

## SENATE

MONDAY 19 June 2023 3:30 P.M. EST NH 3407 / Zoom <u>Governing Documents and Resources</u>

TIMING	AGENDA ITEM	PAGE	ACTION
	OPEN SESSION		
3:30 p.m.	1. Territorial Acknowledgement	Oral	
	2. Conflict of Interest	Oral	Declaration
	3. Approval of the Agenda	Oral	Decision
	4. <u>Minutes of the 15 May 2023 Meeting</u>	5	Decision
	5. Business Arising from the Minutes	Oral	Input
	6. <u>Senate Work Plan</u>	9	Information
3:35 p.m. (35 mins)	<ul> <li>7. Report of the President</li> <li>a. President's Update</li> <li>b. PART Annual Update (Christopher Taylor, Anita Taylor)</li> </ul>	Oral Oral	Information Information
4:10 p.m. (10 mins)	8. Report of the Vice-President, Academic and Provost a. <u>Digital Learning Strategy</u> (Rush, David DeVidi, Johanna Wandel, Aldo Caputo)	11	Information
4:20 p.m. <mark>(5 mins)</mark>	b. <u>Recommendation to Change the Name of the Department of Management</u> <u>Sciences to the Department of Management Science and Engineering</u> Motion: To change the name of the Department of Management Sciences to the Department of Management Science and Engineering.	55	Decision
4:25 p.m. (5 mins)	<ul> <li>Report - Senate Graduate &amp; Research Council         <ul> <li><u>Graduate Studies Academic Calendar Revisions</u></li> <li>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.</li> </ul> </li> </ul>	59	Decision

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TIMING	AGENDA ITEM	PAGE	ACTION
4:30 p.m.	10. Report – Associate Vice-President, Academic		
(20 mins)	a. <u>Teaching Assessment Report</u>	67	Information
	<ul> <li>b. <u>Digital Learning Principles and Guidelines</u> Motion: To approve the Principles and Guidelines for Digital Learning, effective 1 September 2023, as presented.</li> </ul>	111	Decision
4:50 p.m. (5 mins)	<b>Consent Agenda</b> Motion: To approve or receive for information the items on the consent agenda, listed as items 11-17 of the Senate agenda		
	11. <u>Report – Senate Graduate &amp; Research Council</u>	117	Information
	<ul> <li>12. <u>Report – Senate Undergraduate Council</u> <ul> <li>a. <u>Academic Regulation Revision to Admission for the Faculty of Engineering</u></li> <li>Motion: That Senate approve the proposed academic regulation revision to Admission for the Faculty of Engineering, effective 1 September 2024, as presented.</li> </ul> </li> </ul>	119 121	Information Decision
	b. <u>Academic Regulation for Admission Fraud</u> Motion: That Senate approve the proposed academic regulation revision for Admissions Fraud, effective 1 September 2023, as presented.	125	Decision
	c. <u>Academic Regulation Revision for Admission Requirements</u> Motion: That Senate approve the proposed academic regulation revisions of Admissions Requirement for Duolingo Component Scores, effective 1 September 2024, as presented.	127	Decision
	<ol> <li>Report - Vice-President, Research &amp; International         <ul> <li><u>Awards, Distinctions, Grants, Waterloo International Engagements</u></li> </ul> </li> </ol>	129	Information
	14. <u>Report of the Provost – University Research Chairs</u>	135	Information
	15. <u>Report of the Provost – Faculty Appointments, Leaves</u>	137	Information
	16. List of Graduands – Spring 2023 Convocation	139	Information
	17. Other Business a. <u>Senate Orientation Module</u>	Oral 337	Input Information



TIMING	AGENDA ITEM	PAGE	ACTION
4:55p.m.	<b>CONFIDENTIAL</b> Senators, Vice-Presidents, Secretariat and Technical Staff as required		
	18. <u>Minutes of the 15 May 2023 Meeting</u>	339	Decision
	19. Business Arising from the Minutes	Oral	Input
	20. Report of the President	Oral	Information
	21. <u>Report of Vice-President, Advancement on Policy 7</u> (Nenone Donaldson)	341	Information
	22. <u>Report – Honorary Degree Committee</u>	345	Decision
	23. Other Business	Oral	Input
	24. Adjournment	Oral	Input

Mike Grivicic Associate University Secretary Secretary to Senate

## **Important Dates**

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

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

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

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

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

\*regrets

## **OPEN SESSION**

### **CHAIR'S REMARKS**

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

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

### 1. CONFLICT OF INTEREST

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

## 2. APPROVAL OF THE AGENDA

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

## 3. MINUTES OF THE 17 APRIL 2023 MEETING

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 4<sup>th</sup> 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

- 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 September2023, 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 DEGEE COMMITTEE** Received for information.
- **14. REPORT COU ACADEMIC COLLEAGUE** Received for information.
- **15. REPORT VICE-PRESIDENT, RESEARCH & INTERNATIONAL** Received for information.
- **16. REPORT OF THE PROVOST FACULTY APPOINTMENTS, LEAVES** Received for information.

### **17. OTHER BUSINESS**

There was no other business.

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

16 May 2023 *AK/twk/dg*  Andrea Kelman University Secretary (Acting) Secretary to Senate



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

<sup>1</sup> Annual item

<sup>2</sup> Board of Governors approval

<sup>3</sup> Presented by the Vice-President Academic and Provost

<sup>4</sup> Presented by the President and Vice-Chancellor, and Chair of Senate

<sup>5</sup> Presented by the University Secretary <sup>6</sup> Leadership updates may include such topics as: Talent, We Accelerate Report, Communities (EDI, Sustainability), Waterloo International, etc.



Senate Agenda Items <ul> <li>expected</li> <li>*as needed</li> </ul>	15 May 2023	19 June 2023	23 September 2023	<b>23 October 2023</b> Strategic Plan Annual Update / Waterloo at 100	27 November 2023	29 January 2024	4 March 2024	8 April 2024
CONSENT AGENDA								
Reports from Faculties (e.g., appointments, administrative appointments, sabbaticals) <sup>2</sup>	•	•	•	•	•	•	•	•
Tenure and Promotion Report <sup>4</sup>			•					
University Professor Designation <sup>3</sup>							-	
Call for Nominations for University Professor <sup>3</sup>			•					
Call for Nominations for Honorary Degree Recipients <sup>4</sup>						•		
Report of the COU Academic Colleague <sup>1</sup>	•							
Senate Committee Appointments <sup>5</sup>	*	*	-	*	*	*	*	*
CLOSED AGENDA								
Minutes	•	•	•	•	•	•	•	•
Business Arising	•	•	•	•	•	•	•	•
Reports from Committees and Councils	*	*	*	*	*	*	*	*
Honorary Degree Recommendations	*	*	*	*	•	•	*	*
Reports from Search and Review Committees for Policy-based Senior Leadership Appointments and Reappointments	*	*	*	*	*	*	*	*
Report of VP Advancement on Policy 7 <sup>1</sup>		•						

Joint SENATE/BOARD Strategic Plan Focus Sessions 3-4:30	Joint SENATE/BOARD Continuing Education Sessions 3-4:30
To be determined	To be determined

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

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

For more information: <a href="mailto:secretariat@uwaterloo.ca">secretariat@uwaterloo.ca</a> uwaterloo.ca/secretariat, NH 3060

<sup>1</sup> Annual item

<sup>2</sup> Board of Governors approval

<sup>4</sup> Presented by the President and Vice-Chancellor, and Chair of Senate

<sup>5</sup> Presented by the University Secretary

 <sup>5</sup> Presented by the University Secretary
 <sup>6</sup> Leadership updates may include such topics as: Talent, We Accelerate Report, Communities (EDI, Sustainability), Waterloo International, etc.

<sup>&</sup>lt;sup>3</sup> Presented by the Vice-President Academic and Provost



For Information	Public	<b>Open Session</b>
То:	Senate	
Sponsor: Contact Information:	James W.E. Rush, Vice-President Academic and Provo Provost's Office	st
Presenter: Contact Info:	James W.E. Rush, Vice-President Academic and Provo Provost's Office	st
Date of Meeting:	June 19, 2023	

#### **Item Identification:**

8(a). Final Report of the Digital Learning Strategy Working Group for Senate.

#### **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.



## **Documentation Provided:**

• Intentional Shift: Recommendations for the University of Waterloo's Digital Learning Strategy. Final Report of the Digital Learning Strategy Working Group.

## 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 <u>EDTECH governance</u> structure, which would provide a decision-making body for educational technology selection and support, and an <u>EDTECH Hub website</u>, which would act as a central information resource for both current and potential future tools. Technology in classrooms should also be considered in this ecosystem, and both digital and physical need to work together to create a seamless teaching and learning experience.

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

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

## 1.2 Why Waterloo needs a Digital Learning Strategy

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

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

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

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

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

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

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

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

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

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

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

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

## 1.3 Summary of Consultation Process

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

## a. Stakeholder consultations

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

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

## b. Environmental Scan

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

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

## 2. Vision and Principles

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

## 2.1 Vision

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

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

## A vision for digital teaching and learning at Waterloo

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

## 2.2 Core Principles

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

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

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

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

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

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

### Degree requirements, programs, majors, and plans

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

## Recommendations:

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

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

Recommendations:

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 credentialed professional development training over the course of the degree, ultimately leading to verifiable competencies for possible inclusion in digital wallets as per recommendation 7d.

## **Champions of Teaching and Learning**

Waterloo's Teaching Fellows program was initiated in response to <u>Recommendation of the final</u> <u>report of the Task Force on Innovative Teaching Practices to Promote Deep Learning at the</u> <u>University of Waterloo</u> (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 accessibel 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.

## Incubating New Ideas in Digital Learning

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

### Recommendations:

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

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

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

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

## Recommendations

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

## 4. Conclusion and Next Steps

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

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

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

# Appendix A: Project team

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

Additional support was provided by the following stakeholders:

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

# Appendix B: Summary of Consultations

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

Environment	Surveys (n=20)
	Group discussion (n=13)
	Individual consultations (n=2)
Engineering	Surveys (n=59)
5 5	Individuals consultation (n=1)
	Group meetings with Faculty Operations Advisory
	Committtee (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	Individual consultation with Jeff Casello
Affairs	
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 Marloo Shafford
Special Auvisor to the Provost, Watsee	Individual consultation with Marlee Spafford

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

### **Secondary Data from Previous Surveys**

Instructor Survey Data

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

### Student Survey Data

- Spring 2020
- Winter 2021
- WUSA Fall 2020 FINAL Teaching and Course Quality Survey Report
- WUSA flexible\_remote\_options winter\_2022

# Appendix C: Environmental Scan

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

Strategies were broadly categorized as addressing:

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

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

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

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

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

		Deleted		Time frame		е	
	Recommendation	Related recommendations	Responsibility	IP	SR	MR	LR
The University should be intentional and evidence-based about the design and application of digital	<ul> <li>a. Faculties should incorporate digital learning into their Strategic Plans in a manner that reflects the Digital Learning Strategy recommendations.</li> <li>b. Program-level planning decisions should support flexible pathways for</li> </ul>	1b, 1c, 1d 2a, 2b					
learning across	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.	1a, 2c, 4a					
	d. The University should consider how digital competencies can be reflected in institutional degree-level expectations, and these in turn would	1a, 1c, 7b					

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

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

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

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

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

responsibility and include for identifying, researchir recommending new teac learning technologies.	ng, and			
c. The University should r procurement process to e is suited to the efficient s optimal technology withi shifting EDTECH markets	ensure that it election of n the rapidly	University		
d. The University should I dedicated to support the customization, and integr house EDTECH systems for learning. This could involv Faculty collaboration and resources.	development, ration of in- or digital ve ASU and	University		
e. The selection of future the learning managemen (LMS), should consider bo and future needs, pedago frameworks and strategio (e.g., WatSEE, the Future Framework, WatSPEED/li learning).	t system oth current ogic c directions Ready Talent			
f. The University should c ongoing investment in ca infrastructure to support learning on campus (e.g., teaching and learning spa develop classroom stands specifications based on re and function to be emplo builds or retrofits irrespe	mpus digital Wi-Fi, flexible aces) and ards and oom capacity yed in new			

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

pedagogical development needs for digital teaching and learning.	and factor this into the equitable assignment of duties. b. Develop a certificate in digital teaching and learning for instructors and graduate students.	8d			
	c. Expand each Faculty's Teaching Fellows program to provide capacity, support, and reach for digital initiatives.	7e	Faculties		
	d. Continue the collaboration among key teaching and learning related academic support units through Keep Learning as a means to coordinate and streamline access to resources and support for instructors. Keep Learning should continue to provide guidance and support for overall directions set by University leadership, Teaching Fellows, and related advisory bodies.	8b	Academic Support Units		
STRATEGIC DIRECTION 9: Expand our global reach and reputation using digital strategies.	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	Зе			

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

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

12:	a. Improve sharing of institutional data and establish open data standards.			
and develop a vision for a fully digitally enabled	communications and data gathering on current and prospective students' needs, preferences, and drivers of			



# **Office of the Secretariat**

For Information	Public	<b>Open Session</b>
То:	Senate	
Sponsor: Contact Information:	James W.E. Rush, Vice-President Academic and Provo Provost's Office	ost
Presenter: Contact Info:	James W.E. Rush, Vice-President Academic and Provo Provost's Office	ost
Date of Meeting:	June 19, 2023	

### **Item Identification:**

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

### **Summary:**

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

## **Recommendation/Motion:**

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

## **Governance Path:**

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

## **Previous Action Taken:**

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



# **Office of the Secretariat**

## **Highlights:**

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

## **Documentation Provided:**

• Briefing note: Motion for Department Name Change

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

## FOR APPROVAL

### **Department Name Change**

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

### **Rationale**:

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

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

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

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

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• 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.



For Approval	Public	<b>Open Session</b>
То:	Senate	
Sponsor:	Jeff Casello Associate Vice-President Graduate Studies and Postde	octoral Affairs
	Charmaine Dean Vice-President, Research & International	
<b>Contact Information:</b>	jcasello@uwaterloo.ca	
Presenter: Contact Info:	Jeff Casello jcasello@uwaterloo.ca	
Date of Meeting:	June 19, 2023	

**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 <u>strategic commitment</u> 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.).

## **Next Steps:**

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

### **Documentation Provided:**

Program Revision Template - Appendix A

# WATERLOO

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 <u>strategic commitment</u> 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** <u>Graduate Studies Academic Calendar (GSAC)</u> page (include the link to the web page where the changes are to be made):

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

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

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

# UNIVERSITY OF WATERLOO

Current Graduate Studies Academic Calendar content:	Proposed 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.	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.
62 of 35	<ol> <li><u>Course-level WIL</u> 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</li> </ol>

# UNIVERSITY OF WATERLOO

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
	activities. Course-level WIL comes in the form of the following models: a) Community and Industry Research Projects (CIR) or b) Practicums: <sup>1</sup>
	a) <u>Community and Industry</u> <u>Research Projects (CIR):</u> <u>Supporting the course objectives,</u> <u>CIR consist of a project or</u> <u>assignment within the course</u> <u>wherein students engage with a</u> <u>partner organization either</u> <u>individually or in teams. The course</u> <u>project/assignment would occur in or</u> <u>with external organizations, with</u> <u>examples being consulting projects,</u> <u>design projects, program</u> <u>evaluations. When a course involves</u> <u>CIR, the activity would be identified</u> <u>with a secondary (or tertiary)</u> <u>component using the course</u> <u>component CIR.</u>
	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. <u>Program-level WIL</u> 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).

# WATERLOO

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
Calendar content:	Calendar content:         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 601 <sup>2</sup> ), 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
	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
	<ul> <li>work terms (standard or flexible work-terms).</li> <li>b) Internships: Internships are supervised work-integrated learning experiences that are discipline- specific and directly align with the graduate program's learning</li> </ul>

# UNIVERSITY OF WATERLOO

Current Graduate Studies Academic Calendar content	Proposed Graduate Studies Academic Calendar content
Calendar content:	Calendar content:         Outcomes. 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).         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
	<u>research would involve an industry or</u> <u>community partner and an identified faculty</u> <u>collaborator (in most cases, the research</u> <u>supervisor). For research activities to be</u> <u>considered WIL, there must be co-creation of</u> <u>the research objectives by the external partner</u> <u>and the student/faculty member, active</u> <u>engagement and interaction between the</u> <u>student and external partner, and the external</u> <u>partner should have a role in providing</u> <u>feedback to and/or assessment of the student</u> <u>activity.</u>
	<sup>1</sup> 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.
	<sup>2</sup> COOP 601 does not count towards home program degree course requirements.
Current Graduate Studies Academic	Proposed Graduate Studies Academic

Calendar content:	Calendar content:
Glossary of terms	Glossary of terms
N/A	Community and Industry Research Projects (CIR): This is a secondary or tertiary component
	65 of 350 Return to Agenda

Current Graduate Studies Academic	Proposed Graduate Studies Academic
Calendar content:	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 <u>graduate</u> <u>degree level expectations</u> and/or <u>future ready talent framework</u>) 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



# **Office of the Secretariat**

For Information	Public	<b>Open Session</b>
То:	Senate	
Sponsor: Contact Information:	James W.E. Rush, Vice-President Academic and Provo Provost's Office	st
Presenter: Contact Info:	James W.E. Rush, Vice-President Academic and Provo Provost's Office	st
Date of Meeting:	June 19, 2023	

### **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: <u>TAP Office Reports</u>
- 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 <u>Teaching Effectiveness</u> <u>Framework</u> and that provides meaningful and fair assessment of teaching effectiveness.

# Assessment of Teaching: Overview

Update to Senate, May 2023

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

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# Background: Teaching Assessment Processes

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

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

# **Teaching Assessment Processes at the University of Waterloo**

Overarching Goal To mitigate the impact of systemic biases on the teaching component of UW's merit, tenure & promotion process by including multiple sources of information.						
Objectives						
Gradually eliminate single source teaching assessment practices Advance progress toward holistic assessment (Senate endorsed) Demonstrate leadership in teaching assessment	Foster increased equity in teaching assessment Continuous development and improvement of systems and processes					
Provide evidence that drives improvements in teaching quality, contributing to improved student outcomes, engagement, satisfaction, perceptions.						

# **Ongoing Development & Implementation**

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

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

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

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

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

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

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

# Included in This Report

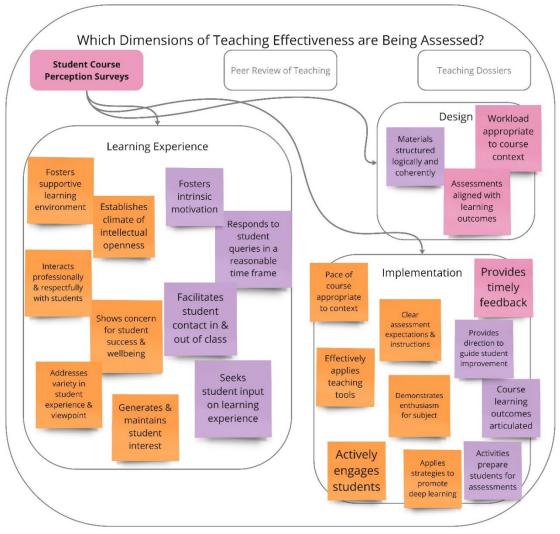
Summary reports on the areas of teaching assessment where there have been the most important developments in the past year are provided below. This includes the following sections:

- 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

<sup>&</sup>lt;sup>1</sup> Members of the committee will be appointed by the Provost on advice from the Deans and AVPA and in consultation with the President of FAUW and the AVP GSPA.

# Update: Student Course Perception Surveys

# Summary: Student Course Perception Surveys



RED = Student Course Perception Survey is primary source ORANGE = both Student Course Perception Survey and Peer Review of Teaching are sources PURPLE = both Student Course Perception Survey and Teaching Dossiers are sources

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: <u>TAP Office Reports</u>

## 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.<sup>2</sup> 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.<sup>3</sup>

# 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.

<sup>&</sup>lt;sup>2</sup> Access the guidebooks here: <u>Academic Administrator Guidebook</u> and <u>Instructors</u> (note, pdf versions are available).

<sup>&</sup>lt;sup>3</sup> Access the surveys here: <u>Academic Administrator Survey</u> and <u>Instructor Survey</u>

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 tierfour 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

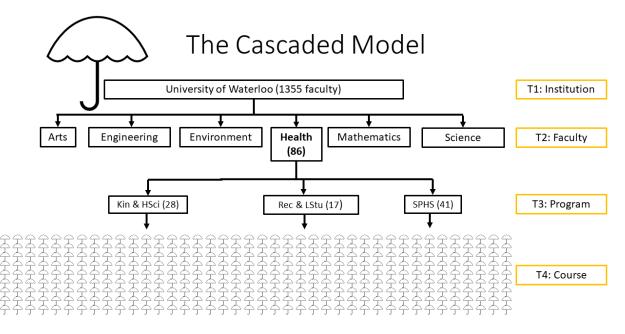
# The Cascaded SCP Model: What is it?

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 indevelopment. 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

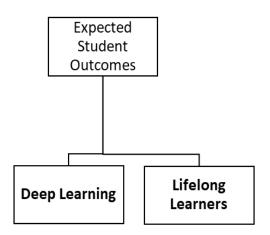
In June 2022, Senate endorsed the decision of Deans' Council to accept the institutional <u>Teaching Effectiveness Framework</u>. This framework serves as the fundamental foundation for developing UWs holistic teaching assessment processes (SCPs, Peer Review, Teaching Dossiers and Student Supervision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

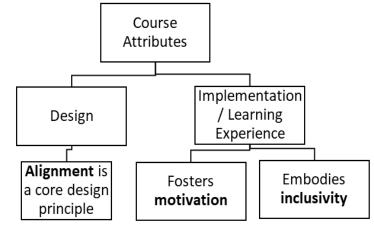
#### Institutional Teaching Effectiveness Framework

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

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

# Institutional Teaching & Learning Priority Map





# Expected Student Outcomes (not measured with SCP)

<u>Deep learning</u> 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. <u>Lifelong learning</u> 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)

<u>Alignment</u> 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.

<u>Motivation</u> 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.

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

# Tier-two Consultation Status

In July 2020, Sonya Buffone, TAP Director, and Gordon 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.

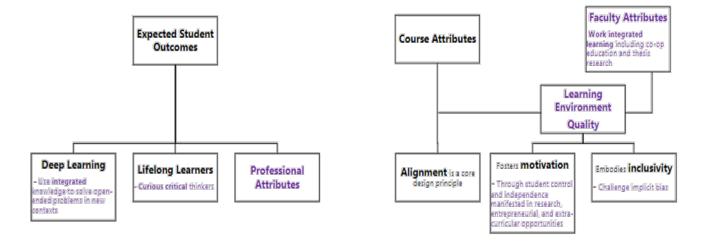
Faculty	Start Date	Priority Map Status	Tier two Question(s) Status	Notes
Engineering	July 2020	Completed	Indefinite Pause	Faculty decision to pause process due to lack of consensus on proposed tier 2 items.
Environment	December 2020	Completed	Pending/Paused	Tier-two items have been proposed and pending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

# Teaching & Learning Priority Maps by Faculty

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

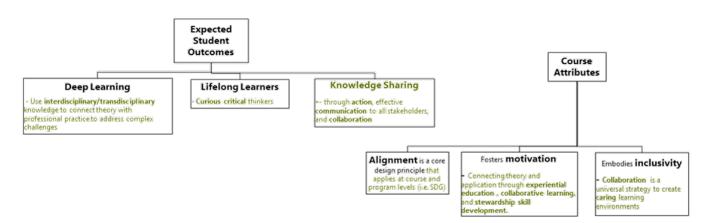
- 1. Spans the Faculty (captures all the diversity of the Faculty);
- 2. Evidence exists that it is a teaching priority (e.g., it is grounded in the strategic plan);
- 3. Fits into the institutional teaching and learning priority map and either
  - a. Broadens; or
  - b. Deepens key priorities; and

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

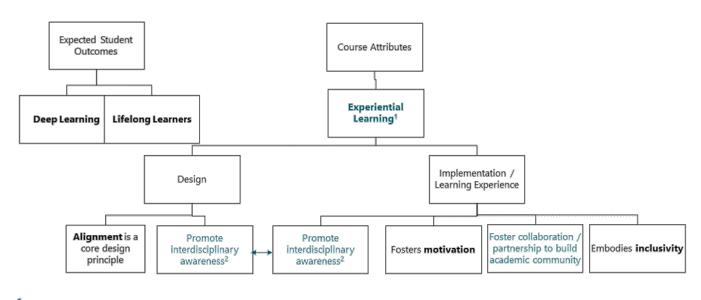


#### Engineering Teaching & Learning Priority Map

Environment Teaching & Learning Priority Map

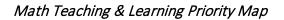


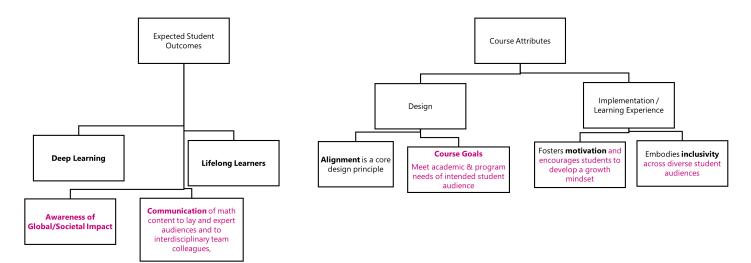
#### Health Teaching & Learning Priority Map



<sup>1</sup> Experiential education includes a broad spectrum of authentic learning activities

<sup>2</sup> 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.

...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."

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

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

#### Proposed Timelines for 2023 Qualitative Analysis

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

# SCP Response Rates

## Overview

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

#### Data Sources

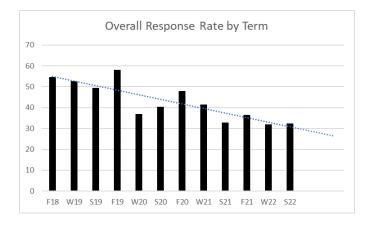
- Perceptions survey platform response rate data: Fall 2018 (1189) to Spring 2022 (1225)
- Institutional Analysis and Planning Student Full Time Equivalent (FTE) data

#### To Keep in Mind

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

#### **Response Rates: Past Four Years**

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



#### Figure 1: Overall response rate (%) by term

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

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

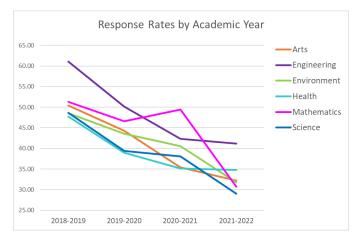


Figure 2: Response rates (%) for each Faculty by academic year

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

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

# Change in Number of Course Evaluations Administered

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

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

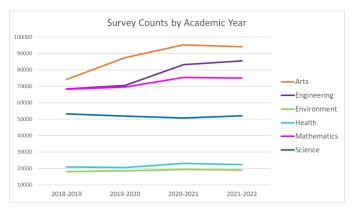


Figure 3: Number of surveys administered by each Faculty by academic year

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

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

<sup>&</sup>lt;sup>4</sup> (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 arts. As a next step, we compared changes in course evaluations administered with changes in enrolment.

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

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

# Change in Course Evaluation Load

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

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

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

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

# Changes in Course Evaluation Load and Response Rate

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

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

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

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

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

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

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

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

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

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

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

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

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

# Overall Change in Course Evaluation Load and Response Rate

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

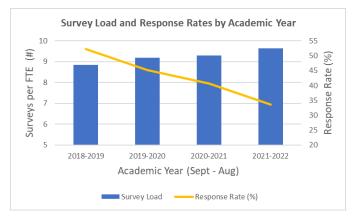


Figure 4: Survey load and response rates by academic year

# Conclusion

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

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

#### **Next Steps**

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

#### Faculty and Department SCP Survey Administrators

- Help avoid respondent burden: do not create separate SCP surveys for single course offerings that have secondary components or multiple instructors.
  - Use the existing features of <u>Perceptions</u> 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;
  - o 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 <u>three-slide presentation</u> is available online.
  - Share link to <u>Perceptions</u> 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

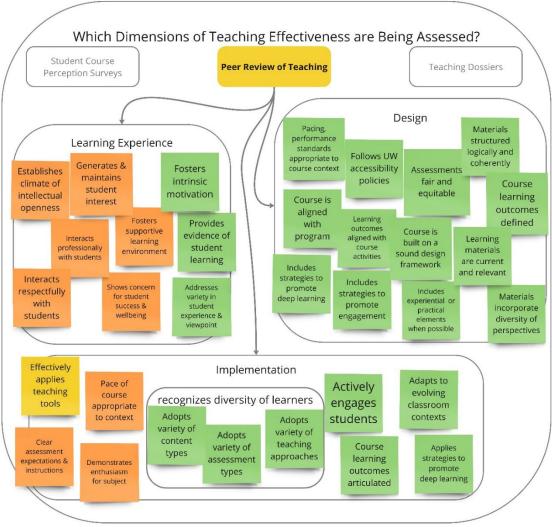
Contact <u>Kathy Becker</u>, Teaching Assessment Processes Specialist, for support as needed.

## Reference

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

# Update: Peer Review of Teaching

# Summary: Peer Review of Teaching



YELLOW = Peer Review of Teaching is primary source

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

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

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

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:

#### <u>May 2020</u>:

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

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

#### <u>June 2022:</u>

- Senate endorsed the decision of Deans' Council to accept the institutional <u>Teaching</u> <u>Effectiveness Framework</u>.
- 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

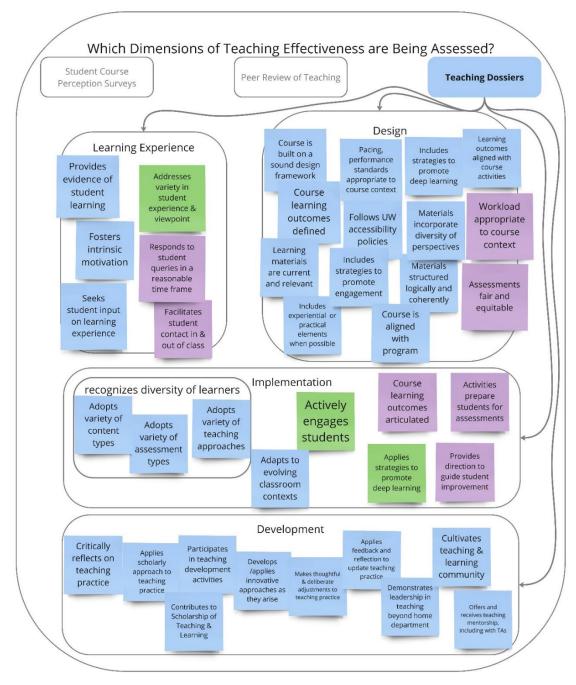
- Distribute PRT Update to Associate Deans and others tasked with leading the implementation of PRT in the Faculty
- Ask the point-people involved in implementing PRT to <u>connect with the TAP office</u>
- Be sure to follow CTAPT guidelines and recommendations for PRT (see <u>CTAPT PRT</u> <u>Details and Report Template (PDF)</u>)
- 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 <u>CTAPT PRT</u> <u>Details and Report Template (PDF)</u> for additional details).
- Amend <u>CTAPT PRT Report Template (PDF)</u> to suit Faculty context (while remaining aligned with <u>Teaching Effectiveness Framework</u>).
- 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

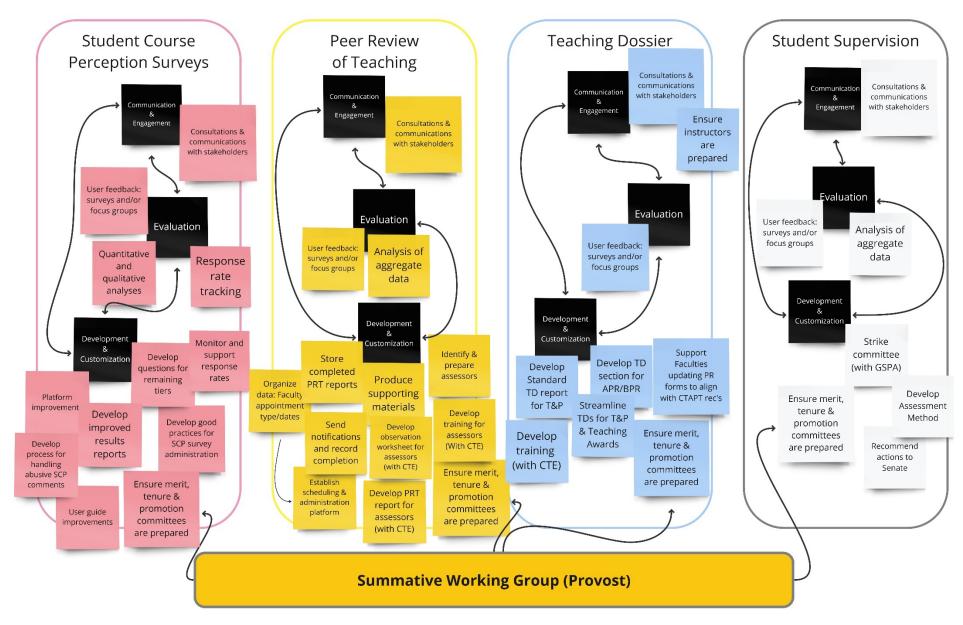
- In September 2022 the TAP office brought CTAPT recommendations with respect to TDs and performance review (APR/BPR) form updates to Dean's Council. At this time Faculty Deans were provided the appropriate guiding documentation (as developed by CTAPT) to update performance review (APR/BPR) forms to 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	Teaching Effectiveness	ning assessment framework a <b>Framework</b> and that is com emic biases on teaching assess	prehensive, equitable, d	_	
Objectives	Develop and implement Senate-endorsed holistic teaching assessment processes	Assess and improve processes and systems	Gather evidence that drives improvements in teaching quality	Foster increased equity in teaching assessment	Demonstrate leadership in teaching assessment
<ol> <li>Fully implement revised Student Course Perception (SCP) Surveys</li> <li>Implement Peer Review of Teaching</li> <li>Implement Teaching Dossier</li> <li>Implement Student Supervision Framework</li> <li>Strike Summative Working Group (SWG)</li> </ol>	<ul> <li>Student Course Perception Survey Development</li> <li>Develop questions for remaining tiers</li> <li>Assess open-ended comments</li> <li>Implement student engagement strategies</li> <li>Peer review of Teaching</li> <li>Develop scheduling &amp; administration platform (with CEL)</li> <li>Identify &amp; prepare assessors</li> <li>Produce supporting materials</li> <li>Ensure merit, tenure and promotion committees are prepared</li> <li>Teaching Dossier</li> <li>Develop training (with CTE)</li> <li>Student Supervision</li> <li>Strike committee (with GSPA)</li> <li>Develop assessment approach</li> <li>Summative Working Group</li> <li>Develop recommendations on triangulation of teaching assessment data for use in merit, tenure &amp; promotions</li> </ul>	<ul> <li>Student Course Perception Surveys</li> <li>Test questions in all tiers (Conduct quantitative and qualitative analyses)</li> <li>Test student engagement strategies</li> <li>Develop improved reports</li> <li>Develop good practices for SCP survey administration</li> <li>Gather user feedback</li> <li>Improve user guides</li> <li>Improve platform</li> <li>Peer review of Teaching</li> <li>Gather feedback</li> <li>Improve admin system, training, supporting materials</li> <li>Teaching Dossier</li> <li>Establish consistency in short- version TD for APR/BPR forms</li> <li>Provide recommendations/guidance for TD's at tenure and promotion time</li> <li>Ensure TD's and teaching awards processes are aligned</li> <li>Gather feedback</li> <li>Student Supervision</li> <li>Gather feedback</li> </ul>	<ul> <li>Student Course Perception Surveys</li> <li>Ensure merit, tenure and promotion committees are prepared</li> <li>Peer review of Teaching</li> <li>Develop PRT report for assessors (with CTE)</li> <li>User feedback: surveys and/or focus groups</li> <li>Analysis of aggregate data</li> <li>Teaching Dossier</li> <li>Develop TD section for APR/BPR forms</li> <li>Support Faculties updating PR forms to align with CTAPT rec's</li> <li>Student Supervision</li> <li>User feedback: surveys and/or focus groups</li> <li>Analysis of aggregate data</li> </ul>	<ul> <li>Student Course Perception</li> <li>Surveys</li> <li>Develop process for handling abusive SCP comments</li> <li>Peer Review of Teaching</li> <li>Develop observation worksheet for assessors (with CTE)</li> <li>Develop training for assessors</li> <li>Teaching Dossier</li> <li>Develop standard TD report for T&amp;P</li> <li>Streamline TD's for T&amp;P &amp; Teaching Awards</li> <li>Student Supervision</li> <li>Recommend actions to Senate</li> <li>Summative Working Group</li> <li>Provide advice to Deans, Associate Deans, Chairs and T&amp;P committees on interpreting teaching assessment scores with equity lens.</li> </ul>	<ul> <li>Consultations &amp; communications with stakeholders</li> <li>Ensure instructors are prepared</li> </ul>



#### **TAP Office Activities in Each Area**

# Conclusion

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

# Appendices

# Appendix A: Teaching Effectiveness Framework: Defining the Categories

#### Design

#### Planning

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

#### Framework

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

#### Implementation

#### Communication

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

#### Student engagement

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

#### Variety of elements

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

#### Assessments and feedback

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

#### Learning experience

#### Rapport

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

#### Responsiveness

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

#### Diversity

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

#### Engagement and learning

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

#### Professional development

#### Reflection

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

#### Growth and continuous improvement

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

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

#### Collaboration, mentorship, and leadership

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

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

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

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

Notes:

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

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

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

- 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.
  - •
  - •

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

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

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

- •
- •
- •



For Approval	Public	<b>Open Session</b>
То:	Senate	
Sponsor: Contact Information:	David DeVidi, Associate Vice-President, Academic david.devidi@uwaterloo.ca	
Presenter: Contact Info:	Aldo Caputo, Director, Centre for Extended Learning 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.
- 7. DC+ (19 October 2022): framework presented at Deans' Council Plus.
- 8. SGRC (14 November 2022). Refinements made in response to SGRC discussion.
- 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 <u>Guidelines for Third-party resources</u> 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 <u>https://uwaterloo.ca/associate-vice-president-academic/remote-teaching-and-learning-intellectual-property</u>) 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.

