-Clinical Specialization) †  
Cornfield, Savanna Rose  
(Gerontology Minor) †  
Cousins, Shenise Patrice  
†  
Cuk, Mihaila  
(Psychology Minor) *  
Danciu, Emily  
(Aging Studies Option) †  
Dubroja, Ivana  
(Health Studies & Joint Honours Social Development Studies – Co-operative Program) *  
Elten, Elissa  
(Gerontology Minor – Co-operative Program) †  
Faller-Saunders, Andrew anthoni vincent  
(Health Studies & Joint Honours Psychology)  
Farooq, Zanab  
(Religious Studies Minor) †  
Galli Francis Xavier, Allan Germanus Josephine  
(Aging Studies Option & Health Informatics Option – Co-operative Program)  
Gao, Angie  
(Health Studies & Joint Honours Psychology)
Garcha, Manjot (Gerontology Minor – Co-operative Program)
Gilani, Eliza (Aging Studies Option) *
Halfyard, Graeme Keith (Gerontology Minor, Psychology Minor) †
Haloulos, Penny Patience (Gerontology Minor – Co-operative Program) †
Hazra, Mimika Ahmed (Aging Studies Option – Co-operative Program) †
Hiemstra, Jenna Natalie Van Ankum (Gerontology Minor, Medical Physiology Minor – Co-operative Program) †
Hou, Jennifer (Co-operative Program) †
Hu, Azalea (Co-operative Program) †
Huet, Kelsey Gwen (Gerontology Minor – Co-operative Program) *
Hussain, Sanaa (Co-operative Program) †
Isidore, Noyala Yashwini (Co-operative Program) †
Jogar, Mehak (Co-operative Program) †
Jogar, Muskaan (Co-operative Program) †
Jolicoeur-Becotte, Marie (Addictions, Mental Health and Policy Minor) †
Jones, Daniel George (Psychology Minor – Co-operative Program)
Kannathasan, Danica (Health Research Specialization – Addictions, Mental Health and Policy Minor – Co-operative Program) †
Karkhanis, Kunal Sanjiv (Gerontology Minor) †
Karlova, Valeriya (Gender and Social Justice Minor – Co-operative Program)
Kashir, Imad Aldeen (Co-operative Program) †
Kaur, Rhythm (Co-operative Program) †
Khan, Amber Fozia (Gerontology Minor – Co-operative Program) †
Khan, Bakhtawar Madeeha *
Khan, Maha Riaz (Co-operative Program) †
Khan, Maira Niaz (Co-operative Program) †
Khinda, Mohitt Singh (Co-operative Program) †
Kirolos, Merna (Pre-Clinical Specialization) †
Krishnakumar, Shophia (Co-operative Program) *
Krishnanandan, Vaishali Anita (Human Resources Management Minor – Co-operative Program) *
Laslalic, Leandra Liviya
Leslie, Syntheye (Health Research Specialization – Gerontology Minor – Co-operative Program) †
MacLean, Madeline Leanne (Gerontology Minor – Co-operative Program) †
Madhusudhan, Mahema (Gerontology Minor – Co-operative Program) †
Mahal, Simran Kaur †
Makkar, Ria (Gerontology Minor – Co-operative Program) *
Maliksei, Keisha Nadera (Pre-Clinical Specialization – Co-operative Program) †
Markovicinovic, Celia Christine (Pre-Clinical Specialization – Medical Physiology Minor)
Marquette, Anastasia Marguerite (Health Research Specialization – Psychology Minor) †
Mazen, Sarah (Health Informatics Option – French Minor – Co-operative Program) *
McManus, Shelby Millar Sievewright (Addictions, Mental Health and Policy Minor, Psychology Minor – Co-operative Program) †
Mohammadreza, Lena (Psychology Minor) †
Mohammadreza, Lu (Psychology Minor) †
Mulvey, Marisa Ruth (Psychology Minor) *
Mungal, Sivanah Privani (Health Research Specialization – Psychology Minor – Co-operative Program) *
Naimi, Mahdi (Co-operative Program) †
Naqvi, Hussain Ali (Co-operative Program) †

* – Distinction
† – Dean’s Honours
Nguyen, Van Thi Thao  
Noor, Gulalay  
Nurbhai, Nasir El-Din  
Olona, David Oluwadamilare  
Omilabu, Mariam Toluwalashe  
Osibeluo, Eniola Anire  
Osman, Nadine Mounira  
Patel, Zayaan Nuha  
Pattar, Amandeep Singh  
Piratheeparatnam, Aanjana  
Pitts, Sophia Louise Nicole  
Rakkar, Samreet  
Rezazadeh, Kian  
Sahni, Jahnvi  
Sajid, Liaba  
Salehi, Iman  
Samat, Ayshe  
Santagata, Mariella Carol  
Sarnovsky, Brooklyn Rose  
Sehar, Hibah  
Sethi, Pavneet Kaur  
Shantzi, Megan Emily  
Sharma, Rickina  
Shin, Sung-Ryung  
Shrotri, Revati Pramod  
Sidhu, Arashprit  
Singh, Navreet  
Sivasothynathan, Anesha  
Skibenko, Daniel  
Somanna, Yamini  
Soo, Colin Chee Chung  
Soo, Jeffrey Chee Kim  
Talwar, Himanshi  
Tang, Wing Tung  
Tasedan, Aaron  
Thayalan, Mithusha  
Thomas, Shayanne Susan  
Vergura, Grace Renee  
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Verma, Nitaant  
Walden, Melissa Joan Elizabeth  
Williams, Christine Oluwadunni  
YaakoubAgha, Haya Ghassan  

**HONOURS KINESIOLOGY**  
Abbas, Haneen Nazar

* – Distinction  
† – Dean’s Honours

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<td>Hill, Ana Athena</td>
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<td>Hinsperger, Jack William</td>
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<td>Ho, Cho Hung Cherie</td>
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<td>Lee, Soo Hyun</td>
<td>(Rehabilitation Sciences Specialization)</td>
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<td>Leung, Angus Ho Kit</td>
<td>(Co-operative Program)</td>
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<td>Li, Houcheng</td>
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<td>Li, Immanuel Chin Wan</td>
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<tr>
<td>Li, Xinyi</td>
<td>(Rehabilitation Sciences Specialization – Ergonomics and Injury Prevention Minor – Co-operative Program) †</td>
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<td>Li Shing Hiung, Ronnie Li Chong Yee</td>
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<tr>
<td>Lin, Samantha Elizabeth</td>
<td>(Psychology Minor)</td>
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<tr>
<td>Liu, Ming Rong</td>
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* – Distinction
† – Dean’s Honours
Lo, Brianne (Rehabilitation Sciences Specialization – Co-operative Program) *
Lunshof, Jordan H (Co-operative Program) *
Lurette, Danielle Maggie Yin (Rehabilitation Sciences Specialization – Anthropology Minor) †
Mackenzie, Taylor Mackinnon, Emily Beth (Legal Studies Minor – Co-operative Program)
Macro, Aidan James (Co-operative Program) *
Manivannan, Renneth (Co-operative Program)
Manji, Afshin Ahmed (Rehabilitation Sciences Specialization – Co-operative Program) *
Maraj, Suvi Suvarna Angiras (Co-operative Program)
March, Kyle Benjamin (Ergonomics and Injury Prevention Minor – Co-operative Program) *
Martins, Luandrya Egea Barbosa (Gerontology Minor – Co-operative Program) †
Massina, Maya Boluwa (Kinesiology & Joint Honours Psychology) †
Mcgurn, Carley Elizabeth (Rehabilitation Sciences Specialization)
McKinnon, Katrina Nicole (Co-operative Program) *
McKittrick, Elizabeth Anne †
Mead, Catharine Cecilia *
Medeiros, Mackenzie Payton (Rehabilitation Sciences Specialization – Medical Physiology Minor)
Metcalfe, Aidan James (Medical Physiology Minor – Co-operative Program)
Michaud, Alan Keith (Medical Physiology Minor – Co-operative Program) †
Millan Benedi, Isaac Monteyne, Christie Jean (Co-operative Program) †
Morgado, Matthew Alexander Pereira Murphy, Julia Leslie (Medical Physiology Minor – Co-operative Program) *
Nestor, Hailey Michelle (Medical Physiology Minor – Co-operative Program) *
Newell, Bennett Robert †
Ng, Ethan Ted Nguyen, Emily (Rehabilitation Sciences Specialization) *
Nolan, Aidan Orosz, Mitchell David
Panchal, Krunal Jayesh (Co-operative Program) †
Panchyshyn, Nataliya (Rehabilitation Sciences Specialization – Ergonomics and Injury Prevention Minor – Co-operative Program) *
Paste, Roshni (Medical Physiology Minor) *
Patel, Kush Pankil (Co-operative Program)
Patel, Shubham Pankajkumar (Co-operative Program)
Pearson, Ruby Kaye
Perez Kokhan, Mark (Co-operative Program) *
Perras, Bennett Taylor (Medical Physiology Minor – Co-operative Program)
Phillips, Zara Valentine (Rehabilitation Sciences Specialization – Co-operative Program)
Piper, Tevin D'Allen (Medical Physiology Minor – Co-operative Program)
Poozhikala, George Joshua (Co-operative Program)
Prevost Chambers, Ian James
Pun, Anthony (Rehabilitation Sciences Specialization)
Ragularajah, Kabina Ralliaram, Rhys Nathan (Co-operative Program) †
Read, Carmen Patricia (Psychology Minor)

* – Distinction
† – Dean’s Honours
<table>
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<th>Program</th>
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<tr>
<td>Reesor, Mikyla Loryl</td>
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<td>Reive, Anna Leigh</td>
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<td>(Psychology Minor – Co-operative Program)</td>
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<td>Taylor, Katherine Mary</td>
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<td>Wiens, Amy Sarah</td>
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* – Distinction  
† – Dean’s Honours
Wiens, Emylea Kim  
(Rehabilitation Sciences Specialization – Co-operative Program)†

Williams, Jocelyn Fiona  
(Rehabilitation Sciences Specialization – Ergonomics and Injury Prevention Minor – Co-operative Program)†

Wilson, Meghan Margaret  
(Rehabilitation Sciences Specialization – Co-operative Program)

Wojnowski, Daniel Kacper

Wong, Chantel T  
(Co-operative Program)

Wong, Christopher Curtis  
(Co-operative Program)†

Woo, Yik Yee Megan  
(Rehabilitation Sciences Specialization/Aging Studies Option)†

Wright, Madeline Danielle  
(Medical Physiology Minor)†

Yeung, Wesley Hymn  
(Rehabilitation Sciences Specialization) *

Young, Meghan Ashley  
(Co-operative Program)†

Yuan, Xi  
*

Zhang, Hanqi  
†

Zheng, Elena  
(Rehabilitation Sciences Specialization – Co-operative Program)†

Zheng, Jason Zhen Yu  
(Psychology Minor)

Zheng, Yuchen  
(Co-operative Program)

DIPLOMA IN FRENCH LANGUAGE I

Beshay, Jessica

Nguyen, Van Thi Thao

Ragularajah, Kabina

DIPLOMA IN FRENCH LANGUAGE II

Anandakumar, Ahrreby Angela

DIPLOMA IN GERONTOLOGY

Adil, Maisha

Ali, Xalimo Abdirahman

Arai, Emiko Jordan

Chudasama, Nabeel Jayesh

El-Rifai, Gofrran

Kannathasan, Danica

Khan, Maira Niaz

Mirza, Asma Liaquat

Piratheeparatnam, Anjana

Randhawa, Tanveer Kaur

Sajid, Liaba

Sehar, Hibah

DIPLOMA IN KOREAN LANGUAGE I

Anandakumar, Ahrreby Angela

Cao, Xuanrui

Koppad, Nagamma Ashok

DIPLOMA IN SPANISH LANGUAGE I

Sterling Lopez, Adrian Gordon

* – Distinction

† – Dean’s Honours
DIPLOMA IN SUSTAINABILITY
Lim, Maicy
Pires, Justine Aurora

CERTIFICATE IN CO-OPERATIVE EDUCATION IN RESEARCH
Almaw, Rachel Dagim
Cole, Cayli Venus Jean
Faller-Saunders, Andrew anthony vincent
Krishnanandan, Vaishali Anita
Martins, Luandrya Egea Barbosa
Sherman, Madison Anna Klawitter
Vaz, Desiree Denica

CERTIFICATE IN EXPERIENTIAL EDUCATION
Abouiznied, Hamza Azmi
Bretzlaff, Jocelyn Kendra
Carlson, Shaunessy Shae
Dawdy-Giggal, Jocelynne Emma
Giannopoulos, Anthony John
Karkhanis, Kunal Sanjiv
Kotwall, Taronish Jamsheed
Lurette, Danielle Maggie Yin
Nguyen, Van Thi Thao
Opoka, Victoria Maria
Ragularajah, Kabina
Sahni, Jahnvi
Thomas, Aleesha
Truong, Taylor Mckenzie
Woo, Yik Yee Megan
Yeung, Wesley Hymn

CERTIFICATE IN GLOBAL EXPERIENCE
Anandakumar, Ahrreby Angela
Jaiswal, Twinkle Rajeevkumar
DOCTOR OF PHILOSOPHY

Ammar, Khaled (Computer Science)
"Systems and Algorithms for Dynamic Graph Processing"

Bai, He (Computer Science)
"Novel Methods for Natural Language Modeling and Pretraining"

Delisle, Thierry (Computer Science)
"The Cforall Scheduler"

Eaton, Edward (Computer Science)
"New Design & Analysis Techniques for Post-Quantum Cryptography"

Fang, Xiang (Computer Science)
"A Generalized Blending Scheme for Arbitrary Order of Continuity"

Gabric, Daniel (Computer Science)
"On the Properties and Structure of Bordered Words and Generalizations"

Glasbergen, Bradley James (Computer Science)
"Universal Database System Analysis for Insight and Adaptivity"

Karyakin, Alexey (Computer Science)
"Memory Power Consumption in Main-Memory Database Systems"

Liao, Zhenyu (Computer Science)
"Improved Bayesian Network Structure Learning in the Model Averaging Paradigm"

Naredla, Anurag Murty (Computer Science)
"Algorithms for Geometric Facility Location: Centers in a Polygon and Dispersion on a Line"

Pham, Viet Hung (Computer Science)
"Improving the Reliability of Deep Learning Software Systems"

Sarkar, Atrisha (Computer Science)
"Empirical Game Theoretic Models for Autonomous Driving: Methods and Applications"

Shi, Peng (Computer Science)
"Facilitating Information Access for Heterogeneous Data Across Many Languages"

Wang, Zhao (Computer Science)
"DNA Computing: Modelling in Formal Languages and Combinatorics on Words, and Complexity Estimation"

Xin, Ji (Computer Science)
"Efficient Interference of Transformers in Natural Language Processing: Early Exciting and Beyond"

MASTER OF MATHEMATICS

Abuwala, Hussain Sadiq (Computer Science)

Al-Manasrah, Wael Akram Mohammad (Computer Science)

Alrefai, Ahmad Salam (Computer Science)

Anand, Abhishek (Computer Science - Quantum Information)

Baral, Benjamin Florian Wolff (Computer Science)

Bigdeli, Reza (Computer Science)

Bora, Abhinav (Computer Science)

Curto, Bryant J (Computer Science)

Dadvar, Vargha (Computer Science)

Ding, Yi (Computer Science)

D'Souza, Matthew William (Computer Science)