- 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

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

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.

### **Digital Learning Principles and Guidelines**

### 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.<sup>†</sup>
- 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.

<sup>&</sup>lt;sup>†</sup> Online Principles 4 and 5 were established by the UW Online Learning Task Force, 2008

### **Digital Learning Principles and Guidelines**

### 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.



# Senate Graduate and Research Council

For Information	Consent Agenda	<b>Open Session</b>
То:	Senate	
Sponsor: Contact Information:	Charmaine Dean Vice-President, Research & International	
Sponsor: Contact Information:	Jeff Casello Associate Vice-President, Graduate Studies and Pos	tdoctoral Affairs
Presenter: Contact Info:	Jeff Casello jcasello@uwaterloo.ca	
Date of Meeting: Agenda Item Identification:	June 19, 2023 11. Report - Senate Graduate & Research Coun	cil

### **Summary:**

<u>Senate Graduate & Research Council</u> met on <u>8 May 2023</u> 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

<u>Council approved</u> 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. <u>Faculty of Health</u> (Health; Recreation and Leisure Studies)
- b. <u>Faculty of Science</u> (Biology; Chemistry)
- c. <u>Graduate Studies</u> (Graduate Studies)

### **Jurisdictional Information:**

As provided for in <u>Senate Bylaw 2</u>, 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	<b>Open Session</b>
То:	Senate	
Sponsor: Contact Information:	David DeVidi, Associate Vice-President, Academic <u>david.devidi@uwaterloo.ca</u>	
Presenter: Contact Information:	David DeVidi, Associate Vice-President, Academic <u>david.devidi@uwaterloo.ca</u>	
Date of Meeting:	June 19, 2023	
Agenda Item Identification:	12. Report – Senate Undergraduate Council	

### **Summary:**

<u>Senate Undergraduate Council</u> met on <u>May 9, 2023</u> 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. <u>Faculty of Engineering</u> (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)
- <u>Faculty of Mathematics</u> (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. <u>Renison University College</u> (undergraduate communication requirement)
- d. <u>Software Engineering</u> (software engineering)
- e. <u>Registrar's Office</u> (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 <u>Senate Bylaw 2</u>; section 5.03; council is empowered to make approvals on behalf of Senate for a variety of operational matters:

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



# Senate Undergraduate Council

For Approval	Consent Agenda	<b>Open Session</b>
То:	Senate	
Sponsor: Contact Information:	David DeVidi, Associate Vice-President, Academic <u>david.devidi@uwaterloo.ca</u>	
Presenter: Contact Information:	David DeVidi, Associate Vice-President, Academic <u>david.devidi@uwaterloo.ca</u>	
Date of Meeting:	June 19, 2023	
Agenda Item Identification:	12a. Report – Senate Undergraduate Council: Academic Regulation Revision to Admission for Engineering	the Faculty of

### **Summary:**

<u>Senate Undergraduate Council</u> met on <u>May 9, 2023</u> 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 <u>Senate Bylaw 2</u>, section 5.03, council is empowered to make approvals on behalf of Senate for a variety of operational matters:

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

### **Governance Path:**

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

### **Background and Rational:**

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

### **Proposed Changes:**

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

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

### Admission

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

The following can be found in this Calendar:

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

### 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 courseswhich can be taken online as an alternative. Post-secondary institutions may offer special preuniversity mathematics, physics, and chemistry courses which can be taken to establish grades for required high school courses. Alternatively, applicants seeking to establish recent grades in required courses may take high school courses through an approved high school. To discuss admissibility and appropriate qualifying studies, applicants are advised to contact the director of admissions-an admissions officer for the Faculty of Engineering in the fall of the year prior to entering first year.

### Admission to Advanced Standing

Admission beyond beyond the 1A term is limited to applicants who have an academic academic course work and work experience background that is considered equivalent to the particular class cohort of students they would join. Due to the co-operative nature of a Faculty of Engineering plan, no student willbe 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 completesatisfactorily the final four academic terms, and the final three work terms and work reports. Credit for previous work experience can be applied only to those work terms preceding the level of admission and cannot exceed three work terms. Students who are readmitted to an engineering plan are-required to clear all previous failures.

### Admission of Applicants with a Technical Degree

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

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# Senate Undergraduate Council

For Approval	Consent Agenda	<b>Open Session</b>
То:	Senate	
Sponsor: Contact Information:	David DeVidi, Associate Vice-President, Academic <u>david.devidi@uwaterloo.ca</u>	
Presenter: Contact Information:	David DeVidi, Associate Vice-President, Academic <u>david.devidi@uwaterloo.ca</u>	
Date of Meeting:	June 19, 2023	
Agenda Item Identification:	12b. Report – Senate Undergraduate Council: Academic Regulation for Admission Fraud	

### **Summary:**

<u>Senate Undergraduate Council</u> met on <u>May 9, 2023</u> 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 <u>Senate Bylaw 2</u>, section 5.03, council is empowered to make approvals on behalf of Senate for a variety of operational matters:

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

### **Governance Path:**

Senate Undergraduate Council approval date (mm/dd/yy): 05/9/23 Senate Undergraduate Council approval date (mm/dd/yy): 05/26/23 (Revision of effective date)

### **Background and Rational:**

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

### **Proposed New Calendar Text:**

### **Admissions Fraud**

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

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

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



# Senate Undergraduate Council

For Approval	Consent Agenda	<b>Open Session</b>
То:	Senate	
Sponsor: Contact Information:	David DeVidi, Associate Vice-President, Academic <u>david.devidi@uwaterloo.ca</u>	
Presenter: Contact Information:	David DeVidi, Associate Vice-President, Academic <u>david.devidi@uwaterloo.ca</u>	
Date of Meeting:	June 19, 2023	
Agenda Item Identification:	12c. Report – Senate Undergraduate Council: Academic Regulation Revision for Admission Re	equirements

### **Summary:**

<u>Senate Undergraduate Council</u> met on <u>May 9, 2023</u> 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 <u>Senate Bylaw 2</u>, 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	Consent Agenda	<b>Open Session</b>
To:	Senate	
Sponsor: Contact Information:	Charmaine Dean, Vice President Research and Internat vpri@uwaterloo.ca	ional
Presenter: Contact Information:	Charmaine Dean, Vice President Research and Internat <u>vpri@uwaterloo.ca</u>	ional
Date of Meeting:	June 19, 2023	
Agenda Item Identification:	<b>13.</b> Awards, Distinctions, Grants, Waterloo Internation Engagements	al

### **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

# Vice-President, Research & International Report to Senate 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**

**Dan Berry** (Mathematics) - Most influential paper award at the Requirements Engineering: Foundation for Software Quality 29<sup>th</sup> International Working Conference, 2023, April 17–20 in Barcelona, Spain.

• 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: <u>https://uwaterloo.ca/news/velocity-health-launches</u>
- Velocity Health 2022 results: 40+ health tech companies supported, \$70,000,000 capital raised, \$36,000,000 sales, 110 patents filed.
- **Jeremey Wang** (co-found Ribbit) wins Mitacs Entrepreneur Changemaker award, <u>https://velocityincubator.com/2023/05/velocity-company-founder-jeremy-wang-named-change-agent-entrepreneur/</u>
- Deep tech company **Adaptis** has announced its first pre-seed round. Founded by University of Waterloo alum **Sheida Shahi** and **Aida Mollaei**, Adaptis joined Velocity last year and is using artificial intelligence to automate and optimize building adaptation and material reuse planning, aimed at decarbonizing buildings and lowering costs. <u>https://betakit.com/adaptis-secures-2-million-cad-to-help-building-owners-move-to-net-zero-with-ai/</u>
- **Roga** rated **top four wellness companies** by Fast Company, <u>https://www.fastcompany.com/90871374/world-changing-ideas-wellness-2023</u>
- **Maclean's** magazine has named **Faizan Sheikh** and **Pablo Molina**, founders of Velocity company **Avidbots Corp**., on its **Top 10 AI Trailblazers** list: <u>https://macleans.ca/rankings/the-power-list-2023/</u>
- Velocity Alumni companies Acerta and Membio Inc. were recently featured in the top 15 of the most interesting and innovative #manufacturing #startups in Canada: <u>https://canadaventure.news/manufacturing-innovations-taking-root-in-canada-showcasing-15-dynamic-startups/</u>



# **Office of the Secretariat**

For Information	Public	<b>Open Session</b>
To:	Senate	
Sponsor: Contact Information:	James W.E. Rush, Vice-President Academic and Prove Provost's Office	ost
Presenter: Contact Info:	James W.E. Rush, Vice-President Academic and Prove Provost's Office	ost
Date of Meeting:	June 19, 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 preeminence 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	Consent Agenda	<b>Open Session</b>
То:	Senate	
Sponsor: Contact Information:	James W.E. Rush, Vice-President, Academic and Prove provost@uwaterloo.ca	ost
Presenter: Contact Information:	James W.E. Rush, Vice-President, Academic and Prove provost@uwaterloo.ca	ost
Date of Meeting:	June 19, 2023	
Agenda Item Identification:	15. Report of the Provost – Faculty Appointments, I	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 <u>Senate agenda page</u><sup>1</sup>.

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

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# **Office of the Secretariat**

For Information	Consent Agenda	<b>Open Session</b>
То:	Senate	
Sponsor: Contact Information:	Cathy Newell Kelly, Registrar <u>cnkelly@uwaterloo.ca</u>	
Sponsor:	Jeff Casello, Associate Vice-President, Graduate Studie Postdoctoral Affairs	es and
<b>Contact Information:</b>	jcasello@uwaterloo.ca	
Presenter: Contact Info:	Cathy Newell Kelly, Registrar <u>cnkelly@uwaterloo.ca</u>	
Date of Meeting:	June 19, 2023	
Item Identification:	<b>16.</b> 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 13<sup>th</sup> to 17<sup>th</sup>, 2023

We herby 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.

Jeffrey M. Casello

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

Catherine 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**

Nathan Collin Allen	Granted May 09, 2023
Michael Christopher Andary	Granted May 09, 2023
Manbir Singh Arora	Granted May 12, 2023
Gursimmer Banwait	Granted May 08, 2023
Leo Bao	Granted May 24, 2023
Gabriel Euzebio Chirico Baranoski	Granted May 09, 2023
Benjamin James Beazley	Granted May 09, 2023
Charlie Cai	Granted May 09, 2023
Alex Chen Chen	Granted May 08, 2023
Elijah Yilang Chen	Granted May 12, 2023
Adrian Hei Tung Chow	Granted May 18, 2023
Thomas Edward Cojocar	Granted May 08, 2023
Karan Dahiya	Granted May 09, 2023
Harsimran Singh Darhan	Granted March 21, 2023
Elizabeth Margaret Drew	Granted May 09, 2023
Ji Yuan Feng	Granted May 09, 2023
Aidan Ronald Gordon Foster	Granted May 24, 2023
Tristan Pierre Gervais	Granted May 09, 2023
Selina Hsu	Granted May 08, 2023
Chun-De Hu	Granted May 16, 2023
Daniel Igino Ingriselli	Granted May 09, 2023
Alexander Jabbour	Granted May 12, 2023
Hadi Khadra	Granted May 09, 2023
Muhammad Ayan Khan	Granted May 12, 2023
Larry Li	Granted May 16, 2023
Jacky Liang	Granted May 12, 2023
Kaiwen Liao	Granted May 08, 2023
Branden Alexander Lisk	Granted May 09, 2023
Kimberly Kim Yen Liu	Granted May 16, 2023
Shu Yan Liu	Granted May 09, 2023
Aleksi Aaron Luoma	Granted May 24, 2023
Kyle Fraser Macdonald	Granted May 16, 2023

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	

Granted May 07, 2023
Granted March 01, 2023
Granted March 15, 2023

# **Bachelor of Computer Science**

Michael Robert Clubine Evan Thomas Leeson

Zheng Ma

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	Granted May 16, 2023
Jianqiao Zhou	Granted May 16, 2023

### **Bachelor of Mathematics**

Yu Qi Bian	Granted May 09, 2023
Laura Yu-Shen Dang	Granted May 09, 2023
Shu Fan Du	Granted May 09, 2023
Junyao Duan	Granted November 07, 2022
Wanghan Feng	Granted February 27, 2023
Shui Yao Jiang	Granted January 23, 2023
Heewon Moon	Granted January 10, 2023
Dasni Senara Samarasena	Granted February 10, 2023
Kamal Dev Uppal	Granted March 31, 2023
Ruixuan Wu	Granted May 26, 2023
Qianxun Xu	Granted May 09, 2023
Xiaoling Yang	Granted January 10, 2023

Granted January 10, 2023

Granted January 10, 2023

Granted May 12, 2023

Granted May 09, 2023

Granted May 10, 2023

Granted May 09, 2023

Granted May 09, 2023

Granted May 09, 2023

Granted May 12, 2023

Granted May 24, 2023

Granted January 10, 2023

Granted January 10, 2023

Granted January 12, 2023

Granted January 10, 2023

Granted January 12, 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
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#### Certificate in Co-operative Education in Research

David Felipe Tello Yepes	Granted January 12, 2023
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#### **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 William Charles Thibault	Granted November 23, 2022 Granted May 02, 2023
Master of Architecture	
Maulshree Gupta Chinenye Michelle Ogbu	Granted March 27, 2023 Granted April 20, 2023
Master of Data Science and Artificial Intelli	igence
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

Granted September 29, 2022 Granted February 17, 2023 Granted December 14, 2022 Granted September 14, 2022 Granted September 21, 2022 Granted October 04, 2022 Granted December 16, 2022 Granted March 27, 2023 Granted March 27, 2023 Granted April 24, 2023 Granted April 24, 2023 Granted April 24, 2023



# One Hundred and Twenty-Sixth Convocation

For the Conferment of Degrees

June 13<sup>th</sup> to 17<sup>th</sup>, 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.

Jeffrey M. Casello

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

Catherine Newell Kelly University Registrar

# DOCTOR OF PHILOSOPHY

Brey, Elizabeth	(English)
"Digital Dialogism: Space, Time, and Queerness in V	<i>ideo Games</i> ''
Kampherm, Monique Elizabeth Mary	<b>(English)</b>
"Masks and Caricatures: Prosopopoeia, Ethopoeia, and	nd the Effect of Social Media on Canadian Political Leaders' Debates''
Li, Yixuan	(Applied Economics)
"Essays on Portfolio Selection, Continuous-Time Ana	lysis, 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 Slende	r Man Phenomenon''
Pearl, Zachary Nathan	(English)
"Fictocritical Cyberfeminism: A Paralogical Model for	Post-Internet Communication''
Yang, Xinyuan	(Applied Economics)
"An Analysis of Optimal Agricultural Fertilizer App	blication 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	

Shaw, Heather	(English - Rhetoric and Communication Design)
Slater, Moira Mardelle	(English - Rhetoric and Communication Design – Co-operative Program)
Sun, Rui	(Economics – Co-operative Program)
Traore, Boukary	(Economics)
Vulić, Jelena	(English - Experimental Digital Media)
Xiang, Yibo	(Economics – Co-operative Program)
Xu, Alice	(Public Issues Anthropology)
Yigit, Muhammed	(Economics)
Yue, Liuyuan	(Economics – Co-operative Program)

# 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

\* – Distinction

(Studio Art)

(Studio Art)

#### 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 Aria. Hana Belanger, Samantha Lauren Chung, Edith Yuen Ting Do, Tam Ernest, Jeremy Farley, Karen Lisa Filatava, Anastasiya Khan, Furqan Li, Zhixiang Ma, Sirui Macedo, Andrey Ribeiro Obrovac, Luka Pulera, Daniel Luca Reeve, Brendan Alexander Selwood, Julia Marie Emily Sun. Rui Tong, Jocelyn Sierra Traore, Boukary Wong, Peter Chihow Xiang, Yibo

# **GRADUATE CERTIFICATE**

Femia, Giuseppe William Laratta, Clara

# **BACHELOR OF ARTS**

ST. JEROME'S UNIVERSITY GENERAL PROGRAM – Three Year Martin, Jaime Nikole

HONOURS PROGRAM Casaccia, Alicia Rose

Chen, Tristan Joshua Shi Dian Firmi-Medensky, Brigg Harry Froud, Erin Christine

\* – Distinction

(Computational Data Analytics for the Social Sciences and Humanities) (Computational Data Analytics for the Social Sciences and Humanities) (Computational Data Analytics for the Social Sciences and Humanities) (Computational Data Analytics for the Social Sciences and Humanities) (Computational Data Analytics for the Social Sciences and Humanities) (Computational Data Analytics for the Social Sciences and Humanities) (Computational Data Analytics for the Social Sciences and Humanities) (Computational Data Analytics for the Social Sciences and Humanities) (Computational Data Analytics for the Social Sciences and Humanities) (Computational Data Analytics for the Social Sciences and Humanities) (Computational Data Analytics for the Social Sciences and Humanities) (Computational Data Analytics for the Social Sciences and Humanities) (Computational Data Analytics for the Social Sciences and Humanities) (Computational Data Analytics for the Social Sciences and Humanities) (Computational Data Analytics for the Social Sciences and Humanities) (Computational Data Analytics for the Social Sciences and Humanities) (Computational Data Analytics for the Social Sciences and Humanities) (Computational Data Analytics for the Social Sciences and Humanities) (Computational Data Analytics for the Social Sciences and Humanities) (Computational Data Analytics for the Social Sciences and Humanities) (Computational Data Analytics for the Social Sciences and Humanities)

(University Teaching) (University Teaching)

(Social Development Studies)

(Social Development Studies – Social Work Specialization & Education Specialization & Diversity and Equity Specialization – Psychology Minor) (Visual Culture – Political Science Minor, Digital Arts Communication Minor) (Economics & Honours Arts and Business) (English-Rhetoric, Media, and Professional Communication & Honours Arts and Business – Co-operative Program) †

I	Harper, Ashley Nicole	(Fine Arts Studio Practice & Honours Arts and Business – Co-operative Program)
I	am, Sheung Chi Claudia	(English-Rhetoric, Media, and Professional Communication – Digital Media Studies Specialization)
I	Mackay, Ainsley Rheanne	(Social Development Studies – Legal Studies Minor)
I	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) *
I	BACHELOR OF ARTS	

**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) \* (Social Development Studies – Social Work Specialization) \* Gray, Sarah Heather Gregory, Renea Nandy Sheeroya (Social Development Studies – Social Work Specialization) Habel, Misha 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) (Social Development Studies – Social Work Specialization) \* MacMillan, Tanya Patricia 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

RENISON UNIVERSITY COLLEGE

Steunenberg, Evelyn Rose	(Social Development Studies – Social Work Specialization) †
Sturgeon, Jodi Mckenna	(Social Development Studies – Social Work Specialization)
Syed, Shahana Reyes	(Social Development Studies)
Vannavong, Mia Gytong	(Social Development Studies – Social Work Specialization)
Vermeltfoort, Jordan Ann	(Social Development Studies)
Visentin, Cynthia Louise	(Social Development Studies – Social Work Specialization)
Vogel, Michelle	(Social Development Studies – Social Work Specialization)
Winfield-Ward, Alyssa Baolan	(Social Development Studies)
Yaromich, Brianna Noelle	(Social Development Studies – Social Work Specialization)
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) †

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 & Social Work Specialization – Peace and Conflict Studies Minor) †
Watson, Emma Joan	(Social Development Studies – Social Policy and Social Action Specialization & Diversity and Equity Specialization) <i>†</i>
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

\* – Distinction

(Fine Arts - General Studio Art – Digital Arts Communication Minor) \*

Beschia, Ana-Sanziana	(English-Literature and Rhetoric – International Studies Minor) †	
Gariepy, Kelly Ann	(English-Literature and Rhetoric – International Studies Minor) † (English-Rhetoric, Media, and Professional Communication)	
Harb, Ryan Robert	(English Fanguage and Literature)	
Ibrahim, Najmah Abdirashid	(English Language and Literature)	
Kargacin Yanez, Vanessa	(Visual Culture)	
Kominar, Miriam	(English Language and Literature – Creative Writing Specialization) *	
Little, Emma Tristan	(Fine Arts - General Studio Art – English Language and Literature Minor) †	
McGregor, Laurie Gilda	(Fine Arts - General Studio Art - English Eanguage and Elterature Minor) 7 (Fine Arts - General Studio Art) *	
Murray, David Scott	(English Language and Literature)	
Pellejera, Matthew Anthony	(English Europaugo and Enoration) (English-Rhetoric, Media, and Professional Communication – Digital Media Studies Specialization)	
Tan, Yingying	(Social Development Studies) *	
Trueman, Robynne Kendra	(English-Rhetoric, Media, and Professional Communication) *	
Wilson-Kulik, Laura Fay	(English Language and Literature – International Studies Minor) *	
Zhang, Zeyu	(Fine Arts - General Studio Art)	
GENERAL PROGRAM – Four Year		
Alnasheet, Mahdi Mohamed Saleh Ahmed Is		
Chau, Wayne Chi	(Economics – Finance Specialization – Management Studies Minor)	
El Refai, Omar	(English-Rhetoric, Media, and Professional Communication)	
Gordan, Lam	(Social Development Studies – Social Work Specialization)	
Kalaichelvan, Pavitra	(Economics – Finance Specialization)	
Mohan, Anil	(English Language and Literature – Philosophy Minor) †	
Sam-Soon, Steven Colin Lee Shih Liam	(Economics – Finance Specialization)	
Singh, Nicholas	(Economics – Finance Specialization – Management Studies Minor)	
HONOURS PROGRAM		
Anand, Vani	(Economics – Finance Specialization & Honours Arts and Business – International Trade Minor – Co-operative Program)	
Arora, Lakshay	(Mathematical Economics – Econometrics Specialization – Co-operative Program)	
Ashcroft, Shae	(English-Literature and Rhetoric - Intensive English Specialization & Technical Writing Specialization – History Minor)	
Babhuta, Arushi	(Economics – Finance Specialization & Honours Arts and Business – Human Resources Management Minor – Co-operative Program)	
Bhattachan, Melina	(English-Rhetoric, Media, and Professional Communication – Co-operative Program)	
Bhullar, Amol	(Economics – Econometrics Specialization & Honours Arts and Business – Co-operative Program) $^{\ast}$	
Bi, Junheng	(Economics) †	
Brailsford, Lachlan Grant	(English-Literature and Rhetoric) *	
Bray, Alexandra Mary Kohana	(Economics & Honours Arts and Business – Co-operative Program) *	
Bugajny, Jacob Alex	(Economics – International Trade Minor) *	
Chen, Shi Long	(Economics & Honours Arts and Business – Co-operative Program)	
Chen, Vicky	(Mathematical Economics – Econometrics Specialization – Co-operative Program) *	
Chen, Weixi	(Economics – Finance Specialization – Co-operative Program)	
Chen, Yurou	(Visual Culture & Honours Arts and Business – Philosophy Minor)	
Chopra, Akankshita	(Economics – Management Studies Minor – Co-operative Program) *	
Choudhury, Irsah Reza	(Economics – Finance Specialization – Earth Sciences Minor)	
Chowdhury, Lameena	(Economics – Finance Specialization – International Trade Minor) *	
Christensen, Renee Jensen	(Fine Arts Studio Practice – Entrepreneurship Minor)	

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, Ishaan	(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)
llgner, 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) $^{st}$
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 – <i>Distinction</i>	(English-Rhetoric, Media, and Professional Communication – Technical Writing

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Specialization – Political Science Minor – Co-operative Program) \* 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) (Fine Arts Studio Practice – Digital Arts Communication Minor, Visual Culture in a Global Kleist, Sophie Kyla 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) (Economics – Management Studies Minor) \* Leung, Megan Teresa 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) † (English-Literature and Rhetoric - Intensive English Specialization & Creative Writing Lima, Alexia Luisa Specialization – Gender and Social Justice Minor) † Liu, Jiaxu (Mathematical Economics) † (English-Rhetoric, Media, and Professional Communication & Honours Peace and Conflict Lumax, Victoria Eve 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) \* (Economics – Co-operative Program) \* Ma, Zheng MacLean, Connor Alexander (Economics – Management Studies Minor) (Economics – Finance Specialization & Honours Arts and Business – Co-operative Program) Mak, Sheung-Yan Lawrence Martos, Blake (Economics – Finance Specialization) † Massina, Tchaou Antonio (Economics – Finance Specialization & Honours Arts and Business – Co-operative Program) Mclellan, 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) (English-Rhetoric, Media, and Professional Communication - Intensive English Specialization Munasinghe, Hirumal - 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) (English-Rhetoric, Media, and Professional Communication – History Minor, Knowledge O'Donnell, Sarah Stephanie Integration Minor) †

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, Yuexuan	(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	

Villanueva, Karl Angelo Gonzales (Economics – Public Policy Specialization – Co-operative Program) \* Walker-Garcia, Cailin Sierra (Social Development Studies – Social Work Specialization – Peace and Conflict Studies Minor) \* (Visual Culture) Wan, Fangyuan 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) (Economics – Econometrics Specialization) Wang, Zizhuo 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) (Fine Arts Studio Practice) Wen, Lanbin 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) \* (Mathematical Economics) † Wu, Fei (Economics) \* Xiang, Renli 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	

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	<i>†</i>
Esparza Cano, Romina Anahí	<i>†</i>
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	<i>t</i>
Jaffer, Suhail Fayaz	, †
James, Brendan Patrick	*
Javier, Christine	
Jenkins-Moss, Michaela Kerin	
Jiang, Anne Gina	*
Josephs, Sierra Mikayla	
Kanekar, Disha Rajendra	†
Kanji, Justin Farid	,
Kapoor, Tanishka	*
Kasprow, Benjamin Alexander Rees	+
Kim, Ha-Won	,
Kodikara, Chatumini Crystal	†
Kotsos, Katherine Nicole	, †
Kulkarni, Esha Dnyanesh	, t

Lai, Daphne Quyen	<i>†</i> *
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, Linyi	*
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	

Devial Levine Meri	*
Powell, Laura May	*
Powers, 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 Modurotoluwa	†
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

#### DOCTOR OF PHILOSOPHY

Abbott, Jesse	(History)
"The Art of Getting Drunk: Martial Masculinity, A	Icohol, and the British Army in the Canadas in the War of 1812''
Bacso, Sarah Allisa	(Psychology)
"The Role of Executive Functions and Emotion Know	vledge in Children's Communication Repair''
<b>Capobianco, Kevin Philip</b>	(Psychology)
"Development of an Efficient and Broadly Applicable	Measure of Case Conceptualization Quality''
Cater, Evan	(History)
"Stand Fast for Peace & Freedom: A Study of Forei	gn Policy of the British Labour Party in Opposition 1931 to 1940''
Dusowoth, Sushma «Représentation du Sujet Féminin Dans les Romans I et Désir D'Agentivité»	<b>(French Studies)</b> Francophones de L'îLe Maurice et L'Archipel des Comores de 1990 à 2020 : Entre Soumission
Evans, Rochelle	<b>(Psychology)</b>
"The Idea of a Follower: An Investigation of Implicit	Followership Theories and Their Correlates''
Kandjii, Jennifer	(Global Governance)
"Xenophobic Citizenship, Unsettling Space, and Con.	straining Borders: Assembling Refugee Exclusion in South Africa's Everyday''
Lukaszczyk, Artur	<b>(Philosophy)</b>
"Towards a Cyber Jus Ad Bellum: Bridging Legal G	aps within Cyberwar Governance''
Perks, Matthew	<b>(Sociology)</b>
"Developing a Community: Qualitative Approaches to	o Understanding the Role of Community Engagement in Gameswork''
Schram, Brian Richard	<b>(Sociology)</b>
"Surveilling Queerness and Queering Surveillance: T	he Techno-Social Making of Queer Identity in the US and Canada, 1939-Present''
Sutherland, Siobhan Elizabeth "The Interpersonal Context of Desire: Exploring Ass Relationships"	(Psychology) sociations Between Sexual Desire, Relationship Satisfaction, and Sexual Satisfaction in Romantic
Wilson, McLennon	<b>(Psychology)</b>
"Temperament, Attention, and the Social World: New	w 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**

Abdulhai, 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)
Betts, 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 Sapio, 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)

Hamedi, Ahmad (Political Science) Hill, Rachel Esther Fey (Classical Studies) Imam, Syed Abbas (Global Governance) Imran, Robain Ali (Political Science – Co-operative Program) (Global Governance) Jagoda, Nidhu 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) (Global Governance) Manners, Laura Kaylin 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) (Social and Legal Studies – Co-operative Program) Poirier, Tyler Joseph 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) (Global Governance) Suzor, Natalie Marie 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 Bilous, Daisy Georgia Cobb, Allyson Creus Cordovez, Rafaella Dick, Susan Docherty, Madeline Claire Gascho, Brandon Joel Khan, Sidra Khursheed, Rebaz Kinate, Zerihun Addisu McDonald, Alexandra Mary Oldenhof, Annie Jane Owens, Patricia Michelle Plummer, Abdel Smith, Jennifer Deborah Thorburn, Sydney Elizabeth

#### MASTER OF PUBLIC SERVICE

Abubaker, Asha (Co-operative Program) Akhtar, Nimra (Co-operative Program) Anand, Samridhi (Co-operative Program) Aria, Hana (Co-operative Program) Belanger, Samantha Lauren (Co-operative Program) Braun, Alexandra Taylor (Co-operative Program) Chung, Edith Yuen Ting (Co-operative Program) Dubali, Ester (Co-operative Program) Ernest, Jeremy (Co-operative Program) Fatima, Zoha (Co-operative Program) Filatava, Anastasiya (Co-operative Program) Gerrits, Matthew Douglas John (Co-operative Program) Hanif, Zainab (Co-operative Program) Herron, Ryan Stephen (Co-operative Program) Jiron, Jeanine (Co-operative Program) Kalashi Pour, Allan (Co-operative Program) Kaup, Shivani (Co-operative Program) Lawrence, Josie (Co-operative Program) Lee, Alyssa Amber (Co-operative Program) Leonardo, Dianna Bairos (Co-operative Program) Leung, Olivia (Co-operative Program) Lewis-Cushing, Eden Germaine (Co-operative Program) Lhawang, Tenzin (Co-operative Program) Mariampillai, Joshua Ajanthan (Co-operative Program) Mastroianni, Francesco Rosario (Co-operative Program) Mehta, Sakshi (Co-operative Program) Mohanathas, Sameera (Co-operative Program) Moore, Astrid Isabella (Co-operative Program) Murray, Nathan Christopher George (Co-operative Program)

\* – Distinction

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, lang 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

SI. JERUNES UNIVERSIT	
GENERAL PROGRAM – THREE YEAR	1
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) †

Causton, Noelle (Communication Studies & Honours Arts and Business – Co-operative Program) Chan, Christie Yan Tung (Psychology – English Language and Literature Minor – Co-operative Program) (Liberal Studies – French Minor, English Language and Literature Minor) \* Clubine, Michael Robert Cormier, Nicholas Ryan (Political Science & Honours Arts and Business – Human Resources Management Minor) Correia, 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) (Sociology – Peace and Conflict Studies Minor) D'Arrigo, Antonella Diemert, Ryan John (Liberal Studies) (Psychology – Co-operative Program) \* Durdle, Megan 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 – Cooperative Program) † Fernandes, Lizandra Rosaria (Psychology & Honours Social Development Studies – Education Specialization) † Guillemette, Jessica Ann (Sociology – Legal Studies Minor) \* (Psychology & Honours Arts and Business – Co-operative Program) \* Han, Bethany Hedrick, Tessa Elizabeth (French - French Teaching Specialization – Music Minor) † Henhoeffer, Victoria Joy (Medieval Studies & Honours Classics) † Hill-Zeesman, Eliana (Legal Studies – Sociology Minor, Psychology Minor) \* Kangas, Taylor Lynn (Sexuality, Marriage, and Family Studies) † Kap, Annika Elizabeth Koop (Sexuality, Marriage, and Family Studies) Kerr, Easton Daniel Alvin (History & Honours Arts and Business – Public Policy and Administration Minor) (Psychology – Applied Language Studies Minor) † Mah, Tiyah Jael Neil, Alexandra Mackenzie (Sociology – Human Rights Minor) \* Nguyen, Joey Duy (Psychology & Honours Arts and Business – Legal Studies Minor – Co-operative Program) \* (Psychology & Honours Arts and Business – Communication Studies Minor – Co-operative Nunes, Benjamin Program) † (Communication Studies & Honours Arts and Business – Human Resources Management Pfefferkorn, Matthew Christopher Minor – Co-operative Program) \* Pratt, Jaime Lynn (Sociology & Honours Legal Studies – Co-operative Program) (Sexuality, Marriage, and Family Studies – Legal Studies Minor, Sociology Minor) Preiss, Mathew Roy 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) (Communication Studies & Honours Arts and Business – Human Resources Management Satchell, Kaitlyn Belle Minor - Co-operative Program) \* Schindler-Currie, Colin Patrick (History – Anthropology Minor) \* Sill, Katharine Therese (Theatre and Performance & Honours Sociology) † (Political Science & Honours Arts and Business – Human Resources Management Minor) St Onge, Irelyn Anna 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

Ventura Aparicio, Lea Rashell	(Legal Studies)
Weigel-Mohamed, Isabelle Joyce	(Psychology - Research Intensive Specialization – Co-operative Program) †
Wentzlaff, 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

GENERAL FROGRAMI - I TREE TEAP	A Contraction of the second seco
Echevarria-Porter, Rachel Ainsley	(History – Studies in Islamic and Arab Cultures Minor) *
Ruppert, Benjamin Albert John	(Psychology)

HONOURS PROGRAM

Knipfel, Victoria Young, Kathryn (Psychology – Applied Language Studies Minor, East Asian Studies Minor) (Psychology – Sexuality, Marriage, and Family Studies Minor, East Asian Studies Minor)

#### **BACHELOR OF ARTS** UNIVERSITY

ONTVENION	
GENERAL PROGRAM – THREE YE	
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)
Dansinghani, 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) *

Osman, Yusuf M A	(Liberal Studies – Psychology Minor)
Patel, Niki	(Liberal Studies)
Prospero, Katherine	(Liberal Studies)
Rajeevan, Sneha	(Political Science) *
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) (Liberal Studies – Gender and Social Justice Minor) Anil, Navdha 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) (Religious Studies – Philosophy Minor) Mckay, Benjamin 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)

(Sociology)

Minor) \*

(Legal Studies)

Minor – Co-operative Program) †

Ahluwalia, Harkirat Singh Ahmed, Hussein Hanif Ahmed, Sara

Ahmed, Sarita Akhter, Aresha

Akter, Yasmin

\* – Distinction

† – Dean's Honours

(Psychology - Research Intensive Specialization – Addictions, Mental Health and Policy

(Communication Studies & Honours Arts and Business – Human Resources Management

(Peace and Conflict Studies & Honours Arts and Business – Legal Studies Minor, Human

(Communication Studies & Honours Arts and Business – Co-operative Program) \*

Resources Management Minor) \* Ali, Ayesha (Psychology – Human Resources Management Minor, Management Studies Minor – Cooperative Program) \* Ali, Lauryn Beverley Rose (Psychology & Honours Arts and Business) \* Allan, Julia Lynn (Legal Studies – Sociology Minor) † Alves, Kacie Lvnne 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 – Cooperative Program) Ashraf, Adil Mahmood (Liberal Studies – International Studies Minor) \* Ayena, John Ciguang (Communication Studies & Honours Arts and Business – Co-operative Program) (Liberal Studies & Honours Arts and Business – Economics Minor, Urban Studies Minor – Babbar, Suvrit 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) Batlawala, Alina (Communication Studies & Honours Arts and Business – Psychology Minor – Co-operative Program) \* Bedi, Misha (Psychology) Behzadasl, Mana (Psychology – Fine Arts Studio Minor – Co-operative Program) Beilby, Zoe Patricia (Peace and Conflict Studies) \* Berry, Daniel James (History – Revolution, War, and Upheaval Specialization) \* Bhandari, Bhumika (Psychology & Honours Arts and Business – Co-operative Program) † Bhatnagar, Kartiki (Psychology & Honours Communication Studies – Co-operative Program) † (Legal Studies & Honours Arts and Business – Co-operative Program) \* Brah, Tajanpreet Singh 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) † (Psychology - Research Intensive Specialization – Co-operative Program) \* Brown, Benjamin Robert James Brown, Brianna Alexia (Legal Studies & Honours Arts and Business – Human Resources Management Minor – Cooperative 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