Du, Xuejun (Computer Science)

Erhabor, Daniel Nkemakolem (Computer Science)

Faraji, Sina (Computer Science)

Feng, Eva Hu (Computer Science)

Ghiassi Nejad, Haudi (Computer Science)

Goertzen, Jason Eamonn Anderson (Computer Science)

Hasrati, Niki (Computer Science)

* – Distinction
† – Dean’s Honours
Hossain, Tamjid (Computer Science – Co-operative Program)
Jahangirzadeh Soure, Ehsan (Computer Science – Co-operative Program)
Kim, Daewoo (Computer Science)
Kong, Xiangzhou (Computer Science - Quantum Information)
Kulkarni, Anuradha Venkatesh (Computer Science)
Lee, Joohan (Computer Science)
Li, Haomin (Computer Science)
Liu, Chang (Computer Science)
Liu, Lixian (Computer Science)
Liu, Runcheng (Computer Science – Co-operative Program)
Majid, Mahbod (Computer Science)
Malekghaini, Navid (Computer Science)
Meidani, Seyed Mehran (Computer Science – Co-operative Program)
Meleshko, Joseph Victor Fiorillo (Computer Science)
Moayyedi, Arash (Computer Science)
Mollazadeh, Ensieh (Computer Science)
Murali, Anupa (Computer Science)
Naman, Omar Fadel (Computer Science)
Ogundepo, Odunayo Jude (Computer Science)
Özdemir, Tümay (Computer Science)
Phan Minh, Linh Nhi (Computer Science – Co-operative Program)
Poon, Edward (Computer Science – Co-operative Program)
Ravi, Vijay (Computer Science)
Saheb Pasand, Ali (Computer Science)
Seifikar, Mahsa (Computer Science)
Singh, Suraj (Computer Science)
Snow, Mallory Alene (Computer Science)
Therien, Benjamin (Computer Science)
Venkatanarayanan, Sruthi (Computer Science)
Vezvaei, Alireza (Computer Science)
Wang, Yiping (Computer Science – Co-operative Program)
Yan, Xinyi (Computer Science – Co-operative Program)
Yang, Yixin (Computer Science)
You, James (Computer Science)
Zabaragh, Saif (Computer Science)
Zhang, Licheng (Computer Science)
Zhang, Xueyan (Computer Science)
Zhao, Leonard (Computer Science)
Zhou, Ziqi (Computer Science)

GRADUATE CERTIFICATE
Mazmudar, Miti (University Teaching)

BACHELOR OF COMPUTER SCIENCE
HONOURS PROGRAM
Adams, Connor Hamilton †
Afroze, Yousuf *
* – Distinction
† – Dean’s Honours
Ayettey, Erasmus Hiro Obido
Bolisetti, Arvind Sai
Budak, Ali
Che, Zhaocheng
Chen, Caroline Jia-Yue (Human-Computer Interaction Specialization – Economics Minor)
Chen, Peiyun
Chen, Yu Hao
Chho, Ishan
Chu, Kevin Yunlong (Economics Minor)†
Cui, Jane (Classical Studies Minor)
de Wit, Alexander James†
Del Rosario, Zaira Zcezanne Rolloque†
Ding, Mengxuan
Ding, Qingting (Data Science)
D’Souza, Danielle Jade*
El-Zeneiney, Mohamed*
Feng, Zijian (Software Engineering Specialization)*
Gong, Yuanyue†
Guo, Runlin Victor†
Han, Tianhao†
Han, Xiao*
Hossain, Ahsan Rakeeb†
Hu, Allen
Hu, Anne (Business Specialization)
Huang, Hao (Economics Minor)
Huang, Jiashen†
Huang, Michael (Combinatorics and Optimization Minor)†
Hussain, Bilaal*
Kapoor, Kabir Singh (Psychology Minor)
Kim, Byunggyu*
Kim, Jihyun *
Kim, Yeri *
Krasnov, Dennis
La, Fiona
Lao, Yiwen
Lei, Willie†
Li, Jacqueline (Business Specialization)*
Li, Simon
Lin, Alisa*
Liu, Hengyu*
Liu, Jason†
Luthra, Aashrit (Business Specialization)
Mai, Qiyuan*
Maulik, Anubhav
Mccuaig, Cameron David†
McQuaide, Isaac John

* – Distinction
† – Dean’s Honours
Ni, Haoyan (Pure Mathematics Minor) †
Pan, Kevin Yihua *
Park, Taeyeong *
Park, Yeeun
Pham, Thang Duc †
Pocol, Sergiu (Combinatorics and Optimization Minor) †
Qin, Zechen
Ren, Nicholas Jianrui †
Sang, Jason Zhichen †
Shahid, Hamzah *
Singh, Aman Pal †
Snider, Caleb Lewis
Sun, Guang Da (Business Option) *
Tang, Amanda *
Tian, Jia Le †
Turner, Maximo Garofalini †
Veluppilai, Vinojan (Statistics Minor) *
Venu, Hrithvik Alex (Combinatorics and Optimization Minor) †
Wang, Colin
Wang, Lanney Fumitsuki
Wang, Ruixuan
Wang, Theodore Luo †
Wang, Yi Nuo (Statistics Minor) †
Wu, Allen †
Wu, Chufan (Statistics Minor) *
Wu, Hancheng *
Xie, Guanyang (Software Engineering Specialization – Combinatorics and Optimization Minor)
Xie, Jerry Jun Rui †
Xu, Hanyu (Pure Mathematics Minor) †
Yang, Andrew Dongtian (Computational Mathematics Minor) †
Yang, Lily (Cognitive Science Minor) *
Yang, Nick KeXu (Human-Computer Interaction Specialization) *
Yang, Xiu (Combinatorics and Optimization Minor) †
Yao, Tianhao *
Ye, William Han Tian
Zeng, Simon
Zhang, Simon Zhong Xing *
Zheng, Baichuan
Zheng, Terry TX (Artificial Intelligence Specialization – Combinatorics and Optimization Minor, Computational Mathematics Minor) †
Zhong, Joey Yi *
Zhong, Putian

HONOURS CO-OPERATIVE PROGRAM
Afsan, Mir Rohan
Ai, Brianna Guan (Combinatorics and Optimization Minor) *
Anas, Emily Ihab Wagdi (Bioinformatics Specialization) *

* – Distinction
† – Dean’s Honours
Araujo, Daniel Amorim (Combinatorics and Optimization Minor) †
Arora, Muskaan *
Arya, Aakarsh †
Aryawan, Thomas Henry
Austin, David Eric (Statistics Minor) *
Azmi, Anf Ali *
Babar, Danyal Ahmed
Bai, Hao Tian *
Bai, Li Dan
Bai, Rong Zhuo (Music Minor) *
Bakshi, Ayon *
Bali, Jananjeet Singh *
Bao, Andy Jie (Business Specialization)
Bei, Clark
Benipal, Uday Singh *
Bishop, William Andrew Scott
Bradley, Maura Elizabeth †
Bruni, Luca Alexander
Bushi, Lorenc (Pure Mathematics Minor) †
Cai, Alice *
Cai, Leo *
Camer, Alexandru *
Cao, Anthony Tan
Cao, Mandy Meng †
Cao, Timothy
Chawla, Parmeet Singh
Chen, Andy
Chen, Angela Muyang *
Chen, Ethan Jien *
Chen, Harrison Haozhe (Combinatorics and Optimization Minor) †
Chen, Runmin *
Chen, SiYao †
Chen, Zhizhou (Economics Minor) †
Cheng, Joseph Sing Leuk *
Cheng, Yuyao *
Chin, Andrew †
Chiu, Andrew *
Chiu, Ernest Chun Tao *
Chow, Ivan Tze Lok *
Chung, Eun Ji †
Chung, Insung
Colborne, Ross Layton (Combinatorics and Optimization Minor)
Costiuc, Daniel Sergiu *
Cui, Sonia *
DaRocha, Michael Lazaro (Software Engineering Option) *
Dhal, Arunika *

* – Distinction
† – Dean's Honours
Dominguez-Schatz, Julian Frank  
(Distinction)  
Du, Hongbo  
DuGe, Bill Sage  
(Faculty)  
Fang, Cindy Yixin  
Fattakhov, Leon  
(Entrepreneurship Minor)  
Fernandes, Skyler Paul  
(Computational Mathematics Minor)  
Fortin, Marc-Olivier  
(Faculty)  
Frumkin, Maxim  
Gandhi, Rushi  
Ge, William  
Geng, Grace  
Ghosh, Rishabh  
Gozali, Raphael Shawn  
(Data Science – Economic Theory Minor)  
Grewal, Nathan Eric  
Grewal, Sherman Singh  
Gu, Stephanie  
Gu, Yixing  
(Pure Mathematics Minor, Physics Minor)  
Guan, Zhanghuihong  
Guo, Landson Tianlang  
(Artificial Intelligence Specialization)  
Han, Ruoxuan  
(Honours)  
Han, Yushuo  
(Data Science – Economics Minor)  
He, Mengyu  
(Combinatorics and Optimization Minor)  
He, Peter  
(Data Science)  
Heo, Yebeom  
Ho, Audrey Yeewai  
Hu, David  
Hu, Jingtong  
Hu, Joseph  
Hu, YiHeng  
Huang, John Yi Rui  
Huang, Liwei  
(Honours)  
Huang, Shao Chen  
(Honours)  
Hudson, Sinclair Strachan Groskorth  
(Artificial Intelligence Specialization)  
Hum, Christopher E N  
(Combinatorics and Optimization Minor)  
Jain, Samta Priya  
(Business Option)  
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(Combinatorics and Optimization Minor, Pure Mathematics Minor)  
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(Combinatorics and Optimization Minor)  
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Jindal, Chirag  
Joseph Byju, Alric  
Kala, Siddharth  
Kamal, Farhan Haidar  
Kang, Grace  
(Kanoria, Mayank  
* – Distinction  
† – Dean’s Honours  
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| Khan, Tamim Mahmud          | *                              |
| Khandaker, Mahdi Kabir     |                                |
| Khazzam, David Aaron       | †                              |
| Kim, Heejae                |                                |
| Kim, Inha Simon            | (Combinatorics and Optimization Minor, Computational Mathematics Minor) † |
| Kona, Susheel Saikanth     | *                              |
| Kong, Deyun                |                                |
| Kong, Edmund Man-Chung     | (Software Engineering Specialization) * |
| Kou, Thomas                | †                              |
| Krishna Prasad, Shreyas    | *                              |
| Krishnan, Pranav           | (Combinatorics and Optimization Minor) † |
| Kulakouski, Daniel George  |                                |
| Lal, Prannoy               | (Human-Computer Interaction Specialization) * |
| Lee, Albert Daniel         | †                              |
| Lee, DongHyun              | †                              |
| Lee, Gyeongwon             | †                              |
| Leung, Samantha Chee Kay   | *                              |
| Li, Jessica Boya           | (Psychology Minor) †           |
| Li, Kevin                  | †                              |
| Li, Kevin                  | †                              |
| Li, Minglei                |                                |
| Li, Nathan                 | †                              |
| Li, Qian                   | *                              |
| Li, Rachel                 | *                              |
| Li, Rolf                   | †                              |
| Li, Ruizhe                 | *                              |
| Li, Yixin                  |                                |
| Li, Yuxuan                 | (Business Specialization) *    |
| Liang, Kathleen            | (Economics Minor) †            |
| Liao, Dai Qing             | (Fine Arts Studio Minor) *     |
| Lim, Zi Wen                | (Entrepreneurship Minor)       |
| Lin, Bowen Yangzhou        |                                |
| Lin, Hanssson Wen Jie      | *                              |
| Lin, Ka Ying Karen         | †                              |
| Liu, Amanda                | (Computational Fine Arts Option) |
| Liu, Da You                | †                              |
| Liu, Feng Hua              | †                              |
| Liu, I-Fu                  | (Combinatorics and Optimization Minor) † |
| Liu, Jinwu                 | (Business Specialization) *    |
| Liu, Qing                  | †                              |
| Liu, Susan                 |                                |
| Liu, Tianhui               |                                |
| Liu, Yu Tong               | (Combinatorics and Optimization Minor) * |
| Liu, Yuxuan                | †                              |
| Lok, Anna                  | *                              |
| Lu, Jinhuan                |                                |

* – Distinction
† – Dean's Honours
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<td>Luczynski, Michael Martin</td>
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<td>Luo, Bowen</td>
<td>(Combinatorics and Optimization Minor) *</td>
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<td>(Data Science) *</td>
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<td>Mahdi, Taaha</td>
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* – Distinction
† – Dean’s Honours
Saebnoori-Zhang, Shayan (Music Minor) *
Safri, Aziz Mujtaba (Economics Minor) *
Sang, Shao Chuan †
Sang, Yi Chen (East Asian Studies Minor) *
Sebastian, Jamie (Economics Minor) *
Sena, Davi Cavalcanti †
Shah, Khubi Umesh *
Shah, Pari †
Shahad, Nabil (Data Science)
Shao, Amy Yuqing (Combinatorics and Optimization Minor) *
Shao, Yu En (Business Specialization)
Sharma, Siddhant *
Shen, Ao *
Shen, Chenyang (Data Science) †
Sheng, James Yanhong
Shi, Pengyuan (Artificial Intelligence Specialization) †
Shi, Richie Hao Jun *
Shi, Yu An (Human-Computer Interaction Specialization)
Shrivastava, Mayank Devesh
Shum, Avery Matthew *
Singh, Sidhartha †
Siwal, Sanya
So, Pak-Ho Lawrence (Business Specialization)
Song, Tang †
Stevanus, Bradley Owen *
Su, Chang (Combinatorics and Optimization Minor) *
Sum, Scott Tian Nan *
Sun, Jesse (Combinatorics and Optimization Minor, Computational Mathematics Minor) †
Sun, Kai (Statistics Minor) †
Sun, Victor Jianzou (Data Science) †
Tai, Angus Si Jun †
Talakshi, Khalid Noor (Software Engineering Specialization – Entrepreneurship Minor)
Tang, Chenchen (Computational Mathematics Minor) †
Tedjosoesilo, Jason (Artificial Intelligence Specialization – Economic Theory Minor) †
Telfer, Patrick Kenneth William †
Teng, Shuyang (Psychology Minor, Cognitive Science Minor) *
Thakore, Manvi Hardikbhai
Toffolo, Lindsay (Combinatorics and Optimization Minor) †
Trieu, Kevin (Political Science Minor) *
Vadrevu, Pranav Sai †
Vasudevan, Arjun (Combinatorics and Optimization Minor, Computational Mathematics Minor) *
Venkataramanan, Varun (English Language and Literature Minor)
Vishrant, Shruti *
Wan, Qianqian *
Wang, Estelle Zhekuan †
Wang, Hanxiang *

* – Distinction
† – Dean’s Honours
Wang, Jingyi (Human-Computer Interaction Specialization) *
Wang, Jonathan Ying (Combinatorics and Optimization Minor, Computational Mathematics Minor) *
Wang, Myoung Hun
Wang, Victor Xingchun (Data Science) *
Wang, William (Combinatorics and Optimization Minor, Computational Mathematics Minor) *
Wang, Willson (Economics Minor) †
Wang, Wilson *
Wang, Yang (Physics Minor) †
Wang, Yuetong †
Wei, Botao (Artificial Intelligence Specialization) †
Wei, Yiyang (Statistics Minor, Economics Minor) *
Wen, Fang Yi
Wen, Kaixin *
Wong, Adam Joseph Luay *
Wong, Christopher Jonathan (Geography and Environmental Management Minor) *
Wu, Francis
Wu, James Haolin
Wu, Jennifer Yu Hsueh *
Wu, Jinkai †
Xi, Clara †
Xia, Yuan Song
Xiang, Yuhua (Data Science) *
Xiang, Zhi Xuan *
Xiao, Yunkai (Data Science – Computational Mathematics Minor) †
Xie, Olivia Liwen *
Xu, Justin (Artificial Intelligence Specialization – Statistics Minor) †
Xu, Mingze (Statistics Minor) †
Xu, Qi
Xu, Vicki (Statistics Minor) †
Xu, Zhanhong †
Xu, Zhongyu †
Yang, Ji Xi †
Yang, Michael Robert
Yang, Yu Zhe *
Yang, Zhengying
Yang, Zi Yue (Psychology Minor)
Yu, Fucheng *
Yu, George *
Yu, Liangkai
Yu, Song Ming (Human-Computer Interaction Specialization)
Yuan, Suofei (Psychology Minor) *
Zeitler, Andrew Stephen *
Zeng, Kairui (Economics Minor) †
Zhai, Eric Baokun †
Zhang, Alvin †
Zhang, An (Data Science – Economics Minor) †

* – Distinction
† – Dean’s Honours
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**BACHELOR OF MATHEMATICS**

**HONOURS PROGRAM**

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**HONOURS CO-OPERATIVE PROGRAM**

* – Distinction  
† – Dean’s Honours
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<td>(Computer Science – Bioinformatics Specialization)</td>
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**BACHELOR OF SOFTWARE ENGINEERING**

**HONOURS CO-OPERATIVE PROGRAM**

Abdi, Syed Hussain Rahber *

Amjad, Mufeez (Combinatorics and Optimization Minor, Computational Mathematics Minor) *†

* – Distinction
† – Dean’s Honours
Amlekar, Ishan  
Asad, Abdullah Bin  
Asad, Shehryar  
Au, Nathan Tinching  
Baines, Orson Andrew  
Bakker, Alex John  
Brown, Bradley Craig Anderson  
Budz, Lucas Joseph  
Cai, Ting  
Campbell, Aidan Joseph  
Cento, Paul Richard Soyland  
Chen, Liujia  
Cheng, Thomas Ho Gee  
Chhabra, Aditya  
Chong, Curtis Ching  
Dietz, Angela Claire  
Dietz, Kara Michelle  
Ding, Cynthia Yiyin  
Du, Julia Youlin  
El Shatshat, Ahmed Ramadan  
Engelman, Brendan Anthony Doshen  
Feng, Ruichen  
Finn, Sterling Edward  
Granstrom, Katherine Daring  
Guo, Ethan Haian  
Hachmer, Nicholas Fritz  
Hacker, Serena Esther  
Hao, Han  
He, Yu Chen  
Huang, Jin Cong  
Jamil, Rafit Farhan  
Jiang, Michael Xiheng  
Joffe, Zachary Max  
Johnston, Nicholas  
Joksimovic, Danilo  
Jung, Tony Jun Ho  
Juravsky, Jordan Benjamin  
Kattukudiyil, John Sabu  
Keung, Haydn  
Li, Bjon Guobin  
Li, Kevin Ye Jie  
Li, Hannah Kexin  
Li, Jianyan  
Li, Peggy  
Li, Selina Keyue  

* – Distinction  
† – Dean’s Honours

(Human-Computer Interaction Specialization)  
(Honours & Joint Honours Combinatorics and Optimization)  
(Music Minor)  
(Computational Mathematics Minor, Combinatorics and Optimization Minor)  
(Artificial Intelligence Option)
Liao, Yuan
Liao, Zi Yu
Liu, Jin Yang
Lu, David Anbo
Luan, Yuyu *(Human-Computer Interaction Specialization)†
Ma, Alan Xiaorui
Mahmud, Atif Arshad *(Honours & Joint Honours Combinatorics and Optimization)*
Mohamed, Lukman
Momi, Shahbaz Singh†
Morin, Amanda Susan Margaret
Nadal, Robert Mario†
Niu, Mei Yi†
O'Neil, Marcel Donald†
Ou, Danny
Park, Seong Min
Patel, Dhvani
Patel, Mann Dilip Kumar†
Pinto, Tyler Justin *(Honours & Joint Honours Combinatorics and Optimization)†
Qin, Michael
Reiter, Damian Matthew†
Reiter, Justin David Valerio*
Riggs, Brayden
Sandhu, Saman Singh
Sathish, Chandana *(Management Sciences Option)*
Saxena, Akshay
Sayeed, SK Sadman*
Shah, Hemit*(Artificial Intelligence Option)†
Shahbaz, Wais*(Artificial Intelligence Specialization – Combinatorics and Optimization Minor, Statistics Minor, Computational Mathematics Minor)†
Shen, Luyi
Singh, Tej Partap
Subramanian, Vikram Nachiappan
Sun, Ellen
Tan, Yiming *(Combinatorics and Optimization Minor, Computational Mathematics Minor)*
Tao, Emily†
Tapia, Aliqyan†
Tascioglu, Tony*
Thomas, Toby James
Varkiani, Sherwin
Wang, Huihong *(Computational Mathematics Minor)†
Wang, Ruichen
Wang, Siyuan
Weitzman, Eric
Wu, Benjamin Jialong *(Artificial Intelligence Specialization & Joint Honours Combinatorics and Optimization)†
Wu, Frank†
Yadav, Mira Paresh†

* – Distinction
† – Dean’s Honours
Yamanaka, Mio
Yan, Ruomei
Yao, Jing Hao
Yu, Jerry Rundong
Zadarko, Juliana Helene
Zhang, Isabel
Zhang, Yifei
Zhao, Yusu (Artificial Intelligence Option)
Zheng, Linda Linjun
Zhu, Kevin (Artificial Intelligence Option)
Zhohar, Ethan David

DIPLOMA IN CREATIVE WRITING

Wu, Hancheng

DIPLOMA IN FRENCH LANGUAGE I

Kim, Heejae
Yang, Zhengying

DIPLOMA IN JAPANESE LANGUAGE I

He, Mengyu
Jiang, Hui
Lao, Yiwen
Li, Yixin
Wu, Jinkai
Yang, Ji Xi
Zhāng, Yìlín
Zhou, You
Zhu, Yuhong

DIPLOMA IN JAPANESE LANGUAGE II

Lee, DongHyun

DIPLOMA IN SPANISH LANGUAGE I

Wang, Estelle Zhekuan

DIPLOMA IN SUSTAINABILITY

Dietz, Angela Claire
Dietz, Kara Michelle
Granstrom, Katherine Daring
Wu, Benjamin Jialong

CERTIFICATE IN CO-OPERATIVE EDUCATION IN RESEARCH

Ruza, Tiadora Valentina

CERTIFICATE IN EXPERIENTIAL EDUCATION

Kapoor, Kabir Singh

* – Distinction
† – Dean’s Honours
CERTIFICATE IN GLOBAL EXPERIENCE

Fang, Cindy Yixin
Wang, Estelle Zhekuan

* – Distinction
† – Dean’s Honours
DOCTOR OF PHILOSOPHY

Araiza Iturria, Carlos Andrés (Actuarial Science)
"Discrimination in Insurance Pricing"

Li, Wenyuan (Actuarial Science)
"Individual Insurance Choice: A Stochastic Control Approach"

Meng, Yechao (Actuarial Science)
"Mortality Prediction Using Statistical Learning Approaches"

Shuldiner, Pavel (Statistics)
"A Mathematical Foundation for the Use of Cliques in the Exploration of Data With Navigation Graphs"

Sun, Zhaohan (Statistics)
"Causal Inference and Matrix Completion with Correlated Incomplete Data"

MASTER OF DATA SCIENCE AND ARTIFICIAL INTELLIGENCE

Ambekar, Ishan (Co-operative Program)
Anugu, Ankitha (Co-operative Program)
Bhalani, Himanshu (Co-operative Program)
Dionne-Laforest, Salomé (Co-operative Program)
Falcao, Samantha Edward (Co-operative Program)
Gavali, Hrithik Laxmikant (Co-operative Program)
Gillich, Peter Manfred (Co-operative Program)
Gowda, Sinchana (Co-operative Program)
Hanes, Hendrix Daniel (Co-operative Program)
Huebner, Erik Michael (Co-operative Program)
Islam, A S M Sohidull (Co-operative Program)
Kurdyak, Robert Colton (Co-operative Program)
Lai, Elbert (Co-operative Program)
Lin, Yi (Co-operative Program)
Lin, Yun Zhi (Co-operative Program)
Ma, Paul Yu-Bo (Co-operative Program)
McMullen, Cameron Rae (Co-operative Program)
Ni, Renjie (Co-operative Program)
Patel, Tashrish (Co-operative Program)
Qi, Yinzhou (Co-operative Program)
Ravichandran, Akshaya (Co-operative Program)
Saini, Jessica (Co-operative Program)
Shivakumar, Rithika (Co-operative Program)
Wang, Huanqiu (Co-operative Program)
Woo, Min Gyu (Co-operative Program)
Wu, Jingyi (Co-operative Program)
Wu, Meng (Co-operative Program)
Wu, Mengqi (Co-operative Program)
Xiao, Yaochen (Co-operative Program)
Xu, Sijie (Co-operative Program)
Xue, Yulin (Co-operative Program)
Yang, Chengzhang (Co-operative Program)

MASTER OF MATHEMATICS

Bobotsis, Christopher James (Data Science)

* – Distinction
† – Dean’s Honours
Feng, Xingjie  (Statistics)
Kapoor, Vega  (Actuarial Science)
Lin, Jialu  (Statistics)
Marevci, Abetare  (Statistics)
Ramkissoon, Jonathan  (Statistics)
Shi, Haoming  (Statistics)
Sun, Jinglan  (Statistics)
Wang, Xiaoya  (Biostatistics)
Yang, Tiancheng  (Statistics)
Yu, Tingzhou  (Statistics)
Zhang, Chuanlong  (Actuarial Science)
Zhang, Shengning  (Actuarial Science)
Zhao, Yanwen  (Statistics)

MASTER OF QUANTITATIVE FINANCE

Cheng, Jiayi
Giblin, Thomas Gerald
Li, Yizhen
Li, Zehao
Liu, Yunfeng
Long, Ruiqi
Love, Gregory Ross
Peng, Jiaqi
Seifi, Seyed Mohammad Mohsen
Shan, Guowei
Si, Muyao
Tsang, Yin Lam
Wang, Ziwei
Wu, Tianyu
Wu, Yue
Xiong, Yiru
Yin, Yaolun
Zhang, Shun

BACHELOR OF COMPUTER SCIENCE

HONOURS PROGRAM

Cheng, Guanlin  (Business Administration and Computer Science) *
Ding, Yilin  (Business Administration and Computer Science) †
Han, Justin  (Business Administration and Computer Science) *
Liu, Siyu  (Business Administration and Computer Science) *
Shi, Joyce  (Business Administration and Computer Science – Combinatorics and Optimization Minor)
Shikher, Orel  (Business Administration and Computer Science)
Sūn, Yuxiāng  (Business Administration and Computer Science) *
Yu, Lichen  (Business Administration and Computer Science – Software Engineering Specialization) *
Zhang, Jing Ting  (Business Administration and Computer Science – Human-Computer Interaction Specialization) *

* – Distinction
† – Dean’s Honours
HONOURS CO-OPERATIVE PROGRAM

Chen, Jacqueline Rong (Business Administration and Computer Science) †
Desai, Ishwar (Business Administration and Computer Science) †
Huang, Chengjie (Business Administration and Computer Science – Software Engineering Specialization) †
King, William Long (Business Administration and Computer Science) *
Lin, Zhang Miao (Business Administration and Computer Science) †
McNamee, David Patrick (Business Administration and Computer Science) *
Mistry, Maitry (Business Administration and Computer Science) †
Oza, Yash Nitin (Business Administration and Computer Science) *
Patel, Vishv (Business Administration and Computer Science) *
Qin, Albert (Business Administration and Computer Science) *
Ren, Shumin (Business Administration and Computer Science) †
Song, Jiaqi (Business Administration and Computer Science)
Weintraub, Daniel (Business Administration and Computer Science)
Yang, Shida (Business Administration and Computer Science – Software Engineering Specialization) *
Zhang, Michael (Business Administration and Computer Science) †
Zhang, Yuanhong (Business Administration and Computer Science & Honours Data Science) †
Zou, Nicole (Business Administration and Computer Science) *

BACHELOR OF MATHEMATICS

GENERAL PROGRAM – Three Year

Ali, Agha Muneeb
Cao, Wei
Chao, Kuan-Chieh *
Dai, Xuemeng
Datars, Isabel Lau
Fan, Bopu
Hua, Wesley Yang
Hutchinson, Cassi-Ann
Jesun, Sunjack
Kundra, Varun
Kwon, Sun Bom
Lee, Joonho
Li, Zhiyuan
Liang, Youqi
Mann, Achint †
Manoil, Stefan
Masoud, Majd Ahmad
Mooneegadoo, Gomaathi
Mujahid, Zuhayr Shadaab
Naqvi, Syed Muhammad Mustafa Haider
Nguyen, Jonathan
Park, Jun-Hong
Patel, Dhaval Rajeshkumar
Pham, Lisa Bich Ha
Punia, Eashan

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**GENERAL CO–OPERATIVE PROGRAM – Three Year**

**HONOURS PROGRAM**

- Anggitawijaya, Audrey (Actuarial Science & Honours Statistics) *
- Au, Bryan Jak Gwan (Statistics & Honours Computational Mathematics – Computing Minor)
- Belimova, Tatiana (Statistics – Economics Minor) †
- Bu, Dan (Mathematical Studies)
- Bulava, Grigorii (Biostatistics & Joint Honours Biology)
- Cato, Shiyan Hilary (Statistics)
- Chadha, Japjeet Singh (Business Administration and Mathematics)
- Chen, Dao Qin (Statistics – Actuarial Science Minor)
- Chen, Jiaqi (Actuarial Science – Statistics Minor) *
- Chen, Yunchao (Statistics)
- Cheng, Jiting (Business Administration and Mathematics & Honours Statistics) †
- Chong, Callista (Actuarial Science – Finance Specialization & Honours Statistics) *
- Choo, Benjamin Arthur (Business Administration and Mathematics)
- Cui, Yunpeng (Statistics)
- Dai, Wenbo (Actuarial Science & Honours Statistics) *
- Dai, Yuxiang (Actuarial Science & Honours Statistics) *
- Dawe, Michael Joseph (Business Administration and Mathematics) *
- Deng, Xiaoyu (Business Administration and Mathematics & Honours Actuarial Science – Statistics Minor)
- Devasar, Virat (Statistics)
- Dong, Shu (Actuarial Science & Honours Statistics) *
- Ehirim, Chijioke Pascal (Statistics – Computing Minor)
- Emerson, Kieran McIntyre (Actuarial Science – Combinatorics and Optimization Minor)
- Feng, Wanghan (Mathematical Studies - Business Specialization)
- Fletcher, William (Mathematical Studies)
- Fong, Michael (Statistics)
- Gao, Yexuan (Mathematical Studies)
- Gao, Yifan (Actuarial Science/Predictive Analytics Option & Honours Statistics) *
- Gibson, Kimberly (Mathematical Studies – English Language and Literature Minor, Applied Mathematics Minor)
- Gu, Yunfei (Actuarial Science & Honours Statistics)
- Guo, Weiyi (Mathematical Studies – Statistics Minor)
- Han, Jamie Jae-Ung (Mathematical Studies – Combinatorics and Optimization Minor, Computing Minor)