Chan, Ashley (Legal Studies – Peace and Conflict Studies Minor) Chan, Jennifer ZhiXuan (Sexuality, Marriage, and Family Studies & Honours Arts and Business - Co-operative Program) (Psychology & Honours Arts and Business – Peace and Conflict Studies Minor – Co-operative Chase, Emilie Ruth 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) (Communication Studies & Honours Arts and Business – Digital Arts Communication Minor – Condotta, Alexis Victoria 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) † (Sociology & Honours Arts and Business – Human Resources Management Minor – Co-Deeskaran, Aiyshwinni operative Program) (Music – Music in Global Context Specialization & Honours Arts and Business – Human Delos Reyes, Jewel Marie Resources Management Minor) \* D'Haene, Joyce Violetta Clara (Psychology) Dhaliwal, Jasnoor Kaur (Legal Studies – Sociology Minor) Dhamer, Adam (Liberal Studies & Honours Arts and Business) \* (Psychology – Human Resources Management Minor – Co-operative Program) Dhillon, Kirat (Liberal Studies – Medieval Studies Minor) Diemer, Kendall (Legal Studies – Sociology Minor) † Downey, Renee Dragusin, Rebecca (Political Science – International Relations Specialization & Honours History – French Minor – Co-operative Program) † Draper, Caleb Michael (Communication Art and Design Practice – Co-operative Program) † Drisdelle, Olivia (Communication Studies & Honours Arts and Business) \* Dudek, Monika A (French - French Teaching Specialization) Eatough, Rachel Anastasia (Legal Studies & Honours Sociology) † Edghill-Tanner, Victoria Rose (Classical Studies & Honours Fine Arts Studio Practice – Digital Arts Specialization) † (Psychology & Honours Social Development Studies – Social Work Specialization & Edington, Abbagail Jean Individual Well-Being and Development Specialization – Co-operative Program) † Ehsanirad, Shayan (Sociology – Human Resources Management Minor, Management Studies Minor – Cooperative Program) \* Eid, Pierre-Anthony (Philosophy & Honours Arts and Business) \* – Distinction

El-Dik, Michelle El-Refai, Houda Emin, Gulay Emtesali, Nora Ewing, Morissa Nicole Keitha Fee, Brendan James Stewart Feher, Alexandra Ferguson, Ashley Lynn

Firth, Nicholas James Flint, Chloë Elizabeth Flores, Peri Ann Fluttert, Karlyssa Elaine Francq, Ethan Alain

Gartner, Samantha Rose Claire Gen, Lauren Jade Gerrits, Melissa Jean

Ghag, Armandeep Kaur Glennie, John Hamilton Gomes, Sarah Maria Jill Grafton, Karen Anne Griffith, Benjamin Cetshwayo Grosso, Debora Sousa Guerrieri, Sebastian Gumah, Khadijah Napuah Gurbaksh, Jaishish Gwon, Yehyun Gwozdz, Jacqueline Maria Hadi, Riyah Karim

Hare, Paige Taylor Hasanagic, Arlinda

Hassan, Abdirashed Henderson, Mira Joy Hillier, Mitchell Glenn Hittoo, Luvish Ho, Sharon Sau Yin Holmes, Taylor Karen-Victoria Hoque, Prianka

Huang, William Huang, Xu Huang, Zu Yi Ibrahim, Zakariah Iynkaran, Ahalya

\* – Distinction † – Dean's Honours

(Psychology - Research Intensive Specialization) \* (Legal Studies – Political Science Minor, Sociology Minor) \* (Sociology & Honours Legal Studies) (Political Science & Honours Legal Studies – Co-operative Program) \* (Legal Studies & Honours Arts and Business – Sociology Minor – Co-operative Program) \* (Psychology – Human Resources Management Minor) \* (French – Biology Minor) (Legal Studies & Honours Sociology & Honours Arts and Business – Human Resources Management Minor – Co-operative Program) \* (Psychology – English Language and Literature Minor – Co-operative Program) † (Sociology – Sexuality, Marriage, and Family Studies Minor) \* (Psychology – Fine Arts Studio Minor) (Psychology & Honours Legal Studies) \* (Political Science & Honours Arts and Business – Economics Minor, International Trade Minor – Co-operative Program) \* (History – German Minor) † (History & Honours Arts and Business – Co-operative Program) \* (Legal Studies & Honours Arts and Business – Digital Arts Communication Minor – Cooperative Program) \* (Legal Studies – Sociology Minor) \* (Political Science & Honours Arts and Business) (Psychology – Co-operative Program) (Psychology – Sexuality, Marriage, and Family Studies Minor) (Legal Studies) \* (French – Professional French Specialization – Political Science Minor) (Liberal Studies & Honours Arts and Business) (Peace and Conflict Studies) (Psychology) † (Psychology & Honours Visual Culture) † (Legal Studies & Honours Arts and Business – Co-operative Program) \* (Liberal Studies & Honours Arts and Business – Human Resources Management Minor. Psychology Minor – Co-operative Program) \* (Political Science – Legal Studies Minor – Co-operative Program) (French - French Teaching Specialization & Professional French Specialization – Psychology Minor) † (Psychology – International Trade Minor) (Theatre and Performance) (Psychology) (Legal Studies & Honours Arts and Business – Co-operative Program) (Sexuality, Marriage, and Family Studies & Honours Arts and Business) † (Sociology & Honours Legal Studies – Co-operative Program) \* (Communication Studies & Honours Arts and Business – Legal Studies Minor – Co-operative Program) † (Legal Studies & Honours Arts and Business – Co-operative Program) (Liberal Studies & Honours Arts and Business – Economics Minor) † (Liberal Studies & Honours Arts and Business – Economics Minor – Co-operative Program) (Psychology - Research Intensive Specialization) † (Psychology – Human Resources Management Minor – Co-operative Program) \*

(Psychology & Honours Arts and Business – Human Resources Management Minor – Co-Jain, Arjun operative Program) \* Jalal, Feroheda (Liberal Studies – Human Resources Management Minor, Psychology Minor) James, Ethan (Legal Studies & Honours Arts and Business) \* Joseph, Janvi Amardeep (Psychology & Honours Arts and Business – Philosophy Minor, Human Resources Management Minor – Co-operative Program) Josh, Navjoyt (Psychology) † Joshi, Tania (Psychology – Human Resources Management Minor – Co-operative Program) (Psychology & Honours Arts and Business – Human Resources Management Minor – Co-Judge, Manvir Singh operative Program) (Communication Studies & Honours Arts and Business – Co-operative Program) \* Kalra, Priyanka Kalsli, Leen (Legal Studies – Psychology Minor) \* Kantor, Ananya (Psychology – Human Resources Management Minor) Karabetsos, Sophia (Legal Studies & Honours Arts and Business) Karalis, Tyler Arthur (Legal Studies & Honours Arts and Business – Co-operative Program) † Karaoulis, Andrew Thomas (Liberal Studies & Honours Arts and Business) \* Karovalia, Asma Saidaa Abdul (Psychology & Honours Arts and Business – Human Resources Management Minor – Cooperative Program) † Kartechner, Jenna Katherine (Legal Studies & Honours Arts and Business – Sociology Minor) Kearns, Priya Kaur (Music) Kelly-Ingram, Mackenzie Brianne (Political Science) Kerfers, Reilly Thomas (Political Science & Honours Arts and Business – Co-operative Program) Khandaker, Maimuna (Psychology & Honours Arts and Business – Human Resources Management Minor – Cooperative Program) † Khangura, Sanjam Singh (Psychology) Khasawneh, Nour Ibrahim (Psychology & Honours Arts and Business) Kim, Brian Sungsoon (Psychology - Research Intensive Specialization) † Kim, Yeju (Sociology & Honours Arts and Business – Human Resources Management Minor) Klein, Michael (History) † Kopeschny, Gillian Deneka (Psychology – Sociology Minor) † Kopylova, Elizaveta Evgenyevna (Legal Studies & Honours French) \* Koshetova, Faina (Legal Studies & Honours Arts and Business – Human Resources Management Minor – Cooperative Program) \* Kosziwka, Hannah Alyssa (History & Honours Arts and Business – Co-operative Program) (Legal Studies – Human Rights Minor) \* Krantz, Amanda Gail (Sociology & Honours Arts and Business – Human Resources Management Minor – Co-Krishnakumar, Saraswati operative Program) \* Kuhnert, Hanne Marie (Psychology & Honours Arts and Business – Peace and Conflict Studies Minor – Co-operative Program) Lahoti, Utkarsh (Legal Studies & Honours Arts and Business – Co-operative Program) Lam, Emily (Sociology & Honours Arts and Business – Co-operative Program) Lam, Teresa (Sociology & Honours Arts and Business – Co-operative Program) Latter, Corey Charles (History – English Language and Literature Minor – Co-operative Program) Lau, Hiu Yue (Psychology) Laube Benini, Celeste Maria Lucia (Political Science – International Relations Specialization – History Minor – Co-operative Program) † Lee, Jabin (Sociology & Honours Legal Studies – Co-operative Program) Lee, Jiho (Legal Studies & Honours Arts and Business – Co-operative Program) † Lee, Nicholas (Psychology - Research Intensive Specialization – Philosophy Minor) † \* – Distinction

Lee Fan, Queenie Jade (French & Honours Arts and Business – Human Resources Management Minor – Cooperative Program) \* Lehman, Braedon Peter (Communication Studies & Honours Arts and Business) (Psychology & Honours Arts and Business – Communication Studies Minor – Co-operative Leung, Janice Program) Li, Eileen Yiran (Psychology – Legal Studies Minor) Li, Lo-chun (Psychology - Research Intensive Specialization & Honours Social Development Studies – Social Work Specialization & Education Specialization) \* (Liberal Studies & Honours Arts and Business – Economics Minor – Co-operative Program) Liang, Dylan Kien An Ling, Jessica (Psychology - Research Intensive Specialization & Honours Legal Studies) † Liu, Joshua En-Rei (Legal Studies) Liu, Xizi (Legal Studies) \* Low, Ethan Eetienne (Liberal Studies & Honours Arts and Business – Economics Minor – Co-operative Program) Lu, Mellisa (Legal Studies & Honours Arts and Business – Political Science Minor – Co-operative Program) \* Luo, Danruo (Liberal Studies – Economics Minor) Lutchmeah, Sabrina Devi (Psychology - Research Intensive Specialization – French Minor) † Macaulay, Colleen Marie (Theatre and Performance – French Minor) \* Mackend, Quinton Andrew (French - French Teaching Specialization – English Language and Literature Minor) † Macmillan, Matthew Jared (Political Science & Honours Arts and Business – International Trade Minor – Co-operative Program) \* Malik, Safaa (Legal Studies – Human Resources Management Minor) \* Manarang, Jessica Grace (Legal Studies & Honours Arts and Business – Peace and Conflict Studies Minor – Cooperative Program) † Marara, Gurleen (Legal Studies) Marasigan, Jordan Kelsey (Communication Studies – Management Studies Minor) (Psychology & Honours Arts and Business) Mathur, Navya McDonald, Braedon Richard (Legal Studies – Political Science Minor) \* McDoom, Shuaib Ansar (Psychology – Visual Culture in a Global Context Minor) \* (Psychology – History Minor) \* Mckay, Hannah Jean (Sociology & Honours Legal Studies – Co-operative Program) † McLuhan, Nicole Noelle Mehra, Abhinav (Liberal Studies – Psychology Minor) \* Mendonca, Mariah Santos (Sociology & Honours Social Development Studies – Co-operative Program) \* Miao, YanWei (Psychology – Human Resources Management Minor) Miller, Lauren Louise (Communication Studies & Honours Arts and Business – Digital Arts Communication Minor – Co-operative Program) \* Mittal. Harshita (Psychology & Honours Arts and Business) Mitton, Rebecca Lane (History – Global Interactions Specialization & Honours Peace and Conflict Studies – Legal Studies Minor – Co-operative Program) Moffitt, Lucas Albert (Psychology – Co-operative Program) Moran, Snigdha (Psychology - Research Intensive Specialization – Co-operative Program) † Morden, Stuart William Lyle (Psychology & Honours Philosophy) † Morina, Flakor Lori (Legal Studies) Mullin, Liam Aidan (History – International Relations Specialization – Public Policy and Administration Minor) Murad, Murid (Liberal Studies & Honours Arts and Business) Murray, John James (Political Science – History Minor – Co-operative Program) \* Nair, Dea (Psychology - Research Intensive Specialization – Fine Arts Studio Minor – Co-operative Program) ' Narula, Bhavyaa (Psychology – Human Resources Management Minor)

\* – Distinction

Navaretnam, Suruthi	(Political Science & Honours Sociology – International Studies Minor – Co-operative Program) †
Navarro, Teresa Daniela	(Sexuality, Marriage, and Family Studies) †
Naway, Kalkidan	(Political Science & Honours Arts and Business – Co-operative Program)
Neil, Kenzie Lynn Joanne	(Communication Studies & Honours Arts and Business) *
Ngo, Brian	(Communication Studies & Honours Arts and Business – Co-operative Program)
Ni, Ruogeng	(Psychology)
Nielsen, Jack Tanner	(Classical Studies & Honours Philosophy) *
Nnadi, Kanayo Robert	(Liberal Studies & Honours Arts and Business)
Nurse, Heather Maeve Harrington	(Legal Studies – Anthropology Minor) *
Nuttall, John Maxwell	(Political Science) *
Okafor, Chukwunonso Pearl	(Psychology – Human Resources Management Minor)
Onyemah, Immanuel	(Legal Studies – Management Studies Minor, Sociology Minor)
Orlandi, Matthew Victorio	(History – Co-operative Program) †
Ouellette-Deschenes, Marc-Andre Joseph Raymond	(History & Honours Political Science) *
Pahl, Summer Valorie-Ann	(Psychology)
Pahwa, Shreya	(Psychology & Honours Arts and Business – Human Resources Management Minor – Co- operative Program)
Pandey, Aditya	(Communication Studies & Honours Arts and Business)
Panesar, Tanya	(Psychology & Honours Arts and Business – Human Resources Management Minor – Co- operative Program)
Pare, Simon Antoine Joseph	(Political Science – History Minor)
Park, Hyewon	(Psychology - Research Intensive Specialization)
Patel, Jeel	(Legal Studies & Honours Arts and Business – Sociology Minor – Co-operative Program) *
Patel, Jeet Sundip	(Psychology & Honours Arts and Business – Human Resources Management Minor – Co- operative Program) *
Patel, Kush Rakeshbhai	(Sociology)
Patel, Neer	(Political Science – Politics and Business Specialization & Honours Arts and Business – Digital Arts Communication Minor – Co-operative Program)
Peden, Emily	(Political Science – Politics and Business Specialization – Economics Minor, International Studies Minor – Co-operative Program) *
Pettigrew, Anyka	(Liberal Studies)
Pileggi, Amanda	(Psychology) †
Pirch, Natalie Kimberly	(Psychology)
Ponciano, José Rafael	(Spanish – German Minor, Cultural Identities Minor, Music Minor) †
Ponjevic, Elma	(Legal Studies & Honours Arts and Business)
Prakash, Keshav	(Psychology – Sociology Minor)
Prentice, Mariah Sydney	(Psychology – Legal Studies Minor)
Prinsen, Kate Adrina	(Psychology – Sexuality, Marriage, and Family Studies Minor) *
Pripon, Daniela Patricia	(Legal Studies & Honours Arts and Business – French Minor – Co-operative Program) *
Radovanovic, Ana	(Political Science & Honours Arts and Business – Legal Studies Minor, International Studies Minor – Co-operative Program)
Ramakrishnan, Nerisha	(Legal Studies & Honours Arts and Business – Human Resources Management Minor – Cooperative Program) $^{\ast}$
Ramer, Samuel Brenneman	(History) †
Rankin, Samuel Carter	(Liberal Studies – Legal Studies Minor)
Rastogi, Sakshi Sanjay	(Communication Studies & Honours Arts and Business)
Rebortura, Mariah Excel Briones	(Political Science – International Relations Specialization & Honours Legal Studies – Co-

operative Program) Rempel, Callum Mac (History) Rizvi, Areej Syed (Psychology - Research Intensive Specialization & Honours Sociology) \* (Psychology & Honours Arts and Business – Cognitive Science Minor – Co-operative Rogers, Ashley Kiara Program) Roopram, Alexandrea Elizabeth (Liberal Studies & Honours Arts and Business – Economics Minor) † Ruhnke, Haley Audrey (Psychology – Sociology Minor) \* Sahi, Gurkirat Singh (Legal Studies) \* Saigal, Suhani (Psychology – Social Development Studies Minor, Technical Writing Minor) Salamé, Sundus Jamal (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) \* (Sexuality, Marriage, and Family Studies – Counselling Specialization) \* Scott, Caitlin Paige 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 – Cooperative 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 – Cooperative 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) \* (Psychology) \* Steingart, Aaron James 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) \* (Liberal Studies – East Asian Studies Minor, Sociology Minor) Sun, Chenyang (Legal Studies & Honours Arts and Business – Economics Minor) Szczepanek, Daniel Christopher Tam, Tyler Kingsley Long (Liberal Studies & Honours Arts and Business – Economic Theory Minor – Co-operative Program) Taylor, Mackenzie Lock (Liberal Studies – Psychology Minor, Human Resources Management Minor, Communication Studies Minor) Thomas, Kuel Kuel (Sociology & Honours Legal Studies) \* – Distinction

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) (Psychology & Honours Arts and Business) \* Tran, Kelly Ho 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) (Legal Studies – Sociology Minor) † Tutt, Sunjeevan Kaur 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 – Cooperative Program) † (Psychology – Social Development Studies Minor) \* Vigh, Emily Renee 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 – Cooperative 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 – Cooperative Program) \* Xu, Rio (Legal Studies) (Psychology – English Language and Literature Minor) Xu, Yang Yang 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) (Communication Studies & Honours Arts and Business – Human Resources Management Yip, Evangel Tsz Yau Minor - Co-operative Program) \* Zacarias-Ponce, Felipe (Political Science & Honours Arts and Business) (Psychology - Research Intensive Specialization) † Zavadskaya, Anna (French - French and Francophone Literatures and Cultures Specialization & Professional Zekan, Ruth HaEun 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

## 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 LI, MUYUAN

### **BACHELOR OF ACCOUNTING AND FINANCIAL MANAGEMENT**

(Taxation)

(Taxation)

(Professional Accountant Specialization – Co-operative Program) †
(Co-operative Program)
(Professional Accountant Specialization – Co-operative Program) †
(Co-operative Program) *
(Professional Accountant Specialization – Co-operative Program) *
(Professional Accountant Specialization – Co-operative Program)
(Professional Accountant Specialization – Sociology Minor – Co-operative Program) *
(Professional Accountant Specialization – Co-operative Program) *
(Professional Accountant Specialization – Co-operative Program) *
(Professional Accountant Specialization – Co-operative Program) †
(Professional Accountant Specialization – Co-operative Program)
(Professional Accountant Specialization – Co-operative Program) *
(Professional Accountant Specialization – Co-operative Program) *
(French Minor – Co-operative Program) *
(Co-operative Program) *

\* – Distinction

Arulesan, Nivethan (Professional Accountant Specialization – Co-operative Program) Atwaul, Navan Singh (Co-operative Program) Ayala, Matthew Carter (Professional Accountant Specialization – Co-operative Program) \* Babaran, Roberto De Lumen (Co-operative Program) † Bahirathan, Vaishaaly (Professional Accountant Specialization – Human Resources Management Minor – Cooperative Program) Bains, Udai Singh (Professional Accountant Specialization – Co-operative Program) Balani, Sonia (Professional Accountant Specialization – Co-operative Program) † Bamra, Sameep (Professional Accountant Specialization – Co-operative Program) \* Bansal, Dhruv (Co-operative Program) Belokurova, Kateryna (Professional Accountant Specialization – Co-operative Program) \* (Professional Accountant Specialization – Co-operative Program) † Bhardwaj, Rohun Bhuyan, Mehek (Professional Accountant Specialization – Co-operative Program) \* Bian, Jia Yan (Professional Accountant Specialization – Co-operative Program) (Professional Accountant Specialization – Co-operative Program) \* Boyd, Julia (Professional Accountant Specialization – Co-operative Program) † Boyd, Megan Brown, Ryan Christopher (Professional Accountant Specialization – Co-operative Program) † Bulovas, Ethan Valdemar Paul (Professional Accountant Specialization – Co-operative Program) \* Cahyadi, Michael (Professional Accountant Specialization – Co-operative Program) \* Cai, Jinfeng (Professional Accountant Specialization – Co-operative Program) \* Campbell, Alexander Adonis (Economics Minor – Co-operative Program) \* (Professional Accountant Specialization – Co-operative Program) \* Cao, Minghao Cao, Tracey (Professional Accountant Specialization – Co-operative Program) \* Carnegie, Brayden Scott James (Professional Accountant Specialization – Co-operative Program) \* Carpino, Chloe (Professional Accountant Specialization – Economics Minor – Co-operative Program) \* Carusi, Stephen Paul (Professional Accountant Specialization – Co-operative Program) † Cassio, Joseph Gerard (Co-operative Program) Chahil, Karnvir (Co-operative Program) Chan, Philbert Chuen-Yiu (Professional Accountant Specialization – Economics Minor – Co-operative Program) † Chang, Nigel (Co-operative Program) \* Chen, Bowen (Professional Accountant Specialization – Co-operative Program) † Chen, Clifford Chih-Jen (Professional Accountant Specialization – Co-operative Program) \* Chen, Jocelyn (Professional Accountant Specialization – Co-operative Program) † Chen, Kevin Nan (Professional Accountant Specialization – Co-operative Program) † Chen, Olivia Rosalie (Professional Accountant Specialization – Co-operative Program) Cheung, Brian Hok Yan (Economics Minor – Co-operative Program) \* Cheung, Christopher Lok Hang (Professional Accountant Specialization – Co-operative Program) † Cheung, Victoria Steffini (Professional Accountant Specialization – Co-operative Program) † Chiu, Ivan Chi Ho (Professional Accountant Specialization – Co-operative Program) † (Professional Accountant Specialization – Co-operative Program) \* Chiu, Tyler Lawrence Choi. Ji Woo (Professional Accountant Specialization – Co-operative Program) † Chu, Laura (Co-operative Program) Chui, Jina Cin Yee (Professional Accountant Specialization – Co-operative Program) † (Professional Accountant Specialization – Co-operative Program) \* Chung, Hee-Yun (Professional Accountant Specialization – Co-operative Program) Clutton, Alyssa Nicole Cotoc, Damaris (Professional Accountant Specialization – Co-operative Program)

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) DeSousa, 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 – Cooperative 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) † (Professional Accountant Specialization – Co-operative Program) † Fernando, Mihiri Yashodara Ficele, Lucas (Professional Accountant Specialization – Co-operative Program) \* Flanagan-Tordiman, Steven Micael (Professional Accountant Specialization – Co-operative Program) † Foo, Amanda Catherine (Professional Accountant Specialization – Co-operative Program) † (Professional Accountant Specialization – Human Resources Management Minor – Co-Fox, Abbey Jayne operative Program) \* (Music Minor – Co-operative Program) † Fu, Karen Jiarong 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 Jasper (Co-operative Program) † Heier, Santiago Lindsay (Professional Accountant Specialization – Entrepreneurship Minor – Co-operative Program) \*

\* – Distinction

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Hematian, Rose (Professional Accountant Specialization – Co-operative Program) \* (Professional Accountant Specialization – Co-operative Program) Hewagama, Tihan Ajitha Ho, Cindy Hsi Kuan (Professional Accountant Specialization – Co-operative Program) \* Ho, Ethan Cho Fung (Professional Accountant Specialization – Co-operative Program) Ho, Jenny (Professional Accountant Specialization – Co-operative Program) \* Ho, Raymond (Professional Accountant Specialization – Co-operative Program) \* Ho, Wing Lam (Professional Accountant Specialization – Co-operative Program) † Hoang, Destiny (Professional Accountant Specialization – Co-operative Program) Hou, Amber (Professional Accountant Specialization – Co-operative Program) \* Howe. Melissa (Professional Accountant Specialization – Co-operative Program) \* Hsu, Emma (Co-operative Program) \* Hu, Jiayu (Co-operative Program) \* Hu, Linda (Professional Accountant Specialization – Co-operative Program) \* Hu, Wen Jia (Professional Accountant Specialization – Co-operative Program) \* Hua, Yang (Professional Accountant Specialization – Co-operative Program) \* Hum, Jessica Megan (Professional Accountant Specialization – Co-operative Program) † Ikram, Abdullah (Professional Accountant Specialization – Co-operative Program) Indrakumar, Puja (Professional Accountant Specialization – Co-operative Program) Izadiyar, Shapur (Entrepreneurship Minor – Co-operative Program) Jacob, Milan Susan (Professional Accountant Specialization – Economics Minor – Co-operative Program) Jagan, Tristan Anjay (Co-operative Program) † Jassal, Manmeet (Professional Accountant Specialization – Co-operative Program) \* Jegatheeswaran, Jerusha (Professional Accountant Specialization – Co-operative Program) \* Jeon, Jonathan Jonghyun (Professional Accountant Specialization – Co-operative Program) Jeyanathan, Tharune (Professional Accountant Specialization – Co-operative Program) Jiang, Hui Lin (Professional Accountant Specialization – Co-operative Program) \* Jiao, Hong Yi (Professional Accountant Specialization – Co-operative Program) \* Josephs, Priya Rose (Professional Accountant Specialization – Co-operative Program) \* Kalyani, Kaifkhan Arifullakhan (Co-operative Program) Kameka, Zoe Yasmine (Professional Accountant Specialization – Co-operative Program) † Kandadi, Smaran (Professional Accountant Specialization – Co-operative Program) \* (Professional Accountant Specialization – Economics Minor – Co-operative Program) Kang, Yanning Kanniampuram-Satish, Sidhhanth (Professional Accountant Specialization – Co-operative Program) Kardasz, Philip Victor (Professional Accountant Specialization – Co-operative Program) † Kaur, Praneet (Professional Accountant Specialization – Co-operative Program) \* Khan, Fahad Ameer (Co-operative Program) Khan, Leena Yasmin (Professional Accountant Specialization – Co-operative Program) Khatri, Lakshmi Pooja (Professional Accountant Specialization – Co-operative Program) \* Khouy-Ly, Edward (Professional Accountant Specialization – Co-operative Program) \* Khurram, Ayesha (Professional Accountant Specialization – Co-operative Program) (Professional Accountant Specialization – Co-operative Program) \* Kim, Hwiyeop Kolanu, Sai Praseeda (Professional Accountant Specialization – Co-operative Program) (Professional Accountant Specialization – Co-operative Program) \* Kong, Matthew Alexander Ku, Evelyn Zhi Wei (Professional Accountant Specialization – Co-operative Program) † Kulendran, Amaresh (Professional Accountant Specialization – Co-operative Program) (Professional Accountant Specialization – Co-operative Program) \* Kuong, Kevin Jia Wei

\* – Distinction

Kuponiyi, Oluwatobiloba (Professional Accountant Specialization – Co-operative Program) † La, Frances (Professional Accountant Specialization – Co-operative Program) † (Professional Accountant Specialization – Co-operative Program) \* Lai, Ziqin (Professional Accountant Specialization – Co-operative Program) \* Lam, Charmaine Chin May (Professional Accountant Specialization – Economics Minor – Co-operative Program) Lam, Janis Chor Tung Lam, Matthew Tuan Minh (Financial Markets Specialization – Co-operative Program) † Lawrencepillai, Sharon (Business Analytics Specialization & Professional Accountant Specialization – Co-operative Program) Le, Britney Michelle (Professional Accountant Specialization – Human Resources Management Minor – Cooperative Program) Lee. Claire (Professional Accountant Specialization – Computing Minor – Co-operative Program) \* Lee, Emily Yuk Sun (Professional Accountant Specialization – Co-operative Program) Lee, Pamela (Professional Accountant Specialization – French Minor – Co-operative Program) \* Lee, Rebecca Katherine (Professional Accountant Specialization – Co-operative Program) † Lee, Veronica Yuen Ting (Professional Accountant Specialization – Co-operative Program) \* Lee, William Yongwoo (Professional Accountant Specialization – Co-operative Program) \* Lee, Wing Lam Marion (Professional Accountant Specialization – Co-operative Program) \* (Professional Accountant Specialization – Economics Minor – Co-operative Program) † Leftwick, Naomi Paige Leung, Cedric (Professional Accountant Specialization – Economics Minor – Co-operative Program) † Leung, Joanne Renee (Professional Accountant Specialization – Co-operative Program) † Li, Candy (Professional Accountant Specialization – Economics Minor – Co-operative Program) Li, Chunyu (Professional Accountant Specialization – Co-operative Program) \* Li, Gloria Mengyao (Professional Accountant Specialization – Co-operative Program) † Liang, Chen Lok (Professional Accountant Specialization – Co-operative Program) † Liang, Harry Heng (Professional Accountant Specialization – Economics Minor – Co-operative Program) † Liao, Cindy Hsun-Chi (Professional Accountant Specialization – Co-operative Program) \* Lieu, Andy (Economics Minor – Co-operative Program) \* Lim, Danielle Grace (Professional Accountant Specialization – Co-operative Program) \* Lin, Chu Ying (Co-operative Program) † Lin. Jia Lei (Professional Accountant Specialization – Co-operative Program) \* Liu, Jieshan (Professional Accountant Specialization – Co-operative Program) \* Liu, Ke Yu (Professional Accountant Specialization – Co-operative Program) \* Liu, Yifei (Professional Accountant Specialization – Co-operative Program) † Liu, Zifei (Co-operative Program) \* Luo, Hui Wen (Professional Accountant Specialization – Co-operative Program) Ly, Matthew Anthony (Professional Accountant Specialization – Co-operative Program) † Ma, Katie Sin - Tung (Professional Accountant Specialization – Co-operative Program) † Ma, Xiaohan (Professional Accountant Specialization – Co-operative Program) \* MacDonald, Dawson Clark (Economics Minor – Co-operative Program) \* Mahony, Ryan Thomas (Co-operative Program) Mai. Jie Shan (Professional Accountant Specialization – Co-operative Program) † Mallari, Xavier Flores (Professional Accountant Specialization – Co-operative Program) Mann, Prabhnoor (Economics Minor – Co-operative Program) \* (Professional Accountant Specialization – Co-operative Program) \* Mao, Yipeng (Financial Markets Specialization – Economics Minor – Co-operative Program) \* Mathur, Deven Prasad Meurs, Chase Tyler (Professional Accountant Specialization – Co-operative Program) Mittal, Arshya (Professional Accountant Specialization – Co-operative Program) \* - Distinction

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) (Financial Markets Specialization – Co-operative Program) † Moores, Luke Christopher Mubasshira, 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) \* (Professional Accountant Specialization – Co-operative Program) † Ng, Alex Ng, Jonathan (Professional Accountant Specialization – Economics Minor – Co-operative Program) † Ng, Queena Cheuk Kwan (Professional Accountant Specialization – Economics Minor – Co-operative Program) (Professional Accountant Specialization – Co-operative Program) \* Ngai, Valerie (Professional Accountant Specialization – Human Resources Management Minor – Co-Nguyen, Christina operative Program) Noor, Fatima (Professional Accountant Specialization – Human Resources Management Minor – Cooperative 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 – Cooperative Program) \* Paruthigulasoman, 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) † (Co-operative Program) \* Patterson, Blake Fredrick Alexander 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) (Professional Accountant Specialization – Co-operative Program) Priffer, Samantha Leigh Puckrin, Warner Steven (Professional Accountant Specialization – Co-operative Program) † Qin, Fan Qi (Co-operative Program) \* Quinlin, Brendan Paul (Professional Accountant Specialization – Co-operative Program) \* (Professional Accountant Specialization – Co-operative Program) \* Ragavan, Harishvar Ramachandra, Aarabi (Professional Accountant Specialization – Co-operative Program) \* Ramnani, Ritvik (Professional Accountant Specialization – Co-operative Program) † Rasoul, Mohamad 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) (Professional Accountant Specialization – Co-operative Program) Rishi, Jatin Rizzo, Curtis Steven (Professional Accountant Specialization – Co-operative Program) \* Roopnauth, Ryan Shivdhan (Professional Accountant Specialization – Co-operative Program) †

\* – Distinction

Rozin, Eitan Aaron (Professional Accountant Specialization – Co-operative Program) † Ruan, Gary (Professional Accountant Specialization – Co-operative Program) \* Sadiq, Muhammad (Economics Minor – Co-operative Program) (Professional Accountant Specialization – Co-operative Program) \* Saltz, Benji Mathew Saraff, Darshan Venkataram (Professional Accountant Specialization – Co-operative Program) Sathiyaseelan, 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) † (Professional Accountant Specialization – Co-operative Program) \* Seto, Vicky Yi Shah, Jalp 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 (Professional Accountant Specialization – Co-operative Program) (Professional Accountant Specialization – Co-operative Program) † Sivabalan, Shangavei 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 – Cooperative Program) † Soares, Aidan Haley (Professional Accountant Specialization – Co-operative Program) \* Song, Cuiyan (Professional Accountant Specialization – Economics Minor – Co-operative Program) Song, Zhe-Ning (Co-operative Program) \* Sran, Simran Kaur (Professional Accountant Specialization – Human Resources Management Minor – Cooperative Program) \* Stachura, Brian James (Professional Accountant Specialization – Co-operative Program) Su, Tie Hong (Professional Accountant Specialization – Co-operative Program) Sudani, Shailvi B (Professional Accountant Specialization – Co-operative Program) \* Sun, Lauren Wenzhe (Professional Accountant Specialization – Co-operative Program) Sun, Ruoxuan (Co-operative Program) \* Sun, Yutian (Professional Accountant Specialization – Co-operative Program) Suresh, Janvi (Professional Accountant Specialization – Co-operative Program) \* Suresh, Sraviya Deepa (Professional Accountant Specialization – Co-operative Program) Suri, Anchita (Professional Accountant Specialization – Co-operative Program) Tahir, Maryam (Professional Accountant Specialization – Co-operative Program) \* Tai, Baldwyn Au Heng (Professional Accountant Specialization – Co-operative Program) † Tang, Justin Pak Hei (Professional Accountant Specialization – Co-operative Program) \* Tao, Yu Jing (Professional Accountant Specialization – Co-operative Program) † (Economics Minor – Co-operative Program) Tarnowski, Zachary Doran Teng, Tianjiao (Professional Accountant Specialization – Co-operative Program) \* Thakur, Ritvik (Co-operative Program) † Thasan, Nila (Economics Minor – Co-operative Program) \* \* – Distinction

Thayaparan, Sarujen (Co-operative Program) Thevakumar, Keshika (Professional Accountant Specialization – Co-operative Program) \* Thirukkumaran, Arthika (Professional Accountant Specialization – Co-operative Program) \* (Professional Accountant Specialization – Co-operative Program) † Tian, Tiana Chenjia Tran, Felix Sui (Professional Accountant Specialization – Co-operative Program) \* Tran, Nathan (Professional Accountant Specialization – Co-operative Program) \* Tran, Tiffany Megan (Professional Accountant Specialization – Co-operative Program) † Turk, Jeremy Jason (Economics Minor – Co-operative Program) \* Turna, Gurmehak Kaur (Co-operative Program) \* Uppal, Krishan (Financial Markets Specialization – Co-operative Program) \* (Professional Accountant Specialization – Economics Minor – Co-operative Program) † Uthayakumaran, Archchenaa Van Wart, Benjamin Germane Wayne (Professional Accountant Specialization – Co-operative Program) † Wang, Shanshan (Professional Accountant Specialization – Co-operative Program) † Wang, William Chen Yang (Professional Accountant Specialization – Co-operative Program) † Wang, Yifei (Professional Accountant Specialization – Co-operative Program) \* Wang, Yinuo (Co-operative Program) \* Wang, Yiran (Co-operative Program) † Wang, Yuhan (Professional Accountant Specialization – Co-operative Program) Wang, Zi (Co-operative Program) † Warsi, Humnah (Professional Accountant Specialization – Co-operative Program) † Wei, Zi Hui (Professional Accountant Specialization – Co-operative Program) \* Winces, Lanish (Professional Accountant Specialization – Co-operative Program) Wong, Gillian Jia Ling (Professional Accountant Specialization – Co-operative Program) Wong, Michelle (Professional Accountant Specialization – Computing Minor – Co-operative Program) † Wong, Samantha (Professional Accountant Specialization – Co-operative Program) Wu, Jack (Professional Accountant Specialization – Economics Minor – Co-operative Program) Xu, Jialun (Co-operative Program) Xu, Yingwen (Professional Accountant Specialization – Co-operative Program) \* (Professional Accountant Specialization – Co-operative Program) † Yang, Jiaying Yang, Yixin (Professional Accountant Specialization – Co-operative Program) \* Yang, Yong Zhe (Professional Accountant Specialization – Co-operative Program) Yang, Yung-Chieh (Professional Accountant Specialization – Co-operative Program) \* Ye, Vicky Jia Hui (Professional Accountant Specialization – Co-operative Program) † (Professional Accountant Specialization – Co-operative Program) \* Yoo, Hyemin Yoo, Jenny Eun Hae (Co-operative Program) \* Yu, Jiayin (Co-operative Program) Yu, Karrie (Professional Accountant Specialization – Co-operative Program) † Yuan, Richard (Professional Accountant Specialization – Co-operative Program) † Zahid, Zenab (Professional Accountant Specialization – Co-operative Program) \* Zaidi, Syed Ali Murtaza (Professional Accountant Specialization – Co-operative Program) † Zaidi, Zareen (Professional Accountant Specialization – Co-operative Program) \* Zhang, Anlei (Professional Accountant Specialization – Co-operative Program) Zhang, Rachel Jiawen (Professional Accountant Specialization – Mathematics Minor, Economics Minor – Cooperative Program) \* Zhang, Stephanie (Professional Accountant Specialization – Co-operative Program) \* Zhang, Tianhui (Human Resources Management Minor – Co-operative Program) \*

Zhang, Yuxin	(Professional Accountant Specialization – Co-operative Program)
Zhang, Ze Xin	(Professional Accountant Specialization – Co-operative Program)
Zhao, Lisa Mingfei	(Professional Accountant Specialization – Co-operative Program)
Zhao, Yanqi	(Professional Accountant Specialization – Co-operative Program) *
Zhou, Yumeng	(Professional Accountant Specialization – Economics Minor – Co-operative Program) $^{*}$
Zhu, Joyce	(Professional Accountant Specialization – Co-operative Program) †

## BACHELOR OF COMPUTING AND FINANCIAL MANAGEMENT

HONOURS CO-OPERATIVE PROGRA	AM
Chen, Lilian	*
Gao, Haiyue	*
llersich, 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) $^{\star}$
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

### DOCTOR OF PHILOSOPHY

Alhusain, 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 D	ynamic 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 V	<i>Tibration of Bluff Bodies</i> ''
Courtney, Matthew Ryan	(Mechanical and Mechatronics Engineering)
"Free-Flow Counterflow Gradient Focusing for Protein	Fractionation''
Deng, Zejian	(Mechanical and Mechatronics Engineering)
"Application of Game Theory to Interactive Lane Cha	Inge Decision Making for Autonomous Driving''
Farag, Heba Elsayed	(Mechanical and Mechatronics Engineering)
"Eddy Current Probes Design for Defect Detection in I	Metallic Parts Made by Additive Manufacturing Processes''
Ghatei Kalashami, Ali	(Mechanical and Mechatronics Engineering)
"An Integrative Investigation of Liquid Metal Embrit.	tlement in the Fe-Zn System: From Responsible Mechanisms to Mitigation Strategies''
Kaji, Farzaneh	(Mechanical and Mechatronics Engineering)
"In-Situ Monitoring and Intermittent Controller for A	daptive Trajectory Generation During Laser Directed Energy Deposition via Powder Feeding"
Khamooshi, Mobin	(Mechanical and Mechatronics Engineering)
"Cooperative Vehicle Perception and Localization Usi.	ng Infrastructure-Based Sensor Nodes''
Khan, Muhammad Shehryar	(Mechanical and Mechatronics Engineering)
"Improving the Multiscale Morphological and Mechani	ical Properties of Laser Welded Al-Si Coated 22MnB5 Press-Hardened Steels''
Kumar, Parichit	(Mechanical and Mechatronics Engineering)
"Development of a Magnetic Levitation System for Ad	ditive Manufacturing Processes''
Lacombe, Francis	(Mechanical and Mechatronics Engineering)
"Stability of Compressible Boundary Layers in Presence	e of Smooth Roughness and Wall Temperature Effects''
Martinez, Alejandro Pedro	(Mechanical and Mechatronics Engineering)
"Monitoring and Control of Metal Additive Manufact.	uring Processes Using Ultrasound"
Misra, Sirshendu "Wetting & Capillarity: From Thin Film Mediated F	(Mechanical and Mechatronics Engineering) Processes to Droplet-Surface Interactions''
Mohammadbagher, Ehsan	(Mechanical and Mechatronics Engineering)
"Self-Localization for Autonomous Driving Using Ve	etor Maps and Multi-Modal Odometry''
Musikhin, Stanislav	(Mechanical and Mechatronics Engineering)
"Microwave Plasma Synthesis of Graphene and its La.	ser-Optical in Situ Characterization''
Ramachandiran, Nivas	(Mechanical and Mechatronics Engineering)
"Structure - Property Correlation in Additive Manufac	stured 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 Augme.	ntation for Autonomous Driving''
Tangestani, Reza "Multi-Scale Modeling of Laser Powder Bed Fusion P	(Mechanical and Mechatronics Engineering) rocess for Superalloys''
Wang, Chia-Pei "Virtual Model Building for Multi-Axis Machine To	(Mechanical and Mechatronics Engineering) ols Using Field Data"
Wang, Jeremy Chan-Hao	(Mechanical and Mechatronics Engineering)
"Riemann Solvers With Non-ideal Thermodynamics: I	Exact, Approximate, and Machine Learning Solutions''
Zarringhalam, Reza	(Mechanical and Mechatronics Engineering)
"Sensor Fault Detection and Fault-Tolerant Estimation	on of Vebicle States"
MASTER OF APPLIED SCIEN	ICE
Bania Stanhan Adauwani	(Machanical and Machatranica Engineering)

# 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

Budnick, Dylan Colpitts, Alyson Dasari, Yashesh Ecclestone, Edward Joseph Gao, Tianvi 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 Ahmed Sedky 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, RAHULKUMAR SURESHCHANDRA Ding, Liping Elankannan, Chandrasekar Keshri, Nitish Kocher, Tyler James LI, Yanhui

(Mechanical and Mechatronics Engineering) (Mechanical and Mechatronics Engineering - Nanotechnology) (Mechanical and Mechatronics Engineering) (Civil Engineering and Planning) (Mechanical and Mechatronics Engineering) (Mechanical and Mechatronics Engineering)

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(Mechanical and Mechatronics Engineering)

Malik, Taha Manohar, Ajay Krishna Marino, Anthony John Navdeep, Navdeep Nedumaran, Kishore Nwokotubo, Malcolm Ugochukwu Pai, Prajwal Prakash Pai Lotliker, Aaditya Pervez, Ibtehaj Pillai, Pranav Balachandran Rahmani, Reza Roy, Roshan Shah, Jinesh Atulbhai Shah, Nisarg Umang Shah, Shivangi Jayrajbhai Shah, Tejas Prakash Shrestha, Bhimsen Sidhu, Manrajjit Singh Thallani Kamalaksha, Suman Kumar Wadhawan, Arjun Wang, Chenyu

### **GRADUATE DIPLOMA**

Arslan, Sheikh Muhammad Bhanushali, Adarsh Anilbhai Chang, Luke Chougule, Sanketh DAK, RAHULKUMAR SURESHCHANDRA Freiburger, Troy Alexander Keshri, Nitish Kocher, Tyler James Lenos, Jared Nikolai Manohar, Ajay Krishna Marino, Anthony John Navdeep, Navdeep Nedumaran, Kishore Nwokotubo, Malcolm Ugochukwu Pai, Prajwal Prakash Pai Lotliker, Aaditya Pillai, Pranav Balachandran Rahmani, Reza Roy, Roshan Shah, Jinesh Atulbhai Shah, Shivangi Jayrajbhai Shrestha, Bhimsen Thallani Kamalaksha, Suman Kumar

(Mechanical and Mechatronics Engineering – Co-operative Program) (Mechanical and Mechatronics Engineering) (Mechanical and Mechatronics Engineering) (Mechanical and Mechatronics Engineering) (Mechanical and Mechatronics Engineering) (Mechanical and Mechatronics Engineering – Co-operative Program) (Mechanical and Mechatronics Engineering) (Mechanical and Mechatronics Engineering)

(Green Energy) (Design Engineering – Co-operative Program) (Fire Safety) (Design Engineering – Co-operative Program) (Green Energy) (Cognitive Science) (Design Engineering – Co-operative Program) (Fire Safety) (Software Engineering) (Design Engineering – Co-operative Program) (Green Energy) (Design Engineering) (Green Energy) (Design Engineering – Co-operative Program) (Green Energy) (Green Energy) (Design Engineering – Co-operative Program) (Design Engineering – Co-operative Program) (Green Energy) (Design Engineering – Co-operative Program)

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\* – With Distinction

# BACHELOR OF APPLIED SCIENCE

MECHANICAL ENGINEERING	
Abidi, Syed Mohammed Waqar	(Computing Option)
Adriano, Annroneth	(Computing Option) *
Akpata, Ephraim Etinosa	
Al-Joundi, Kadin Peter	*
Allen, Nathan Collin	*
Andary, Michael Christopher	*
Annosantini, Adam Stuart Sante	(Mechatronics Option) *
Antoniades, Peter Anthony	*
Aruchunan, Prasanthan	
Assad, David Sameh	*
Ayala Delgado, Armando Alexander	
Baranoski, Gabriel Euzebio Chirico	
Barrington, Kyle Maxwell	*
Barry, Veronica Juliet-Marie	(Welding and Joining Specialization)
Beazley, Benjamin James	(Mechatronics Option)
Bhattacharya, Ardhendu Shekhar	*†
Bian, Zhen Bo	*†
Boarder-Allen, Justin	(Welding and Joining Specialization) *
Bolt, Collin Gerald	(Environmental Engineering Option) *
Bonner-Stanley, Justis Andrew Nathanial	
Bradski, Simcha Rost	*
Bruulsema, Timothy	(Welding and Joining Specialization) *
Bunkheila, Jihad	(Computing Option) *
Callam, Andrew Duncan	*
Canavan, James Spencer	(Welding and Joining Specialization)
Cao, Lisa	
Carreno-Molina, Oscar Manuel	*
Chai, Solomon Sanghyun	(Computing Option) *
Chan, Billy Ngai Hun	
Chateauneuf, Jacob Douglas	*†
Chaudhry, Jazab	(Computing Option)
Chaytor, Duncan Llewellyn	*
Chen, Yang	
Chen See, Benjamin Luke	*
Chow, Adrian Hei Tung	(Artificial Intelligence Option) *
Chow, Ning Kelly	*
Chu, William	(Management Sciences Option)
Cojocar, Thomas Edward	
Curran, Jack Patrick	(Welding and Joining Specialization) *
Dang, Jingwei	(Management Sciences Option) *
Davla, Shikhar	*
Dawson, Hugh Munroe	(Physical Sciences Option)
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\* – With Distinction

Deol, Harsukh Kaur	*
Desai, Param	*
Ding, Yusen	
Domaratzki, Samuel Peter	*
Dondertman, Lucas Emil	*
Dsouza, Snehal Ashlyn	
Duan, Rui Jia	*†
Dunk, Benjamin Keith	*
El Khayri, Hicham	*
Embleton, Andrew Marc	(Welding and Joining Specialization)
Fehr, Sylvia Breanne	
Fernandez, Natalie Anne	*
Fletcher, Jacob Austin	*
Fung, Adam Freeman	
Gervais, Tristan Pierre	*
Ghosh, Rapti	
Gibbs, Hannah Jane	*
Gurhale, Saurav Laxmikant	
Hafeez, Saif Imran	
Hakim, Fawaz Suhail	*†
Han, Dong Gyu	
Hassanali, Hussein	
Hergott, Megan Rita	
Hole, Laura Christine	*
Hu, Xingyu	(Biomechanics Option) *
Huang, Ningwei	*
Hussein, Sana	
Ingriselli, Daniel Igino	*†
Jain, Dhruv Sandeep	,
Jeyaganeshan, Nisha	*
Jia, Chengyu	*
Johanna, Sarah	(Management Sciences Option) *
Joseph, Evan Rea	(Welding and Joining Specialization) *
Kagaya, Michiyo	*t
Kalia, Nikhila	ہ (Entrepreneurship Minor) *
Karunaratne, Dinil Demetrius Perera	*
Keating, Lauren Louise	*†
Kenjic, Nikola	، (Welding and Joining Specialization) *
Kenneweg, Christopher James	*t
Khadra, Hadi	*
Khan, Tahmid Ahmed	
Kim, Jae Hyung	*
Kim, Tae Hun	
Kishorchandra, Ankitha	*
Klarer, Connor James	
Knibutat, Carly Alexandria	(Software Engineering Option) *
* – With Distinction	

Kremer, Shannon Kristina	*†
Kuo, Varun Fu-Han	*
Laddaran, Alexsa Mae Cabisudo	*
Lakhani, Ayaan Aly	*
Lalancette, Gabriel	(Welding and Joining Specialization)
Lalani, Rakeen	
Lecaj, Burim	
Lee, Sanford	*
Lee, Seungjae	*
Lew, Ryan Alexander	*
Li, Jia Hong	
Li, Larry	*
Li, Lin	*
Li, Yu Rong	*
Li, Yuhao	(Management Sciences Option) *
Liao, Kaiwen	*†
Liebenberg, Anna Brynn	(Biomechanics Option) *
Liew, Shan-Sam	(Artificial Intelligence Option) *
Liu, Eldon Sheng-Qian	(Management Sciences Option)
Liu, Geoffrey Jianfei	*7
Liu, Hairan	
Liu, Kimberly Kim Yen	*†
Looi, Horace Ingram	(Management Sciences Option) *†
Luyt, Noah Forrest	
Lydon, Daniel James	(Welding and Joining Specialization)
Majeed, Abdullah	*
Malik, Gagan	(Physical Sciences Option) *†
Manboadh, Kristal	
Mansy, Chris	*
Marinakos, Apostolos Elias	
Marwari, Shray	*
Masak, Conrad Ryan	(Welding and Joining Specialization) *
Mathivannan, Keerthigan	*
Mehra, Shreshth	(Mechatronics Option) *
Metzger, Jeremy Dillon Bauman	*†
Miclăuș, Alex-George	(Mechatronics Option) *
Miglani, Radhika	*
Milek, Stephen Del Grosso	*
Min, Shuangrun	(Life Sciences Option) *†
Moore, Emily Julia	*
Mozaffari, Michael	*
Nakka, Paul Raju	*
Naud, Martin Forrest	*†
Ng, Tiffany	(Computing Option) *
Nguyen, Mai Khanh	
Obermayer, Mackenzie Carol	(Biomechanics Option) *
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* – With Distinction	

Ong, Ivanseth Solis	*†
Opeoluwa-Calebs, Oluwatofolafun Damilola	(Mechatronics Option)
Park, Jung-Eun Erica	*#
Patel, Karan	*
Patel, Manan Diptesh	*
Patel, Mann	*
Patel, Vaibhav Nilesh	
Pereira, Zeeshan Rafiq	
Pincus, Bennett J	
Poon, Bryan Chi-Ho	
Poon, Julian Ho Yin	(Management Sciences Option) *
Qian, Wenduo	*
	*
Qin, Kathy	
Quijano, Timothy Lorenz Liboro	
Qureshi, Ayman Khalid	
Raina, Tejant Singh	(Mechatronics Option)
Randall, William Huey Gray	
Ravani, Attilio	*†
Ren, Chenglong	*
Saini, Ishan	
Sarathchandran, Advika	*
Sarim, Muhammad	*†
Schlotzhauer, Theodore Percy	*†
Schneider, Alec John Mitchell	(Welding and Joining Specialization)
Schwartzel, Daniel Michael	
Sellner, Kevin George	*
Selvarasa, Kaarusan	*
Selvarasa, Kaurisan	(Mechatronics Option) *
Shah, Grishma	(Welding and Joining Specialization/Management Sciences Option)
Shahid, Sahifa	*
Shamsee, Ahsan Navaid	
Shaw, Joshua Allister Hiram	*†
Singh, Lovepreet	*†
Singh, Nikhil	*
Singh, Shawn Rohan	*
Sokic, Luka Michael	(Biomechanics Option) *†
Song, Xianyu	
	*
Suherli, Shaela Brigitta	*†
Sullivan, Robert Miles	1
Tai, Felix Si Yuan	
Tan, Ryan	(Markater vice Ortion)
Tanary, Ryan	(Mechatronics Option)
Thurairajah, Kaveeshan Akan	(Physics Minor) *
Tiesma, Frederick Harrison Akira	*†
Tran, Kenton	
Tran, Tommy	
* – With Distinction	

van Huuksloot, Erin Alexandra Vance, Kodey Lloyd Waldner Khan, Thomas Andrew Wallace, Mark Elliott (Welding and Joining Specialization) Walli-Attaei, Aaron (Management Sciences Option) \* Wang, Edward 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) Yang, Shi Jing Yoo, Seungwoo You, Gary \*† Yu, Yao Zaman, Fardeen Tausif (Mechatronics Option) Zhang, Andrew Changan (Mechatronics Option) Zhao, Hanqi \* Zhao, Nina Ranran Zhou, Jim Tong MECHATRONICS ENGINEERING Agrahari, Abhinav \*† Ahamed, Kamran Karim Alnader, Hashem (Artificial Intelligence Option) (Management Sciences Option & Computing Option) \* Atif, Hunnain (Artificial Intelligence Option) \* Bai, Tonghe 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

Brett, Caleb Ian Broekhoven, Derek Louis

\* – With Distinction

Cai, Charlie

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	1
Clark, Liam Edward	
	*
Cui, Yuanlong	*
Dao, Eric-Khang Tan Darban, Haraimran Singh	
Darhan, Harsimran Singh	(Riemechanics Ontion) *
Dawda, Hetal Bharat	(Biomechanics Option) * *
del Rosso, Matthew Anthony	
Dellosa, Joshua Raymund	*†
Diao, Ziyang	*
Divecha, Keahn Rushad	
Docker, Colin Alexander	*
Doria, Luke Domenic	*†
Drew, Elizabeth Margaret	*
Du, Rachel	*
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) *†
Gillespie-Friesen, Noah	
Gopaul, Kavir Darron	(Management Sciences Option) *
Gupta, Nihit	(Computing Option) *
Gupta, Tushar	
Han, Daeun	(Computing Option) *
Hao, Brandon	
Hari, Shyam Siddharth	*
Hariharan, Saharsh	
Harrington, Ryan John	*
Hashi, Laila	
He, Jason Jiachen	*
Hernandez, David Lorenzo	*†
Hillcoat, Sophie Rachel	*#
Hsu, Selina	1 *
Hu, Chu Qing	(Artificial Intelligence Option) *
	*
Huang, Jimmy Ximing	<u>^</u>

Hyeun, Jeesup	(Software Engineering Option) *
Itua, Itohansose Elaine	(Artificial Intelligence Option)
Jain, Prashuk	
Ju, Jerry Tian Jian	(Computing Option) *
Kamal, Ahmad Nabil Yousef	*†
Khan, Riyad Rafiq	*
Khan, Wohsumoe Soyazhe	(Computing Option) *†
Kim, Ihn Hwan	*†
Kim, Ryun	*
Kim, Youngbin	*
Kirton, Chad Anthony Cavour	
Kitaev, Alexander	*†
Klassen, Nathan Daniel Steinmann	*
Kletke, Dawson Walker	*
Lai, Frank Yifeng	*
Lam, Adrian Chun Wing	(Computing Option) *
Le, Jane	
Le, Tuan Quang Minh	*
Lee, Chun Hei Jeffrey	(Artificial Intelligence Option) *†
Lee, David	
Lee, Eric Younghoon	*
Lee, Kaitlyn Victoria	(Computing Option) *
Leung, Daniel J	*
Li, Junsong	
Lin, James Jiayan	
Liu, George Yilong	*
Liu, Shu Yan	*†
Lumibao, John Michael	*
Ma, Wei Min	*
Mali, Aashmika	*
Manani, Dhruv	(Artificial Intelligence Option) *†
Manley, Thomas Allan Major	
Manohara, Nirosh	*
Manoj Kumar, Kiran	(Computing Option) *
Mathiarasu, Ganesh Krishna	(Computing Option) *
Mears, Zachariah Henry Howden	*†
Mehta, Jainish Manojkumar	(Artificial Intelligence Option) *
Mei, Caitlyn	*
Minhas, Pritika	(Computing Option) *
Mittal, Ayush	(Artificial Intelligence Option & Computing Option) *
Moffett-Steinke, Kaelan Shane	(Computing Option)
Mok, Gabriel Nicholas	
Mourcos, Andrew	(Computing Option) *
Murugathas, Thamilmaaran	*†
Naik, Sameeksha	*
Nanji, Azum	*
- With Distinction	

Nasello, Michael Laurent Navalyal, Suchir Neliba, Kamila (Computing Option) \* Nicholls-Harrison, Robert Benjamin (Management Sciences Option) Niu, Longchen (Physical Sciences Option) \* Noia, Vanessa Sykiotis Ohayon, Sasha Armand O'Leary, Elijah Jacob David Palayew, Steven Ryan (Computing Option) \* Pandey, Keshav Dutt Parikh, Neil Park, Junha Patel, Dhruv Pramodkumar Patel, Nimit Jaideep Patel, Sohun Patel, Vrut Maheshkumar Pathak, Anoushka Picozzi, Matthew Thomas (Management Sciences Option) \*† Piirsalu, Jacob Caleb (Artificial Intelligence Option) \* Pistek, Urban \* Policelli, Dylan Nicholas Rahman, Parizeh Asaf Ramon Gaona, Ana Paula (Biomechanics Option & Management Sciences Option) \* Ray, Krishn Kiran Joshi Reda, Younes Reza, Syed Fayyad Ali Rong, Zheng Sabri, Faisal (Computing Option) \* Sarwar, Sana (Artificial Intelligence Option) \* Schnapp, Benjamin David (Biomechanics Option) \* Senthilkumar, Rajkumar Shahriar, Fahim Shahriar, Shafin (Management Sciences Option) Shaju, Nick \* Sharma, Sakshi Shayaan, Syed Muhammad Shin, Donghoon (Software Engineering Option) Shivakumar, Yathindra (Artificial Intelligence Option) \*† Sivakaran, Thanushon (Computing Option) \*† Skarica, Stephanie Thalen (Computing Option) \*† Srivastava, Ankit Jagdish Steiner, Emily Anne (Computing Option) \*† Sullivan, Christina Lee Tam, Kendra Kum-Pui (Computing Option – Visual Culture in a Global Context Minor) \* Tam, Kyle Michael Jiu-Zhi Tamrakar, Suyog \* – With Distinction

Tan, Zhuohua	(Management Sciences Option) *
Tang, Lyndon Elliot	*†
Terisno, Lania Philia	(Management Sciences Option) *
Thiessen, Natalie Nicole Brawn	*
Tims, Nigel	*
Tiou-Fat, Jason Eric Haoshan	(Software Engineering Option) *
Tipold, Glenn Masao	*
Tran, Celine Yen Phuong	(Management Sciences Option & Computing Option)
Trehan, Aryan	(Artificial Intelligence Option) *†
Truong, lan	*
Unrau, Joshua Paul	
Vijikaran, Gobishan	(Management Sciences Option & Computing Option)
Von Friedl, Kathrine Elizabeth	*
Vora, Hanz Jitendra	(Computing Option) *†
Walia, Kunal	(Artificial Intelligence Option) *
Wang, Bill	
Wang, Siyi	*
White, David Daniel	*
White, James Clermont Christopher Montana	*
Windhaus, Brian Anthony	*
Winter, Maximillian Thomas	
Wong, Felix KaHin	(Management Sciences Option) *†
Wong, Jillian Claire	*
Wong, Yanni Chun Yen	*
Wu, Peixin	*
Wu, Xiaofei	*†
Wu, Zewen	*†
Xiao, George	
Yu, Jason Da Wei	(Artificial Intelligence Option) *
Yu, Xinyue	(Artificial Intelligence Option) *†
Zanker, Teva	*
Zaryab, Mahad	(Computing Option) *†
Zhang, Mu En	(Artificial Intelligence Option) *
Zhao, Yuchi	*
Zheng, Huanpeng	*
Zhou, Haoyu	*
Zwiebel, Joshua Jack	(Artificial Intelligence Option) *

# **CERTIFICATE IN CO-OPERATIVE EDUCATION IN RESEARCH**

Annosantini, Adam Stuart Sante

### **CERTIFICATE IN GLOBAL EXPERIENCE**

Itua, Itohansose Elaine

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\*

### DOCTOR OF PHILOSOPHY

Ahmadloo, Fatemeh	(Electrical and Computer Engineering)
"Control Loop Interactions and Their Mitigation Sche	mes in VSC-HVDC Systems''
Alsharman, Mohammad Khaled	(Electrical and Computer Engineering)
"Towards Learning Feasible Hierarchical Decision-M	aking Policies in Urban Autonomous Driving''
Barbosa de Queiroz, Rodrigo	(Electrical and Computer Engineering)
"Scenario Modeling and Execution for Simulation Test	sting of Automated-Driving Systems''
Córdova Sota, Samuel Alejandro "Operation of Microgrids with Conventional and Virt.	(Electrical and Computer Engineering) ual Energy Storage Systems''
Devadiga, Anurag Anand "Analysis of Transformer Insulation Under High-Free	(Electrical and Computer Engineering) quency Transients''
Fouladi Azarnaminy, Arash	(Electrical and Computer Engineering)
"High-Performance Reconfigurable Piezoelectric Resond	ators and Filters for RF Frontend Applications''
Gul M Khan, Omniyah "Congestion Management in Active Distribution Netw	(Electrical and Computer Engineering) vorks and its Cyber Security''
Hussein, Abdalla Mohamed Abdelaziz Mahmoud	(Electrical and Computer Engineering)
"Operating Multi-User Transmission for 5G and Bey	-
Jarrar, Ibrahim Marwan Mousa "A Study on Turn-to-Turn Insulation of Medium Vo	
Khaira, Navjot Kaur	(Electrical and Computer Engineering)
"Reconfigurable Cryogenic Microwave Devices Using L	ow Temperature Superconducting rf-SQUIDs''
Khan, Asif Abdullah	(Electrical and Computer Engineering)
"High-Performance Piezoelectric Nanogenerators Based	d on Hybrid Perovskite Nanomaterials for Energy-Harvesting''
Li, Zhuoran	(Electrical and Computer Engineering)
"Visual Content Characterization Based on Encoding	Rate-Distortion Analysis''
Mao, Chunyu "Scaling Permissioned Blockchains via Sharding"	(Electrical and Computer Engineering)
Matar, Amr Salaheldin Hashem	(Electrical and Computer Engineering)
"Resource and Interference Management in UAV-Cel	Inlar 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	mponents In Human Movement Through Optimization-Based Approaches''
Peralta Moarry, Dario Andres	(Electrical and Computer Engineering)
"Modeling and Operation of Ground Source Heat Pun	mps in Electricity Markets Considering Uncertainty''
Pil Ali, Abdollah	(Electrical and Computer Engineering)
"Grating Technology and System Development for Hig	h-Resolution X-Ray Phase-Contrast Imaging''
Stangherlin, Kleber Hugo "Secure and Unclonable Integrated Circuits"	(Electrical and Computer Engineering)
Tekcan, Burak "III-V Semiconductor Nanowire Array Avalanche Pr	(Electrical and Computer Engineering) botodiodes''
Van Kasteren, Bradley Edward	(Electrical and Computer Engineering)
"Emerging Semiconductor Nanostructure Materials for	r Single-Photon Avalanche Diodes''
Vera Solorzano, Enrique Gabriel	(Electrical and Computer Engineering)
"Planning of Multi-Microgrids Considering Uncertain.	ties and Spatial Characteristics''
Wang, Siyi	(Electrical and Computer Engineering - Nanotechnology)
"Thermal Dynamic Imaging and Thermal Management	nt for Quantum Cascade Lasers''
Xue, Liang	(Electrical and Computer Engineering)
"Privacy-Preserving and Regulation-Enabled Mechani.	sms for Blockchain-Based Financial Services''
Yazdani, Farzad	(Electrical and Computer Engineering)
"Investigations Into Impedance Tuners for the Next G	eneration of Communication Systems"

### MASTER OF APPLIED SCIENCE

Abdelkareem, Youssef Abdelrahman Fathi Ahmed	(Electrical and Computer Engineering)
Aghamohammadi, Hamid	(Electrical and Computer Engineering)
Alam, Nova	(Electrical and Computer Engineering)

\* – With Distinction

Azizi, Negin (Electrical and Computer Engineering) (Electrical and Computer Engineering) Ba Raean, Saleh Mohammed Salem Bahlmann, Andrew Richard (Electrical and Computer Engineering) (Electrical and Computer Engineering) Barkhordar-pour, Hoda Bastarache, Jean-Luc (Electrical and Computer Engineering) Cai, Yifan (Electrical and Computer Engineering) Cai, Zhiping (Electrical and Computer Engineering) Cerkauskas, Cyrus Xu (Electrical and Computer Engineering) Dempster, Rowan (Electrical and Computer Engineering) Elghalhoud, Omar Mahmoud Rida (Electrical and Computer Engineering) Abdulrahman Fardno, Fatemeh (Electrical and Computer Engineering) Gao, Zehan (Electrical and Computer Engineering) Gu, Zhao (Electrical and Computer Engineering) He, Ziran (Electrical and Computer Engineering) Houk, Anna Maria (Electrical and Computer Engineering - Quantum Information) Huang, Fangzheng (Electrical and Computer Engineering) Jha, Piyush (Electrical and Computer Engineering) Jin, Huixin (Electrical and Computer Engineering) Jodhka, Tejasvi Singh (Electrical and Computer Engineering) Kananian, Pouya (Electrical and Computer Engineering) (Electrical and Computer Engineering) Klashtorny, Artem Lakhani, Ahmad (Electrical and Computer Engineering) Lee, Hurn Ook (Electrical and Computer Engineering) Li. Chao (Electrical and Computer Engineering) Lin, Shizhe (Electrical and Computer Engineering) Long, Guofei (Electrical and Computer Engineering - Nanotechnology) Ma, Haien (Electrical and Computer Engineering) Nooruddin, Sheikh (Electrical and Computer Engineering) Priana, Farhana Hossain (Electrical and Computer Engineering) Robitaille, Marcel Joseph (Electrical and Computer Engineering) Sabour, Negar (Electrical and Computer Engineering) Saha, Soumyadeep (Electrical and Computer Engineering - Nanotechnology) Schmidt, Lukas Fridolin (Electrical and Computer Engineering) (Electrical and Computer Engineering) Tang, Xikai Tao, Liran (Electrical and Computer Engineering) Theivendran, Karthikan (Electrical and Computer Engineering) Wang, Jun (Electrical and Computer Engineering) Yigzaw, Samuel Mulatu (Electrical and Computer Engineering) Zhou, Xiang (Electrical and Computer Engineering)

### MASTER OF ENGINEERING

Divya Aggarwal, Adish Aggarwal, Tanvi Agrawal, Sheena

\* – With Distinction † – Dean's Honours List (Electrical and Computer Engineering) (Electrical and Computer Engineering) (Electrical and Computer Engineering) (Electrical and Computer Engineering)

Allahabadi, Hina (Electrical and Computer Engineering) Alotary, Abdulrahman (Electrical and Computer Engineering) (Electrical and Computer Engineering) Amiri, Tahereh (Electrical and Computer Engineering) An, Di Ansari, Areeb Ullah (Electrical and Computer Engineering) Arulselvam, Sahithyaa (Electrical and Computer Engineering) Arumugam, Shanthi Meena (Electrical and Computer Engineering) Bachani, Juhi Vasudev (Electrical and Computer Engineering) Baillie, Katherine (Electrical and Computer Engineering) (Electrical and Computer Engineering) Bal, Subham Biswajit Baladhandapani, Aswathy (Electrical and Computer Engineering) Baluja, Swapnil (Electrical and Computer Engineering) Baskaran, Poojitha (Electrical and Computer Engineering) Batra, Sushant (Electrical and Computer Engineering) Batta, Prikshit (Electrical and Computer Engineering) (Electrical and Computer Engineering) Bhatia, Rubani Bisen, Mimansa (Electrical and Computer Engineering) Bobbiti, Shreya Reddy (Electrical and Computer Engineering) Borole, Sanket Subhash (Electrical and Computer Engineering) Bremner, Eric (Electrical and Computer Engineering) Burt, Michael Jared (Electrical and Computer Engineering - Electric Power Engineering) Cao, Jingtao (Electrical and Computer Engineering) Chang, Xinyi (Electrical and Computer Engineering - Electric Power Engineering) Chauhan, Vivek (Electrical and Computer Engineering) Cheng, Ruilin (Electrical and Computer Engineering) Chopra, Kritika (Electrical and Computer Engineering) Chopra, Vimanyu (Electrical and Computer Engineering) Deshpande, Vaishnavi Amod (Electrical and Computer Engineering) Dhole, Shraddha Digambar (Electrical and Computer Engineering) Dong, Tingcen (Electrical and Computer Engineering) Fan, Zekun (Electrical and Computer Engineering) Feroz, Saad (Electrical and Computer Engineering - Electric Power Engineering) Gao, Zhiyue (Electrical and Computer Engineering) (Electrical and Computer Engineering) Geng, Xiaoshuai Geng, Zhuliang (Electrical and Computer Engineering) Gong, Zhen (Electrical and Computer Engineering) Gore, Ritika Shantaram (Electrical and Computer Engineering) Gossain, Hardik (Electrical and Computer Engineering) Guntimadugu, Suraj Raju (Electrical and Computer Engineering) Guo, Chen (Electrical and Computer Engineering) **GUPTA, SHUBHANKI** (Electrical and Computer Engineering) Hao, Sheng (Electrical and Computer Engineering) Hara, Bipinjot Kaur (Electrical and Computer Engineering) Hoskin, David John (Electrical and Computer Engineering) Huang, Chenxin (Electrical and Computer Engineering) Huang, Xin (Electrical and Computer Engineering)

\* – With Distinction † – Dean's Honours List Indarapu, Abhinav (Electrical and Computer Engineering) Iqbal, Azza (Electrical and Computer Engineering) Ishleen, Ishleen (Electrical and Computer Engineering) Islam, Akib (Electrical and Computer Engineering) Jain, Charvi (Electrical and Computer Engineering) Jain, Priyanka (Electrical and Computer Engineering) Jin, Kangwei (Electrical and Computer Engineering) Jolly, Harpreet (Electrical and Computer Engineering) Kakkar, Snigdha (Electrical and Computer Engineering) Kalakkadu Bhaskaran, Sai Abhishek (Electrical and Computer Engineering) Kanchanakuntla, Sindhuja (Electrical and Computer Engineering) Kaswan, Kashish (Electrical and Computer Engineering) Kaur, Harsimran (Electrical and Computer Engineering) Kaushik, Parnika (Electrical and Computer Engineering) Khurana, Hitesh (Electrical and Computer Engineering) Khwaja, Sarah Waheed (Electrical and Computer Engineering) KOTHURI, SRI TARUN (Electrical and Computer Engineering) Laad, Uditya Uday (Electrical and Computer Engineering) Latne, Tejas Girish (Electrical and Computer Engineering) Lenos, Jared Nikolai (Electrical and Computer Engineering) (Electrical and Computer Engineering) Li, Fengyan (Electrical and Computer Engineering - Electric Power Engineering) Li, Jin Li, Mingyue (Electrical and Computer Engineering) Li, Xiaoke (Electrical and Computer Engineering) Li, Xinyang (Electrical and Computer Engineering) Li, Yang (Electrical and Computer Engineering) Li, Ziyue (Electrical and Computer Engineering) Lin, Yanhao (Electrical and Computer Engineering) Lin, Zhen Rui (Electrical and Computer Engineering) Lingamsetty, Naga Yoshita (Electrical and Computer Engineering) Liu, Aiyuan (Electrical and Computer Engineering) Liu, Yuheng (Electrical and Computer Engineering) Liu, Zihan (Electrical and Computer Engineering) Luo, Xuechen (Electrical and Computer Engineering) Luong, Brian (Electrical and Computer Engineering) Mahajan, Tejaswini (Electrical and Computer Engineering) Mehta, Dharaben Mineshkumar (Electrical and Computer Engineering) Meshram, Falgun Dnyanendra (Electrical and Computer Engineering) Mistry, Heli (Electrical and Computer Engineering) Mo, Xiaoxue (Electrical and Computer Engineering) (Electrical and Computer Engineering) Mody, Krutik Mukesh Mohammed, Abdul Sadiq (Electrical and Computer Engineering) Mohammed, Khaja Amir Kafeel (Electrical and Computer Engineering) Mohammed, Suhail Tharappel (Electrical and Computer Engineering) Momin, Arshad Mohammed Shafi (Electrical and Computer Engineering) Mostafa, Omar Walid Ahmed Ahmed (Electrical and Computer Engineering)

\* – With Distinction

Muppavarapu, Venkata Akhil (Electrical and Computer Engineering) (Electrical and Computer Engineering) Murali, Vidhya Naeem, Muhammad Osama (Electrical and Computer Engineering) Naik, Harmin Kartik (Electrical and Computer Engineering) Nambiar, Shrenik (Electrical and Computer Engineering) Oahimire, Princess Gloria (Electrical and Computer Engineering) Panara, Jay (Electrical and Computer Engineering) Pang, Chen (Electrical and Computer Engineering) Parikh, Dhrumilkumar Sandipkumar (Electrical and Computer Engineering) Patel, Dhairya Ajitkumar (Electrical and Computer Engineering) Patel, Nagma Salimbhai (Electrical and Computer Engineering) Patel, Parth NITINBHAI (Electrical and Computer Engineering) Patel, Parth Bhadreshkumar (Electrical and Computer Engineering) Patel, Rishi Atul (Electrical and Computer Engineering) Patel, Riya Jitendrakumar (Electrical and Computer Engineering) Patel, Yash Ketanbhai (Electrical and Computer Engineering) Perichiappan, Swetha Perial (Electrical and Computer Engineering) Piguing, Paolo Cristopher Mapa (Electrical and Computer Engineering - Electric Power Engineering) Potnis, Sagar Sanjeev (Electrical and Computer Engineering) Prajapati, Chinmay Bakuleshkumar (Electrical and Computer Engineering) Qaiser, Rameesha (Electrical and Computer Engineering) Ramesh, Sujitha (Electrical and Computer Engineering) Ratmono, Abdul-Halim Budi Santoso (Electrical and Computer Engineering) Ren, Chendi (Electrical and Computer Engineering - Electric Power Engineering) Ruan, Ziming (Electrical and Computer Engineering) Samaha, Edmond (Electrical and Computer Engineering) Samanta, Rumna (Electrical and Computer Engineering) Sandhu, Navjot Singh (Electrical and Computer Engineering) Sasidharan, Vijiithaa (Electrical and Computer Engineering) Satheesh, Premchander (Electrical and Computer Engineering) Shah, Juhi Parag (Electrical and Computer Engineering) Shaheer, Mudabir (Electrical and Computer Engineering) Shahpar, Bahareh (Electrical and Computer Engineering) Sharma, Aditya (Electrical and Computer Engineering) Sharma, Himalaya (Electrical and Computer Engineering) Sharma, Rahul (Electrical and Computer Engineering) Shi, Anyi (Electrical and Computer Engineering) Shi, Hongyi (Electrical and Computer Engineering) Singh, Amolpreet (Electrical and Computer Engineering) Singh, Gursahib (Electrical and Computer Engineering) Singh, Karanjot (Electrical and Computer Engineering) Singh, Navneet Ishan (Electrical and Computer Engineering) Singh, Ravideep (Electrical and Computer Engineering) Singh, Sumati (Electrical and Computer Engineering) Sivaraman, Sriram (Electrical and Computer Engineering) Song, Haoran (Electrical and Computer Engineering)