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Liu, Simon (Actuarial Science/Predictive Analytics Option) *
Liu, Yu Qing (Mathematical Studies – Actuarial Science Minor)
Lock Son, Andrew Shian Min (Actuarial Science & Honours Statistics) †
Loubenski, Lilia (Actuarial Science & Honours Statistics) *
Loy, Ka Hon Gareth (Actuarial Science & Honours Statistics) †
Lu, Kai (Statistics)
Luo, Anqi (Actuarial Science & Honours Statistics) †
Luo, Fresa Hong Yi (Actuarial Science/Predictive Analytics Option & Honours Statistics) *
Luo, Qizi (Business Administration and Mathematics & Honours Combinatorics and Optimization – Statistics Minor) †

* – Distinction
† – Dean’s Honours
<table>
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<th>Name</th>
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<tr>
<td>Lyou, Jin</td>
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Trang, Sydney (Actuarial Science & Honours Statistics) *
Tripathi, Vinay Krishna (Business Administration and Mathematics & Honours Statistics – Actuarial Science Minor) *
Tulloch, Joshua William (Actuarial Science & Honours Statistics)
Wang, Chengzhi (Statistics & Honours Computational Mathematics) †
Wang, Chenxin (Statistics & Honours Combinatorics and Optimization) †
Wang, Jiayi (Data Science – Combinatorics and Optimization Minor, Computational Mathematics Minor) †
Wang, Joseph Hao (Data Science – Economics Minor) †
Wang, Sijia (Statistics – Applied Mathematics Minor, Physics Minor) †
Wang, Yichen Carolyn (Statistics – Computing Minor) *
Wang, Yifan (Actuarial Science – Statistics Minor) *
Wang, Zi jian (Actuarial Science & Honours Statistics – Economics Minor)
Wang, Ziyi (Mathematical Studies – Pure Mathematics Minor, Computer Science Minor) †
Wei, Jia Ying (Actuarial Science & Honours Statistics) *
Wong, Ann Gie (Statistics – Computing Minor) *
Wong, Brennan Kam Hei (Actuarial Science & Honours Statistics)
Wong, Wilson Pak Long (Statistics)
Wu, Chu Xin (Actuarial Science & Honours Statistics) *
Wu, Haohui (Mathematical Studies – Computing Minor)
Wu, Jiang (Statistics)
Wu, Ryan Peiyu (Statistics) *
Wu, Yimo (Actuarial Science & Honours Statistics) †
Wu, Yuchuan (Data Science – Applied Mathematics Minor) *
Xiao, Bing Nan (Statistics – Computing Minor)
Xie, Yuhan (Statistics & Honours Combinatorics and Optimization – Computational Mathematics Minor) *
Xu, Haoxiang (Business Administration and Mathematics) *
Xu, Henry Shenghao (Statistics – Computational Mathematics Minor)
Xu, Jingwen (Actuarial Science & Honours Statistics) †
Xu, Niya (Mathematical Studies - Business Specialization – Computing Minor)
Xu, Yiwei (Statistics)
Yan, Yuyi (Statistics) *
Yang, Qianyu (Data Science) *
Yang, Yinze (Statistics – Computing Minor)
Yang, Yun Fan (Actuarial Science) †
Yao, Chenlong (Statistics & Honours Combinatorics and Optimization) *
Ye, DeXuan (Statistics & Honours Actuarial Science) *
Yong, Celine Chee-Lin (Statistics – Computing Minor, Economic Theory Minor)
You, Tracy (Actuarial Science/Finance Option – Management Studies Minor) †
Yu, Jia (Statistics) *
Yuan, Hao (Data Science) *
Yuan, Lilian Lynette Quan (Statistics – Computer Science Minor) †
Zelle, Cole David (Actuarial Science & Honours Statistics)
Zhan, Jiahao (Statistics)
Zhang, Daniel (Statistics – Computing Minor)
Zhang, Minqi (Actuarial Science & Honours Statistics) †
Zhang, Yiming (Actuarial Science & Honours Statistics) *
Zhang, Zeheng (Statistics & Honours Computational Mathematics – Combinatorics and Optimization Minor)

* – Distinction
† – Dean’s Honours
Zhang, Zexiang  (Actuarial Science & Honours Statistics) *
Zhang, Zirui  (Statistics) *
Zhao, Hexuan  (Statistics) *
Zhao, Jie  (Actuarial Science & Honours Statistics) *
Zhao, Yutong  (Statistics – Economics Minor) *
Zheng, Yuhang  (Statistics)
Zhou, Anqi  (Actuarial Science & Honours Statistics) *
Zhou, Jie  (Actuarial Science & Honours Statistics) †
Zhou, Qinyi  (Statistics & Honours Computational Mathematics) *
Zhou, Qiran  (Actuarial Science & Honours Statistics)
Zhu, Meiting  (Statistics & Honours Combinatorics and Optimization – Pure Mathematics Minor) *
Zhu, Terris  (Actuarial Science)
Zhu, Ya  (Actuarial Science & Honours Statistics) †
Zhu, Yiqing  (Actuarial Science – Predictive Analytics Specialization & Honours Statistics) *
Zohair, Ali  (Statistics – Computing Minor, Economics Minor) *
Zou, Lily  (Biostatistics – Pure Mathematics Minor) *
Zou, Xiaoyu  (Data Science) *

DIPLOMA IN FRENCH LANGUAGE II
Han, Jamie Jae-Ung

DIPLOMA IN JAPANESE LANGUAGE I
Song, Jiaqi
Tang, Yijun

DIPLOMA IN JAPANESE LANGUAGE II
Zhou, Anqi

CERTIFICATE IN EXPERIENTIAL EDUCATION
Belimova, Tatiana

CERTIFICATE IN GLOBAL EXPERIENCE
Li, Nan
Xie, Yuhan

* – Distinction
† – Dean’s Honours
DOCTOR OF PHILOSOPHY

Assem Abd-AlQader Mahmoud, Amena
"Edge-Disjoint Linkages in Infinite Graphs"
(Combinatorics and Optimization)

Boulter, Eric Thomas
"Vector Bundles on Non-Kähler Elliptic Surfaces"
(Pure Mathematics)

Donganont, Mana
"Consensus Problems in Hybrid Multi-Agent Systems"
(Applied Mathematics)

Im, Haesol
"Implicit Loss of Surjectivity and Facial Reduction: Theory and Application"
(Combinatorics and Optimization)

Meng, Yiming
"Bifurcation and Robust Control of Instabilities in the Presence of Uncertainties"
(Applied Mathematics)

Milne, Russell
"A Spatially Explicit Modeling Approach for Predicting and Managing the Effects of Coral Reef Stressors"
(Applied Mathematics)

Nabergall, Lukas
"Enumerative Perspectives on Chord Diagrams"
(Combinatorics and Optimization)

Nourian, Vahid
"Modeling and Simulation of Uni- and Multi-Flagellar Bacterial Locomotion in a Viscous Fluid"
(Applied Mathematics)

Petrie, James Ian Mackie
"Decentralized Contact Tracing Protocols and a Risk Analysis Approach to Pandemic Control"
(Applied Mathematics)

Smith-Roberge, Julien
"Microcolony Dynamics: Motion from Growth, Order, and Incompressibility"
(Applied Mathematics)

Sun, Hao
"Transversal Problems in Sparse Graphs"
(Combinatorics and Optimization)

MASTER OF MATHEMATICS

Adeku, Funmilayo Lateefat
(Combinatorics and Optimization – Co-operative Program)

Bedsole, Carter James
(Combinatorics and Optimization)

Bernakevitch, Andrew Scott Christian
(Applied Mathematics)

Carbonero Gonzales, Alvaro Rodrigo
(Combinatorics and Optimization)

Cheng, Jiahui
(Combinatorics and Optimization)

D’Astous, Justin
(Computational Mathematics – Co-operative Program)

Hamed, Waqas Bin
(Computational Mathematics – Co-operative Program)

Hwang, Steven Munso
(Combinatorics and Optimization)

Iam, Hoi Cheong
(Combinatorics and Optimization)

Kalichman, David
(Combinatorics and Optimization)

Koerts, Hidde Oscar
(Combinatorics and Optimization)

Li, Zhuqing
(Applied Mathematics)

Livochka, Anastasiiia
(Computational Mathematics – Co-operative Program)

Mao, Brian
(Applied Mathematics – Co-operative Program)

McConville, Spencer
(Computational Mathematics – Co-operative Program)

McLaren, Darian Ashe
(Applied Mathematics - Quantum Information)

Oluyemi, Momoiyioluwa Adeyemi
( Applied Mathematics – Co-operative Program)

Pan, Guanting
(Computational Mathematics – Co-operative Program)

Preciado Rivas, Maria Rosa
( Applied Mathematics)

Quartz, Thanin
(Applied Mathematics)

Rivera Omaha, Maria Fernanda
(Combinatorics and Optimization)

Rundström, Mathieu Erik Charles
(Combinatorics and Optimization)

Sadat Hosseini Khajouei, Dorsa
(Applied Mathematics)

Siu, Kevin
(Applied Mathematics)

Smith, Delaney Grace
( Applied Mathematics – Co-operative Program)

Smolcic, Josip
(Combinatorics and Optimization)

* – Distinction
† – Dean’s Honours
Vladusic, Stefan  
Wan, Clement  
Wang, Xuetong  
Wilson, Spencer MacLaren  
Wong, Cassandra  
Yalsavar, Maryam  
Yao, Leon Chang Liang  
Yusim, Samuel  
Zhang, Niejia

(Computational Mathematics – Co-operative Program)
(Pure Mathematics)
(Computational Mathematics)
(Combinatorics and Optimization)
(Computational Mathematics – Co-operative Program)
(Computational Mathematics – Co-operative Program)
(Computational Mathematics – Co-operative Program)
(Combinatorics and Optimization)
(Computational Mathematics)

MASTER OF MATHEMATICS FOR TEACHERS
Bethune, Mark Philip
Colosimo, Adriano
Delaney, Jenna Marie
Dickson, Chris
Dottin, Ruth
Ferreira, Filipe Jesus
Frenette, Andree Danielle
Fyrrar, Karissa
Gilchrist, Krista Lynn
Griffiths, Gwendolyn Keely
Han, Miguel
Harrison, Ashley Lee-Anne
Ingraham, Tia Lynn
Kim, Doyoon
Lee, Deborah Borah
Love, Alexander Rennie
MacPhee, Kathleen Elizabeth
Manuel, Tesa
Mcnamara, Angela
Mirza, Batul Fatima
Perren, Alexander Walter
Probst, Jacqueline Renee
Rowe, William Watson
Smith, Ronald Kyle
Trochanowski, David
Zheng, Hairong

GRADUATE CERTIFICATE
Chugunova, Marina
(University Teaching)

BACHELOR OF MATHEMATICS
HONOURS PROGRAM
Ahady, Arash  
Ala, Michael Francesco  
Anand, Vedika  
Ao, Hang Cheng

(Pure Mathematics – Statistics Minor)
(Pure Mathematics – Applied Mathematics Minor) *
(Computational Mathematics – Statistics Minor, Economics Minor)
(Computational Mathematics & Honours Statistics) *

* – Distinction
† – Dean’s Honours
Bader, Mujtaba Alfateh  (Applied Mathematics)
Bai, Xinwei  (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization & Honours Statistics) †
Braga, Jakob Nicholas  (Mathematical Physics) *
Chen, Jiahuang  (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization)
Chen, Junze  (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization)
Chen, Yuyuan  (Information Technology Management)
Chen, Zhiyang  (Pure Mathematics & Honours Combinatorics and Optimization – Philosophy Minor) *
Cheng, Steven Kevin  (Combinatorics and Optimization & Honours Computational Mathematics – Computer Science Minor)
Cheng, Yujin  (Pure Mathematics)
Cheung, Ian  (Mathematical Finance – Computing Minor) †
Darbasie, Marc Daniel Nicholas  (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization)
Ding, Zijun  (Mathematical Finance) *
Dorfman, Adam  (Mathematical Physics) *
Dou, Ruihan  (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization & Honours Statistics) †
Du, Jing Huan  (Joint Pure Mathematics & Joint Honours Combinatorics and Optimization) †
Du, Qianhui  (Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization)
Du, Qianqian  (Mathematical Economics) *
Eaton, Sydney  (Combinatorics and Optimization)
Faassen, Alexander Derek Rens  (Computational Mathematics – Statistics Minor, Economics Minor) *
Farias, Justin Michael  (Applied Mathematics – Physics Specialization) *
Fu, Yen-Kang  (Pure Mathematics & Honours Combinatorics and Optimization) †
Gao, Ang  (Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization) *
Gu, Xiayu  (Mathematics/Business Administration)
Han, Yiling  (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization) †
Hu, Liwen  (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization) †
Hu, Mingyuan  (Computational Mathematics)
Huang, Haoyi  (Mathematics/Business Administration)
Jeffries, Shannon Alexa  (Combinatorics and Optimization – Pure Mathematics Minor) †
Ji, Xinyi  (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization & Honours Statistics)
Jia, Xi Man  (Mathematics/Business Administration – Statistics Minor)
Jiang, Jing  (Applied Mathematics & Honours Statistics)
Jiang, Jun  (Mathematical Finance) †
Jiang, Weikang  (Computational Mathematics & Honours Statistics)
Kaur, Ambra  (Mathematics/Business Administration – Computing Minor)
Kim, ChanYong  (Combinatorics and Optimization)

* – Distinction
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<td>Wang, Junrong</td>
<td>(Mathematics/Financial Analysis &amp; Risk Management-Professional Risk Management Specialization – Statistics Minor) †</td>
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<td>(Mathematical Physics – East Asian Studies Minor)</td>
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* – Distinction
† – Dean’s Honours
Yang, Zhirui
(Mathematics/Business Administration)

Yao, Huilin
(Mathematics/Financial Analysis & Risk Management - Professional Risk Management Specialization & Honours Statistics) *

Ye, Huiyi

Ye, Liujia
(Mathematics/Financial Analysis & Risk Management - Chartered Financial Analyst Specialization) †

Yin, Pinhua
(Mathematics/Financial Analysis & Risk Management - Professional Risk Management Specialization – Statistics Minor) †

Yin, Yijin
(Mathematics/Financial Analysis & Risk Management - Professional Risk Management Specialization – Statistics Minor) *

Yuan, Jianhao
(Computational Mathematics – Statistics Minor, Computing Minor, Combinatorics and Optimization Minor)

Zhang, Alan Yilong
(Pure Mathematics)

Zhang, Chenan
(Mathematics/Financial Analysis & Risk Management - Chartered Financial Analyst Specialization) *

Zhang, Jiacheng
(Mathematics/Financial Analysis & Risk Management - Professional Risk Management Specialization & Honours Statistics)

Zhang, Jiakai

Zhang, Jingyao
(Mathematics/Financial Analysis & Risk Management - Professional Risk Management Specialization & Honours Statistics)

Zhang, Songyue
(Computational Mathematics)