\* – With Distinction

Song, Hongyao Song, Qian Sun, Qiyang Sun, Shaowei Sun, Yuan Suresh, Vidya Shree Suryanarayan, Shridhar Talaviya, Niravkumar Vinubhai Taneja, Mukul Taneja, Sunidhi Tao, Yuan Teli, Mrunal Thayyil, Gopishankar TINGRE, OMKAR SATISH Torcato, Shannon Bosco Francis Uttarwar, Priyanka Chandrakant VADALIA, SHYAM KIRITKUMAR Vaniya, Hardik Ravajibhai Vashishth, Adi Wan, Yulin Wang, Haoran Wang, Herong Wang, Lei Wang, Yihan Wang, Yutong Watchi Hayek, Maher Wu, Kunyuan Xie, Kunyang Xu, Shuoni Xu, Xiaodong Yang, Bai Yang, Kaihua Ye, Sitong Yuan, Runze Zafar, Laeeq Zanzarukiya, Abhi Rajendra Zhan, Chengzheng Zhang, FengQi Zhang, Hanzhe Zhang, Mingrui Zhao, Fengnian Zhou, Zihang Zhu, Yifan Zuo, Siyuan

(Electrical and Computer Engineering) (Electrical and Computer Engineering)

# **BACHELOR OF APPLIED SCIENCE**

\* – With Distinction † – Dean's Honours List

COMPUTER ENGINEERING	
Academia, Raphael Buenviaje	*
Achimescu, Anda Adriana	*
Acosta, Jesse Guillermo	*
Aggarwal, Dhruv	
Aguilar, Santiago	*†
Ahmed, Faduma Mahad	*
Alam, Muhammad Hamza	
Anton, Satyaana	
Arakcheev, Daniel	*
Arora, Manbir Singh	
Baba, Joanne	*†
Bai, Yingjian	
Bakker, Braden Gerrit Oldejans	(Management Sciences Option) *†
Banerjee, Arhan	
Bao, Leo	*
Bawa, Arjun	(Communication and Signal Processing Specialization) *
Beqo, Patrik	*
Bhardwaj, Kartikeya Janendrakumar	*
Bhatt, Jai Vinish	
Bhattacharjee, Siddharth	
Bhimani, Jawad	*
Booth, Mitchell David	*
Brennan, Kevin Mitchell Gordon	
Cai, Catherine Jiahua	(Artificial Intelligence Option) *
Cai, Yanqi	*
Chacko, Caleb Thomas	*
Chang, Alisa Sara	*
Chen, Alex Chen	*
Chen, Ze Liang	*†
Cherney, Cole	*
Chik, Kevin Chun-Ting	
Chou, Tzu-Chun	*
Chowdhury, Nur-E Safwaan Haider	
Chugh, Ruhani	(Artificial Intelligence Option) *
Chung, Colin Daniel	*
Cui, Shurui	*
Cunha, Joshua Martins	*
Dahiya, Karan	*
Datta, Aurchon	*
De Luca, Anthony Natale	*
De Souza, Shimona	(Management Sciences Option) *
Demirel, Omer Faruk	*
Deol, Kawalpreet	
Ding, Wen Qi	*
Du, Rui Fei	
* – With Distinction	

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Dullaert, Ryan Rumeng Xie	(Artificial Intelligence Option) *
Ekundayo, Isemi	*
Emaish, Sultan	*
Erathasari, Gautham	*
Esfarayeni, Nita	(Communication and Signal Processing Specialization) *
Farlow, Robert William	
Foster, Aidan Ronald Gordon	
Fourchalk, Patrick George Zung-Wah	*
Gallant, Morgan Anthony	*
Gao, Chen Hao	*
Garcia Moreno, Jesus Francisco	*
Grewal, Ikamdeep Singh	*
Guo, Si Qi	*
Guo, Zheng Hao	* <del>/</del>
Haber, Aviv Jesse Dawson	* <del>/</del>
Han, Gitae	
Han, Lucy Lu	*
Hartman, Nathan Daniel James	* <del>/</del>
He, Alvin Wenjun	*
He, Tiantian	*†
Hem, Emily Socheta	*
Heza, Ayesha	
Hodges, Quinn Henry	*
Hopkins, Anthony John Paul Norman	*†
Hou, Tianhong	*†
Hsu, Stephanie Cywie	*
Hua, Andrew	*†
Hua, Xiaoyun	*
Huang, Rennie	*
Hussain, Umar Farooq	*
Jabbour, Alexander	*
Jiang, Hong Bin	*
Ju, Haoyang	*†
Kabir, Nikita	
Katugaha, Sathira Govindunath	*
Khan, Ansar Zunnoon	*†
Khan, Muhammad Ayan	*
Khan, Salmaan	(Economics Minor) *†
Khanna, Yug	*
Khardenavis, Yuvika	*†
Khattak, Saifuddin	*†
Khurana, Tanmay	*
Kim, Daniel Byungha	*
Kim, Kaeun	(Artificial Intelligence Option) *
Kim, Sanghun Eric	*
Kluev, Yulia Tamara	

Kuszmar, Robert	*†
Ladd, Andrew	
Lam, Benny Daw Yeong	*†
Lam, Michael Andrew Jay	
Lau, Anthony Marcus	*#
Lee, Catherine	*
Lei, Grace	
Li, Chengyang	(Statistics Option) *
Li, Chenyang	*†
Li, Mervin	*
Li, Ricky Jia Le	
Li, Ruo Yu	*
Li, Shizhen	*†
Li, Wen Hao	
Li, William	*
Li, Yuchuan	*
Li, Yuyang	
Lin, Ga-Chun	*
Lin, Zhiming	
Liu, Caroline	*
Liu, Jason Jie Shen	*
	*†
Liu, Jing	*
Liu, Shuhan	
Liu, Ted Lamson	*†
Liu, Tong	*†
Liu, Xialin	*
Liu, Zhe	
Liu, Ziqian	*†
Lohtia, Aditi	(Management Sciences Option) *
Lou, Alain Zeyu	-
Loui, Courtney Mui-Sum	
Lu, David Yiduo	(Artificial Intelligence Option) *
Lu, Eugene	
Luong, Emily	*
Lyu, Mengze	
Ma, Jeff	(Artificial Intelligence Option – Psychology Minor) *†
Maclean, Rian James	
Maghsoudlou, Kourosh	*†
Mahmud, Muaaz	*
Malik, Yash	*
Manchanda, Harshit	
Mansoor, Moyez Farook	*
Mathur, Dhruv	*
Mazza, Dante	
Mehta, Hetansh Nirajkumar	
Miller-Junk, Devon Scott	*†
* – With Distinction	

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	(Communication and Signal Processing Specialization) *
Panigrahy, Yathartha	(Management Sciences Option) *
Parthasarathy, Harish	
Patel, Fenilkumar	*
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	(Entrepreneurship Option) *
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	

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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	*†
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

† – Dean's Honours List

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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, Sarvath	*
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

#### DOCTOR OF PHILOSOPHY

Abou Chacra, David	(Systems Design Engineering)
"Modern Object and Visual Relationship Detection in	I Images from a Critical, Cognitive and Data Perspective''
Afshari, Mehdi "Spatially Constrained Compound Magnification Fran	(Systems Design Engineering)
Almarzooqi, Khalfan	(Chemical Engineering)
"Graphene Based Membranes for High Salinity, Prod.	Juced Water Treatment by Pervaporation Separation''
Cheraghi, Elahe	(Systems Design Engineering)
"Fabrication and Evaluation of Polymer Nanocompos	ites for Space Radiation Shielding Application''
Duggins, Peter	(Systems Design Engineering)
"Learning and Decision Making in Social Contexts: 1	Neural and Computational Models''
Ebrahimian, Arash	(Systems Design Engineering)
"Human Middle Ear: Material Characterization, Ar	nalysis of Effects of Uncertainties, and Investigation of Impacts of Medical-Device Attachment''
G Menon, Kavitha	(Chemical Engineering)
"Scheduling Process Operations Under Uncertainty and	d 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	be Upper Arm"
Hosseini, Seyedeh Maryam	(Systems Design Engineering)
"Secure Computation and Proportionally Fair Collabo	oration in Federated Learning of Histopathology Images''
Jubinville, Dylan	(Chemical Engineering)
"Highly Filled, Durable, and Sustainable Wood-Plass	tic Composites from Recycled Thermoplastics''
Kim, A-Reum	(Chemical Engineering - Nanotechnology)
"Interface Dynamics of Soft Solids With Liquids, Soli	ids, and Gels''
Lee, Yebin	(Chemical Engineering - Nanotechnology)
"Design of Functional Coating on Cellulose Nanocryst	tals for Advanced Applications''
Li, Zhelun	(Chemical Engineering)
"Polydopamine-Based Thin Film Composite Membran	nes for Pervaporative Concentration of Potassium Acetate Solution''
Liu, Jiayu Alexander	(Systems Design Engineering)
"Improvements in Field Emission Properties of Carbon	n Nanotube Field Emitters''
Misaghian, Niloofar	(Chemical Engineering)
"Multiphysics Pore Network Simulation of Electrocher	mical Devices as a Design Tool"
Nasr, Ali	(Systems Design Engineering)
"Design, Dynamics, and Control of Active-Passive Up	oper-Limb Exoskeleton Robots''
Sabtan, Bader	(Systems Design Engineering)
"Human Factors in Esports: Investigating Performance	re Measures, Coaching Practice, and Stress Training in League of Legends''
Vitelli, Michael Joseph	(Chemical Engineering)
"Improving Productivity in Bioreactors Through Contro	ol of Cell Heterogeneity''
Wang, Jiaqi	(Systems Design Engineering - Nanotechnology)
"Nanocomposite Based Infrared Photo Thermo Electri	ic Detectors''
Zarshenas, Kiyoumars	(Chemical Engineering)
"Advanced Membrane for Desalination and Ion Separ	ration Application''
MASTER OF APPLIED SCIEN	ICE
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)
Claland Kaith	(Chemical Engineering)

Cleland, Keith (Chemical Engineering)

- Durmanova, 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

Izquierdo Martinez, Alfonso (Chemical Engineering) Jaworski, Pawel (Systems Design Engineering) Kamali, Seyedehsara (Chemical Engineering) Kim, Kyuyeon (Chemical Engineering) Lahlou, Mariam (Systems Design Engineering) Ly, Sam (Chemical Engineering) Lyne, John (Systems Design Engineering) Manning, Max Ian Alexander (Systems Design Engineering) Nadalian, Soheila (Systems Design Engineering) Nurzhanov, Merlan (Chemical Engineering) Olfat, Seyed-Mahdi (Systems Design Engineering) Post, Matthew (Systems Design Engineering) Rodriguez Ruiz-Andino, Irene (Chemical Engineering - Water) Schaef, Laura Kathleen (Systems Design Engineering) Seenivasan, Renuka Devi (Systems Design Engineering) Sharma, Gauri (Systems Design Engineering) Sivan, Vignesh (Systems Design Engineering) Srinivasan Rammanoharan, Sneha (Systems Design Engineering) Sy, Jing (Chemical Engineering) Yang, Huiyi (Chemical Engineering - Nanotechnology)

### MASTER OF ENGINEERING

Bei. Zhiai (Systems Design Engineering) Burman, Ronnit Roy (Systems Design Engineering) Chen, Junwei (Systems Design Engineering) Chen, Yifan (Systems Design Engineering) Ding, Zhuxian (Systems Design Engineering) Flanagan, Nicholas (Systems Design Engineering) Hao, Wei (Systems Design Engineering) HASHEMPOURNOSRATABADI, ALI (Chemical Engineering) Kang, Kaidi (Chemical Engineering) Karmakar, Rijubak (Chemical Engineering) Liu, Wenhan (Systems Design Engineering) Palakollu Venkataramana, Renuka Devi (Chemical Engineering) Qi, Lu (Chemical Engineering) Rezazadeh, Seyedfaridoddin (Chemical Engineering) Shah, Kushan Bhavin (Chemical Engineering) Shaikh, Tabish (Chemical Engineering) Sharma, Shobhit (Chemical Engineering) Sudswong, Wanetha (Systems Design Engineering) Xu, Xiongyi (Systems Design Engineering) Yang, Bokai (Chemical Engineering) Zagorodski, Nikita (Systems Design Engineering) Zhang, Shuo (Systems Design Engineering) Zhou, Haotian (Systems Design Engineering) Zhou, Yunan (Systems Design Engineering)

\* – With Distinction

# **GRADUATE CERTIFICATE**

Saadatmand Hashemi, Sanaz	(University Teaching)
Uereten, Ece	(University Teaching)

# **BACHELOR OF APPLIED SCIENCE**

outing Option) * <del>1</del> s Engineering Specialization) * gement Sciences Option) * outing Option) * al Engineering Specialization/Computing Option) gement Sciences Option & Computing Option) *7 al Engineering Specialization/Computing Option)
gement Sciences Option) * outing Option) * al Engineering Specialization/Computing Option) gement Sciences Option & Computing Option) *
puting Option) * puting Option) * al Engineering Specialization/Computing Option) gement Sciences Option & Computing Option) *
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al Engineering Specialization/Computing Option)
al Engineering Specialization/Computing Option)
outing Option) *
outing Option) *†
outing Option) *
outing Option) *
outing Option) *†
outing Option) *†
outing Option) *
outing Option) *
nology Minor) *
,
outing Option) *†

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) Pandiaraju, Surya (Neural Engineering Specialization/Computing Option) \* Patel, Sonali Ashvin \*† Pearce, Taylor Pinzon-Corral, Karla Ennette Pothier, Sydney Emma Quinto, John Rafael Ranieses (Computing Option) Rahman, Marwan A (Computing Option) Richer, Megan Frances (Computing Option) \* Ryoo, Hee-Woon 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 Terhljan, Naomi Skye (Computing Option) \* (Management Sciences Option & Computing Option) \* Tien, Abigail Rei-Ting Ting, Kayley Noelle (Computing Option) \* Varenbut, Nick Veldhuis, Leah Nicole (Neural Engineering Specialization/Computing Option) \* Vijayagopal, Harris Wang, Kendra Manting (Computing Option) \* Wang, Leon (Computing Option) \* (Computing Option) \* Wang, Michael 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) \* (Materials and Manufacturing Processes Specialization) \* Afifi, Ali Hasan Majed Ahmad, Faique Faraz (Chemical Process Modelling, Optimization and Control Specialization) \* (Materials and Manufacturing Processes Specialization) \* Ahmed, Aryan 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 Balaji, Arvind Baun, Matthew Alexander Brake, Jarrid Bishop

Buskell, Jason Brady Byers, Jared Brian Catly, Jazmine Joy Chan, Ching-Yuan Chaudhary, Rithik Chen, Yige Cho, Elliot Zachary Choi, Dong Wook Choi, Yun Woo Chughtai, Arsalan Ali Crow, Andrea Gayle Cuba Coltsmann, Marianna Isabella Cui, Songbo Dauz, Irene Joy Dave, Param Ravin d'Entremont, Sawyer Dhaliwal, Jasnain Kaur Diaz Contreras, Harumi Andrea Dima, Alexander Stephan

Ding, Yuhan Dudding, Casey Louise Dutaud, Matthew Theodore Steven Feng, Alice Xue Ying Foell. Adrian Martin Garcia-Marroquin, Sebastian Adriel Gnanachandran, Aranjan Good, Cassidy Alyssa Grech, Darby Jayne Greuel, Peter Everest Harrison, Craig Thomas Hasan, Syeda Farisa Hufton, Gregory Stephen Hurd, Ryan William Jayakody, Jason Jindal, Priyanka Joyce, Idamae Elizabeth Kanade, Siddharth Dipak

Kang, Dong Hyun Kapadia, Aaliyan Afroz Kaur, Amrita

\* – With Distinction

† – Dean's Honours List

(Materials and Manufacturing Processes Specialization) \* (Physical Sciences Option) \* (Chemical Process Modelling, Optimization and Control Specialization/Management Sciences Option) (Energy and Environmental Systems and Processes Specialization – Economics Minor) (Materials and Manufacturing Processes Specialization) \* (Materials and Manufacturing Processes Specialization) \* (Energy and Environmental Systems and Processes Specialization) (Materials and Manufacturing Processes Specialization) \*† (Energy and Environmental Systems and Processes Specialization) (Chemical Process Modelling, Optimization and Control Specialization) (Chemical Process Modelling, Optimization and Control Specialization) \* (Energy and Environmental Systems and Processes Specialization) (Materials and Manufacturing Processes Specialization) \* \*† (Energy and Environmental Systems and Processes Specialization) \*† (Energy and Environmental Systems and Processes Specialization) \* (Chemical Process Modelling, Optimization and Control Specialization/Entrepreneurship Option) (Chemical Process Modelling, Optimization and Control Specialization/Statistics Option) \*† (Materials and Manufacturing Processes Specialization) \* \*† \*† (Materials and Manufacturing Processes Specialization) \* (Chemical Process Modelling, Optimization and Control Specialization) \* (Materials and Manufacturing Processes Specialization) \* \* (Materials and Manufacturing Processes Specialization) \* (Energy and Environmental Systems and Processes Specialization) (Energy and Environmental Systems and Processes Specialization) \* (Management Sciences Option) \*† (Materials and Manufacturing Processes Specialization) \* (Chemical Process Modelling, Optimization and Control Specialization/Management Sciences Option)

(Materials and Manufacturing Processes Specialization) \*

(Materials and Manufacturing Processes Specialization) \*

Khan, Irfan Naved Khan, Muhammad Rahim Kim, Daniel Kim, Hyunseo Kim, Soobin Kiszka, Michael Robert

Li, Chenxin Liang, Jacky Liu, Jingtian Liu, Yiran

Lozano Castillo, Mariana Luoma, Aleksi Aaron Luu, Victor Mackay, Elizabeth Anne Magro, Kendall Lynn Malakooti, Cyrus Amir McNeil, Shannon Katherine Pearsall Melanson, Joshua Robbie Noël

Muthalathu, Rithu

Nguyen-Dang, Angeline Hoang-An Nia, Tina Nicholson, Alexa Catherine Ohaka, Tobechukwu Joshua O'Hara, Guenevere Glory Ohl, Robert Okoronkwo, Tarela Chinyere Olatunbosun, Olamide Chukwudubem

Ou, Loria

Pandey, Shraddha Patel, Tirth Manoj Pun, Jason Lok Tin

Raj, Shiani Remes-Gavin, Kael Rizvi, Syed Haider Romagnoli, Luca Rowntree, Faith Marie Rutyna, Amber Marie Salvatore, Alexa Margaret Sharma, Sayjal Skidmore, Jeffrey Evan Smyth, Emily Helen

(Energy and Environmental Systems and Processes Specialization) \* (Materials and Manufacturing Processes Specialization) \* (Chemical Process Modelling, Optimization and Control Specialization) (Chemical Process Modelling, Optimization and Control Specialization & Materials and Manufacturing Processes Specialization/Management Sciences Option) (Materials and Manufacturing Processes Specialization) (Energy and Environmental Systems and Processes Specialization) \* (Chemical Process Modelling, Optimization and Control Specialization/Management Sciences Option) (Chemical Process Modelling, Optimization and Control Specialization) \* (Materials and Manufacturing Processes Specialization) \* (Materials and Manufacturing Processes Specialization) \* (Energy and Environmental Systems and Processes Specialization) \* (Materials and Manufacturing Processes Specialization) (Chemical Process Modelling, Optimization and Control Specialization) \* (Chemical Process Modelling, Optimization and Control Specialization/Statistics Option & Management Sciences Option) (Materials and Manufacturing Processes Specialization) \*† (Materials and Manufacturing Processes Specialization) (Energy and Environmental Systems and Processes Specialization) \*† (Energy and Environmental Systems and Processes Specialization/Management Sciences Option) \*† (Chemical Process Modelling, Optimization and Control Specialization/Management Sciences Option) \* (Energy and Environmental Systems and Processes Specialization) \*† (Energy and Environmental Systems and Processes Specialization) \* (Chemical Process Modelling, Optimization and Control Specialization & Materials and Manufacturing Processes Specialization/Management Sciences Option) \*† (Materials and Manufacturing Processes Specialization) \*† (Energy and Environmental Systems and Processes Specialization) (Energy and Environmental Systems and Processes Specialization) \* (Energy and Environmental Systems and Processes Specialization) \* (Materials and Manufacturing Processes Specialization) (Materials and Manufacturing Processes Specialization) \*† (Energy and Environmental Systems and Processes Specialization) \*† (Energy and Environmental Systems and Processes Specialization) (Energy and Environmental Systems and Processes Specialization/Management Sciences

Option) \*

Staines, Jakob Christopher Duarte Sultana, Nusayba Sun, Duo Swaminathan, Adithya Thapa, Bishal Thevasagayam, Eveline Tinline, Derian Alan Tong, Alice Tong, Jason Jiacheng Tran, Chris

Tse, Alexander Tin Yin Varghese, Abin Anil Villa Lema, Fabian Ismael Villeneuve, Alexandra Louise Vinzon, Danielle Joy Lamasan Wang, Hao Wortman, Joseph

Yang, Chelsea Yang, Xinge Yau, Jeng Haw

Ye, Zhen Zhang, Hao Yu Zhu, Jin Yun

#### NANOTECHNOLOGY ENGINEERING

Alidina, 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

(Energy and Environmental Systems and Processes Specialization) \* (Materials and Manufacturing Processes Specialization) \* (Materials and Manufacturing Processes Specialization/Life Sciences Option) \*† (Chemical Process Modelling, Optimization and Control Specialization) \* (Materials and Manufacturing Processes Specialization) \* (Management Sciences Option) \*† \* (Materials and Manufacturing Processes Specialization/Management Sciences Option) \* (Materials and Manufacturing Processes Specialization/Management Sciences Option) \* (Materials and Manufacturing Processes Specialization/Management Sciences Option) \* (Chemical Process Modelling, Optimization and Control Specialization & Materials and Manufacturing Processes Specialization/Management Sciences Option) \* (Chemical Process Specialization/Management Sciences Option) \* (Energy and Environmental Systems and Processes Specialization)

(Materials and Manufacturing Processes Specialization) \*

(Chemical Process Modelling, Optimization and Control Specialization) \*

(Materials and Manufacturing Processes Specialization) \*

(Materials and Manufacturing Processes Specialization) \*

(Chemical Process Modelling, Optimization and Control Specialization) \*†

(Energy and Environmental Systems and Processes Specialization/Management Sciences Option) \*

\*† (Energy and Environmental Systems and Processes Specialization/Environmental Engineering Option) \* (Chemical Process Modelling, Optimization and Control Specialization) \* (Materials and Manufacturing Processes Specialization) \* \*†

Farfan, Paul Joshua Fernandes, Guillaume 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) (Computing Option) \* Hung, Minren \*† 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

Singh, Angad	*
Soni, Yashveer Viral	*
Spinazze, Michael Ross	*†
Syed, Mustapha	
Tang, Teresa Siyun	*
Thompson, Etido Emmanuel	*†
Torrance, Skye Kristen	*
Turkiewicz, Luca	*†
Vandame, Océane	(Computing Option) *
Verma, Priyanka	*
Wu, Dihan	*
Xu, Alexander Haoyan	*
Zala, Brijrajsinh Dharmendrasinh	*†
Zhang, Zijian	(Computing Option) *
Zhen, William	(Computing Option) *
Zheng, Joyce Yiran	*†
SYSTEMS DESIGN ENGINEERING	*
Almawi, Ahmad	*
Ang, Cooper Ka-Ming	*
Ayyanan, Sasipriya	
Bhatt, Ishaan	
Cao, Jiaru	*
Carr-Pries, James Thomas	(Cognitive Science Minor) *†
Chaudhry, Ahmad Tahir	(Computing Option) *
Chen, Jennifer	(Computing Option) *†
Cheng, Bernadette Ho-Sum	(Computing Option) *
Chiang, Jianying	(Management Sciences Option & Computing Option)
Cho, Hyunjun	
Cho, Yongwon	(Management Sciences Option)
Chu, Carol Ran	*
Chudasama, Abhaysinh Dharmendrasinh	
Dales, Alexander Charles Kyte	*
Debebe, Yonael Miheret	(Management Sciences Option)
Dey, Aunosua	*
Doleweerd, Kaitlyn Mary Louise	
Drak Sibai, Burhan	
Dugan, Jeffrey Terrence	
Go, Yzabelle To	(Computing Option) *
Gurnsey, Flynn James Barber	*†
He, Jing Yi	*†
He, Tian Ying	
Ho, Jonathan Benedict	(Management Sciences Option – Economics Minor)
Howard, Phoebe Elizabeth	*
Inglis, Katherine	(Management Sciences Option) *†
Islam, Seeam Nizamul	(Management Sciences Option) *

\* – With Distinction

Kalia, Chetan Khalid, Aaiza Khew, Paulina Grace Kim, Daniel Hayoung Kim, Lynn Landy, Alexandra Mackenzie Lee, Carmen Li, Carman Li, Sara Lok-Na Liu, Yuxuan Ly, Erin Malton, Margaret Anne Matulis, Lucina Anna McGinnis, Cindy Lee McPhee, Mary Rennie Shaw Mehrotra, Aadit Sandeep Monga, Rohan Morenos, Seth Villaruz Muir, Jess Douglas Nagri, Hussein Zulfikar Ng, Jeffrey Chiu-Hang Nguyen, Kha Hoang Nguyen, Lena Oh, Nathan Michael Olive Jr, David Matacot Park, Joon Young Patel, Kiera Neena Pena, Ainley Abigail Pittman, Emily Faith Qiao, Justin Cheng Rajwani, Aliya Ramamani, Sweta Ramezani, Hooman Rao, Surin Tejas Rehders, Emma Katherine Rivers, Hannah Elizabeth Robens-Paradise, Samuel Rooke, Clayton James Ruegg, Matthew James Semin, Roman Seto, Vanessa Seu, Logan Shah, Amay Keval Shah, Dhrumil Ketul Sharma, Neil Sun, Yizheng \* - With Distinction

† – Dean's Honours List

(Software Engineering Option) (Computing Option) \*† (Society, Technology and Values Option & Management Sciences Option) \*† (Computing Option) \* (Management Sciences Option) (Management Sciences Option & Computing Option) \* (Computing Option) \*† (Management Sciences Option & Computing Option) \* \*† (Computing Option) \* (Music Minor) (Computing Option) \* \*† (Computing Option) \* (Management Sciences Option)

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

#### DOCTOR OF PHILOSOPHY

Akbarpour Safsari, Shaghayegh	(Civil Engineering - Water)
"Using Machine Learning to Understand the Hydrolo,	gic Impacts of Permafrost Thaw-Driven Land Cover Change''
Almutairi, Haya "Investigating Solutions for Self-Healing and Crack M	(Civil Engineering)
Aurilio, Roberto	(Civil Engineering)
"Investigating and Developing Fatigue-Healing Charac	cterization of Asphalt Materials''
Awe, Olukayode	(Civil Engineering)
"Cured-in-Place Pipe Pressure Liner Experimental St	udy''
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 S	<sup>Study</sup> "
Demircan Ozelcaglayan, Ezgi	(Civil Engineering - Water)
"Evaluation of a Novel Beta-Cyclodextrin Functional	ized Nano Adsorbent for Removal of Pharmacenticals''
Kabir, Tamanna	(Civil Engineering)
"Development of Porous Rubber Pavement for the Cam	adian Climate''
Kafi Farashah, Mehran	(Civil Engineering)
"Development of Sustainable Asphalt Mix Solution for	or 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	<b>(Civil Engineering)</b>
"Lightweight Cellular Concrete as Flexible Pavement."	Subbase Material: Field Performance and Sustainability Study''
Qabur, Ali Hussain I	<b>(Civil Engineering)</b>
"Optimization of the Use of Post-Industrial Recycled N	Multilayer Plastic Packaging (MPP) as Asphalt Modifier''
Taheri, Mahkameh "Upscaling Fill-and-Spill Hydrologic Processes"	(Civil Engineering - Water)
<b>Terry, Jacob Ross</b>	(Civil Engineering)
"Analyzing the Competitiveness of Transit-Integrated".	Ridesourcing Systems''
Wang, Rui	<b>(Civil Engineering)</b>
"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	f Cold In-Place Recycled Pavement''
Zarei, Mohammad	(Civil Engineering)
"Improving Predictive Models for Road Safety Screening	g: Cost-Benefit Data Analytics and Deep Generative Models''
Zhang, Linbo	(Civil Engineering)
"Bracing Requirements for Multi-Column Systems with	b 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)
Mitte Distinguite	

\* – With Distinction

# MASTER OF ARCHITECTURE

Alnabelseya, Safaa	
Chuang, Vincent	
D'Sa, Bhadra Dhisana	
Dunn, Angus Emery David	
Gupta, Maulshree	(Co-operative Program)
Ip, Pui Yue Iris	
Jabbarimoghaddam, Tala	(Co-operative Program)
Joseph, Ashwati Teresa	(Co-operative Program)
Kiernan, Giulia Paige	
Lee, Bogyeong	
Lee, Salina Victoria	
Leung, Audrey	
Li, Zhen	
Li, Zhi	
Lin, Weeney	
McNeil, Alison	
Mema, Iva	
Ogbu, Chinenye Michelle	
Paranthahan, Mayuri	
Patange, Poorna S	(Water)
Puersten, Nicholas Michael	
Reinhart, Madeleine	
Saad, Esraa Mohamed Mahmoud (Co-opera	tive Program)
Sermol, Alexandra	
Shehab, Hania Assem	(Co-operative Program)
Trivett, Martha	
Varshosaz, Parastoo	(Co-operative Program)
Wang, Shiying	
Wang, Yidan	
Yeh, Nancy	
Young, Stephanie	

# MASTER OF ENGINEERING

Arbuckle, Spencer David	(Civil Engineering)
Attaluri, Ramvinay Durgaprasad	(Civil Engineering)
Burchell, Gregory Robert	(Civil Engineering)
Çako, Elisabeta	(Civil Engineering)
Gade, Stephen James	(Civil Engineering)
Gindodia, Yashraj Sanjay	(Civil Engineering)
KarimianTaheri, Arman	(Civil Engineering)
Modi, Siddhant Dipak	(Civil Engineering)
Wakhale, Kaustubh Jayant	(Civil Engineering)

#### MASTER OF MANAGEMENT SCIENCES

Saurav (Co-operative Program) Acikel, Yildirim Adil, Arish (Co-operative Program) Ajadi, Oluwapelumi Emmanuella Akinlemibola, 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)
Vazdekis, 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 Rajalingam, Vishnu Shah, Advait Rajeshkumar (Data Analytics) (Data Analytics) (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, Herry	(Building Structures Specialization) *†
Choi, Youngjin	(Building Systems Specialization) *
Chow, Jonathan Eugene	(Building Systems Specialization) *†
* – With Distinction	

Clement, Vincent Roy (Building Systems Specialization) Coons, Susannah Julia Anne (Building Systems Specialization) Dabrowski, Jan Jakub (Building Structures Specialization) (Building Systems Specialization) \*† Daviau, Maxime Adrien (Building Systems Specialization) DeLorenzis, Maria Luisa Dowling, Marley Kathleen Loft (Building Structures Specialization & Building Systems Specialization) \* Elmaghrabi, Omar Khaled Mokhtar (Building Systems Specialization/Management Sciences Option) Feng, Zi Rui Fleming, Julia Marita (Building Structures Specialization) \*† Frise, Charles Taylor (Building Systems Specialization) (Building Systems Specialization) Furtado-Herzig, Sarah M Rose Giang, Amanda Kelley (Building Systems Specialization) \* (Building Structures Specialization & Building Systems Specialization) \* Gomes, Nicolas Mendes Grignano, Daniel Vincent (Building Structures Specialization) Gu, Fangming (Building Systems Specialization) \* Hioe, Michael Alexander (Building Systems Specialization) Howie, Kaitlyn Joanna (Building Structures Specialization) Hweija, Sham (Building Structures Specialization) Jiang, Harry (Building Structures Specialization & Building Systems Specialization) \*† Kam, Serena Puiying (Building Systems Specialization) \*† (Building Structures Specialization & Building Systems Specialization) \* Kassab Hassan, Ibaa Kim, Jongwon Kim, Lucas (Building Systems Specialization) Kovacs, Tristan Christopher (Building Systems Specialization) \*† LeBrun, Mackenzie Noelle Leung, Cheuk Fung (Building Systems Specialization) Li, Augusta (Building Systems Specialization) Liao, Jessica (Building Structures Specialization) \*† (Building Structures Specialization) Markwart, Amy Catherine Martin, Jillian Rose (Building Structures Specialization) Mathanamohan, Sharuja (Building Structures Specialization) Mei, Yutao (Building Systems Specialization) \* (Building Systems Specialization) Nathaniel, Joyceline Anne Neals, Thomas James (Building Systems Specialization) \* Ngilinga De Carvalho, Mapendo Pierre Oliver, Lacey Samantha (Building Structures Specialization) Paquette, Ethan Michael (Building Systems Specialization) Poon, Joanna Purcell, Robert Gideon James (Building Structures Specialization) Quattrociocchi. Alexa Julia (Building Structures Specialization) \*† (Building Systems Specialization) \* Rabinovich, Sean Ramesh, Kanishk (Building Structures Specialization) (Building Structures Specialization & Building Systems Specialization) \* Rana, Dilroz Rankovic, Stefan Marko Ryan, Ayden Grace (Building Structures Specialization) \* Sang, Xiaoqi

\* – With Distinction

Saunders-Henning, Shein Rose Sebastian, Cathy Siciliano, Serena Louise Siddiqui, Jawaad Khawar Stakheiko, Maria Su, Jason Wu, Xiao Rui Xu, Ya Ting Xue, Yan Xin Zafar, Balaaj Zhu, Carrie

**CIVIL ENGINEERING** Abdelmessih, Ezzat Aggarwal, Madhvi Ahmed, Aasil Akpata, Emmanuel Omorose Alexander, Jacob Francis Alhassan, Sarra Hassan Ali, Azaan Alimi, Eklil Alvarez, Riber Elenilson Amero, Ethan Timothy Anandappa, Tiana Nicole Balles, Nicole Antoinette Bradley, Martin David Brzyski, Kamil Daniel Busca, Benjamin Robert Camarda, Tyler Allan Campos, Ana Lia Ruiz Chan, Louisa Hau Yu Charky, Thomas George Edward Chaudhry, Noah Ali Chen, Harry Haosong Chen, Shaowen Chen, Xin Cheng, Dayi Chingadu, Yovin Heylan Cimino, Anthony Ryan Coelho Martins, João Pedro Collins, Troy Alexander Corrado Lopez, Jesus Antonio Cunanan, Gilbert Davis, Kyle Eric Robinson Deng, Jessica Dyce, Russel Frank

(Building Systems Specialization)
(Building Systems Specialization)
(Building Systems Specialization) \*
(Building Systems Specialization) \*
(Building Systems Specialization & Building Systems Specialization) \*
(Building Systems Specialization) \*

(Structural Specialization) \*† (Structural Specialization) \*† (Structural Specialization) \* (Structural Specialization) (Structural Specialization) (Management Sciences Option) \*† (Structural Specialization) \* (Geotechnical Specialization & Structural Specialization) (Structural Specialization) \* (Geotechnical Specialization) (Structural Specialization/Management Sciences Option) \* (Transportation Specialization) \*† (Transportation Specialization) \* (Structural Specialization) (Transportation Specialization) \* (Water Resources Specialization) \* (Structural Specialization) \* (Structural Specialization) (Structural Specialization) \*† (Transportation Specialization) (Transportation Specialization) \* (Transportation Specialization) (Structural Specialization) \* (Structural Specialization) (Structural Specialization) \* (Geotechnical Specialization) \* (Structural Specialization) (Structural Specialization) \* \* (Transportation Specialization) \*

\* – With Distinction † – Dean's Honours List (Structural Specialization) \*

Ermers, Noah David Fang, Lefu Ferazzutti, Anthony Frankovich, Luka Vincent Fu, Yifang Garcha, Chirjivan Singh Ghobrial, Joshua Ghotra, Manpreet Singh Golebiowski, Claudia Gordon, Andrew MacKay Gou, Zhi Peng Grewal, Manraj Singh Guirguis, David Ehab Guirguis, Keristin Hossam Hakimi, Soleeman Han, Yu Chen Hannah, Kelly Philomena Harper, George William Scott Hassan, Mazen Hu, Xiaoge Illman, Walter Ricardo Jamieson, Nathan David Janzen, Ryan Peter Jeyakumar, Jonathan Kanna Khalid Khan, Labeeb Khan, Aiman Khosa, Jaskaran Singh Kim, Brian Hojung Klassen, Benjamin Luke Kool, Jordan Willem Alan Kurtz, Stefanie Anne Lee, Jeseung Li, Herman Liu, Abbly Jia Hui Liu, Phillip YiMei Ly, Jacob MacIsaac-Sun, Madeleine Frances McParland, Matthew Peter Miranda, John Mizzen. Connor Matthew Moondi, Harkiran Kaur Morrison, Dominique Noella Margaret Mortillaro, Luca Muhammad, Shaheer Muiruri, Kamande Mujadidi, Ahmad Tariq \* - With Distinction

† – Dean's Honours List

(Structural Specialization) (Transportation Specialization) \*† (Transportation Specialization) (Structural Specialization) (Transportation Specialization) \*† (Structural Specialization) (Structural Specialization) (Structural Specialization) \* (Transportation Specialization) (Structural Specialization) \*† (Structural Specialization) \*† (Structural Specialization) (Structural Specialization) (Structural Specialization/Management Sciences Option) \* (Structural Specialization) \* (Structural Specialization) \*† (Structural Specialization & Transportation Specialization) \* (Structural Specialization/Management Sciences Option) (Structural Specialization) \* (Structural Specialization/Management Sciences Option) (Structural Specialization) \* (Transportation Specialization) \* (Structural Specialization) \* (Transportation Specialization) (Structural Specialization) \* (Transportation Specialization) (Geotechnical Specialization & Structural Specialization) \* (Structural Specialization) (Structural Specialization) \*† (Transportation Specialization) \* (Transportation Specialization) (Transportation Specialization) \*† (Water Resources Specialization) \* (Geotechnical Specialization & Transportation Specialization) \*† (Structural Specialization) \* (Water Resources Specialization) \* (Structural Specialization) \*† (Water Resources Specialization) \*† (Structural Specialization/Management Sciences Option) \* (Geotechnical Specialization & Structural Specialization) \* (Structural Specialization) \* (Structural Specialization)

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 (Transportation Specialization) Rywak, Adam 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) \* (Structural Specialization) \* Sy, Liam Jacob Tan, Denis Xi (Water Resources Specialization) \*† Taylor, Jack lan (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)	*

Chiu, Wesley Choudhary, Faizan Ahmad Chun, DongJae (Water Resources Option) Corriveau, Riley Adam Cota, Chad Michael (Hydrology Specialization) \*† Das, Shubhayu Dunbar, Paige Elizabeth (Pollution Treatment and Control Specialization) \* Fierastrau, Vlad Andrei Fraser Semenoff, Maria (Hydrology Specialization & Pollution Treatment and Control Specialization) \* Gao. Xin Grenapin, Cedric Grover, Lakshaya (Energy Specialization) \* Huang, Rui Han Imtiaz, Muhammad Anzar (Energy Specialization) \*† (Pollution Treatment and Control Specialization) Jamal, Kiran Keyes-Krysakowski, Rudolf Gustaw (Hydrology Specialization) \* Khan, Ahmad Abdullah Kichiy, Emma Nicole Kim, Daniel (Hydrology Specialization & Pollution Treatment and Control Specialization) \* Kim, Jung Hyun (Pollution Treatment and Control Specialization) \* Kooy, Jacob Anthony Tate (Hydrology Specialization) \*† Kuruppu, Anjali Purnima (Hydrology Specialization) \* (Pollution Treatment and Control Specialization) \* Laliberte, Rayden Grace Leoni, David Gabriel Leung, Gareth Hon-Yiu (Energy Specialization) \* Li, Yiming Linehan, Matthew John \*† Ma, William Graham Macdonald, Kyle Fraser Messenger-Lehmann, Rachael Trillium (Hydrology Specialization) \* Montgomery, Jane Cecilia (Energy Specialization) \* Myles, Madeleine (Energy Specialization & Pollution Treatment and Control Specialization) \*† (Hydrology Specialization & Pollution Treatment and Control Specialization) \* Nasir, Malaica Park, Jung Jun (Water Resources Option) \* Paul, Sarah (Hydrology Specialization & Pollution Treatment and Control Specialization) Rai, Haryug Singh (Energy Specialization) \*† (Water Resources Option) \* Reynolds, Hailey Michelle Santos, Dian Angelo Shen, Oliver (Water Resources Option) \* Stojanovic, Borislav Suen, Julia Hoi-Yiu (Hydrology Specialization) \*† Thurai, Kohulan Calvin (Hydrology Specialization) Tian, Yuan (Pollution Treatment and Control Specialization) \*† Tucker, Madeline Gabriela Vandenberg, Lukas Martin \*† Viegas, Declan Anthony (Pollution Treatment and Control Specialization) \* - With Distinction

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) $^*$

(Computing Option) \*

MANAGEMENT ENGINEERING Abou Sawan, Nicolas

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

Kim, Soohyun (Computing Option) \* Kornberg, Zachary Aaron (Computing Option) Krasinski, Caitlan (Statistics Option & Computing Option) \*† Kumar, Ashwuni (Artificial Intelligence Option) \* Laventhiran, Suvaena (Computing Option) Lin, Emma (Computing Option) Liu, Qirui (Computing Option) Lu, Sabrina (Computing Option) Mak, Pui Ying Janice (Computing Option) Mastantuono, Thomas (Computing Option) Meiyappan, Aashan (Computing Option) Mena, Emilio Andres (Computing Option) \*† Mhatre, Mihir Samir (Computing Option) Nagtegaal, Eric William (Artificial Intelligence Option) \* Nesarajah, Kokelan (Computing Option) Noor, Zain (Computing Option) Olynyk, Roman Walter (Physical Sciences Option & Computing Option) \* Park, Alexandra Rachel (Computing Option) \* Paroski, Liliana Prasad, Karthik (Computing Option) \* Prevost, Rachel Lauren Ren, Julia (Computing Option & Artificial Intelligence Option) \* Ren, Victoria JiaYuan (Computing Option) \* Sanghera, Gurleen Kaur (Computing Option) \* Selvaraj, Rishega Selvarajah, Gogilan (Computing Option) \* Senthilmanoharan, Geerthika (Computing Option) Shokeh, Dana Sivekumaar, Suthan (Computing Option) \* (Statistics Option & Computing Option) \*† Song, Arden Justice Tanveer, Fahmida (Computing Option) \* Tonigussi, Paloma Monette Tu, Mylene Grace (Entrepreneurship Option & Computing Option) \* Visva, Aswine Ajanthan (Computing Option) \* Walker, Samantha Anne Wong, Aiden (Computing Option) \* Wu, Christiana Zheng (Statistics Option & Computing Option) Wu, Sharon Yan (Computing Option) \* You, Olivia (Statistics Option & Computing Option) Yu, Charles Matthew (Statistics Option & Computing Option) \*† Zaidi, Syed Ali Haider (Computing Option) \* Zheng, Zi Xuan (Computing Option) \*

### **BACHELOR OF ARCHITECTURAL STUDIES**

HONOURS PROGRAM Chang, Ardy Chen, Nicole Wing daCosta, Alexandra Mariko Forte, Jordan Thomas Kalloo, 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

# FACULTY OF ENVIRONMENT

#### DOCTOR OF PHILOSOPHY

Aguilar Vargas, Francisco Ignacio "Transforming Electrical Energy Systems Towards Su.	(Social and Ecological Sustainability) stainability in a Complex World: The Cases of Ontario and Costa Rica''
Badewa, Emmanuel Adedamola "The Impact of Biobased Residues on Soil Health and	(Social and Ecological Sustainability) Greenhouse Gas Emissions Under a Changing Climate''
Buttazzoni, Adrian Nicholas "Urban and Architectural Design for the Young Mind Health"	<b>(Planning)</b> I: An Ecological Investigation of the Relationship Between Urban Form and Adolescent Mental
Caceres, Renato "Adaptive Capacity, Collaboration, and Adaptive Go	(Geography) vernance: The Galapagos Small-Scale Fishing Sector"
Cook, Julie Linda "Success and Failure in Social Marketing Programs: A	(Sustainability Management) 4 Qualitative Exploration''
Dhakal, Anil "Remittances, Household Food Security, and Entrepre	(Geography) neurship Development: A Case Study of Mzuzu, Malawi''
Dordi, Truzaar "Investing for Climate Action: The Role of Capital M.	(Sustainability Management) arkets in Enabling a Low-Carbon Transition''
Felix Martin del Campo, Francisco Xavier "Islands at Risk: Analyzing Resource-Use Dynamics	(Sustainability Management) From a Socio-Metabolic Research Perspective''
Gievski-Sidorovska, Isidora	(Planning) comes of Strategic Planning in Social-Service Nonprofits''
Giles, Richard Eugene "Under the Skin: Assessing the Ideological Underpinn	(Social and Ecological Sustainability)
Hinton, Lucy Beth "Front-of-Pack Labelling in the Caribbean Community	(Global Governance) ty: Power and Policy in Regional Standard Setting"
Joynt, Amanda	(Geography) s of Multi-Level Governance: A Case Study of Mzuzu, Malawi''
King, Fraser Dennis Murray "Developing a Radar-Based Machine Learning Snowfa	(Geography) all Retrieval Algorithm''
Korsah, Percy Erasmus "Effects of Seismic Lines on Peatland Carbon Cycling	<b>(Geography)</b> in Boreal Alberta, Canada''
Minano, Andrea "Evaluating Flood Risk Governance With Geospatial	(Geography) Technologies''
Mohtat, Niloofar "Attaining Climate Justice Through the Adaptation of	<b>(Planning)</b> f Urban Form to Climate Change: Flood Risks in Toronto''
Mollaei, Sadaf "An Analysis of Canadian Young Adults' Eating Be	(Sustainability Management) baviours Towards Sustainable Food Choices''
Murfitt, Justin Charles "Forward Modelling of Multifrequency SAR Backscan Transfer Framework"	<b>(Geography)</b> tter of Snow-Covered Lake Ice: Investigating Varying Snow and Ice Properties Within a Radiative
O'Hearn, Shawna Anne "Place-Based Experiences in the Work Environment I	<b>(Geography)</b> During the Menopausal Transition: A Case Study of Canadian Physiotherapists''
Pradhan, Sisir Kanta "Social-Ecological Systems Analysis of the Dried Fish India"	(Sustainability Management) Value Chain for Community Wellbeing in the Bay of Bengal Coast of Odisha and West Bengal,
Sanniti, Sophia Rose "(Re)Organizing Toronto Households During COVID	(Social and Ecological Sustainability) D-19 Lockdown: A Case Study on an Imposed Degrowth Scenario''
Silburt, Aviva "Mapping the Complexity of Mining & Peacebuilding	(Global Governance) in Guatemala''
MASTER OF ARTS	
Barcellos, Natalie Isobel DeBloeme	(Planning)
Cameron, Marilyn Frances	(Planning)
Moss, Dana Avery	(Geography)

Scott-Frater, Charlotte Leigh

Skidmore, Jason Robert

\* – Distinction

(Planning)

(Planning)

Westerhof, Colin J	(Planning)
Wilson, Brayden James Richard	(Planning)
Wong, Man-Juk Bryan	(Planning)
Zhang, BiYe	(Geography)

#### 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) (Sustainability Management) Bahari, Kimiya 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) (Social and Ecological Sustainability) Phoenix, Jason Ian Richards, Graham Anthony (Planning) Sanchez Castillo, Juan Sebastian (Social and Ecological Sustainability) Saunders, Mark Daniel (Social and Ecological Sustainability - Water) (Geography) Tan, Jingtian 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

# **GRADUATE DIPLOMA**

Abrha, Snit	(Climate Risk Management)
Brewer, Nicholas Arthur	(Climate Risk Management)
Goubanova, Svetlana	(Climate Risk Management)
Guzman, Carlos	(Climate Risk Management)
Jangid, Prachi	(Climate Risk Management)
Leung, Leann Edith	(Climate Risk Management)
Newell, Robert	(Planning)
Parle, Jean-Michel	(Climate Risk Management)

(Geography - Water)

(Geography - Water)

(Geography - Water)

(Geography - Water)

(Geography)

(Geography)

(Geography)

(Geography)

# **GRADUATE CERTIFICATE**

Gievski-Sidorovska, Isidora	(University Teaching)
Hill, Lowine Stella	(University Teaching)
McDougall, Emma Deirdre	(University Teaching)
Mollaei, Sadaf	(University Teaching)
Swanson, Kayleigh Emily	(University Teaching)
Tan, Weikai	(University Teaching)

# **BACHELOR OF ENVIRONMENTAL STUDIES**

GENERAL GEOGRAPHY AND ENVIR Agbelogode, Maxwell	ONMENTAL MANAGEMENT – Three Year
Ayyappan, Aakash Varman	
Coleman, Graham Ross	
Dodanli, Okan	
Fisher, Ethan Alexander	
Hewitt, Kelsey	
Lu, Jinhong	
Mathew, Nevin Joseph	*
Simmons, Kenneth John	*
Sukhai, Sebastian Kyle	(Aviation Specialization)
Valaitis, Matthew Cole	
Vilensky, Michelle	
Wilson, Brendan Robert	(Urban Studies Minor)
Zhang, Zihao	

#### HONOURS ENVIRONMENT AND BUSINESS

Ayisi (Economics Minor – Co-operative Program) Aamir, Aaiman Abdu, Tala (Political Science Minor – Co-operative Program) Amer, Dalia Andreotte, Nicholas Andrew (Co-operative Program) \* Balamuraly, Visnu (International Trade Minor – Co-operative Program) \* Chen, Keying (Mathematics Minor, Economics Minor) Chen, Meigi (International Development Minor – Co-operative Program) † Desai, Jahanvi Chaitanya Ding, Bolei Du, Yihang (Geography and Environmental Management Minor) Du, Yue † Duran. Deniz (Geography and Environmental Management Minor – Co-operative Program) \* Gallant, Bennett Paul (Economics Minor – Co-operative Program) † Gao, Jie Gardijan, Aneta (Co-operative Program) \* He, Aishan Hou, Yi Tao (Co-operative Program) Huang, Leping (Co-operative Program) Ishtiaq, Muhammad Haider (Co-operative Program) \* Kamath, Sanghamitra (History Minor – Co-operative Program) \* (Co-operative Program) \* Khan, Oneeb Kabir Lee, Damian Jacob (Philosophy Minor – Co-operative Program) \* Lee, Rachel Euna (Co-operative Program) \* Li, Chengzu (Environment, Resources and Sustainability Minor – Co-operative Program) Lightfoot, Jacob Paul (Cognitive Science Minor – Co-operative Program) Liu, Xinyu (Economics Minor) \* Lou, Jingyou Luo, Jennifer Shijia (Co-operative Program) Manninger, Kaitlyn Mary (Co-operative Program) \* Mao, Zi Mirella-Sanchez, Marc Philip (Entrepreneurship Minor – Co-operative Program) Monhemius, Lauren Isabelle (Human Resources Management Minor – Co-operative Program) \* Muller, Carissa Tamara Lin (Urban Studies Minor, Human Resources Management Minor – Co-operative Program) † Ni, Junying (Co-operative Program) † Ovais, Nawal (Political Science Minor – Co-operative Program) \* Pahwa, Vaibhav (Economics Minor – Co-operative Program) Panta Chhetri, Manisha (Co-operative Program) Park, Eunsoo (International Trade Minor – Co-operative Program) † Parmar, Sonali (Co-operative Program) Phan, Anh Thao (Human Resources Management Minor) Porter, Krista Ruth Raitano, Ryan Alessandro (Co-operative Program) \* Raminhos, Simon Patrick Almeida (Co-operative Program) Rehan, Samas Amir (Computing Option – Economics Minor – Co-operative Program) \* - Distinction

+ Doon's Honoy

† – Dean's Honours

Rendalkar, Pranav	(Co-operative Program)
Sharma, Aarti	(Legal Studies Minor – Co-operative Program)
Sharma, Aryamik	(Economics Minor – Co-operative Program) *
Shukla, Aishwarya	(Co-operative Program) *
Singh, Jasdeep	(Economics Minor – Co-operative Program)
Slater, Sofia Somani	(Theatre and Performance Minor – Co-operative Program)
Sukker, Akashdeep Singh	(Co-operative Program) *
Tao, Shaoyang	*
Teng, Yutong	t
Thiessen, Kayla Loewen	' (Co-operative Program) *
Tinmouth, Thomas Joseph	(Environment, Resources and Sustainability Minor – Co-operative Program) *
Tran, Philip Yves	(Mathematics Minor – Co-operative Program) *
Turchan, Alexander James	(Co-operative Program)
Wang, Xiaojie	t
Williamson, Elizabeth Katherin	(Co-operative Program) *
Wood, Elizabeth Mae	(Co-operative Program) *
Wu, Jingzhi	<i>t</i>
Wu, Yubo	*
Xi, Jiayan	*
Xia, Jiyu	(Economics Minor – Co-operative Program) *
Xu, Lujin	<i>t</i>
Xu, Qianyi	<i>†</i>
Xue, Chenyue	*
Yan, Yuhan	*
Yang, Lu	*
Ye, Zhou	<i>†</i>
Yee, Krystal Jing Ing	(Human Resources Management Minor, Event Management Minor – Co-operative Program) *
Yeh, Tzu-Tung	(Legal Studies Minor, Economics Minor, Human Resources Management Minor – Co- operative Program)
Young, Matthew Ka Chun	(Co-operative Program) *
Zhang, Chuang	
Zhao, Baizhou	(Economics Minor – Co-operative Program)
Zhou, Bo	(Economics Minor)
Zhou, Qinyi	<i>t</i>
Zhou, Yilin	*
Zhu, Haonan	t
HONOURS ENVIRONMENT, RESOL	
Agbey, Joel Mawuena	(Co-operative Program)
Aikens, Jacey Augusta	(Peace and Conflict Studies Minor – Co-operative Program)
Al-khasawneh, Haneen Mohanad	(Urban Studies Minor, Geography and Environmental Management Minor – Co-operative Program) *
Ate, Sharon Benita	
Ayu, Msendoo Osinimu	(Fine Arts Studio Minor)
Bauman, Justin Nicholas	(Sociology Minor)
Bowers, Isabel	(Co-operative Program) *
Brown, Whistler	(Parks Minor)
* – Distinction	
† – Dean's Honours	

Cameron, Katana Marie Cha, Alexander Jae-hyun Chute, Simon Selig

Clarke, Alison Carol-Lynn Dang. Matthew Davis, Evan Thomas James Dela Paz, Asher Legaspi Dela Paz, Noah Legaspi Dresser, Elle Anne Elliott, Natalie Paige Eves, Erika Lynn Fatile, Favour Damilola Frisella, Abigale Victoria Garby, Olivia Mary Guzmán Pichogagón, Yuly Patricia Hunter, William Jacob Wayne Hussey, Holly Grace James, Victoria Tica Carolyn Johnson, Trisa Rachelle Kalli Johnston, Ethan Patrick Khan, Aalia Irshad Kirkwood, Andrew Yekyaw Aung Kumbhkarni, Mehika Kwiatkowski, Claudia Landon, Grace Margaret Lawrence, Zoë Jade Lee, Tegan Bethany Leiher, Ethan Christopher Li. Reuben Lukic, Nikola Macchiusi, Brett Stefano Makaroff, Christine May McColeman, KayThi Grace Muhammad, Roaha Naday, Baxter Mannix Paxton, Shelby Petersen, Anne Ellen Pleskina, Stephen James Praveen, Sneha Price. Samantha Anne Ramos, Vanessa Judith Reed, Bronwyn Tilbe Ember Rumer, Caroline Vandusen Self, Erin Kassidy Shelley, Rebecca Lee

(Political Science Minor) † † (Environment, Resources and Sustainability & Joint Honours Biology - Co-operative Program) † (Geography and Environmental Management Minor – Co-operative Program) † (Geography and Environmental Management Minor – Co-operative Program) (Geography and Environmental Management Minor – Co-operative Program) \* (Geography and Environmental Management Minor – Co-operative Program) † (Geography and Environmental Management Minor, Peace and Conflict Studies Minor) \* (Geography and Environmental Management Minor – Co-operative Program) \* (Urban Studies Minor – Co-operative Program) † (Geography and Environmental Management Minor) (Parks Minor) † (Geography and Environmental Management Minor) \* (Parks Minor – Co-operative Program) † † (Biology Minor – Co-operative Program) (Political Science Minor, Legal Studies Minor) † (Co-operative Program) (Environment, Resources and Sustainability & Joint Honours Biology) \* (Business Option – Co-operative Program) (Geography and Environmental Management Minor – Co-operative Program) (Parks Minor) (Co-operative Program) (Co-operative Program) (Geography and Environmental Management Minor) (Geography and Environmental Management Minor) (Geography and Environmental Management Minor, Parks Minor – Co-operative Program) † (Geography and Environmental Management Minor) \* (Co-operative Program) (Co-operative Program) \* (Biology Minor – Co-operative Program) \*

(History Minor) (Geography and Environmental Management Minor – Co-operative Program) \* (Co-operative Program) \* (Co-operative Program) \* (Business Option – Geography and Environmental Management Minor) \* (Gender and Social Justice Minor) † (Economics Minor – Co-operative Program) (Geography and Environmental Management Minor) †

\* – Distinction

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

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	n)
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	

† – Dean's Honours

Meyer, Marcus Ronald Angelo	(Geomatics Specialization) †
Muller, Benjamin Cole	(Co-operative Program) †
Poblete, Pia Colynn	(Geomatics Specialization – Co-operative Program) †
Santia, Veronica	(Earth Systems Science Specialization – Classical Studies Minor – Co-operative Program) †
Savarimuthu, Joshua Travis	(Co-operative Program)
Scotland, Shania Tiffany Wonder	(Co-operative Program) †
Sequeira, Christopher Anthony	(Geomatics Specialization – Co-operative Program) *
Sun, Letong	(Earth Systems Science Specialization – Co-operative Program) *
Van Caulart, Joycelin Adele	(Earth Systems Science Specialization – Religious Studies Minor – Co-operative Program) †
Vicario, Kale Jade	(Earth Systems Science Specialization) *
Yeung, Yuki Ching Yee	(Climate Change and Environment Specialization – Psychology Minor – Co-operative Program) †
Zander, Carly Roseanne	<i>t</i>
Zhang, Shijia	(Earth Systems Science Specialization)
Zhu, Rui	(Economy & Society Specialization) *
HONOURS GEOMATICS	
Bailie, Ethan Alexander	(Computing Minor – Co-operative Program)
Cameron, Noah Timothy	(Computing Minor – Co-operative Program) †
Chow, Earl	(Computing Minor – Co-operative Program) *
Coossa, India	(Geomatics & Joint Honours English-Literature and Rhetoric – Creative Writing Specialization/Computing Option) *
Díaz Garduño, Ana Paula	(Computing Minor – Co-operative Program) †
Diniz, Gabriel Sun	(Computing Minor – Co-operative Program) †
Goyal, Siddhant	(Aviation Specialization – Management Studies Minor – Co-operative Program)
Kim, Hamin	(Computing Minor – Co-operative Program)
Lam, Erica	(Computing Minor – Co-operative Program) *
Lau, Lucas	(Computing Option – Co-operative Program)
Li, Meixuan	*
Lin, Jingzhe	(Business Option) *
Meng, Xinran	*
Ng, Joshua Chi Lai	(Co-operative Program) *
Nguyen, David Khoa	(Computing Minor – Co-operative Program)
Parekh, Krishna Dharmeshkumar	(Computing Minor)
Patel, Hetanshi Chintan	(Business Option – Co-operative Program)
Pourdeilami, Siavash	(Computing Minor – Co-operative Program)
Singh, Gagandeep	(Climate Change and Environment Specialization – Computing Minor – Co-operative Program) *
Singh, Paramvir	(Climate Change and Environment Specialization – Computing Minor – Co-operative Program) †
Sleeth, Joshua James	(Computing Minor)
Song, Jiahe	
Tamayo, Monique	(Co-operative Program)
Tuen, Tsz Ying Belle	(Climate Change and Environment Specialization – Computing Minor – Co-operative Program) *
Wang, Leqi	(Co-operative Program)
Xiong, Yajing	(Co-operative Program) *
Yan, Victor ChangJing	(Climate Change and Environment Specialization – Computing Minor – Co-operative Program)

\* – Distinction

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) *	
Boyes, 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) *	
Dawan, 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

Ho, Natalie Ka-Li	(Urban Design Specialization – East Asian Studies Minor – Co-operative Program) *
Horn, Penelope Kathleen	(Co-operative Program) †
llagan, Isabelle Georgia	(Land Development Planning Specialization – Co-operative Program) †
Jay, Matthew	(Co-operative Program) †
Johnson-Campbell, Tyson Boyd	(Land Development Planning Specialization – Geography and Environmental Management Minor – Co-operative Program) †
Khan, Amna	(Land Development Planning Specialization – Co-operative Program) *
Khan, Musharraf	(Land Development Planning Specialization & Urban Design Specialization – Geography and Environmental Management Minor – Co-operative Program) *
Khwaja, Hamza Imran	(Urban Design Specialization – Geography and Environmental Management Minor – Co- operative Program) †
Kim, Andrew	(Decision Support and Geographical Information Systems Specialization & Land Development Planning Specialization – Co-operative Program) *
Kim, Doehyun	(Urban Design Specialization – Co-operative Program) †
Kim, Ryan Dohee	(Decision Support and Geographical Information Systems Specialization – Co-operative Program)
Kim, Yerim	(Land Development Planning Specialization – Geography and Environmental Management Minor – Co-operative Program)
LaMarre, Claire Catherine	(Co-operative Program)
Lee, Julian	(Environmental Planning and Management Specialization – Co-operative Program) †
Lee, Meaghan Jordan Valentini	(Decision Support and Geographical Information Systems Specialization – Geography and Environmental Management Minor – Co-operative Program) †
Leung, Hoi Yan Florence	(Land Development Planning Specialization – Co-operative Program) *
Li, Jiaxin	(Land Development Planning Specialization – Geography and Environmental Management Minor – Co-operative Program) *
Li, Trevor Julian	(Urban Design Specialization – Geography and Environmental Management Minor – Co- operative Program) †
Liang, Yueying	(Land Development Planning Specialization & Urban Design Specialization – Co-operative Program) *
Lo, Emily	(Environmental Planning and Management Specialization – Public Policy and Administration Minor – Co-operative Program) †
Ma, Alisha	(Co-operative Program) †
Ma, Kathy	(Land Development Planning Specialization – Geography and Environmental Management Minor – Co-operative Program) *
Martin, William Stephen	(Geography and Environmental Management Minor – Co-operative Program)
McCarthy, Caitlyn Avery Hogan	(Urban Design Specialization – Geography and Environmental Management Minor – Co- operative Program) †
McGregor, Evan Ene	(Co-operative Program)
Miller, Grace-Ann Elisa	(Co-operative Program) *
Mittelstaedt, Maya Rose	(Environmental Planning and Management Specialization – Environment, Resources and Sustainability Minor – Co-operative Program) *
Mo, Anthony Kai Kit	(Geography and Environmental Management Minor – Co-operative Program) *
Nair, Ritika	(Co-operative Program) †
Nix, Emily Bernadette	(Co-operative Program)
O'Neill, Lexi Michaela	(Land Development Planning Specialization – Co-operative Program) †
Owen, Michelle Jennifer	(Urban Design Specialization – Geography and Environmental Management Minor – Co- operative Program) *
Patel, Ayush	(Land Development Planning Specialization & Urban Design Specialization – Geography and Environmental Management Minor – Co-operative Program)
Payne, Steven Joseph	(Environment, Resources and Sustainability Minor – Co-operative Program) *
Rashid, Zoha	(Co-operative Program) *

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**

HONOURS PROGRAM	
Andratis, Alexandra Xelaju	(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, Spiro	(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 Rebeccah

#### 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, Doehyun Kumbhkarni, Mehika

\* – Distinction

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

## FACULTY OF HEALTH

### DOCTOR OF PHILOSOPHY

Amoako, Joyceline "Exploring the Impacts of Precarious Work and Fami Ontario, Canada"	(Public Health Sciences) by Caregiving on the Health of African Immigrant Women Amidst the COVID-19 Pandemic in
Armstrong, Daniel Paul	<b>(Kinesiology)</b>
"Understanding Personal Determinants of Lifting Stra	tegy to Inform Movement Focused Ergonomic Interventions''
Basharat, Aysha "Multisensory Integrative Processes and Aging"	(Kinesiology (Aging, Health and Well-Being))
Battista, Katelyn Victoria	(Public Health Sciences)
"Using Decision Trees to Examine the Influence of the	School Environment on Youth Mental Health''
Beaudry, Kayleigh Michelle	<b>(Kinesiology)</b>
"Does Sex or Exercise Modality Influence Post-Exerci	se Glucose Handling or Insulin Sensitivity''
Carleton, Nicole	<b>(Public Health Sciences)</b>
"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 Mo	tion and Cybersickness in Virtual Reality''
Crouch, Meghan Kathleen "Coworking Through the Pandemic: Flexibly Yours"	(Public Health Sciences)
00	(Public Health Sciences) Levels, Patterns, and Impacts of Missing Data in a Large Cohort Study of Canadian Youth''
	(Public Health Sciences) rker 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 Zam	<sub>bia</sub> ''
	(Public Health Sciences) ns in Canada: Differences by Neighbourhood Deprivation, Individual Socioeconomic Factors, and
Gauthier, Robert Peirce	(Public Health Sciences)
"Computational Thematic Analysis of Online Commun	<sup>nities''</sup>
Khan, Tauhid Hossain	(Public Health Sciences)
"Self-Employment, Health, Illness, and Social Security	Among Solo Self-Employed Workers''
	<b>(Kinesiology)</b> for the Classification and Quantification of High Knee Flexion Exposures in Childcare''
	(Recreation and Leisure Studies) estorations, 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-Dwell	Ing Older Adults and Their Informal Caregivers''
Mcllroy, Robert Evans	(Kinesiology)
"Visual Determinants of Postural Control and Percept	ion During Physical and Visual Motion''
Mutumba Nakalembe, Margaret Joanita	<b>(Public Health Sciences)</b>
"A Multi-Level Analysis on Implementation of Low-C	Cost IVF in Sub-Saharan Africa: A Case Study of Uganda''
Nazia, Nushrat	(Public Health Sciences)
"Spatial Epidemiology of a Highly Transmissible Dise.	ase in Urban Neighbourhoods: Using COVID-19 Outhreaks in Toronto as a Case Study''
Njungu, Mwimanenwa	(Public Health Sciences - Water)
"Applying a Systems Thinking Approach to Health C	are for Women & Children in the Flood Plains of Western Zambia''
Zehr, Jackie Doreen	<b>(Kinesiology)</b>
"History-Dependent Changes to the Structure, Propertie	es, and Function of the Cartilaginous Endplate''
MASTER OF ARTS	
Browne, Karin Alejandra	(Recreation and Leisure Studies)
Crane, Nathaniel James	(Recreation and Leisure Studies)
Edwards, Graham Julian	(Recreation and Leisure Studies)

- Edwards, Graham Julian Fortin, Kendra Elizabeth
- 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, 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, Abhishesh	(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

Taqvi, Urooj Zehra	(Public Health Sciences)
Thompson, Benjamin Pearce	(Kinesiology)
Veerasammy, Sanjay	(Kinesiology)
Weeks, Terri	(Kinesiology)
Wei, Cindy	(Kinesiology)
Williams, Tabitha	(Public Health Sciences)
Woo, Rachel Samantha	(Public Health Sciences)
Zuljevic, Matea	(Public Health Sciences)

## MASTER OF SOCIAL WORK

Maruthaiyinar, Vaithoure Petrova, Olena

## **GRADUATE CERTIFICATE**

Doggett, Amanda	(University Teaching)
Ergen, Can	(University Teaching)
Khajeei, Dahlia	(University Teaching)
Koroll, Rebecca Sophia	(University Teaching)
Pinto, Brendan Luke	(University Teaching)

## **BACHELOR OF ARTS**

GENERAL RECREATION AND LEISURE STUDIES – Four Year	
Kidwai, Raneem	(Event Management Minor)
Sim, Jessica Lynn	(Event Management Minor)
Tse, Darren Waifu	

#### HONOURS RECREATION AND LEISURE STUDIES

Cao, Xuanrui	(Event Management Minor) †
Chen, Lee-Young	
Chow, Yuet Tung	(Event Management Minor – Co-operative Program) †
Colantonio, Rebecca Lena	(Event Management Minor – Co-operative Program)
Courtney, Auden Charles Warren	(Human Resources Management Minor)
Hoerner, Alexander Andreas	
Howlett, Elizabeth June	(Psychology Minor) †
Hutson, Megan Grace	
Jonker, Cassondra Christine	(Aging Studies Option – Co-operative Program) †
Lowrie, Brendan John	(Tourism Minor)
Magat, Victoria Akiko	(Event Management Minor – Co-operative Program) †
McBride, Micaela Mengyue Patricia	(Psychology Minor – Co-operative Program) †
Metz, Brandon	(History Minor)
Nguyen, Hung Quoc	
Pires, Justine Aurora	(Event Management Minor, Theatre and Performance Minor – Co-operative Program) †
Qasim, Anooshae	(Event Management Minor, Management Studies Minor – Co-operative Program)
Seguna, Samantha Cassandra	
Sin, Joey Ho Yi	(Event Management Minor) †
Tang, Xiru	
Truffen, Justin William Kelly	<i>†</i>
* - Distinction	

\* – Distinction

Wang, Zimou Whalen, Stephen James Wilts, Elise Janna Zhao, Xinran

#### HONOURS RECREATION AND SPORT BUSINESS

Alemany, Samantha Melody	(Human Resources Management Minor – Co-operative Program) *
Alfaro Argumedo, Daniela Elizabeth	(Event Management Minor)
Bacaltos, Kleebe Noel	*
Burnell, Owen Robert	(Event Management Minor) †
Cascagnette, Jacob Grant Joesph	(Human Resources Management Minor)
Chin, Jolie Patricia da Silva	t
Collard, Andrew Terrance	(Co-operative Program) *
Correia, Jet Glen	
Couroux, Sadie Marjorie	(Event Management Minor)
Davey, Trent Bruce	* · · · · · · · · · · · · · · · · · · ·
Edelinski, Antoni	
Fan, Shuyu	(Human Resources Management Minor – Co-operative Program) *
Fitzpatrick, Braeden James	(Event Management Minor – Co-operative Program)
Frisse, Max William	<i>†</i>
Fulcher, Jacob	(Co-operative Program) *
Grande, Simon Nathanial	*
Harris, Graydon	
Haveman, Lauren Joanne	(Human Resources Management Minor, Event Management Minor – Co-operative Program) *
Heerspink, Jacob Robert	(Legal Studies Minor) †
Heuving, Lucinda Beth	(Human Resources Management Minor, Event Management Minor) *
Ismail, Riana	(Event Management Minor – Co-operative Program) †
Ivancic, Katherine Ljuba	(Co-operative Program) *
Jurus, Michael Brian	(Event Management Minor)
Kamnik, Luka Yann	(Co-operative Program) *
Kelly, Liam Joseph	(Human Resources Management Minor – Co-operative Program) †
Lapierre, Joseph Roy Mckinnon	(Event Management Minor – Co-operative Program) †
Lee, Kevin	(Event Management Minor, Human Resources Management Minor) *
Levine, Jesse Benjamin	
Li, Boni	(Co-operative Program) *
Li, Ruikang	(Co-operative Program)
Lovie, Connor William	(Event Management Minor, Human Resources Management Minor) *
Moraes, Samuel Jared	(Co-operative Program)
Mutunga, Ramogi Liam	
Ni, Zonghao	(Co-operative Program)
Oh, Seungmin	(Event Management Minor)
Parashar, Sameer Shiv	*
Pereira, Marcus Thomas	(Co-operative Program) *
Peterson, Alexander Jeffrey	(Entrepreneurship Minor, Event Management Minor – Co-operative Program) †
Romanson, Lucas Jacob Rixson	(Event Management Minor)
Sherwin, Megan Taylor McCoy	(Event Management Minor – Co-operative Program) †

Sime, Julian John	(Event Management Minor, Human Resources Management Minor) *

Sripathybalamuraleetharan, Ananthavarunan

Steeneveld, Abbey Marie	(Legal Studies Minor, Event Management Minor – Co-operative Program)
Stobbe, Adam	(Human Resources Management Minor) †
Sutherland, Liam Vincent	*
Vincent, Tyler Grant	*
Wight, Lily	(Legal Studies Minor – Co-operative Program) *
Woznuk, Ellora Lakshman	(Event Management Minor – Co-operative Program) *
Young Lao, Aaron Ahing	(Event Management Minor – Co-operative Program)

#### HONOURS THERAPEUTIC RECREATION

Babici, Sofia	(Co-operative Program) †
Bell, Ryley Hannah Grace	(Aging Studies Option) *
Bender, Katrin Jonina	(Co-operative Program) *
Bhola, Shalinie	(Aging Studies Option – Social Development Studies Minor) †
Busato, Danielle Marie	
Caplan, McKenna	(Psychology Minor) †
Cargill, Crystal-Jade	<i>t</i>
Charbonneau, Katherine Mathilde	<i>t</i>
Comeau, Rebecca	(Fine Arts Studio Minor) *
Darling, Mikayla Anne	*
Del Genio, Rebecca Anne	(Music Minor) †
Deverell, Maddison Skye	(Therapeutic Recreation & Joint Honours Psychology) *
Ducharme, Emma Grace	
Flaherty, Emily Marie	(Aging Studies Option – French Minor) †
Hamilton, Sydney Amelia	(Co-operative Program) †
Heidrich, Haley Chen	(History Minor – Co-operative Program) †
Hogan, Taylor Lynne Kathleen	(Event Management Minor) †
Mitton, Sydney Elizabeth	(Co-operative Program) †
Mullins, Andrea	(Co-operative Program)
Nagendran, Bonita	*
O'Brien, Faye Helen	(Gender and Social Justice Minor)
Paghubasan, Irene Nagahara	(Psychology Minor – Co-operative Program) †
Shantz, Ashlyn Mckayla	(Co-operative Program) *
Smith, Caitlynn Marie	*
Valencia-Mendez, Elizabeth Eunice	(Social Development Studies Minor)
Yu, Andrew	*

#### HONOURS TOURISM DEVELOPMENT

Ahmed, Karim Kamal	*
Fujii, Travis Weilong	<i>†</i>
Molloy, Kellen	(Event Management Minor) †
Robinson, Jacob Roy-Anthony	(Event Management Minor – Co-operative Program) *
Shikaze, Cassandra	(Co-operative Program)