Zhang, Xiaojing
(Mathematical Finance & Honours Statistics) †

Zhang, Xinyi
(Mathematics/Financial Analysis & Risk Management - Professional Risk Management Specialization & Honours Statistics) †

Zhang, Xinyue
(Applied Mathematics – Economics Specialization) *

Zhang, Yihui
(Combinatorics and Optimization – Computational Mathematics Minor) *

Zhang, Yuanzhe
(Applied Mathematics) *

Zhang, Yuetlan
(Mathematics/Financial Analysis & Risk Management - Professional Risk Management Specialization) *

Zhang, Yuxia
(Combinatorics and Optimization & Honours Computational Mathematics)

Zhao, Qicheng
(Mathematics/Financial Analysis & Risk Management - Professional Risk Management Specialization – Statistics Minor) †

Zhao, Ranran
(Pure Mathematics) *

Zhao, Wenhan
(Combinatorics and Optimization) *

Zhao, Yichun

Zhao, Yixing
(Computational Mathematics – Combinatorics and Optimization Minor, Computing Minor, Statistics Minor) †

Zhao, Ziqing
(Mathematics/Business Administration – Statistics Minor)

Zhu, Yonglai
(Mathematical Finance & Honours Actuarial Science) †

HONOURS CO-OPERATIVE PROGRAM

Alani, Navaz
(Combinatorics and Optimization) *

Allen, Connor John
(Applied Mathematics)

Aneja, Harsimran Singh
(Mathematics/Financial Analysis & Risk Management - Professional Risk Management Specialization – Statistics Minor) †

Ashar, Unnati Atul
(Mathematics/Financial Analysis & Risk Management - Chartered Financial Analyst Specialization) *

Badhol, Hartik Singh
(Mathematics-Chartered Professional Accountancy)

* – Distinction
† – Dean’s Honours
Badovinac, Ryan Michael
(Mathematics-Chartered Professional Accountancy – Computing Minor)

Bai, Fang Rui
(Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization) *

Barredo, Renee Ysabelle
(Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization – Statistics Minor) *

Befekadu, Jonathan Get
(Mathematical Physics) *

Benedict, Samuel
(Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization & Honours Statistics – Computational Mathematics Minor) †

Bhandari, Tunisha
(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization)

Bishop, John Bruce
(Mathematical Physics)

Briggs, Matthew Robert
(Combinatorics and Optimization)

Bustos Bueno, Valerie Denisse
(Pure Mathematics – Computing Minor) *

Cai, Keke
(Mathematics/Chartered Professional Accountancy - Finance Option)

Chen, Bingzhi
(Pure Mathematics – Computing Minor, East Asian Studies Minor) *

Chen, Danny
(Mathematics-Chartered Professional Accountancy)

Chen, Guanhan
(Applied Mathematics)

Chen, Jason D
(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization)

Chen, Joshua Jiajie
(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization)

Chen, Siyan
(Mathematics/Chartered Professional Accountancy - Finance Option) *

Chen, Yaqi
(Mathematics-Chartered Professional Accountancy)

Chen, YiXuan
(Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization & Honours Statistics) †

Chen, Zhiyi
(Mathematics/Chartered Professional Accountancy - Finance Option) *

Cheng, Yiwen

Cheung, Benedict Pak Tak
(Mathematics-Chartered Professional Accountancy) *

Deering, Rachel Marie
(Mathematics-Chartered Professional Accountancy)

Dhoomon, Vaibhavi

Ding, Xinwen
(Applied Mathematics & Honours Combinatorics and Optimization & Honours Computational Mathematics) †

Elias, Evelyn
(Mathematics/Chartered Professional Accountancy - Finance Option)

Elkateb, Reem
(Information Technology Management)

Equenly, Veronique
(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization)

Fan, Lijie
(Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization & Honours Statistics) *

Fu, Yuchen
(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization)

Gong, Yi
(Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization)

Gouchtchina, Alexandra
(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization)

Guo, Shujun
(Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization – Statistics Minor) *

Gutman, Yuval Or

Han, Xiaoyu
(Mathematics/Business Administration)

Ho, Chun Wei
(Mathematics/Chartered Professional Accountancy - Finance Option)

* – Distinction
† – Dean’s Honours
Ho, Wing Yee Victoria (Mathematics/Chartered Professional Accountancy - Finance Option) *
Hu, Guangqiuse (Computational Mathematics & Joint Honours Statistics – Computer Science Minor) *
Hu, Yiwen (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization – Statistics Minor) †
Huab, Daniel Reyes (Mathematics/Teaching – Pure Mathematics Minor, French Minor)
Huang, Huiwen (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization)
Huang, Qizhao (Pure Mathematics & Honours Mathematical Physics & Joint Honours Combinatorics and Optimization – Computer Science Minor) †
Husein, Sophia (Combinatorics and Optimization & Honours Computational Mathematics – Statistics Minor) *
Ikwan, Rafelia (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization – Statistics Minor)
Ishtiaq, Simrah (Mathematics/Business Administration)
Jiang, Kelan (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization – Statistics Minor) †
Jiang, Kerui (Combinatorics and Optimization – Computational Mathematics Minor)
Jiang, Zining (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization)
Jin, Dian (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization – Statistics Minor) †
Jin, Xi (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization)
Jin, Yushan (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization) *
Johnstone, Owen Frederick (Mathematics-Chartered Professional Accountancy)
Kandola, Triman Singh (Computational Mathematics – Combinatorics and Optimization Minor, Computing Minor)
Kaur, Hameet (Mathematics-Chartered Professional Accountancy)
Khan, Sameer Ali (Information Technology Management)
Laframboise, Erik Thomas (Mathematics-Chartered Professional Accountancy)
Lall, Isaac (Mathematics/Business Administration)
Lam, Anson Ho Man (Mathematics-Chartered Professional Accountancy) *
Lee, Joh Ann (Computational Mathematics & Honours Statistics – Economics Minor) *
Lee, Martin Lok Tin (Pure Mathematics & Honours Combinatorics and Optimization) *
Li, Gan Lu (Mathematics/Teaching – Computing Minor, Pure Mathematics Minor) *
Li, Huixin (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization – Statistics Minor) *
Li, Muzihe (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization – Statistics Minor) †
Li, Yaotong (Information Technology Management)
Liang, Jingya (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization) *
Liu, Chang (Computational Mathematics & Honours Statistics – Computing Option)
Liu, Haiyue (Combinatorics and Optimization & Honours Statistics) *
Liu, Kevin (Information Technology Management)
Liu, Nicholas Yang (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst
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<th>Name</th>
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<td>Liu, Zhenyang</td>
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* – Distinction
† – Dean’s Honours
Romshoo, Faisal (Pure Mathematics) †
Samarasena, Dasni Senara (Mathematics/Business Administration) *
Sandhu, Sumeet Raj Singh (Computational Mathematics – Statistics Minor, Computing Minor)
Schmider, Jiayun (Mathematical Physics – Computing Minor) †
Shan, Wenqi (Pure Mathematics & Honours Combinatorics and Optimization) *
Shen, Chen (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization) *
Shen, Siyun (Computational Mathematics & Joint Honours Computer Science – Combinatorics and Optimization Minor) †
Sheth, Samyak Sanjeev (Computational Mathematics – Statistics Minor, Computing Minor, Economics Minor) *
Shi, Man Xin (Mathematics-Chartered Professional Accountancy)
Simmons, Miles Jude (Combinatorics and Optimization – Biology Minor) †
Smith, Andrew Tyler (Mathematics-Chartered Professional Accountancy) *
Su, Jimmy (Mathematics-Chartered Professional Accountancy)
Sun, Henry Haobing (Mathematics-Chartered Professional Accountancy)
Sun, Yiqiao (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization – Statistics Minor) *
Sun, Yunyi (Mathematics/Chartered Professional Accountancy - Finance Option) *
Tang, Tianyi (Computational Mathematics – Physics Minor)
Tian, Haiqi (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization – Statistics Minor) *
Tingling, Gareth Alexander (Mathatical Finance)
To, Daniel Yue Hei (Mathematics/Business Administration)
Tu, Chuan (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization & Honours Biostatistics) †
Tu, Julia (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization – Computing Minor) *
Vadigi, Suhaas Venkata Sai (Computational Mathematics)
Vaid, Yuki (Mathematics/Business Administration – Statistics Minor)
Vasishth, Kartikya (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization)
Vaux, Haley Nicole (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization) †
Veerani, Sara (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization – Statistics Minor) *
Verhaar, Tyler Magnus (Mathatical Finance & Honours Statistics) *
Vu, Thien Ngan An (Mathematics-Chartered Professional Accountancy)
Wan, Yuchen (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization & Honours Statistics) *
Wang, Haoxiang (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization & Honours Statistics) †
Wang, HongYue (Mathematics/Chartered Professional Accountancy - Finance Option) *
Wang, Jiaxin (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization) *
Wang, Jonathan (Computational Mathematics – Combinatorics and Optimization Minor)
Wang, Michelle (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization) *
Wang, Shujian (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization & Honours Statistics) †
Wang, Shuyun (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization & Honours Statistics) †
Wang, Sijia (Mathematics-Chartered Professional Accountancy)
Wang, Yu Han (Combinatorics and Optimization & Honours Statistics) *
Wang, Zhan (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization & Honours Statistics) †
Wei, Xinyang (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization & Joint Honours Statistics)
Wei, Yuan (Pure Mathematics – Computer Science Minor) †
Wei, Zirui (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization) *
Wu, Keqi (Applied Mathematics with Scientific Computing & Honours Statistics – Computing Minor) *
Wu, Yi Ran (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization)
Wu, Yue (Mathematical Finance & Honours Statistics) *
Wu, Yun Qing (Mathematical Physics) †
Wu, Zehui (Computational Mathematics & Honours Statistics) *
Xie, Xinyue (Mathematical Physics & Honours Pure Mathematics & Honours Combinatorics and Optimization – Astrophysics Minor) †
Xiong, Yanjun (Mathematics/Business Administration)
Xu, Chenrui (Mathematics/Teaching & Honours Statistics & Joint Honours Pure Mathematics – Computational Mathematics Minor) †
Xu, Lu (Mathematical Finance) †
Xu, Yufan (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization & Honours Statistics) †
Xue, Wei (Mathematics/Chartered Professional Accountancy - Finance Option) *
Yang, Daiwen (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization & Honours Statistics) †
Yang, Haiqi (Computational Mathematics & Honours Statistics) *
Yang, Kai Hsiang (Pure Mathematics & Honours Computer Science) †
Yang, Shihui (Mathematics/Chartered Professional Accountancy - Finance Option – Computing Minor) †
Yang, Shuya (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization) *
Yang, Xiaoling (Computational Mathematics – Computing Minor, Statistics Minor) *
Yang, Xinming (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization & Honours Actuarial Science) *
Yang, Yiwen (Mathematical Finance & Honours Statistics)
Yang, Yizhou (Mathematics/Chartered Professional Accountancy - Finance Option) †
Yang, Zijie (Mathematics-Chartered Professional Accountancy) *
Yao, Kang (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization & Honours Statistics) †
Yao, Yunhao (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization – Computing Minor) *
Yu, Ewen (Mathematical Economics – Statistics Minor)

* – Distinction
† – Dean’s Honours
Yu, Justin Yan Yee (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization & Honours Statistics) *
Yu, Ronny (Mathematics-Chartered Professional Accountancy) †
Zain, Ali (Combinatorics and Optimization)
Zhan, Yuntian (Mathematical Finance & Honours Actuarial Science) †
Zhang, Grace (Mathematics-Chartered Professional Accountancy – Computing Minor) *
Zhang, Hao Ning (Mathematical Finance – Statistics Minor, Pure Mathematics Minor) *
Zhang, Qi (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization – Computing Minor, Statistics Minor) †
Zhang, Tianhao (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization & Honours Actuarial Science) †
Zhang, Tingyao (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization – Statistics Minor) †
Zhang, Xinran (Computational Mathematics)
Zhang, Yi Lin (Mathematics/Chartered Professional Accountancy - Finance Option)
Zhang, Yuhan (Computational Mathematics) *
Zhang, Zhaoxin (Mathematical Finance & Honours Statistics – Pure Mathematics Minor) †
Zhao, WenJing (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization – Computing Option – Statistics Minor) *
Zhao, Yueshan (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization)
Zheng, Bo (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization – Actuarial Science Minor, Statistics Minor) †
Zhou, Haoyang (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization) *
Zhou, Wilson (Mathematics-Chartered Professional Accountancy)
Zhu, Jiayun (Mathematical Optimization - Operations Research Specialization & Honours Statistics) *
Zhu, Martha (Mathematics-Chartered Professional Accountancy – Computing Option)
Zhu, Siyi (Applied Mathematics & Joint Honours Biology – Statistics Minor) †
Zhu, Yi Wei (Mathematics-Chartered Professional Accountancy)
Zhu, Yiming (Mathematics-Chartered Professional Accountancy)
Zuo, YiJie (Mathematics-Chartered Professional Accountancy)

DIPLOMA IN ENGLISH FOR MULTILINGUAL SPEAKERS
Wang, Jinghan

DIPLOMA IN FRENCH LANGUAGE II
Kaur, Ambra

DIPLOMA IN JAPANESE LANGUAGE II
Chen, Bingzhi
Shen, Siyun
Westerholm, Karl Stephen

DIPLOMA IN KOREAN LANGUAGE I
Zhang, Yuhan
* – Distinction
† – Dean’s Honours
DIPLOMA IN SPANISH LANGUAGE I
Olliviera, Stachenne Antonia Ruth

CERTIFICATE IN CO-OPERATIVE EDUCATION IN RESEARCH
Xie, Xinyue

CERTIFICATE IN EXPERIENTIAL EDUCATION
Jiang, Jing

CERTIFICATE IN GLOBAL EXPERIENCE
Chen, Bingzhi
Jeffries, Shannon Alexa
Shen, Chen
DOCTOR OF PHILOSOPHY

Chow, Hei-Yin John (Chemistry)
"Temperature Programming of the Second Dimension in Comprehensive Two-Dimensional Gas Chromatography (GC x GC)"

Chung, Kristian Tyn-Kai (Physics)
"Hodge Theory For Geometrically Frustrated Magnetism"

Dai, Xi (Physics - Quantum Information)
"Superconducting Flux Circuits for Coherent Quantum Annealing"

Deel, Harmeen Kaur (Chemistry)
"Immature SOD1: Protein Folding, Misfolding and Aggregation"

Gharavi, Kaveh (Physics - Quantum Information)
"Superconducting Proximity Effect in Nanowire Josephson Junction"

Golzar, Hossein (Chemistry - Nanotechnology)
"Development of 3D printable, Hydrophilic, and Rapidly-Curing Silicone-Based Ink Formulations for Various Biomedical Applications"

Gray, Finnian Padraig Stott (Physics)
"Symmetries in Black Hole Spacetimes"

Gunderman, Lane G. (Physics - Quantum Information)
"Collective Spin-Cavity Ensembles and the Protection of Higher-Dimensional Quantum Information"

Jai-akson, Puttarak (Physics)
"Edge Modes and Carrollian Hydrodynamics on Stretched Horizons"

Lozano Gómez, Daniel (Physics)
"Symmetry Breaking, Order-by-Disorder, Fragmentation, and Spin-Liquids in the Magnetic Pyrochlore Lattice With Anisotropic Interactions"