## BACHELOR OF PUBLIC HEALTH

#### HONOURS PROGRAM

Abu, Efuaye Eseose Alrubaie, Malak Arigu, Annaeya Emmanuella Bai, Zhuolin Beshay, Jessica Billias, Nicole Katherine Grace Brassel, Sara Carmichael, Meilin Yuanfei Stitt Cheung, Christine Cheuk-Ying Daniel, Kathleen Jazmine Dawamneh, Leen Dhaliwal, Komal Kaur Dixon, Sarah Lynn Gagnon, Jasmine Jayna Veda Gobran, Mark Emad Habte, Merhawi Girmay Haddad, Martin Paul Halpenny, Laura Mary Hand, Samantha Ann Hasan, Shifa Hashmi, Ayman Kajura, Lavinia Kalra, Kishika Kani, Aaron Duah Khalid, Fatima Kim, Doyoon Knutson, Vivike Anne Lim, Maicy Lytle, Anne Shirley McDonald, Nicole Jewelle Muhammad, Manal Nathoo, Sarina Noor, Hatyum Oenputera, Briana Nicole Opoka, Victoria Maria Pandey, Riya Parvaiz, Alina Rajani, Fizah Afzal Rattansi, Nilusha Sajid, Dawood Sibomana, Aliny Sipley, Melissa Katherine Sivaharan, Arrani Sivanathan, Harisha Soltan, Salma Ahmed

(Co-operative Program) \*

†
(French Minor – Co-operative Program)
(Public Policy and Administration Minor – Co-operative Program) \*
(Co-operative Program) †
(Psychology Minor – Co-operative Program) †
(Gerontology Minor) †

(Health Informatics Option – Co-operative Program) †
(Psychology Minor)
†
(Gerontology Minor – Co-operative Program) \*
(Psychology Minor – Co-operative Program) †
(Medical Physiology Minor – Co-operative Program) \*

(Aging Studies Option – Psychology Minor) †

(Psychology Minor – Co-operative Program) † (Addictions, Mental Health and Policy Minor) † (Co-operative Program)

†

(Aging Studies Option – Public Policy and Administration Minor – Co-operative Program) \*
(Pre-Clinical Specialization – Co-operative Program) \*
(Aging Studies Option – Co-operative Program) †
(Gerontology Minor – Co-operative Program) \*
(Social Development Studies Minor – Co-operative Program)
(Aging Studies Option – Co-operative Program) †
(Gerontology Minor, Political Science Minor – Co-operative Program) \*
(Co-operative Program) †
(Aging Studies Option) \*
(Addictions, Mental Health and Policy Minor)
(Gerontology Minor) \*
(Gerontology Minor)
(Aging Studies Option – Co-operative Program) \*
(French Minor – Co-operative Program) \*

(Health Research Specialization) † (Co-operative Program) \* (Addictions, Mental Health and Policy Minor) † (Gerontology Minor) \*

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, Jiapei	*

## **BACHELOR OF SCIENCE**

GENERAL KINESIOLOGY PROGRAM – Four Year

Butt, Joshua Brian Johnston, Catherine Taylor, Connor John Wang, Yi Lin

(Rehabilitation Sciences Specialization)

#### HONOURS HEALTH SCIENCES

	1
Abbasi, Rida	t (De succesting Decement) t
Alsefaou, Moad Abdualla	(Co-operative Program) †
Beshay, Abanoub Samy	<i>t</i>
Charette, Victor Raphaël	<i>t</i>
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) *
Hildebranth Alavez, Tanya	*
Hoffman, Leora Kayla Nathania	*
Jaiswal, Twinkle Rajeevkumar	(Pre-Clinical Specialization – Medical Physiology Minor – Co-operative Program) *
Kapoor, Mannat	t
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) †
McClennan, 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	

Pervaiz, Myra Anjum Purba, Tasmeen Randhawa, Tanveer Kaur Sahota, Sanjit Kaur Saragadam, Ashish Suarez, Mary Alyssa Natividad Truong, Taylor Mckenzie Van Leemput, Flore Vanama, Manasvi Sai Vaz, Desiree Denica Vigneswaran, Shankavi Wilson, Vanessa Veronica

#### HONOURS HEALTH STUDIES

Abdallah, Lama

Abistado, Arnold Dian Jr Kayanan Abouiznied, Hamza Azmi Abraham, Zachary Adil, Maisha Al-Hammadi, Mawj Maad Ali, Xalimo Abdirahman Almaw, Rachel Dagim Arai, Emiko Jordan Arunkumar, Krishna Priya Atacan, Can Augustine, Treina Bartlett, Cayley Ann Beairsto, Kayden Bella Kendra Blommaert, Scott Matthew Braga, Jovelyn Joy Brar, Karanpal Singh Bretzlaff, Jocelyn Kendra Cheung, Kelly Shum Yuet Chudasama, Nabeel Jayesh Cole, Cayli Venus Jean Collins, Emma Cornfield, Savanna Rose Cousins, Shenise Patrice Cuk, Mihaila Danciu, Emily Dubroja, Ivana Elten, Elissa Faller-Saunders, Andrew anthony vincent Farooq, Zanab Galli Francis Xavier, Allan Germanus Josephine Gao, Angie \* – Distinction † – Dean's Honours

#### †

(Pre-Clinical Specialization) \* (Pre-Clinical Specialization – Medical Physiology Minor – Co-operative Program) \* (Aging Studies Option) † (Co-operative Program) † (Health Research Specialization – Co-operative Program) † (Gerontology Minor) \* (Pre-Clinical Specialization – Gerontology Minor) † (Pre-Clinical Specialization – Gerontology Minor – Co-operative Program) † (Health Research Specialization – Gerontology Minor – Co-operative Program) † (Pre-Clinical Specialization – Gerontology Minor – Co-operative Program) † (Pre-Clinical Specialization – Gerontology Minor – Co-operative Program) † (Pre-Clinical Specialization – Gerontology Minor – Co-operative Program) † (Pre-Clinical Specialization – Medical Physiology Minor) †

(Gerontology Minor – Co-operative Program) † (Medical Physiology Minor – Co-operative Program) † † (Health Research Specialization – Co-operative Program) † (Health Research Specialization/Aging Studies Option – Co-operative Program) \* (Co-operative Program) \* (Gerontology Minor – Co-operative Program) † (Co-operative Program) † (International Studies Minor) † (Health Research Specialization/Aging Studies Option) † (Co-operative Program) † (Addictions, Mental Health and Policy Minor) \* (Health Research Specialization – Co-operative Program) † (Addictions, Mental Health and Policy Minor – Co-operative Program) † † (Pre-Clinical Specialization) † (Gerontology Minor – Co-operative Program) † (Co-operative Program) † (Co-operative Program) † (Pre-Clinical Specialization) † (Gerontology Minor) † (Psychology Minor) \*

(Aging Studies Option) †

(Health Studies & Joint Honours Social Development Studies – Co-operative Program) \* (Gerontology Minor – Co-operative Program) † (Religious Studies Minor) † (Aging Studies Option & Health Informatics Option – Co-operative Program) (Health Studies & Joint Honours Psychology)

Garcha, Manjot (Gerontology Minor – Co-operative Program) Gilani, Eliza (Aging Studies Option) \* (Gerontology Minor, Psychology Minor) † Halfyard, Graeme Keith Haloulos, Penny Patience (Gerontology Minor – Co-operative Program) † (Aging Studies Option – Co-operative Program) † Hazra, Mimika Ahmed 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) † (Gerontology Minor – Co-operative Program) † Khan, Amber Fozia 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) † (Co-operative Program) \* Krishnakumar, Shophia Krishnanandan, Vaishali Anita (Human Resources Management Minor – Co-operative Program) \* Laslavic, Leandra Liviya Leslie, Syntheya (Health Research Specialization – Gerontology Minor – Co-operative Program) † (Gerontology Minor – Co-operative Program) † MacLean, Madeline Leanne 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) † Markovinovic, 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) † (Psychology Minor) † Mohammadreza, Lua Mulvey, Marisa Ruth (Psychology Minor) \* (Health Research Specialization – Psychology Minor – Co-operative Program) \* Mungal, Sivanah Privani Naimi, Mahdi (Co-operative Program) † Naqvi, Hussain Ali (Co-operative Program) †

Nguyen, Van Thi Thao (Gerontology Minor) \* Noor, Gulalay (Co-operative Program) † (Gerontology Minor) \* Nurbhai, Nasir El-Din Olona, David Oluwadamilare (Co-operative Program) † Omilabu, Mariam Toluwalashe (Pre-Clinical Specialization/Aging Studies Option – Co-operative Program) † Osibeluwo, Eniola Anire Osman, Nadine Mounira (Aging Studies Option – Human Nutrition Minor – Co-operative Program) † Patel, Zayaan Nuha Pattar, Amandeep Singh Piratheeparatnam, Aanjana (Co-operative Program) † Pitts, Sophia Louise Nicole Rakkar, Samreet (Gerontology Minor, Psychology Minor) Rezazadeh, Kian Sahni, Jahnvi (Gerontology Minor) Sajid, Liaba (Co-operative Program) Salehi, Iman (Medical Physiology Minor – Co-operative Program) † Samat, Ayshe Santagata, Mariella Carol (Co-operative Program) † Sarnovsky, Brooklyn Rose (Gerontology Minor) Sehar, Hibah (Health Research Specialization/Health Informatics Option – Co-operative Program) † Sethi, Pavneet Kaur (Gerontology Minor – Co-operative Program) \* Shantz, Megan Emily † Sharma, Rickina (Management Studies Minor) Shin, Sung-Ryung (Pre-Clinical Specialization – Psychology Minor) \* Shrotri, Revati Pramod (Health Informatics Option – Co-operative Program) \* Sidhu, Arashprit (Co-operative Program) † Singh, Navreet (Co-operative Program) † Sivasothynathan, Anesha (Co-operative Program) † Skibenko, Daniel † Somanna, Yamini † Soo, Colin Chee Chung (Co-operative Program) † Soo, Jeffrey Chee Kim (Co-operative Program) † Talwar, Himanshi Tang, Wing Tung (Aging Studies Option – Co-operative Program) \* Tasedan, Aaron † Thayalan, Mithusha (Gerontology Minor) Thomas, Shayanne Susan (Management Studies Minor – Co-operative Program) † Vergura, Grace Renee Verma, Ananya (Co-operative Program) † Verma. Nitaant (Pre-Clinical Specialization – Co-operative Program) (Aging Studies Option – Co-operative Program) † Walden, Melissa Joan Elizabeth Williams, Christine Oluwadunni (Co-operative Program) \* YaakoubAgha, Haya Ghassan (Gerontology Minor) †

HONOURS KINESIOLOGY Abbas, Haneen Nazar Ahmad, Aamna Saida Ahmed, Imaan Haroon Al Hasani, Jwana Hayder Alemu, Blen Anandakumar, Ahrreby Angela Atkins, Ethan David Bansal, Simran Barber, Melanie Lynn Blair, Hannah Margaret Bossom, Juliana Grace Ludvig Bryans, Carol Grace Budiatmanto, Shawn Patrick Bullock, Christopher William Cabral, Colin Anthony Carlson, Shaunessy Shae Carraretto, Anthony Marcus Chan, Cherie Chang, Brandon Chi Huai Chanyi, Jessica Lezah Clara Cheung, Arthur Chittineni, Roop Dhara Surya Rao Chung, Joanne Aimei Chung, Sisi Sisi Connell, Ireland Faith

Cromwell, Graham Dempsey Blake Crooks, Grace Sarah Elizabeth Dawdy-Giggal, Jocelynne Emma Ding, Hongyue Duarte De Sa. Melissa Dueck, Anna-Mae Ruth Duffee, Noah Batoche James Duong, Jeremy Thien Bao Earle, Alexandra El-Rifai, Gofrran Fischer, Derek Dean Friedel, Jared Isaac Friesen, Justin Thomas Gagnon, Chantalle Katherine Giannopoulos, Anthony John Gill, Aurangzaib Giraldo Gaviria, David Goli, Laura Maria Gopaul, Joshua St Clair Grant, Lamarre Stephen Grewal, Tanureet Kaur

(Co-operative Program) (Rehabilitation Sciences Specialization – Co-operative Program) † (Psychology Minor – Co-operative Program) † (Medical Physiology Minor) (Co-operative Program)

(Rehabilitation Sciences Specialization/Aging Studies Option – Psychology Minor) (Rehabilitation Sciences Specialization) \* (Medical Physiology Minor) \* (Co-operative Program) † (Co-operative Program) † (Co-operative Program) † (Rehabilitation Sciences Specialization – Co-operative Program) \* (Medical Physiology Minor) (Co-operative Program) † (Co-operative Program) †

\*

(Co-operative Program) \*
(Co-operative Program) \*
(Co-operative Program)
(Co-operative Program) \*
(Rehabilitation Sciences Specialization – Ergonomics and Injury Prevention Minor – Co-operative Program) \*
(Ergonomics and Injury Prevention Minor, Entrepreneurship Minor)
(Aging Studies Option – Co-operative Program) †
(Rehabilitation Sciences Specialization/Aging Studies Option) \*
†
(Rehabilitation Sciences Specialization – Co-operative Program) \*

(Rehabilitation Sciences Specialization – Ergonomics and Injury Prevention Minor) (Co-operative Program) † (Rehabilitation Sciences Specialization) (Rehabilitation Sciences Specialization) (Rehabilitation Sciences Specialization – Co-operative Program) † (Co-operative Program) † (Medical Physiology Minor – Co-operative Program) †

(Psychology Minor – Co-operative Program) \* (Co-operative Program) † (Co-operative Program) \* (Rehabilitation Sciences Specialization – Co-operative Program) †

(Medical Physiology Minor – Co-operative Program) \*

Grkinic, David Haley, Ryan Peter William (Co-operative Program) (Rehabilitation Sciences Specialization) \* Hall, Charlotte Sara (Co-operative Program) † Hanton-Fong, Meghan Emma (Co-operative Program) † Harrigan, Jane Claire Hartman, Mitchell Alexander (Co-operative Program) \* Hassan, Omar Ahmad (Co-operative Program) Hayden, Mackenzie Jane (Rehabilitation Sciences Specialization – Psychology Minor) Hewitson, Brandon (Rehabilitation Sciences Specialization – Co-operative Program) \* Hildebrandt, Holly Elizabeth (Co-operative Program) \* (Human Nutrition Minor) \* Hill, Ana Athena Hinsperger, Jack William (Medical Physiology Minor) \* Ho, Cho Hung Cherie (Human Nutrition Minor, Psychology Minor) † (Rehabilitation Sciences Minor – Co-operative Program) \* Ho, Enoch Tin-Nok Ho, Euan (Co-operative Program) \* Hussey, Brookelyn Johanna Huynh, Namiko (Co-operative Program) \* Ingstrup, Michael Anton (Co-operative Program) † Jagpal, Kiranjot Kaur Janzen, Joshua Karl (Co-operative Program) \* Jian, Yun Yao (Co-operative Program) † Jiang, Zhen Yu Johnston-Lindsay, Nathaniel Thomas (Human Nutrition Minor – Co-operative Program) \* Kalanandan, Abarna (Co-operative Program) \* Kent, Megan Christine (Management Studies Minor – Co-operative Program) † Kerr, Jennifer-Lynn Diane (Rehabilitation Sciences Specialization) Kinnear, Adam Thomas Knarr, Rebecca Ashley (Ergonomics and Injury Prevention Minor – Co-operative Program) † Ko, Hyunjun Kohli, Ashninder (Human Nutrition Minor) Koppad, Nagamma Ashok (Medical Physiology Minor – Co-operative Program) Kozmevski, Sophia Liljana (Gerontology Minor) † Kress, Amy Catherine (Rehabilitation Sciences Specialization – Co-operative Program) † Lee, Delaney (Rehabilitation Sciences Specialization – Co-operative Program) \* Lee, Gunmo Lee, Jacob Chi Ko Lee, Soo Hyun (Rehabilitation Sciences Specialization) Lee, Timothy Younjae Leung, Angus Ho Kit (Co-operative Program) \* Li, Houcheng (Co-operative Program) Li, Immanuel Chin Wan Li, Xinyi (Rehabilitation Sciences Specialization – Ergonomics and Injury Prevention Minor – Cooperative Program) † Li Shing Hiung, Ronnie Li Chong Yee Lin, Samantha Elizabeth (Psychology Minor) Liu, Ming Rong

Lo, Brianne (Rehabilitation Sciences Specialization – Co-operative Program) \* (Co-operative Program) \* Lunshof, Jordan H 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, Rennoth (Co-operative Program) Manji, Afshin Ahmed (Rehabilitation Sciences Specialization – Co-operative Program) \* Maraj, Suvir Suvarna Angiras (Co-operative Program) March, Kyle Benjamin (Ergonomics and Injury Prevention Minor – Co-operative Program) \* (Gerontology Minor – Co-operative Program) † Martins, Luandrya Egea Barbosa Massina, Maya Boluwa (Kinesiology & Joint Honours Psychology) † Mcgurn, Carley Elizabeth (Rehabilitation Sciences Specialization) (Co-operative Program) \* McKinnon, Katrina Nicole McKittrick, Elizabeth Anne t 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 t 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 – Cooperative 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)

Reesor, Mikyla Loryl Reive, Anna Leigh Richardson, Lauren Dianne Rocca. Noah David Saad, Manar Sabeeh, Hamzah Saeed, Laiba Sanghera, Gurvir Singh Satkunalingam, Pirashon Sawatzky, Mattilyn Elsie Scott, Rianne Tiffany Shah, Saloni Shamsaei, Alireza Sharma, Kamakshi Sharma, Tanishq Inder Sherman, Madison Anna Klawitter Sikri, Danika Skublics, Alexander Thomas Sloan, Connor Stephen Smith, Emily Amanda Song, Zihan Spataro, Amanda Lin Sribaskararajah, Kesigan Sterling Lopez, Adrian Gordon Stiles, Chloë Karrie Anne Suleiman, Karum Surdykowski, Jacob Liam Suthananthan, Inthuja Tam, Amy Diana Tang, Jonathan Ting Hong Tatlongmaria, Julianna Rivamonte Taus, Taylor Elizabeth Taylor, Katherine Mary Thevarajah, Dilani Thomas, Aleesha Thompson, Sarah Christine Toor, Harnoor Kaur Trieu, Joycelyn Ka Lai Violin, Isabel Irene Wang, Shirley Watson, Michael Ian Waung, Emily Weinhardt, Mikayla Naomi Welc, Kaya West, Emerson Robin Wiens, Amy Sarah

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(Co-operative Program) \* (Rehabilitation Sciences Specialization – Co-operative Program) \* \*

(Kinesiology & Joint Honours Psychology)

(Rehabilitation Sciences Specialization)

(Psychology Minor – Co-operative Program)

(Co-operative Program) †

(Co-operative Program) †

(Co-operative Program)

(French Minor) †

(Co-operative Program) (Aging Studies Option – Co-operative Program) †

(Medical Physiology Minor – Co-operative Program) † (Gerontology Minor – Co-operative Program)

(Rehabilitation Sciences Specialization) (Ergonomics and Injury Prevention Minor – Co-operative Program) (Co-operative Program) \*

(Rehabilitation Sciences Specialization – Medical Physiology Minor)
†
(Medical Physiology Minor) †
(Co-operative Program) \*
(Medical Physiology Minor – Co-operative Program)
(Rehabilitation Sciences Specialization)
(Rehabilitation Sciences Specialization – Co-operative Program) \*

(Rehabilitation Sciences Specialization – Co-operative Program) † (Human Resources Management Minor – Co-operative Program) †

(Co-operative Program) †

†

(Medical Physiology Minor – Co-operative Program) †
(Psychology Minor – Co-operative Program) \*
†
(Rehabilitation Sciences Specialization) \*
\*
(Rehabilitation Sciences Specialization)

Wiens, Emylea Kim	(Medical Physiology Minor) †
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	<i>t</i>
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, Aanjana 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

## **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 "Systems and Algorithms for Dynamic Graph Process.	(Computer Science)
Bai, He	(Computer Science)
"Novel Methods for Natural Language Modeling and	Pretraining''
Delisle, Thierry "The Cforall Scheduler"	(Computer Science)
Eaton, Edward	(Computer Science)
"New Design & Analysis Techniques for Post-Quant	um 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 a	nd Generalizations''
Glasbergen, Bradley James	(Computer Science)
"Universal Database System Analysis for Insight and	Adaptivity''
Karyakin, Alexey	(Computer Science)
"Memory Power Consumption in Main-Memory Data	base Systems''
Liao, Zhenyu	(Computer Science)
"Improved Bayesian Network Structure Learning in th	be 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 I	Driving: Methods and Applications''
Shi, Peng	(Computer Science)
"Facilitating Information Access for Heterogeneous Da	ita Across Many Languages''
Wang, Zihao	(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 Lan	aguage Processing: Early Exiting 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)

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)
Zabarah, 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	<i>†</i>
Chen, Caroline Jia-Yue	, (Human-Computer Interaction Specialization – Economics Minor)
Chen, Peiyun	*
Chen, Yuhao	*
Chho, Ishan	
Chu, Kevin Yunlong	(Economics Minor) †
Cui, Jane	(Classical Studies Minor)
de Wit, Alexander James	<i>t</i>
Del Rosario, Zaira Zcezanne Rolloque	<i>t</i>
Ding, Mengxuan	*
Ding, Qingting	(Data Science)
D'Souza, Danielle Jade	*
El-Zeneiny, Mohamed	*
Feng, Zijian	(Software Engineering Specialization) *
Gong, Yuanyue	<i>†</i>
Guo, Runlin Victor	<i>†</i>
Han, Tianhao	<i>†</i>
Han, Xiao	*
Hossain, Ahsan Rakeeb	<i>t</i>
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	

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 PI Afsan, Mir Rohan	ROGRAM
Ai, Brianna Guan	(Combinatorics and Optimization Minor) *
Anas, Emily Ihab Wagdi	(Bioinformatics Specialization) *
* – Distinction	

Araujo, Daniel Amorim	(Combinatorics and Optimization Minor) †
Arora, Muskaan	*
Arya, Aakarsh	<i>†</i>
Aryawan, Thomas Henry	
Austin, David Eric	(Statistics Minor) *
Azmi, Arif Ali	*
Babar, Danyal Ahmed	
Bai, Hao Tian	*
Bai, Li Dan	(Music Minor) *
Bai, Rong Zhuo	
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	

\* – Distinction

Dominguez-Schatz, Julian Frank	(Artificial Intelligence Option) †
Du, Hongbo	
DuGe, Bill Sage	<i>†</i>
Fang, Cindy Yixin	*
Fattakhov, Leon	(Entrepreneurship Minor) *
Fernandes, Skyler Paul	(Computational Mathematics Minor) *
Fortin, Marc-Olivier	(Entrepreneurship Minor) †
Frumkin, Maxim	
Gandhi, Rushi	<i>†</i>
Ge, William	, †
Geng, Grace	1
Ghosh, Rishabh	
Gozali, Raphael Shawn	(Data Science – Economic Theory Minor) *
Grewal, Nathan Eric	t
Grewal, Sherman Singh	, †
Gu, Stephanie	, †
Gu, Yixing	ہ (Pure Mathematics Minor, Physics Minor) †
	(Fure mainemailes minor, Frysics minor)   *
Guan, Zhanghuihong Guha, Ayushi	
Guo, Landson Tianlang	(Artificial Intelligence Specialization) †
Han, Ruoxuan	(Statistics Minor) †
Han, Yushuo	(Data Science – Economics Minor) †
He, Mengyu	(Combinatorics and Optimization Minor) †
He, Peter	(Data Science) *
	*
Ho, Audrey Yeewai	
Hu, David	*
Hu, Jingtong	<u> </u>
Hu, Joseph	T
Hu, YiHeng	t
Huang, John Yi Rui	
Huang, Liwei	<i>t</i>
Huang, Shao Chen	t
Hudson, Sinclair Strachan Groskorth	(Artificial Intelligence Specialization) †
Hum, Christopher E N	(Combinatorics and Optimization Minor) *
Jain, Samta Priya	(Business Option)
Jiang, Edward Yeduo	(Combinatorics and Optimization Minor, Pure Mathematics Minor) †
Jiang, Haoning	(Combinatorics and Optimization Minor) †
Jiang, Hui	*
Jiang, Kuan	
Jindal, Chirag	t
Joseph Byju, Alric	
Kala, Siddharth	*
Kamal, Farhan Haidar	
Kang, Grace	t
Kanoria, Mayank	*
* – Distinction	
+ Deen's Heneurs	

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Khan, Tamim Mahmud	*
Khandaker, Mahdi Kabir	
Khazzam, David Aaron	<i>†</i>
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	t
Krishna Prasad, Shreyas	*
Krishnan, Pranav	(Combinatorics and Optimization Minor) †
Kulakouski, Daniel George	
Lal, Prannoy	(Human-Computer Interaction Specialization) *
Lee, Albert Daniel	t
Lee, DongHyun	<i>t</i>
Lee, Gyeongwon	<i>t</i>
Leung, Samantha Chee Kay	*
Li, Jessica Boya	(Psychology Minor) †
Li, Kevin	<i>t</i>
Li, Kevin	<i>†</i>
Li, Minglei	
Li, Nathan	<i>†</i>
Li, Qian	*
Li, Rachel	*
Li, Rolf	<i>†</i>
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, Hansson Wen Jie	*
Lin, Ka Ying Karen	<i>†</i>
Liu, Amanda	(Computational Fine Arts Option)
Liu, Da You	<i>†</i>
Liu, Feng Hua	<i>†</i>
Liu, I-Fu	(Combinatorics and Optimization Minor) †
Liu, Jinwu	(Business Specialization) *
Liu, Qing	<i>†</i>
Liu, Susan	
Liu, Tianhui	
Liu, Yu Tong	(Combinatorics and Optimization Minor) *
Liu, Yuxuan	<i>†</i>
Lok, Anna	*
Lu, Jinhuan	
* – Distinction	

Luan, Daniel Luczynski, Michael Martin Luo, Bowen (Combinatorics and Optimization Minor) \* Luo, Chong Ma, Hongde (Data Science) \* Ma, Mo Jie Mahdi, Taaha Mahendran, Chanchev (Software Engineering Specialization) \* Mali, Netra Janak Mangat, Balpreet Kaur (Human-Computer Interaction Option) \* Matharu, Amrit Menezes, Sean Daniel † Misjuwar, Amanda Belle (Human-Computer Interaction Specialization) Mo, Dennis Yunfei † Mohammed, Saffiyah Gail (Psychology Minor) Mohammed Sahl Mollahajian, Pedram Morra, Mark Albert Mueller, Arista Jade Muhunthan, Mathush (Business Option) \* Murugesan, Shreevarshini † Nesterovic, Ivan Stefan † (Combinatorics and Optimization Minor) † Ngo, Nancy Nhi Nguyen, Do Anh Huy (Psychology Minor) \* Nguyen, Nhat Tan (Economics Minor) † Oh, Joshua (French Minor) Olaru, Eric Osmond, Clarice (Statistics Minor) Pahooja, Sahil (Business Specialization & Human-Computer Interaction Specialization) \* Pan, Jianyu (Economics Minor) (Economics Minor) Parappally, Josiah Philip Park, Sang Won (Economics Minor) \* Pasqualini, Adrian Santo (Artificial Intelligence Option – Combinatorics and Optimization Minor) † \* Patel, Aarsh Anil Patel, Kush Vijaykumar Patel, Shalin Alpeshkumar Pathan, Ashfi Peng, Lu (Combinatorics and Optimization Minor) † Peng, Victoria Zhu † Pietsch, Sophia Theresa † Porter, Mark Pu, Sarah Siyu Qu, Jenny Jingyi Rahman, Shahriyar Rajpal, Simran Reasat, Elman

\* - Distinction

Saebnoori-Zhang, Shayan	(Music Minor) *
Safri, Aziz Mujtaba	(Economics Minor) *
Sang, Shao Chuan	t
Sang, Yi Chen	' (East Asian Studies Minor) *
Sebastian, Jamie	(Economics Minor) *
Sena, Davi Cavalcanti	t
Shah, Khubi Umesh	*
Shah, Pari	<i>†</i>
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	(Human-Computer Interaction Specialization)
	*
Shum, Avery Matthew Singh, Sidhartha	
-	t
Siwal, Sanya	(Rusiness Specialization)
So, Pak-Ho Lawrence	(Business Specialization)
Song, Tang	<i>†</i> *
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 Jianzhou	(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	<i>t</i>
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	t
Wang, Hanxiang	*
* – Distinction	

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	<i>†</i>
Xi, Clara	<i>†</i>
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	<i>t</i>
Xu, Zhongyu	<i>†</i>
Yang, Ji Xi	<i>†</i>
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	t
Zhang, Alvin	, †
Zhang, An	, (Data Science – Economics Minor) †
-	
* – Distinction	

† – Dean's Honours

\*

\*

Zhang, Charles Yingjia	(Artificial Intelligence Specialization) †
Zhang, Chenyang	(Combinatorics and Optimization Minor) †
Zhang, Grace Jia-Yi	t
Zhang, Jeff	*
Zhang, Jia Yi	(Computer Science/Bioinformatics Option & Joint Honours Chemistry – Pure Mathematics Minor) †
Zhang, Jialin	*
Zhang, Jing Wen	(Human-Computer Interaction Specialization – Statistics Minor) *
Zhang, Kai Yi	(Business Option) †
Zhang, Richard Kongfan	*
Zhang, XinWen	*
Zhang, Yi Han	(Combinatorics and Optimization Minor, Computational Mathematics Minor) †
Zhang, Yiding	t
Zhāng, Yìlín	(Combinatorics and Optimization Minor) †
Zhang, Yingran	
Zhang, Yuechen	(Data Science) †
Zhao, Qi	(Data Science) †
Zhao, Runbei	(Human-Computer Interaction Specialization)
Zhao, Yiqing	(Physics Minor) *
Zheng, Allyn	*
Zheng, Franklin Kaifeng	*
Zheng, Jolene	(Legal Studies Minor) *
Zhou, Si Yue	(Combinatorics and Optimization Minor) †
Zhou, You	*
Zhu, Chenkai	*
Zhu, Tom Zhenyan	*
Zhu, Yuhong	(Combinatorics and Optimization Minor) *

# **BACHELOR OF MATHEMATICS**

HONOURS PROGRAM	
Chen, Terry Yu-Xi	(Computer Science & Honours Statistics) *
Day, Aidan Paulo	(Computer Science & Honours Combinatorics and Optimization)
Du, Shu Fan	(Computer Science & Honours Combinatorics and Optimization) †
Duan, Junyao	(Computer Science & Joint Honours Combinatorics and Optimization & Joint Honours Statistics – Computational Mathematics Minor) †
Golden, Ely Dov Putterman	(Computer Science – Pure Mathematics Minor) *
Holterhus, Riley Karl	(Computer Science) †
Huang, Yongjia	(Computer Science & Honours Statistics) *
Jackson, Riley Adam	(Computer Science & Honours Pure Mathematics & Honours Combinatorics and Optimization) †
Li, Eric	(Computer Science – Combinatorics and Optimization Minor, Computational Mathematics Minor) †
Liu, Zhonghao	(Computer Science & Honours Statistics)
Lu, Zijie	(Computer Science – Combinatorics and Optimization Minor) †
Xing, Enze	(Computer Science) †
Zhu, Zhenyan	(Computer Science) †

#### HONOURS CO-OPERATIVE PROGRAM

- \* Distinction
- † Dean's Honours

Bian, Yu Qi (Computer Science & Honours Statistics) † (Computer Science & Joint Honours Pure Mathematics) † Bundgard, James Michael Gerard (Computer Science & Honours Statistics) † Cao, Yiran Cao, Yu Jia Jessica (Computer Science & Joint Honours Statistics) \* (Computer Science & Joint Honours Combinatorics and Optimization) + Chen, Jianzhen Chen, Quancheng (Computer Science & Honours Statistics) † Cheung, Cindy Chak Yee (Computer Science & Honours Statistics) \* Feng, Tianlu (Computer Science & Honours Statistics – Combinatorics and Optimization Minor) \* Ghosh, Aritra (Computer Science & Honours Pure Mathematics) He. Colin Qimin (Computer Science – Artificial Intelligence Specialization & Honours Combinatorics and Optimization) † Hoxha, Kevin (Computer Science & Honours Combinatorics and Optimization) † Hui, Ki Ho Antonio (Computer Science & Honours Computational Mathematics) † Jiang, Daniel (Computer Science & Honours Combinatorics and Optimization – Statistics Minor) † Krofchak, Christopher Ian (Computer Science) † (Computer Science & Honours Statistics) † Li, Boyi Li, Erica Yune-Yune (Computer Science – Physics Minor) Li, Haochen (Computer Science & Joint Honours Statistics – Computational Mathematics Minor) \* Liao, Victor (Joint Computer Science & Joint Honours Pure Mathematics & Joint Honours Combinatorics and Optimization) + Liu, Jeffrey Yunfan (Computer Science & Honours Combinatorics and Optimization & Honours Pure Mathematics) † (Computer Science & Honours Pure Mathematics & Honours Combinatorics and Lo, Nathan Optimization) † Lu. Yi Ao (Computer Science & Honours Statistics & Joint Honours Combinatorics and Optimization) † Luo, Ji Han Jie (Computer Science & Honours Pure Mathematics & Honours Combinatorics and Optimization) † Mustageem, Aziz Khawar (Computer Science & Honours Pure Mathematics) † Parco, Russell James (Computer Science & Honours Statistics) † (Computer Science & Honours Pure Mathematics & Honours Combinatorics and Penner, Thomas John Optimization) † (Computer Science & Joint Honours Combinatorics and Optimization) † Qu. Bosen Regalado Lozano, Sebastián David (Computer Science & Joint Honours Pure Mathematics – Computational Mathematics Minor) † Ruza, Tiadora Valentina (Computer Science & Honours Combinatorics and Optimization) † (Computer Science & Joint Honours Combinatorics and Optimization) † Su, Jianyuan Wang, Guanzhao (Computer Science – Artificial Intelligence Specialization & Honours Combinatorics and Optimization & Honours Computational Mathematics – Economics Minor) † Wang, Yukai (Computer Science) † Wu, Haochen (Computer Science & Honours Combinatorics and Optimization & Honours Computational Mathematics) † Xu, Qianxun (Computer Science) (Computer Science – Artificial Intelligence Specialization & Honours Combinatorics and Zhang, Edwin Zilong Optimization – Computational Mathematics Minor) † Zhao, Zixuan (Computer Science – Bioinformatics Specialization)

## **BACHELOR OF SOFTWARE ENGINEERING**

HONOURS CO-OPERATIVE PROGRA	M	
Abdi, Syed Hussain Rahber	*	
Amjad, Mufeez	(Combinatorics and Optimization Minor, Computational Mathematics Minor)	*†

Amlekar, Ishan	(Human-Computer Interaction Specialization)
Asad, Abdullah Bin	*
Assad, Shehryar	*
Au, Nathan Tinching	*†
Baines, Orson Andrew	*†
Bakker, Alex John	*
Brown, Bradley Craig Anderson	(Honours & Joint Honours Combinatorics and Optimization) *†
Budz, Lucas Joseph	<i>†</i>
Cai, Ting	*†
Campbell, Aidan Joseph	(Music Minor) *†
Cento, Paul Richard Soyland	*†
Chen, Liujia	(Human-Computer Interaction Specialization) *
Cheng, Thomas Ho Jee	*
Chhabra, Advitya	*
Chong, Curtis Ching	*
Dietz, Angela Claire	*†
Dietz, Kara Michelle	*†
Ding, Cynthia Yiying	*†
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	(Artificial Intelligence Option) *†
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	(Honours & Joint Honours Combinatorics and Optimization) *†
Kattukudiyil, John Sabu	*†
Keung, Haydn	(Computational Mathematics Minor, Combinatorics and Optimization Minor) *
Li, Bjon Guobin	(Computational Mathematics Minor, Combinatorics and Optimization Minor) *†
Li, Darren	*†
Li, Hannah Kexin	*†
Li, Jianyan	*†
Li, Kevin Ye Jie	*†
Li, Peggy	*
Li, Selina Keyue	*†
* – Distinction	

\* – Distinction

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 Chanuin	*
Varkiani, Sherwin	
Wang, Huihong	(Computational Mathematics Minor) *†
	(Computational Mathematics Minor) *† *
Wang, Huihong	
Wang, Huihong Wang, Ruichen	
Wang, Huihong Wang, Ruichen Wang, Siyuan	
Wang, Huihong Wang, Ruichen Wang, Siyuan Weitzman, Eric	* * *

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) *
Zohar, 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

# **CERTIFICATE IN GLOBAL EXPERIENCE**

Fang, Cindy Yixin Wang, Estelle Zhekuan

## DOCTOR OF PHILOSOPHY

Araiza Iturria, Carlos Andrés "Discrimination in Insurance Pricing"	(Actuarial Science)
Li, Wenyuan	(Actuarial Science)
"Individual Insurance Choice: A Stochastic Control 2	<sup>Approach''</sup>
Meng, Yechao	(Actuarial Science)
"Mortality Prediction Using Statistical Learning App	broaches''
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 Corre	elated 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) (Co-operative Program) Hanes, Hendrix Daniel Huebner, Erik Michael (Co-operative Program) Islam, A S M Sohidull Kurdyak, Robert Colton (Co-operative Program) Lai, Elbert (Co-operative Program) Lin, Yi (Co-operative Program) (Co-operative Program) Lin, Yun Zhi 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 \* – Distinction (Data Science)

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, Yùxiáng	(Business Administration and Computer Science) *
Yu, Lichen	(Business Administration and Computer Science – Software Engineering Specialization) $^{\star}$
Zhang, Jing Ting	(Business Administration and Computer Science – Human-Computer Interaction Specialization) *

#### HONOURS CO-OPERATIVE PROGRAM

HUNUURS CO-OPERATIVE PROGRA	AM
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