Lu, Xinze (Earth Sciences)
"Early Paleozoic Ocean Redox Dynamics: Perspectives From Uranium Isotopes of Sedimentary Rocks"

Mashmoushi, Nour (Chemistry)
"The Investigation of Isomers Using Differential Mobility Spectrometry and Ultraviolet Photodissociation Spectroscopy"

Mathur, Avi (Chemistry - Nanotechnology)
"Polymer Additive Engineering of Organolead Halide Perovskites: Effect on Device Characteristics and Scalable Manufacturing"

Moreira, Ryan (Chemistry)
"Synthesis and Study of the Cyclic Lipopeptide Antibiotics Duptonycin and A54143"

Nazdrajić, Emir (Chemistry)
"Development and Study of the Microfluidic Open Interface Coupled With Solid-Phase Microextraction for Rapid Analysis"

Rana, Nahyan Muhammad (Earth Sciences)
"Global Study of Tailings Dam Failures by Statistical and Remote Sensing Methods"

Raymond, Neil George (Chemistry)
"Equilibrium and Dynamical Computation Schemes for Vibrionic Models of Nonadiabatic Systems"

Reid, Jennifer Anne (Physics)
"Magnetic Excitations in Transport Measurements of Novel Quantum Materials"

Rosales Solano, Hernando Fabian Alonso (Chemistry)
"Solid Phase Microextraction: A Versatile Technique for Lipid Analysis"

Šoda, Barbara (Physics)
"New Aspects of Quantum Interactions: Acceleration-Induced Transparency, Newton's Cradle Spectra, Superoscillations"

Sombini Dos Santos, Gabriel (Earth Sciences)
"Petrology, Tectonic Setting, and Regional Implications of the Ophiolitic Luyuan Complex, NW China"

Tamhane, Prathamesh Dhananjay (Physics)
"Re-Visiting the Radio-Mechanical Feedback in Brightest Cluster Galaxies"

Whittingham, Alexander William Henry (Chemistry)
"A Study of Electrochemically Induced Lattice Distortions in Layered Perovskites"

Yaghoubi, Ali (Earth Sciences)
"Tectonic Stresses and Injection-Induced Fault Slip Assessment"

Yin, Junjie (Physics - Nanotechnology)
"Stable Polymer Glasses"

Zandieh, Mohamad (Chemistry)
"Metal-Mediated Adsorption of DNA Oligonucleotides Onto Polymeric Materials"

Zhong, Shazhou (Physics - Quantum Information)
"Thickness- and Symmetry-Induced Electronic Transport Properties of Semi Metallic Transition Metal Dichalcogenides"

Zhou, Yehao (Physics)
"Development of 3D printable, Hydrophilic, and Rapidly-Curing Silicone-Based Ink Formulations for Various Biomedical Applications"
"Twisted Holography: The Examples of 4d and 5d Chern-Simons Theories"

MASTER OF SCIENCE

Anderson, Delaney (Chemistry)
Arabaci, Cemile Senem (Physics)
Bala, Upneet (Chemistry)
Buratynski, Javan Alexander (Chemistry)
Burniston, John Richard (Physics - Quantum Information)
Christ, Margaret Ingrid Patricia (Physics - Quantum Information)
Chytros, Anthony Paul (Physics - Quantum Information)
Foroozan, Setareh (Physics)
Gammon, Michael William (Physics)
Golabek, Andrew (Chemistry)
Hinkle, Zachary Daniel Pittman (Physics - Quantum Information)
Hussein, Omar Aly (Physics - Quantum Information)
Labas, Sarah Rebekah (Chemistry)
Lisogorsky, Ariel (Earth Sciences - Water)
Little, Hunter Thomas (Chemistry)
Manning, Rebekah Katherine (Earth Sciences)
McLeod, Meghan Marie (Earth Sciences - Water)
Mills, Riley Hanson (Earth Sciences - Water)
Nazareth, Boris Peter (Chemistry)
Patterson, Everett Avison (Physics)
Pennetsa, Siddhardha (Physics)
Qi, Yuxuan (Physics)
Ramezanadeh, Mehdi (Earth Sciences)
Sakuragi, Mai (Physics)
Schietzsch, Andrew Paul (Earth Sciences)
Song, Weixiang (Physics)
Sun, Dongwei (Earth Sciences)
Taylor, Jacob Richard (Physics - Quantum Information)
Tormann, Alexandra (Chemistry)
Tupkary, Devashish Jayant (Physics - Quantum Information)
Turner, Sarah (Earth Sciences)
Vogliano, Anthony (Physics - Quantum Information)
Wei, Quan (Earth Sciences - Water)
Williams, Justine Camilla (Chemistry)
Worthington, Quinn Noel (Earth Sciences)
Xian, Rickie Ruixiao (Physics)
Xu, Xiangxuan (Physics)
Zhang, Tingxian (Earth Sciences - Water)

GRADUATE CERTIFICATE

Tannous, Ramy Nicolas (University Teaching)

BACHELOR OF SCIENCE

HONOURS BIOCHEMISTRY

* – Distinction
† – Dean’s Honours
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<td>Adloc, Jessa Grace Gloria</td>
<td>Biotechnology Specialization – Co-operative Program</td>
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Roper, Michael Burton (Co-operative Program)
Sahota, Sandeep (Biotechnology Specialization – Co-operative Program)
Shergill, Guntaas Singh (Bioinformatics Option – Co-operative Program)
SHIN, JIYOUNG (Biochemistry & Joint Honours Mathematics) *
Simons, Danielle Marie (Co-operative Program) †
To, David (Bioinformatics Option – Co-operative Program)
Tu, Anqianyi (Bioinformatics Option – Co-operative Program) *
Tudorica, Eileen (Biotechnology Specialization – Co-operative Program)
Webster, Thomas Babiwashe (Co-operative Program)
Westlake, Chloe Pamela (Co-operative Program) *
Xu, Xiaoxiao (Co-operative Program)

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Fischer, Nathan Teilo (Co-operative Program)
Monga, Ela Gauri (Legal Studies Minor)

HONOURS CHEMISTRY
Bax, Kate Lindsay (Psychology Minor – Co-operative Program) *
Bissonnette, Justine Rose (Co-operative Program) †
Dayal, Urvi Sudhir
D'Sa, Adrianna (Co-operative Program) †
Elnatour, Chafic (Co-operative Program)
Fantin, Emma Mirella Luigina (Co-operative Program) *
Han, Yutong (Co-operative Program) *
Hopson, Hana (Co-operative Program) *
Hussain, Hamza Syed (Co-operative Program)
Ji, Xinrui
Kim, Simon Hyesung (Computational Specialization – Computing Minor)
Klassen, Evan David Johnathon (Philosophy Minor)
Kompter, Audrey Sienna (Psychology Minor, Biology Minor – Co-operative Program)
Lemmens, Shannon Carmel (Co-operative Program)
Li, Guocheng
Li, Katie
Liang, Junwei
Liu, Jiawen
Ma, Yue Ye
McNeil, Scott William (Co-operative Program) †
Mulley, Brian Paul (Co-operative Program) †
Parkins, Tyler Craig (Computing Minor – Co-operative Program)
Qassim, Sara (Co-operative Program)
Scott, Ryan James (Physics Minor)
Siong Sin, Aurelie Foong-Chin (Computational Specialization – Mathematics Minor – Co-operative Program) *
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Thiessen, Matthias Jakob Weiler (Co-operative Program)
Tiwari, Drishti (Co-operative Program)
Tocsoy, Koray

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Yang, Xiaofei
Yeung, Raymond (Co-operative Program)
Yip, Emily (Co-operative Program) *
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Zhou, Yang

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Chatham, Wesley Arthur (Geology Specialization) *
Cunningham, Olivia (Geology Specialization – Co-operative Program) *
Kerr, Nicholas Dylan (Geophysics Specialization – Co-operative Program) *
Lu, Bowen (Hydrogeology Specialization – Computing Minor)
Mesich, Luka Nickolas (Geology Specialization – Co-operative Program) †
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HONOURS ENVIRONMENTAL SCIENCES
Miliya (Geoscience Specialization) *
Agudo, Angelica Marie Pableo (Geoscience Specialization – Economics Minor)
Andrews, Grace Elizabeth (Ecology – Co-operative Program)
Arsenault, Katie Margaret (Geoscience Specialization)
Cao, Xingliang (Water Science Specialization) *
Cassidy, Liam Thomas Weeks (Ecology)
Chen, Haiyang (Water Science Specialization) †
Chen, Saier (Water Science Specialization) †
Chen, Sirong (Water Science Specialization) †
Chessum, Cory Jack (Ecology – Geography and Environmental Management Minor – Co-operative Program) *
Crosby, Estella (Ecology – Co-operative Program)
Decker, Nicholas William (Geoscience Specialization – Co-operative Program) *
Deng, Chicheng (Water Science Specialization)
Fan, Yizhou (Water Science Specialization) †
Frankie, Tyler Joseph (Ecology)
Gan, Yuhao (Water Science Specialization)
Gong, Xuezi (Water Science Specialization) †
Good, Wesley John (Ecology – Earth Sciences Minor)
Gu, Xin (Ecology)
Gu, Xinyue (Ecology)
Han, Zhenghao (Water Science Specialization) †
Han, Ziyi (Water Science Specialization) *

* – Distinction
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</table>

* – Distinction
† – Dean’s Honours
Zhou, Yudong  
(Water Science Specialization)

HONOURS GEOCHEMISTRY
Meinzinger, Shayna Bree  
(Co-operative Program)
Schulz, Myles Peter  
(Co-operative Program) †

HONOURS LIFE PHYSICS
Basco, Anna Margarita Ocampo  
(Medical Physics Specialization – Co-operative Program)
Chan, Shirlie Suet-Yee  
(Medical Physics Specialization – Biology Minor – Co-operative Program) *
Dong, Zhi Fei  
(Medical Physics Specialization/Bioinformatics Option – Biology Minor – Co-operative Program) †
Farooqui, Mohammad Taha  
(Co-operative Program)
Graves, Sarah Evelyn Dawson  
(Biophysics Specialization – Co-operative Program) †
Jay, Jonah Mason  
(Bioinformatics Option – Co-operative Program)
Lee, Samantha Caitlin  
(Medical Physics Specialization – Co-operative Program) *
Luctkar, Aidan Elizabeth  
(Medical Physics Specialization – Co-operative Program)
Potsiluienko, Yurii  
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Tapper, Sydney Josee  
(Medical Physics Specialization)

HONOURS MATERIALS AND NANOSCIENCES
Byzalov, Lev
Chen, Mengyang  
(Mathematics Minor)
Chen, Shuo  
†
Chen, Yijing  
*
Dent, William
Gao, Biwen  
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Guan, Chaoyu
Hu, Jingxuan  
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Huang, Junting  
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Jiang, Yuelin  
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Jin, Shangkun  
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Kang, Yadong
Li, Ao
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Li, Meixuan  
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Li, Renjia
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Liu, Puyuan  
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Liu, Qirui  
(Computing Minor) †
Liu, Yunfei
Liu, Zitong
Luo, Kun  
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Luo, Ma
Pei, Zuofan
Qian, Chengjia  
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Qin, Zhihao
Ren, Kaiyang  
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* – Distinction
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Shi, Yiming
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Zhong, Xiaoyue
Zhou, Hao Nan
Zhou, Kaiwen

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Fung, Hin Pok Cyrus
Gage, Finnegan Eli
Halbertsma, Emrys Gabriel Tjalling
Jian, Xiao luo
Lawrence, Jensen Pierce Thomas
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Mazey, Cameron
Membrere, Ireneo James
Morawetz, James Gow
Moser, Sarah Toshiko
Qualter, Jonathan
Ravi, Parmesh
René, David
Schraa, Michael Thomas

* – Distinction
† – Dean’s Honours
Seaward, Grady Francis
Shah, Ruhi (Pure Mathematics Minor – Co-operative Program) †
Sharma, Varad (Pure Mathematics Minor – Co-operative Program) *
Singh, Gurteg (Pure Mathematics Minor)
Srikantharuban, Kishor (Co-operative Program)
Terrey, Catherine Anne (Astrophysics Minor – Co-operative Program) †
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Zhao, Junle
Zuo, Shen

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Knaggs, Karlene Laurie Myhal (Co-operative Program)
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McAlpine, Anika Kimberley-Anne Kathleen (Co-operative Program) †
Mojica, Joshua Alex (Co-operative Program)
Pham, Richard Dinh (Co-operative Program) *
Woods, Riley Thomas (Co-operative Program)
Zhang, Qiyang (Biochemistry Minor – Co-operative Program) †

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Ahmed, Yusuf (Astrophysics Minor)
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Cat, Michael Thai (Co-operative Program)
Cheng, Cheng (Astrophysics Minor)
Cornick, Elena Rose Willett (Co-operative Program) †
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Johnston, Nolan Anthony Paul (Biophysics Minor – Co-operative Program)
Lahiouel, Hichem (Co-operative Program)
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Liu, Ruolin *
Peters, Cameron Emil (Mathematics Minor – Co-operative Program)
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Suthendran, Shivam
Villalba Alemán, Geovanny Valentín
Voora, Sakethram (Physics & Joint Honours Mathematics)
Wheatle, Jordan Lloyd (Co-operative Program)
Zhou, Jiayuan

HONOURS PHYSICS AND ASTRONOMY
Aamir, Azzam Bin (Co-operative Program) †
Aikens, Megan Elizabeth (Co-operative Program)
Barré, Ruxin Daphne (Mathematics Minor – Co-operative Program) †
Barton, Rachel Annamaria (Co-operative Program) *

* – Distinction
† – Dean’s Honours
Bayat, Nouralhoda  
Chander, Suhail  *(Physics and Astronomy & Joint Honours Mathematics – Co-operative Program)*  
Defend, Xander Douglas  
Doshi, Dhvani Chetan  *(Co-operative Program)†*  
Forrester, Sabrina Isabella  *(Co-operative Program)*  
Ghosal, Tanisha  *(Mathematics Minor – Co-operative Program)*  
Gupta, Ridhee  *(Computing Minor – Co-operative Program)*  
Hedley, Kohl Gregory James  *(Co-operative Program)†*  
Hermez, Andy  
Hyatt, Benjamin William Andrew  *(Co-operative Program)†*  
Issa, Joshua  *(Philosophy Minor – Co-operative Program)*  
Kavanagh, Hayley Michaela Shannon  *(Mathematics Minor – Co-operative Program)*  
Klys, Michael Jan  *(History Minor – Co-operative Program)*  
Ko, Graeme Grant  *(Biophysics Minor – Co-operative Program)*  
Lepage, Renée Juliette  *(Co-operative Program)*  
Nguyen, Chi Nguyen  
Ormen, Alp Kaan  *(Co-operative Program)*  
Pacholko, Taylor Rae  *(Co-operative Program)†*  
Pappur, Thrishal Reddy  *(Co-operative Program)*  
Paquette, Olivier  *(Co-operative Program)†*  
Patel, Darshak Atul  *(Co-operative Program)†*  
Rodrigues, Serene Francis  *(Co-operative Program)*  
Rourke, Sarah Alexandra  *(Fine Arts Studio Minor – Co-operative Program)*  
Russell, Stephen  
Schweinle-Stewart, James Alexander  *(Computing Minor)*  
Sow, Maimouna  
Suri, Shubhang  *(Co-operative Program)*  
Tang, Chen  
Tathed, Gaurav Ashish  *(Co-operative Program)†*  
Vilcacundo Tulcanaza, Andrea Carolina  *(Co-operative Program)†*  
Wright-Mellone, Dylan  *(Co-operative Program)*  
Xu, Angqing  

**HONOURS SCIENCE**  
Abdulle, Omar Muktar  *(Biology Minor)*  
Ambrose, Lexi Brae  *(Biology Minor, Psychology Minor)*  
Bains, Komalpreet Kaur  *(Biology Minor)*  
Bains, Sagar Singh  *(Biology Minor)†*  
Bednarchik, Nicole Gabriella  *(Psychology Minor, Biology Minor)†*  
Bertrand, Laura  *(Biology Minor, Psychology Minor)*  
Bhangu, Simran  *(Medical Physiology Minor)†*  
Bhatla, Sonali Sunil  
Bhullar, Rabab  *(Biology Minor)*  
Bunha, Miral Rasikbhai  *(Biology Minor, Psychology Minor)*  
Cambu, Lee Cader  *(Biology Minor, Political Science Minor)*  
Chaudhry, Saad Anwar  *(Bioinformatics Option – Chemistry Minor)*  

* – Distinction  
† – Dean’s Honours
Chaytor, Sarah Emma Elizabeth (Biology Minor, Economics Minor)
Chen, Yuxiang
Cheng, Clifton
Cho, Julie (Medical Physiology Minor, Biology Minor)
Choe, Jonathan Eugene (Bioinformatics Option – Biology Minor) †
Chow, James Hoyin (Biology Minor)
Clancy, Burak Patrick
Crawford, Braydon Mackenzie *
Cucci, Michela (Fine Arts Studio Minor, Biology Minor) *
Cunningham, Julia Taylor (Biology Minor, Psychology Minor) *
De Ciancio, James Thomas (Biology Minor)
Denomme, Jenna Alyssa (Biology Minor, Psychology Minor) †
Denomme, Jordan Stanley
Dhaniwal, Kareena (Biology Minor)
Dhanju, Manraj (Biology Minor)
Dorich, Megan (Biology Minor, Psychology Minor) †
Eid, Seema (Biology Minor)
Furgal, Caitlin Anne (Bioinformatics Option – Biology Minor, French Minor)
Furtado-Crannie, Courtney Anne (Biology Minor, Chemistry Minor, Sociology Minor)
Gan, Tian (Psychology Minor)
Gao, Ye
Garzon Llanos, Valentina Paola (Biology Minor) *
Gayne, Ethan Daniel (Psychology Minor, Chemistry Minor, Biology Minor) *
Ghiasi, Romina (Science & Joint Honours Psychology – Biology Minor)
Giesen, Sarah Elizabeth Katrina
Gill, Puneet (Biology Minor)
Gill, Tajpreet Kaur (Biology Minor, Geography and Environmental Management Minor)
Gu, Wenjun (Mathematics Minor, Biology Minor) *
Guo, Vincent (Biology Minor, Chemistry Minor) †
Hallam, Julia Anne (Biology Minor)
Handy, Robyn Elizabeth (Biology Minor)
Hanson, Mark Steven (Biology Minor)
Hansra, Jashan Singh (Biology Minor)
Hasan, Saad Mohammed (Biology Minor, Psychology Minor)
Hua, Anna Thanh Nhan (Biology Minor, East Asian Studies Minor) *
Imrie, Reis Alexandra (Biology Minor, Management Studies Minor)
Ith, Laura Sotheara (Biology Minor)
Jamali, Wagma
Jawaheri, Kousha *
Jayandan, Amshula (Biology Minor, Psychology Minor, French Minor)
Jewett, Emma Jane Llewelyn (Earth Sciences Minor)
Joshi, Aishwarya (Science & Joint Honours Economics – Physics Minor)
Kang, Eric (Biology Minor) †
Karklins, Andrew David
Kereliuk, Allison Jane (Chemistry Minor, Psychology Minor) *
Khalid, Marria (Biology Minor) †

* – Distinction
† – Dean’s Honours
<table>
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<tr>
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<tbody>
<tr>
<td>Khan, Anisa Tsering</td>
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<td>Samra, Rose</td>
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</table>

* – Distinction
† – Dean’s Honours
Shienh, Gurveer Singh  
Sivananthalingam, Vinujen  
Sood, Abhishek  
Su, Camila  
Sue, Meghan Alicia  
Sumithrarachige Don, Saduni Udeesha  
Syed, Shaza Kamal  
Tran, Cindy Thanh  
Tsao, Madelan Kwei-Ling  
Ung, Samantha  
Uppal, Manrohit Singh  
Vo, Tri Anh Brian  
Weiler, Kevin John  
Xue, Queenie  
Xue, Ruixuan  
Yang, Yue Han  
Yasmin, Syeda Lamia  
Yau, Aaron Ming Fai  
Zhu, Rui  
Zonis, Danielle

HONOURS SCIENCE AND AVIATION
Ajith, Abhijith  
Collins, Zachary Robert Luis  
Gan, Oscar Yuecheng  
Goulbourne, Tiffany Grace  
Gu, Andrew  
Hudspeth, Jacob Edward  
Jing, Tyler Tailai  
Lai, Jacob  
Levytsky, Maksym  
Rahman, Abdul  
Sandhu, Gurkirat Singh  
Weisberg, Jeremy Parker  
Zheng, Wenjun

DIPLOMA IN CHINESE LANGUAGE I
Su, Camila

DIPLOMA IN ECOLOGICAL RESTORATION AND REHABILITATION
Andrews, Grace Elizabeth  
Crosby, Estella  
Hausz, Nikita  
Rachmadsyah, Syifa Azzahra Bidarea  
Robertson, Shelby Lynn

* – Distinction  
† – Dean’s Honours
DIPLOMA IN ENVIRONMENTAL ASSESSMENT
Agudo, Angelica Marie Pableo
Gupta, Ridhee
Kokthi, Sarah
Robertson, Shelby Lynn

DIPLOMA IN FRENCH LANGUAGE I
Vilcacundo Tulcanaza, Andrea Carolina

DIPLOMA IN JAPANESE LANGUAGE I
Hua, Anna Thanh Nhan
Ng, Ka Tie

DIPLOMA IN SUSTAINABILITY
Gupta, Ridhee
Safiullina, Lilia

CERTIFICATE IN CO-OPERATIVE EDUCATION IN RESEARCH
Fantin, Emma Mirella Luigina
Membrere, Ireneo James
Robertson, Shelby Lynn
Washington, Zofia Joy

CERTIFICATE IN EXPERIENTIAL EDUCATION
Ahmed, Yusuf
Baral, Neeharika
Becerra, Maria Paz
Furtado-Crannie, Courtney Anne
Imrie, Reis Alexandra
Khalid, Marria
Mahajan, Mahika
Ramgarib, Kavita
Shen Cao, Jenny Lixian
Vilcacundo Tulcanaza, Andrea Carolina
DOCTOR OF PHILOSOPHY

Alkabbani, Wajd
(Pharmacy)
“The Associations Between Insulin, Hypoglycemia, and Dementia: Combating Threats to Internal Validity in a Series of Population-Based Cohort Studies”

Bose, Susmita
(Vision Science)
“Fabrication of an Enzyme Responsive Biomaterial for the Treatment of Recurrent Corneal Erosion”

Dowling, Nicole Victoria
(Biology)
“A Structural Investigation of Novel Fungal Polyglycine Hydrolases”

Heath, George Alexander
(Biology)
“Development of Protein Level Cytokine Assays and Assessment of the Impact of Implanted Acoustic Telemetry Tags on the Rainbow Trout (Oncorhynchus mykiss) Immune System”

Huang, Jiahao
(Pharmacy)
“In-Solution and Physical State Properties of Polymer and Lipid Excipients and Their Effects on the Supersaturation Evolution of Poorly Water-Soluble Drugs”

Johnson, Lisa Anne
(Biology)
“Microbial Composition and Functional Diversity in Waste Environments”

Mohammed, Wathiq Jassim
(Biology)
“Development and Application of Periphyton-Based Biomonitoring Methods to Elucidate Aquatic Ecosystem Responses of Lakes in a Water-Rich Northern Landscape (Old Crow Flats, Yukon, Canada) to Climate Change”

Robinson, Morgan
(Pharmacy)
“The Interplay Between the Neuronal Plasma Membrane and Cell Signaling in Alzheimer’s Disease”

Sunga, Julia Carmen
(Biology)
“The Role of Social Preferences in the Organization of a Gregarious Mammal Colony”

Yeung, Cindy Hoi Ting
(Biology)
“Pediatric Physiologically Based Pharmacokinetic (PBPK) Modeling to Advance Knowledge of Breastfeeding Infant Exposure to Maternal Medications”

Yu, Jacky Ka-Hei
(Pharmacy)
“Pharmacokinetic and Economic Implications When Switching Between Hemophilia A Treatments”

Yun, Yejin
(Pharmacy)
“Development of a Framework for Identifying Critical Input Parameters for Effective Pediatric PBPK/PBTK Modelling”

MASTER OF SCIENCE

Aragón Baquero, Lina Marcela
(Biology)

Baker, Emily Danielle
(Biology)

Breadner, Patrick Raymond
(Biology - Water)

Collis, Cody
(Biology)

Domashinski, Gwynne
(Biology)

Ellmen, Isaac Agnew Overend
(Biology)

Hodgins, Harold Paul
(Biology)

McAllister, Keith Steven
(Biology)

McLay, Sean
(Biology)

Ng, Andrew Ka Yiu
(Pharmacy)

Pushparajah, Deborah Grace Dhamayanthi
(Pharmacy)

Quinn, Rebecca Sydney
(Biology)

Teodoro, Juliette Isabel
(Vision Science)

Thibault, Hannah Jane
(Biology)

GRADUATE CERTIFICATE

Amoud, Razan
(University Teaching)

Filice, Carina Teresa
(University Teaching)

Firth, Britney Lynn
(University Teaching)

McKnight, Michelle Marie
(University Teaching)

BACHELOR OF SCIENCE

* – Distinction
† – Dean’s Honours
### GENERAL SCIENCE – Three Year

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<td>Ali, Nazia Sajid</td>
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<td>Hamdavi, Ayman</td>
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<td>Isaac, Claudia</td>
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<td>Mccarry, Haig Stephen</td>
<td><em>(Physics Minor)</em></td>
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<td>Menendez-Garcia, Samuel Alejandro</td>
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<td>Mittal, Kashish</td>
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<td>Mobayed, Qamar</td>
<td><em>(Biology Minor)</em></td>
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<td>Moutafova, Mira</td>
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<td>Pasumarthy, Venkateswara Pranav</td>
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<td>Smith, Calvin Whittaker</td>
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<td>Zheng, Marina Zixin</td>
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### HONOURS BIOLOGY

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<tr>
<td>Ali, Aisha Abdullahi</td>
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<tr>
<td>Andress, Samuel Jacob</td>
<td><em>(Microbiology Specialization)</em></td>
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<tr>
<td>Arends, Melissa Kate</td>
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<td>Chan, Alexander</td>
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</tr>
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</table>

* – Distinction
† – Dean’s Honours
Chandrasekharapuram Kasi Viswa, Mahalekshmi
Duval, Mitchell David Robert
Epp, Hayden
Foley, Melanie Marie
Fox, Andrew James Fraser
Gallo, Hannah Kathryn
Giurasevici, Alicia
Go, Kristoff Jean
Go-Ho, Kiara Maxine
Hans, Jasreen
Hines, Meaghan Suzanne
Holdenried, Sarah Claire
Hsieh, Ming Hsun
Jamshed, Shanza
Jeevarajah, Shayaki
Karim, Kellie Meghan
Khater, Diana
Lanteigne, Jonathan George
Lee, Eunseo
Lo, Melanie
Logarajah, Aswin
McDonald, Gillian Maria
McPherson, Sara R
Meighoo, Melissa Savita Ramona
Miles, Adam Yuen
Mohabir, Stephanie Leah
Nagy, Alyssa Nicole
Nandakumar, Shankavi
Ng, Bonar Wai-Bond
Or, Locke
Pablay, Kamalvir Singh
Panoulias, Nicolette Irene
Patel, Shreya Dipakbhai
Pathmanathan, Harishia
Peters, Kira Nicole Unger
Rogozymski, Noah Peter
Sasitharan, Ambikai
Serravalle, Erika Ann
Sinanios, Lodi Maria
Singh, Siddharth
Sivagunalan, Vaheesan
Sriram, Aadhira
Stoicoiu, Elisa Ioana
Stragapede, Elena Jessica
Tan, Sophia

* – Distinction
† – Dean's Honours
Tarakji, Joseph Pierre  
(Bioinformatics Option)

Tastassa, Ariel  
(Bioinformatics Option – Co-operative Program) †

Tello Yepes, David Felipe  
(Microbiology Specialization – Biochemistry Minor – Co-operative Program) *

Thompson, David Tobias  
(Plant Biology Specialization – Co-operative Program)

Tran, Lisa  
(Medical Physiology Minor – Co-operative Program) *

Velu Sundaralingam, Nitharshani  
(Plant Biology Specialization – Psychology Minor)

Villarreal Boada, Melissa Alejandra  
(Biotechnology Specialization)

Wiersma, Matthew Liam

Wolf, Jessica Leann  
(Co-operative Program) *

Wong, Becky  
(Co-operative Program)

Woollard, Spencer Westley Constable  
(Biotechnology Specialization – Co-operative Program)

Yang, Ji  
(Bioinformatics Option) †

Yang, Krystal Xin  
(Co-operative Program)

Yang, Yu Qian  
(Co-operative Program) †

Yoon, Jung Won

Zhou, Matthew

Zhou, Siyu  
(Psychology Minor)

HONOURS BIOMEDICAL SCIENCES

Abdelkader, Ahmed  
(Medical Physiology Minor) †

Abrar, Mohammad Mahdi

Abu Kuwaik, Noor  
†

Adewo, Olufunminire Adebukunola

Akanni, Oluwadurotimi Wilson  
†

Alsakani, Afnan  
(Medical Physiology Minor, Anthropology Minor)

Alshehabi, Yasmeen  
(French Minor, Psychology Minor, Medical Physiology Minor) †

Andonian, Natalie Anna  
†

Bains, Justin Singh

Berends, Conor William

Bidarkar, Ashita  
†

Boston, Camryn Mackenzie  
†

Bradley, Mya Michelle  
(Psychology Minor) *

Brar, Bikram Singh  
(Medical Physiology Minor) *

Cai, Benny Yong Hui

Chong, Relena Sarah  
†

Clarke, Janelle Kimone  
(Medical Physiology Minor) *

Cristea, Linda

Dayoub, Maya  
(Medical Physiology Minor)

Deosaran, Nicholas Shiva

Devolder, Natalie Anne

Dhaliwal, Jaskirat

Dhaliwal, Shelly

Díaz Ortiz, Nicole Carolina  
(Medical Physiology Minor)

Fan, Jonathan Jingyuan  
†

Flanagan, Kate Rosemary  
(Human Nutrition Minor) †

Ghauri, Saif Uddin  
(Medical Physiology Minor)

* – Distinction
† – Dean’s Honours
Ghotra, Mahima Kaur
Gill, Deep Armaan Singh
Gobburu, Vaishnavi Mohana
Gopaul, Rashmi
Guan, Jinhong (Psychology Minor, Medical Physiology Minor) *
Guest, Jocelyn Marie
Haladuick, Rachael Shannon (Psychology Minor) †
Halim, Arshi (Medical Physiology Minor)
Hall Elwood, Ruby (Psychology Minor) *
Herrera Contreras, Brittany Alexandra (Computing Minor) †
Ho, Amy Thanh *
Hoang, Michael Duy
Hoxha, Jessica †
Huang, Zi Yi †
Hui, Lok Yew Chloe
Huseljić, Denis †
Iancu, Rebeca (Computing Minor) *
Imran, Ahmed Mohammad †
Jeffery, Curtis Glenn *
Kandias, Annamaria (Biophysics Minor)
Karanassios, Alexandros †
Kairojananan, Atchareeya (Medical Physiology Minor, Psychology Minor)
Lakhi, Sabiha †
Li, Leo
Li, Xinyue †
Lif, Autumn Kathleen (Medical Physiology Minor) *
Li-Yim-Feng, Jenna Meryl (Mathematics Minor, Chemistry Minor) †
Lo, Chak Nam *
Lu, Ivy Oi-Yee †
Macci, Sumayyah (Medical Physiology Minor)
Magyar, Mitchell Lightfoot
Mascarenhas, Shyan (Psychology Minor) *
Mendez, Shaiele Cianna Mary
Mendez, Sarah Victoria (Human Resources Management Minor, Medical Physiology Minor) *
Miners, Allison Diane
Mir, Iman Mumtahina (Medical Physiology Minor) *
Nagra, Jatinderjit Kaur (Medical Physiology Minor) *
Noble, Drewcila Lea (Medical Physiology Minor, Psychology Minor) *
Oh, Sebin (Medical Physiology Minor)
Ovalekar, Raoul Rajesh †
Pablo, Ashley Jade (Medical Physiology Minor) *
Palaparty, Srinija (Bioinformatics Option – Medical Physiology Minor, Psychology Minor) *
Pamidimukkala, Mayura †
Patel, Karan †
Patel, Sneha Mayur (Human Resources Management Minor, Psychology Minor) *
Peia, Michael Ioan

* – Distinction
† – Dean’s Honours
Pirhonen, Kyla Anne *
Rana, Ramal Ifikhar (Human Nutrition Minor)
Roostan, Abtin †
Sabo, Emma Grace (Psychology Minor) †
Salas, Ethel Maeryn †
Sandhu, Pavneet Kaur (Medical Physiology Minor)
Schmidt, Chloe Diane †
Sennaoui, Sara (Legal Studies Minor)
Sethupathy, Sri Akshaya (Medical Physiology Minor) †
Shaik, Rehan *
Sigler, Marissa Nicole (Medical Physiology Minor)
Spitzl, Noah Christian (Medical Physiology Minor, Chemistry Minor) †
Stewart, Mary Ainsleigh (Psychology Minor, Medical Physiology Minor) *
Stojić, Vanessa (Medical Physiology Minor) *
Syed, Hiba (Management Studies Minor)
Szerwinski, Natalie Alice (Biomedical Sciences & Joint Honours Psychology - Research Intensive Specialization)
Taughter, Katherine Grace (Medical Physiology Minor)
Thandi, Joshdeep Singh (Medical Physiology Minor)
Thevasenan, Sharanya (Medical Physiology Minor, Human Resources Management Minor) *
Tian, Joanie (Biomedical Sciences & Joint Honours Mathematics)
Trajceska, Liliana (French Minor) †
Truong, Anson Wa *
Tsui, Oscar Ho Yiu
Upton, Isabelle (Medical Physiology Minor)
Uy, Ryan Christopher Balancio (Psychology Minor) †
Vargas Andrade, Johanna Carolina (Medical Physiology Minor)
Vu, Chi My
Worsdell, Kaitlyn (Chemistry Minor) †
Wu, Conan (Medical Physiology Minor) *
Yaseen, Aseid
Zafiris, Eudoxia (French Minor)
Zeng, Xiaojun
Zhang, Jingshu *

HONOURS BIOTECHNOLOGY/CHARTERED PROFESSIONAL
Chaung, Geoffrey Ching Fai (Co-operative Program)
Jacob, Sneha Susan (Co-operative Program)
Lee, Martin Kachun (Co-operative Program)
Morris, Catherine Jane (Co-operative Program) *
Pong, Matthew (Co-operative Program) *
Wan, Meagan Man Yan (Co-operative Program) †

HONOURS BIOTECHNOLOGY/ECONOMICS
Cheng, Ethan Yu Hin (Co-operative Program)
Dong, Emily (Co-operative Program)
Jung, Dahyeon (Co-operative Program) *
Morin, Elizabeth Anne (Co-operative Program)

* – Distinction
† – Dean’s Honours
Novillo Morán, Ángel David
Ou, Yuetong
Puranik, Aman Vivek
Wong, Julianne Tan

HONOURS PSYCHOLOGY

Al-Ghannam, Ghazal
Baral, Neeharika
Becerra, Maria Paz
Budge, Joshua Rafe Campbell
Bumra, Kiran Kaur
Chowdhury, Nabilah
Chuong, Jerika Weisum Park
Cyr, Emily Michelle
Dash, Kasturi
D’Gama Rose, Aliyah Sitara
Duong, Christine
Gammag, Kyla Denise Edu
Garth, Kristina Anne Melissa
Hamid, Madiha Bano
Hamilton, Ian Fraser Rinko
Haroon, Abida
Karmakar-Johnson, Maya
Kuwar, Anushka Ashish
Kwak, Gyeongwon
Leung, Yuk Hei
Manohar, Hannah Maria
Mitchell, Ryan William
Mustafa, Laith Abdel Hadi Awad
Olaleye, Oladimeji Solomon
Omdara, Jacqueline
Parray, Mehnoor Jehangir
Patel, Brinda
Rachmadita, Christina
Salikhov, Arslan
Thomson, Helen Julia
Un, Suevin
Wang, Sirui
Washington, Zofia Joy
White, Nicholas Christopher
Wicaksana, Namira Dani
Wilkinson, Leslie Ada
Yan, Yuxin
Yin, Li

HONOURS SCIENCE AND BUSINESS

* – Distinction
† – Dean’s Honours
<table>
<thead>
<tr>
<th>Name</th>
<th>Program</th>
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<tbody>
<tr>
<td>Aboulhoda, Souhail Mouhannad</td>
<td>(Co-operative Program)</td>
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<tr>
<td>Afridi, Minahil</td>
<td>(Biology – Co-operative Program)</td>
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<td>Ahmed, Dua Jawad</td>
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<td>Babulal, Zachary Kishan Etan</td>
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<td>Dewan, Jagrit</td>
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<td>Dicastri, Nathan Phillip</td>
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<td>(Biology Minor, Economics Minor) *</td>
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</tbody>
</table>

* – Distinction  
† – Dean’s Honours
Reidner, Talon Scott (Physics – Economics Minor – Co-operative Program) *
Rezakarimi, Maryam (Economics Minor, Biology Minor) †
Sahota, Simranpreet Kaur
Samuel, Sefonias (Chemistry – Co-operative Program) *
Sarmiento, Leila Denise (Co-operative Program)
Saskin, Tamar Rachel (Chemistry Minor, Economics Minor – Co-operative Program) *
Shams, Shayan Nadeem (Biochemistry – Co-operative Program) *
Shaw, Gillian (Economics Minor – Co-operative Program)
Sokalski, Adriana (Co-operative Program)
Staub, Emily Frances (Biology – Co-operative Program)
Suresh, Ambarish (Biology) †
Tan, Kelly (Environmental Sciences – Biology Minor – Co-operative Program) *
Thayaparan, Abinaya (Co-operative Program)
Tran, Anthony (Science and Business/Biotechnology & Joint Honours Economics – Co-operative Program) *
Tse, Elizabeth Jocelyn (Biology – Economics Minor – Co-operative Program) *
Tyagi, Anoushka (Biology – Economics Minor) *
Valeri, Sabrina Isabella Kaur (Biology) †
VanderVelde, Jillian Johanna M (Economics Minor, Earth Sciences Minor – Co-operative Program) *
Varshney, Satvik (Physics – Co-operative Program)
Vasandani, Vidhi Mukesh
Virani, Aman (Biotechnology – Economics Minor – Co-operative Program) *
Vushaj, Angel (Co-operative Program)
Wang, Zi Hao (Co-operative Program)
Wu, Ziyi †
Yağcı, Ezgi
Yu, Michael (Economics Minor, Computing Minor – Co-operative Program) *
Zhang, Jie Yi (Co-operative Program) †

DOCTOR OF OPTOMETRY

Ahmed, Tazeen *
Alliston, Mary-Katharine Ann *
Bansal, Aashna *
Beauchamp, Breanne Taylor †
Bendall, Cassandra Christine †
Boehr, Meagan Justina †
Braham, Jenna †
Brawdy, Molly Gabriella Jean *
Chan, Tiffany Yik Tung †
Chang, Claudia *
Cheng, Clifton †
Choi, Maria Harmony Holy †
Chow, Clement Chi Hin *
Chow, Timothy Gok Hung *
Chow, Winnie Wing Yin *
D'Angelo, Sarah Megan †
De Marinis, Jessica Danielle †

* – Distinction
† – Dean’s Honours
Deng, Ivy Deyi †
Denomme, Jordan Stanley †
Fonseca, Manuela *
Germain, Peter George †
Graves, Christopher Brian †
Gunasekaran, Selah Lizanne †
Gupta, Isha *
Hackner, Charlotte Sarah *
Hellinga, Michaela Katherine *
Holms, Julie Patricia Marie *
Hong, Alvin †
Howorth, Katelyn Anne *
Huynh, Regan Pei-Yu *
Kamphuis, Alexandra Joy †
Karklins, Andrew David †
Kwon, Whijin †
Langlois, Emma Michelle *
Le, Kim Bao *
Lee, Jenny †
Leitao, Filipa Da Silva †
Letwinetz, Kristen Nicole †
Li, Kevin Xutong †
Li, Ziqing †
Lin, Kelly Yasi †
Lin, Tina Nuo Ja †
Lin, Vanessa Xuwen †
Liu, Anjingyao †
Lo, Bethany Pui-Hei †
Loughran, Pamela Christine †
Marciano, Ralph Vincent *
McMillan, Karlie Alexandra †
Merali, Sahil Ali †
Milling, Stephanie Marie †
Mlynarczyk, Alicia Jaclyn †
Mohammed, Umayr
Morgan, Lillian *
Naeem, Hajra *
Nelson, Anika Rachelle *
Ng, Ron Kiu *
Nogier, Danielle Lee †
Osei-Yeboah, Nana Adwoa *
Patterson, Alyssa Diane †
Potkidis, Natalie *
Reza, Samiha *
Roberts, Eric Allan *
Sharif, Alisha †

* – Distinction
† – Dean’s Honours
Shelswell, Kevin Markus †
Slade, Shannon †
Solanki, Sanjay †
Steinman, Bethany Christine Lichti †
Stewart, Katie Anne †
Sue, Meghan Alicia †
Symons, Adrienne Michelle †
Tahmoures-Zadeh, Taraneh *
Tan, Janet †
Templeman, Nathan John Ryan †
Tewari, Gaurav †
Thai, Glenda *
Touich, Jonah †
Tsang, Katelyn Emily *
Tsao, Madelan Kwei-Ling *
Turner, Zachary Troy Jacob *
Wohlgemuth, Ethan David †
Workman, Christopher Stephen †
Xie, Jodie Zhuoying †
Xue, Queenie *
Yang, Yue Han †
Yau, Aaron Ming Fai *
Zhang, Eileen *
Zhang, Yuanming †
Zhao, Addison Yide *

DIPLOMA IN FRENCH LANGUAGE I
Dolcine, Kimberly Margarette
Gopaul, Rashmi

DIPLOMA IN FRENCH LANGUAGE II
Bidarkar, Ashita

DIPLOMA IN ITALIAN LANGUAGE
Herrera Contreras, Brittany Alexandra

CERTIFICATE IN CO-OPERATIVE EDUCATION IN RESEARCH
McPherson, Sara R
Tastassa, Ariel
Tello Yepes, David Felipe

CERTIFICATE IN EXPERIENTIAL EDUCATION
Alsakani, Afnan
Gopaul, Rashmi
Halim, Arshi
Lakhi, Sabiha
Li-Yim-Feng, Jenna Meryl

* – Distinction
† – Dean’s Honours
DATE: June 1, 2023
TO: Vivek Goel, President & Vice-Chancellor
FROM: Catherine Newell Kelly, Registrar
       Jeff Casello, Associate Vice-President, Graduate Studies and Postdoctoral Affairs
SUBJECT: Additions and Changes to the Fall 2022 Conferment of Degrees Listings

Attached is a listing of revisions to the list of degree candidates approved by Senate at the October 2022 meeting. The information includes the processing date of the request, and the rationale for the late or amended confirmation of degree requirements.

The rationale of "student request" refers to a late request initiated by the student where either the application to graduate was received after the deadline or there were additional faculty approvals required for the requested credentials. The rationale of "department request" refers to a late request initiated by the department which was submitted after the original degree requirement confirmation from the department/faculty was approved and this occurred after the deadline.

Catherine Newell Kelly
Registrar

Jeff Casello
Associate Vice-President, Graduate Studies and Postdoctoral Affairs
Faculty of Arts
Additions to Senate

Bachelor of Arts, Three-Year General Program
Brubacher, David
(Peace and Conflict Studies)
Added October 26, 2022; student request

Graduate Diploma
Du, Yu Ming
(Theoretical Neuroscience)
Added March 29, 2023; student request

Faculty of Engineering
Additions to Senate

Bachelor of Applied Science
Garcia-Gonzalez, Francisco Javier
(Honours Mechatronic Engineering/Artificial Intelligence Option – Co-operative Program)
Addition of Artificial Intelligence Option
Added March 16, 2023; student request

Faculty of Environment
Addition to Senate

Master of Environment and Business
Tymchuk, Gail Elizabeth
Added November 2, 2022; student request

Faculty of Mathematics
Addition to Senate

Bachelor of Computer Science, Honours Program
Elgersma, Timothy Ryan
(Honours Computer Science)
Added October 20, 2022; student request
Dear Senators,

The Secretariat’s Office is actively working to implement the recommendations from the 2021 Senate Governance Review. One key recommendation was to increase opportunities for orientation and training for Senators. I am pleased to share with you the Senate Orientation Module, created in partnership by the Secretariat’s Office and the Centre for Extended Learning.

Link to Senate Orientation Module: https://uwaterloo.ca/secretariat/governing-bodies/senate

The Senate Orientation Module is fully AODA compliant, hosted online, and is found on the Secretariat’s website – no login required. The module takes approximately 45-60 minutes to complete and provides an overview of Waterloo’s bicameral governance structure, the roles and responsibilities of Senate, and how to prepare for and what to expect at Senate meetings.

The completion of this module is optional however, serves as a great opportunity to familiarize oneself with current Senate information and materials. The module will be updated as we continue to implement recommendations from the Senate Governance Review and new processes/resources are available. We also plan to leverage this module for awareness-building and recruitment of new Senators.

If you have any questions or feedback about the module, please contact senate@uwaterloo.ca.

Thank you for your service to the University of Waterloo. We look forward to implementing more of the recommendations from the Senate Governance Review to continue to improve collegial and effective governance at Waterloo.

Vivek Goel, Chair
Andrea Kelman, Acting University Secretary
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