Rahim, Lyana Rozeannah\*Richardson, Emma Jean\*Robertson, Peter Scott\*Sharma, Rajat\*Uppal, Kamal Dev\*Yang, Simon\*Zhang, He\*Zheng, Ziyi\*Zhilyayev, Daniil\*

#### GENERAL CO-OPERATIVE PROGRAM - Three Year

Garg, Palvit Lu, Luyi Park, Christopher Joonha

#### 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)
* – Distinction	

(Mathematical Studies – Business Specialization) Hardy, Rebecca Lynn Heckel, Jennifer Hope (Business Administration and Mathematics) Huang, Yuan Hui (Statistics – Economics Minor) Jairam, Brian (Statistics – Computational Mathematics Minor) † Jiang, Shui Yao (Mathematical Studies) Jin, Yun (Statistics – Computing Minor) Jung, Minji (Statistics – Computing Minor) Kang, Junyoung (Statistics) Lawrence, Owen Herman James (Business Administration and Mathematics) Lebrasseur, Ryan Michael (Statistics – Computational Mathematics Minor) \* (Statistics – Computing Minor) \* Lee, Nakyum Lee, Tyson Shawn (Statistics & Honours Computational Mathematics) Leistner, Emily (Business Administration and Mathematics – Statistics Minor) Li, Nan (Business Administration and Mathematics & Honours Statistics) \* Li, Xueqian (Statistics & Honours Computational Mathematics – Actuarial Science Minor) Li, Yuyang (Mathematical Studies) Liang, Thomas (Statistics) Lim, Seokho (Statistics – Combinatorics and Optimization Minor) Lin, Wen-hui (Statistics) \* Lindner-Liaw, Maia (Statistics – Economics Minor) † Lisogurski, Alexa Leia (Mathematical Studies – Computing Minor, Pure Mathematics Minor) \* Liu, Chen (Statistics) Liu, Xiaoyi (Statistics) (Statistics) Liu, Xinhe Lu, Jiaqi (Statistics – Combinatorics and Optimization Minor) \* Malik, Mohammad (Mathematical Studies – Statistics Minor) Matiana, Shahbuland Shahzad (Data Science) \* Nasser, Muhammad Raza (Actuarial Science) Nhan, Brandon Du (Statistics) Ni, You (Statistics) Pan, Zivi (Actuarial Science & Honours Statistics) \* Puddifoot, Alex (Mathematical Studies – Applied Mathematics Minor, History Minor) Qi, Weichao (Actuarial Science & Honours Statistics) Qiao, Xinjie (Data Science) \* Qin, Ping (Actuarial Science & Honours Statistics) Qin, Yuan (Actuarial Science & Honours Statistics) \* Ramsoobhag, Priyanka Monisha (Statistics – Computing Minor) Serro, Alexandre Antonio (Mathematical Studies – Computing Minor) Shah, Maitri (Statistics & Honours Mathematics/Business Administration) Shao, Max (Actuarial Science & Honours Statistics) Sharma, Shubham (Statistics) Shen, Yifu (Statistics – Applied Mathematics Minor) Shen, Zehai (Actuarial Science & Honours Statistics) Shi, Minye (Statistics) Sinha, Richie Jeet (Mathematical Studies – Combinatorics and Optimization Minor, Computing Minor, Computational Mathematics Minor)

Smalley, Tyler Stuart (Business Administration and Mathematics & Honours Statistics) \* Song, Chengzhe (Actuarial Science – Statistics Minor) Song, Wenting (Data Science) † Sriram, Swathi (Business Administration and Mathematics) Sun, Haixin (Actuarial Science – Finance Specialization) Syamala, Aavinash Reddy (Mathematical Studies – Statistics Minor, Computational Mathematics Minor) Tan, Haowu (Actuarial Science & Honours Statistics) Tang, Qi (Statistics) Tang, Ruoxi (Statistics) Tang, Yijun (Statistics – Computing Minor) \* Tehrani-Moein, Sina (Business Administration and Mathematics & Honours Statistics) † Tong, Yifei (Statistics – Economics Minor) Verslype, Jacob Tyler (Mathematical Studies) Wang, Bonan (Statistics & Honours Computational Mathematics) (Statistics) Wang, Jiaming Wang, Yang (Actuarial Science & Honours Statistics – Economics Minor) Wang, Yitian (Mathematical Studies – Statistics Minor) Wang, Yukun (Actuarial Science & Honours Statistics) \* Weng, Yusong (Statistics) Wibowo, Aurelya Rachell (Actuarial Science & Honours Statistics) † WU, QIANYI (Statistics) Wu, Ruixuan (Mathematical Studies - Business Specialization – Computing Option) Wu, Yiwei (Statistics) \* Xiao, Ariel Qianwei (Actuarial Science – Statistics Minor) Xiao, Ruoyao (Actuarial Science & Honours Statistics) \* Xing, Jianglong (Data Science) Xu, Ke (Data Science) \* Xu, Siming (Data Science) † (Business Administration and Mathematics – Actuarial Science Minor) \* Xu, Yuming Xue, Yingwen (Statistics) Yang, Shuxin (Statistics – Actuarial Science Minor) Yang, Wangyue (Actuarial Science & Honours Statistics) \* Yang, Yixiao (Actuarial Science & Honours Statistics) Yang, Zhenyu (Data Science) Yao, Chenxi (Data Science – Actuarial Science Minor) \* Yao, Kefei (Statistics – Pure Mathematics Minor) Yao, Wengian (Statistics & Honours Combinatorics and Optimization – Pure Mathematics Minor) \* Yu, Xinchun (Statistics & Joint Honours Actuarial Science) Yuan, Fei (Mathematical Studies – Statistics Minor) Yuan, Yuqi (Actuarial Science & Honours Statistics) † Zahoor, Saad Atif (Statistics – Actuarial Science Minor) \* Zhang, Anyi (Mathematical Studies – Legal Studies Minor) Zhang, Haoqi (Data Science) \* Zhang, Haoyu (Actuarial Science – Statistics Minor) Zhang, Jianlong (Statistics) \* Zhang, Jiayi (Statistics) †

\* – Distinction

Zhang, Sundonglong	(Statistics – Computing Minor) *
Zhang, Xinyuan	(Statistics) *
Zhang, Yu Quan	(Statistics)
Zhang, Yunhao	(Statistics)
Zhao, Xuanxuan	(Actuarial Science) *
Zheng, Lanhe	(Statistics – Actuarial Science Minor)
Zhong, Laiyi	(Mathematical Studies – Business Specialization – Computing Minor)
Zhou, Mingxuan	(Statistics & Honours Combinatorics and Optimization – Pure Mathematics Minor) $^{*}$
Zou, Xuecheng	(Statistics)

#### HONOURS CO-OPERATIVE PROGRAM Amaranath Aurthevsh

HUNUURS CO-OPERATIVE PROGR	
Amaranath, Aurtheysh	(Statistics – Combinatorics and Optimization Minor)
Anderson, Eric Robert	(Statistics & Honours Computational Mathematics)
Azra, Rajbir Singh	(Statistics – Biology Minor) *
Bai, Jack	(Statistics)
Bajnathsingh, Reece Vishal Lokesh	(Data Science) †
Blazevic, Victoria Mary	(Statistics – Actuarial Science Minor)
Brazeau, Sarah Ann	(Mathematical Studies - Business Specialization – Computing Minor)
Bumbulis, Laura Sylvia	(Statistics & Honours Combinatorics and Optimization – Pure Mathematics Minor) †
Carlson, Trevor David	(Business Administration and Mathematics – Computing Minor)
Chan, Andy	(Data Science)
Chan, Jia Yi	(Data Science) †
Chandraphalan, Vaishnavi	(Actuarial Science – Statistics Minor)
Chen, Jier	(Statistics – Computing Minor) *
Chen, Kaijun	(Actuarial Science & Joint Honours Statistics)
Chen, Longyao	(Actuarial Science & Honours Statistics)
Chen, Xingying	(Statistics & Honours Combinatorics and Optimization – Computational Mathematics Minor) *
Cheng, Ming Sum Hilary	(Business Administration and Mathematics) *
Chengadu, Keven	(Actuarial Science & Honours Statistics)
Chong, Weng Liang	(Statistics & Honours Computational Mathematics – Computing Minor)
Cimermancic, Lukas Daniel	(Data Science) †
Connell-Tombs, Matthew	(Statistics – Actuarial Science Minor) †
Cui, Bolun	(Actuarial Science & Honours Statistics) †
Dabke, Rohit Sachin	(Business Administration and Mathematics – Computing Minor) *
Dang, Laura Yu-Shen	(Statistics – Computing Minor) *
Deng, Jasmine Ning	(Actuarial Science & Honours Statistics)
Ding, Yu Hao	(Statistics – Computational Mathematics Minor, Combinatorics and Optimization Minor)
Douglas, Kara Nicole	(Actuarial Science) *
Duan, Yun han	(Actuarial Science & Honours Statistics) †
Feng, Ji Han	(Statistics & Honours Computational Mathematics – Computing Minor) †
Feng, Jilin	(Statistics)
Gajendragadkar, Rohit	(Statistics) *
Gong, Xiaoping	(Actuarial Science & Honours Statistics)
Goyal, Akshar Shailesh	(Statistics – Computational Mathematics Minor, Computing Minor) *
Griffin, Kassandra Anne	(Actuarial Science – Statistics Minor)
Hamalainen, Kaitlyn Elena	(Mathematical Studies - Business Specialization)

\* – Distinction

Han, Minchan (Statistics – Computing Minor) Hao, Jinchen (Business Administration and Mathematics & Honours Statistics) \* Hao, Yunjie (Actuarial Science & Honours Statistics) Hewa Batuwitage, Joshua Zeno (Actuarial Science – Statistics Minor) Hinton, Cameron Edward (Statistics – Computing Minor) Hsiung, Charlene Chia-Yih (Actuarial Science – Statistics Minor) Huang, Shuyan (Business Administration and Mathematics & Honours Statistics) \* Hwang, Suk Joon (Statistics & Honours Applied Mathematics) \* Jahanzeb, Saad (Mathematical Studies) Jaseharan, Apiraam (Statistics) Jejo, Sarah Amy (Statistics – English Language and Literature Minor) † Ji, Angela (Mathematical Studies) Ji, Yuki (Statistics) \* Jiang, Zhujing (Actuarial Science & Honours Statistics) Jiang, Zihan (Statistics & Honours Computational Mathematics – Computing Minor) † Kim, Keon Wook (Mathematical Studies – Computing Minor) Knox, Carter Stewart (Statistics) Kowlessar, Matthew Joshua (Statistics – Economics Minor) Lai, Leo Chung Kit (Statistics) Lai, Zhuoye (Statistics & Honours Actuarial Science) † (Mathematical Studies – Computing Minor) Lam, Jayden Karbo (Mathematical Studies – Statistics Minor) Lawrence, Horace Lerner, Philip Michael (Statistics – Computing Minor) \* Li, Anna Dean (Statistics) Li, Angi (Actuarial Science/Predictive Analytics Option & Honours Statistics) \* LI, Baoyu (Statistics – Actuarial Science Minor, Computing Minor) \* (Statistics) Li, Pusheng Li, Shao Zhong (Statistics & Honours Computational Mathematics – Computing Minor) \* Li. Yifan (Actuarial Science & Honours Statistics) † Li, Yinshi (Business Administration and Mathematics – Statistics Minor) † (Biostatistics & Honours Computer Science – Cognitive Science Minor) † Li, Yuhong Li, Yuze (Statistics – Computational Mathematics Minor) \* Liang, Billy (Statistics) Lin, Kara Ka Wai (Data Science) † Liu, James Tianyi (Actuarial Science – Finance Specialization – Statistics Minor) \* Liu, Shuhao (Statistics & Honours Computational Mathematics – Computing Minor) \* Liu, Simon (Actuarial Science/Predictive Analytics Option) \* (Mathematical Studies – Actuarial Science Minor) Liu, Yu Qing 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, Angi (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) †

Lyou, Jin (Statistics – Computing Minor) \* Ma, Jiaze (Business Administration and Mathematics & Honours Statistics) (Mathematical Studies – Computing Option – Pure Mathematics Minor) Maclellan, Jonathan Aloysius Malhi. Dilmeet Kaur (Statistics – Computing Minor) \* Malinowski, Victor Michael (Biostatistics) \* McCleary, Reuben Gerhard (Statistics – Pure Mathematics Minor, Computing Minor) McEllistrum, Kyra Ann (Mathematical Studies – Computer Science Minor, French Minor) Mehta, Veeraj (Actuarial Science – Finance Specialization & Joint Honours Statistics) \* Moon, Heewon (Actuarial Science) Naik. Anisha (Actuarial Science & Honours Statistics) \* Narendran, Kohulan (Mathematical Studies – Statistics Minor) Narula, Arkin (Actuarial Science & Honours Statistics) Nguyen, Dieu Hoa (Statistics & Joint Honours Actuarial Science) Nguyen, Duc Minh (Statistics – Computing Minor) Noël, Sebastien Michaël Shawn (Actuarial Science & Honours Statistics) \* Oh, Jeyoung (Statistics – Computing Minor) Osman, Liban Abdinur (Statistics) Paine, Lucy Brenda (Business Administration and Mathematics – Statistics Minor) † Park, Robert Jeffrey Gary (Data Science) † (Actuarial Science & Honours Statistics) Parmasar, Rajeev (Biostatistics – Computing Option) \* Payne, Jessica Marie Peng, Huijun (Actuarial Science & Honours Statistics) \* Petro, Michael Giovanni (Business Administration and Mathematics) Prabakaran, Arjun (Data Science – Combinatorics and Optimization Minor) \* Rai, Kapil (Actuarial Science) (Statistics) \* Ravichanran, Surean (Statistics) \* Roy, Rayan Sadovsky, Ron (Statistics – Computing Minor) Sakurai, Seiji Maxmillian (Mathematical Studies – Computing Minor) Sauve, Claire Ellen (Business Administration and Mathematics & Honours Statistics – Actuarial Science Minor) \* Semak, Brooke (Actuarial Science & Honours Statistics) \* Senko, Samuel Edward Spriet (Business Administration and Mathematics & Joint Honours Pure Mathematics & Joint Honours Statistics) † Shahzad, Saquib (Mathematical Studies – Computational Mathematics Minor, Computer Science Minor, Economics Minor) Shao, Boya (Actuarial Science – Predictive Analytics Specialization & Honours Statistics) † Shim, Karen Ashley (Actuarial Science – Predictive Analytics Specialization & Honours Statistics) Shin, Joan (Actuarial Science & Honours Statistics) \* (Business Administration and Mathematics & Honours Combinatorics and Optimization & Shu, Ying Honours Statistics) \* (Actuarial Science & Honours Statistics) \* Singh, Kevan Satyen Song, Renchang (Statistics – Applied Mathematics Minor) \* Sonnenburg, Rhett Mackenzie (Business Administration and Mathematics – Computing Minor) \* Sun, Esbo (Statistics) Teh, Ying Wei (Actuarial Science/Predictive Analytics Option & Honours Statistics) † Tham, Nicole Yen Li (Actuarial Science & Honours Statistics) Ting, Denissa (Actuarial Science/Predictive Analytics Option & Honours Statistics) \*

\* – Distinction

(Actuarial Science & Honours Statistics) \* Trang, Sydney (Business Administration and Mathematics & Honours Statistics – Actuarial Science Minor) \* Tripathi, Vinay Krishna (Actuarial Science & Honours Statistics) Tulloch, Joshua William 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) (Actuarial Science & Honours Statistics) † Xu, Jingwen 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, Mingi (Actuarial Science & Honours Statistics) † Zhang, Yiming (Actuarial Science & Honours Statistics) \* Zhang, Zeheng (Statistics & Honours Computational Mathematics – Combinatorics and Optimization Minor)

\* – Distinction

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) $^{\star}$
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

# 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 System	(Applied Mathematics)
Im, Haesol	(Combinatorics and Optimization)
"Implicit Loss of Surjectivity and Facial Reduction: T	Theory and Application''
Meng, Yiming	(Applied Mathematics)
"Bifurcation and Robust Control of Instabilities in th	e Presence of Uncertainties"
Milne, Russell	(Applied Mathematics)
"A Spatially Explicit Modeling Approach for Predic	ting and Managing the Effects of Coral Reef Stressors''
Nabergall, Lukas "Enumerative Perspectives on Chord Diagrams"	(Combinatorics and Optimization)
Nourian, Vahid	(Applied Mathematics)
"Modeling and Simulation of Uni- and Multi-Flagel.	lar Bacterial Locomotion in a Viscous Fluid''
Petrie, James Ian Mackie	(Applied Mathematics)
"Decentralized Contact Tracing Protocols and a Risk	Analysis Approach to Pandemic Control''
Smith-Roberge, Julien	(Applied Mathematics)
"Microcolony Dynamics: Motion from Growth, Order	r, and Incompressibility''
Sun, Hao "Transversal Problems in Sparse Graphs"	(Combinatorics and Optimization)

# **MASTER OF MATHEMATICS**

Adeku, Funmilayo Lateefat	(Applied Mathematics – 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 Munsu	(Combinatorics and Optimization)
lam, Hoi Cheong	(Combinatorics and Optimization)
Kalichman, David	(Combinatorics and Optimization)
Koerts, Hidde Oscar	(Combinatorics and Optimization)
Li, Zhuqing	(Applied Mathematics)
Livochka, Anastasiia	(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, María Rosa	(Applied Mathematics)
Quartz, Thanin	(Applied Mathematics)
Rivera Omaña, María 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

Vladusic, Stefan	(Computational Mathematics – Co-operative Program)
Wan, Clement	(Pure Mathematics)
Wang, Xuetong	(Computational Mathematics)
Wilson, Spencer MacLaren	(Combinatorics and Optimization)
Wong, Cassandra	(Computational Mathematics – Co-operative Program)
Yalsavar, Maryam	(Computational Mathematics – Co-operative Program)
Yao, Leon Chang Liang	(Computational Mathematics – Co-operative Program)
Yusim, Samuel	(Combinatorics and Optimization)
Zhang, Niejia	(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

\* – Distinction

(Pure Mathematics – Statistics Minor) (Pure Mathematics – Applied Mathematics Minor) \* (Computational Mathematics – Statistics Minor, Economics Minor) (Computational Mathematics & Honours Statistics) \*

Bader, Mujtaba Alfateh (Applied Mathematics) Bai, Sichun (Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization – Statistics Minor) Bai, Xinwei (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization & Honours Statistics) † Braga, Jakob Nicholas (Mathematical Physics) \* (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Chen, Jiahuang Specialization) (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Chen, Junze Specialization) Chen, Yuyuan (Information Technology Management) (Pure Mathematics & Honours Combinatorics and Optimization – Philosophy Minor) \* Chen, Zhiyang 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) (Mathematical Finance) \* Ding, Zijun (Mathematical Physics) \* Dorfman, Adam 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, Qiangian (Mathematical Economics) \* Eaton, Sydney (Combinatorics and Optimization) Faassen, Alexander Derek Rens (Computational Mathematics – Statistics Minor, Economics Minor) \* Farias, Justin Michael (Applied Mathematics – Physics Specialization) \* (Pure Mathematics & Honours Combinatorics and Optimization) † Fu, Yen-Kang (Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Gao, Ang 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) Hu. Yu (Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization) (Mathematics/Business Administration) Huang, Haoyi Jeffries, Shannon Alexa (Combinatorics and Optimization – Pure Mathematics Minor) † (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Ji, Xinyi Specialization & Honours Statistics) (Mathematics/Business Administration – Statistics Minor) Jia, Xi Man (Applied Mathematics & Honours Statistics) Jiang, Jing Jiang, Jun (Mathematical Finance) † Jiang, Weikang (Computational Mathematics & Honours Statistics) Kaur, Ambra (Mathematics/Business Administration – Computing Minor) Kim, ChanYong (Combinatorics and Optimization)

\* – Distinction

Kim, Nicole Jeeyoung	(Computational Mathematics)
Kuwahara, Bruce Matthew	(Applied Mathematics – Biology Specialization – Knowledge Integration Minor) †
Lei, Zikang	(Pure Mathematics) †
Lemke, Amanda Jean	(Mathematics/Business Administration)
Li, Delong	(Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization)
Li, Jiecheng	(Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization)
Li, Jingwen	(Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization) *
Li, Lejia	(Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization) *
Li, Qian	(Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization – Statistics Minor)
Li, Wen	(Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization – Statistics Minor) †
Li, Xiang	(Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization – Statistics Minor) *
Li, Yanze	(Mathematical Optimization - Operations Research Specialization & Honours Statistics) *
Li, Zhize	(Applied Mathematics)
Linger, Andrew James	(Pure Mathematics – Economics Minor)
Liu, Hao-Wei	(Combinatorics and Optimization – Pure Mathematics Minor)
Liu, Jiayi	(Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization) *
Liu, Kailin	(Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization – Statistics Minor)
Liu, Yiyi	(Information Technology Management – Statistics Minor)
Lo Sasso, Luke	(Pure Mathematics – Computing Minor)
Lowndes-Irwin, Annalina Elizabeth	(Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization)
Mcvittie, Matthew Konrad	(Combinatorics and Optimization – Psychology Minor)
Mei, Yunya	(Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization) *
Miao, Zhiyi	(Pure Mathematics & Joint Honours Combinatorics and Optimization) *
Mo, Ruoxing	(Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization & Honours Statistics)
Ouyang, Ziyu	(Computational Mathematics – Statistics Minor)
Pandey, Anupriya	(Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization) *
Parkhomenko, Pavlo	(Mathematical Finance – Economics Minor)
Priebe, Nicholas Timothy	(Pure Mathematics) †
Rajkumar, Rishi Darren	(Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization)
Rajpal, Vaani	(Combinatorics and Optimization – Philosophy Minor)
Rampersad, Rory Rudra	(Mathematics/Business Administration – Computing Minor)
Rao, Sameer Valerio	(Mathematical Optimization - Operations Research Specialization) *
Scott, James	(Mathematics/Business Administration – Computing Minor)
Shaban, Kimia	(Combinatorics and Optimization – Computing Minor) †
Shen, Yiao	(Combinatorics and Optimization – Philosophy Minor)
Shiner, Austin Wing-Ho	(Pure Mathematics) †
Sikdar, Sailesh	(Mathematics/Business Administration – Computing Minor)
* – Distinction	

Song, Yuanzheng (Mathematical Finance & Joint Honours Pure Mathematics) \* Song, Zhuoyuan (Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization) Summers, Pauline Claire (Applied Mathematics with Scientific Computing) \* Sun, Lurui (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization) Sun, Scholar (Combinatorics and Optimization & Honours Statistics – Pure Mathematics Minor) \* Svarte-Bourra, Edric-Auguste (Mathematical Economics) † (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Tanchip, Corbin Nicholas Specialization) (Computational Mathematics – Combinatorics and Optimization Minor, Computing Minor) \* Tang, Sylvia Terning, Jackson Leif James (Pure Mathematics – Computer Science Minor) \* Tong, Chi Wah (Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization) † Trinh, Hoai Khang Ken (Mathematical Optimization - Operations Research Specialization) Tu, Yiheng (Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization – Statistics Minor) \* Tutu, Stefan Alex (Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization) Vaidya, Kshitij Mandar (Mathematical Physics) Vandervies, David John (Pure Mathematics) † Vasiu, Christopher (Combinatorics and Optimization) \* Veeramoothoo, Kandisen (Mathematical Finance & Honours Statistics – Computational Mathematics Minor, Pure Mathematics Minor) \* Wang, Huxuan (Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization – Statistics Minor) \* Wang, Jinghan (Applied Mathematics – Engineering Specialization – Pure Mathematics Minor) \* Wang, Jinyan (Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization) (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Wang, Junrong Specialization – Statistics Minor) † (Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Wang, Qi Specialization) † Wang, Ruoshui (Applied Mathematics) Wang, Weiyi (Mathematical Finance) Wang, Wenxu (Mathematics/Business Administration) Wang, Yi (Mathematical Economics) Wei, Lini (Mathematical Economics – Statistics Minor) \* Westerholm, Karl Stephen (Mathematical Physics – East Asian Studies Minor) Wolfe, Jaymee Julian (Pure Mathematics & Honours Combinatorics and Optimization) \* (Combinatorics and Optimization – Computing Minor) \* Wu, Julie Wu, Tingshuang (Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization) Wu, Yuyan (Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization) Xiang, Yunhai (Pure Mathematics) \* Xiong, Xinchen (Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization) † Xu, Qingze (Mathematical Finance & Honours Statistics – Pure Mathematics Minor) \* Yang, Kunling (Computational Mathematics & Honours Statistics – Economics Minor) † Yang, Yida (Mathematics/Financial Analysis & Risk Management-Professional Risk Management \* – Distinction

	Specialization – Statistics Minor) †
Yang, Zhirui	(Mathematics/Business Administration)
Yao, Huilin	(Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization & Honours Statistics) *
Ye, Huiyi	(Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization – Statistics Minor) *
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	(Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization – Statistics Minor) *
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, Yuetian	(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	(Mathematics/Financial Analysis & Risk Management -Chartered Financial Analyst Specialization – Statistics Minor) *
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) †
	AN4

#### 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

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) † (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Bhandari, Tunisha 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) \* (Mathematics-Chartered Professional Accountancy) Chen, Danny 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) \* (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Cheng, Yiwen Specialization – Statistics Minor) \* Cheung, Benedict Pak Tak (Mathematics-Chartered Professional Accountancy) \* (Mathematics-Chartered Professional Accountancy) Deering, Rachel Marie Dhoomon, Vaibhavi (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization & Honours Statistics) 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) (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Fan, Lijie 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 (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization – Statistics Minor) \* 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)
Jung, Minhyeok	(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization – Economic Theory Minor) †
Kandola, Triman Singh	(Computational Mathematics – Combinatorics and Optimization Minor, Computing Minor)
Kaur, Harneet	(Mathematics-Chartered Professional Accountancy)
Khan, Sameer Ali	(Information Technology Management)
Kolekar, Omkar Nitin	(Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization – Statistics Minor)
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, Lening	(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization & Honours Statistics) *
Liu, Nicholas Yang	(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst
– Distinction	

† – Dean's Honours

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	Specialization)
Liu, Zhenyang	(Mathematical Finance & Honours Statistics – Pure Mathematics Minor) *
Luchun, Geetika	(Mathematical Economics – Statistics Minor) †
Lupu, Ioan Mihnea	(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization) *
Lyu, Keying	(Mathematics-Chartered Professional Accountancy – Statistics Minor) *
Ma, Jiujiu	(Computational Mathematics – Computer Science Minor)
Ma, Wenqing	(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization – Actuarial Science Minor) †
Macri, Vincent David	(Pure Mathematics & Honours Combinatorics and Optimization) *
Mao, Aaron Lin Lin	(Mathematics-Chartered Professional Accountancy – Computing Option) *
Mcauley, Paul Winston	(Pure Mathematics) †
Mctavish, Ethan Luis Villanueva	(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization – Economics Minor) †
Meng, Jiawen	(Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization) *
Meng, Keyan	(Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization – Statistics Minor) *
Min, Zixiao	(Mathematical Finance & Honours Statistics – Computing Minor, Pure Mathematics Minor) $^{st}$
Mou, Difei	(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization)
Muthiah Pillai, Sathya	(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization)
Narang, Mohanpreet Singh	(Computational Mathematics – Computing Minor, Psychology Minor)
Ng, Wei Keat	(Applied Mathematics – Pure Mathematics Minor) *
Oh, Ji Ho	(Computational Mathematics – Computing Minor)
Ollivierra, Stachenne Antonia Ruth	(Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization) *
Pan, Siqi	(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization) *
Pan, Zeyu	(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization & Honours Statistics) *
Pannu, Sukhjot Singh	(Mathematics-Chartered Professional Accountancy) *
Parapurath, Priya	(Mathematics/Chartered Professional Accountancy - Finance Option) †
Parikh, Sharv Saumil	(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization) *
Patel, Dip Akshar	(Mathematics/Chartered Professional Accountancy - Finance Option)
Pivato, Jordan Simon	(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization) *
Qin, Dewei	(Mathematics-Chartered Professional Accountancy – Computing Minor) *
Qiu, Tiankai	(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization)
Qiu, Yue	(Mathematics/Chartered Professional Accountancy - Finance Option) †
Rae, Terra Donna	(Mathematics-Chartered Professional Accountancy) *
Rajpal, Amogh	(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization)
Ramlogan, Maehak Sandhya Jyoti	(Combinatorics and Optimization & Honours Computational Mathematics – Economics Minor) †
Robinson, Colin Whiteley	(Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization & Honours Statistics) *
Rodriguez, Daniel Liam	(Mathematics-Chartered Professional Accountancy – Computing Minor) †
* – Distinction	

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, Wengi (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) \* (Mathematics-Chartered Professional Accountancy) Shi. Man Xin Simmons, Miles Jude (Combinatorics and Optimization – Biology Minor) † Singh, Kritnoor (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization) Smith, Andrew Tyler (Mathematics-Chartered Professional Accountancy) \* (Mathematics-Chartered Professional Accountancy) Su, Jimmy (Mathematics-Chartered Professional Accountancy) Sun, Henry Haobing (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Sun, Yiqiao Specialization – Statistics Minor) \* Sun, Yunyi (Mathematics/Chartered Professional Accountancy - Finance Option) \* (Computational Mathematics – Physics Minor) Tang, Tianyi (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Tian, Haiqi Specialization – Statistics Minor) \* Tingling, Gareth Alexander (Mathematical Finance) To, Daniel Yue Hei (Mathematics/Business Administration) Totoo, Khrishma Darshnee (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization & Honours Statistics) \* 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. Yukti (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 (Mathematical Finance & Honours Statistics) \* Vu, Thien Ngan An (Mathematics-Chartered Professional Accountancy) Wan, Yuchen (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization & Honours Statistics) \* (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Wang, Haoxiang Specialization & Honours Statistics) † Wang, HongYue (Mathematics/Chartered Professional Accountancy - Finance Option) \* (Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Wang, Jiaxin Specialization) \* Wang, Jonathan (Computational Mathematics – Combinatorics and Optimization Minor) Wang, Michelle (Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization) \*

\* – Distinction

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	(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization – Statistics Minor)
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, Qianrui	(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization – Statistics 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) $\dag$
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) *
Yang, Zikun	(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization – Statistics Minor) *
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, Yue	(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization – Statistics Minor)
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-Chartered Professional Accountancy)
Zheng, Bo	(Mathematics/Financial Analysis & Risk Management-Chartered Financial Analyst Specialization – Actuarial Science Minor, Statistics Minor) †
Zheng, Chenxiang Michael	(Mathematics/Financial Analysis & Risk Management-Professional Risk Management Specialization – Computing Option – 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**

Ollivierra, 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	<b>(Chemistry)</b>
"Temperature Programming of the Second Dimension"	in Comprehensive Two-Dimensional Gas Chromatography (GC × GC)''
Chung, Kristian Tyn-Kai	(Physics)
"Hodge Theory For Geometrically Frustrated Magnetic	ism''
Dai, Xi	(Physics - Quantum Information)
"Superconducting Flux Circuits for Coherent Quantum	m Annealing"
<b>Deol, Harmeen Kaur</b>	(Chemistry)
"Immature SOD1: Protein Folding, Misfolding and A	Aggregation''
Gharavi, Kaveh	(Physics - Quantum Information)
"Superconducting Proximity Effect in Nanowire Josep	bson Junctions''
Golzar, Hossein	(Chemistry - Nanotechnology)
"Development of 3D printable, Hydrophilic, and Rap.	idly-Curing Silicone-Based Ink. Formulations for Various Biomedical Applications''
Gray, Finnian Padraig Stott "Symmetries in Black Hole Spacetimes"	(Physics)
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 Stree	tched Horizons''
Lozano Gómez, Daniel	(Physics)
"Symmetry Breaking, Order-by-Disorder, Fragmentat	ion, and Spin-Liquids in the Magnetic Pyrochlore Lattice With Anisotropic Interactions"
Lu, Xinze	(Earth Sciences)
"Early Paleozoic Ocean Redox Dynamics: Perspective	s From Uranium Isotopes of Sedimentary Rocks''
Mashmoushi, Nour	(Chemistry)
"The Investigation of Isomers Using Differential Mobility	lity Spectrometry and Ultraviolet Photodissociation Spectroscopy''
Mathur, Avi	(Chemistry - Nanotechnology)
"Polymer Additive Engineering of Organolead Halide	Perorskites: Effect on Device Characteristics and Scalable Manufacturing"
Moreira, Ryan	(Chemistry)
"Synthesis and Study of the Cyclic Lipopeptide Antiba	iotics Daptomycin and A54145''
Nazdrajić, Emir	(Chemistry)
"Development and Study of the Microfluidic Open Inter-	erface Coupled With Solid-Phase Microextraction for Rapid Analysis''
Rana, Nahyan Muhammad	(Earth Sciences)
"Global Study of Tailings Dam Failures by Statistica	l and Remote Sensing Methods''
Raymond, Neil George	(Chemistry)
"Equilibrium and Dynamical Computation Schemes J	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 Implication.	s of the Ophiolitic Liuyuan Complex, NW China''
Tamhane, Prathamesh Dhananjay	(Physics)
"Re-Visiting the Radio-Mechanical Feedback in Brig	htest Cluster Galaxies''
Whittingham, Alexander William Henry	(Chemistry)
"A Study of Electrochemically Induced Lattice Distort	tions in Layered Perovskites''
Yaghoubi, Ali	(Earth Sciences)
"Tectonic Stresses and Injection-Induced Fault Slip A	ssessment''
Yin, Junjie "Stable Polymer Glasses"	(Physics - Nanotechnology)
Zandieh, Mohamad	(Chemistry)
"Metal-Mediated Adsorption of DNA Oligonucleotic	les Onto Polymeric Materials''
Zhong, Shazhou	(Physics - Quantum Information)
"Thickness- and Symmetry-Induced Electronic Transp	ort Properties of Semi Metallic Transition Metal Dichalcogenides''
Zhou, Yehao	(Physics)
– Distinction	

# 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)
Penmetsa, Siddhardha	(Physics)
Qi, Yuxuan	(Physics)
Ramezanzadeh, 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

Adloc, Jessa Grace Gloria (Biotechnology Specialization – Co-operative Program) (Biotechnology Specialization) Bagchi, Aparajita Barnum, Lara Marie (Co-operative Program) \* Bates. Eileen Marie (Biotechnology Specialization – Co-operative Program) † (Biotechnology Specialization – Entrepreneurship Minor – Co-operative Program) Chheda, Rikin Nikunj Chiang, Angus Cheuk-Hang (Co-operative Program) \* Clark, Liam James Cobourne, Zinedine Samuel (Co-operative Program) Colic, Eva (Co-operative Program) † Conners, Brett Maxwell Shain (Biotechnology Specialization/Bioinformatics Option – Co-operative Program) (Biotechnology Specialization – Co-operative Program) \* Deng, Ying Dharmasiddhi, Ida Putu Wiweka (Biotechnology Specialization/Bioinformatics Option – Co-operative Program) † (Biotechnology Specialization – Co-operative Program) \* Donald, Sarah Margaret Ferhatoglu, Emre (Biotechnology Specialization/Bioinformatics Option – Co-operative Program) \* (Co-operative Program) \* Fernandez Galliano, Ana Maria Fleming, James Alexander (Co-operative Program) Gandhi, Aastha (Co-operative Program) † Gere, Alice (Co-operative Program) Gillespie, Graeme Robert Andrew (Co-operative Program) Hadas, Nicholas Aziz (Biotechnology Specialization/Bioinformatics Option – Co-operative Program) Hammond, Sarah Elisabeth (Co-operative Program) † Hao, Yiming (Co-operative Program) Howes. Nicole Mitsue (Biotechnology Specialization – Co-operative Program) \* Huynh, Cassandra Bonnie (Bioinformatics Option – Co-operative Program) Imani, Jacob (Co-operative Program) Islam, Zujaija (Biotechnology Specialization) † (Biotechnology Specialization) \* Jin, Andy Kirby, Maxim (Co-operative Program) Lee. Hannah Felisa (Co-operative Program) \* Li, Albert Zehan (Co-operative Program) † Ling, Michael (Co-operative Program) \* Lung, Christopher Kar Jun (Biotechnology Specialization – Co-operative Program) † Ly, Jonathan (Biotechnology Specialization/Bioinformatics Option - Co-operative Program) \* MacAlpine, Connor Romeo Joseph (Co-operative Program) Marga, Dora-Lynn Mcarthur, Owen Daniel (Co-operative Program) † McLeod, Madison (Biotechnology Specialization – Human Nutrition Minor – Co-operative Program) Miller, Zachary Richard (Co-operative Program) \* Mirza, Haider Abbas (Biotechnology Specialization/Bioinformatics Option – Co-operative Program) Nahian. Labiba (Biotechnology Specialization – Co-operative Program) (Mathematics Minor) Najmul Hussain, Sidra Nguyen, Bao Khanh (Bioinformatics Option) † Parmar, Mokhash Singh (Biotechnology Specialization/Bioinformatics Option – Co-operative Program) Qian, Rungi Ramgoolam, Shubham Devesh (Biochemistry & Joint Honours Mathematics) † Rashid, Saadat (Co-operative Program)

\* – Distinction

Roper, Michael Burton Sahota, Sandeep Shergill, Guntaas Singh SHIN, JIYOUNG Simons, Danielle Marie To, David Tu, Anqianyi Tudorica, Eileen Webster, Thomas Babiwashe Westlake, Chloe Pamela Xu, Xiaoxiao

HONOURS CHEMICAL PHYSICS Fischer, Nathan Teïlo Monga, Ela Gauri

#### HONOURS CHEMISTRY

Bax, Kate Lindsay Bissonnette, Justine Rose Dayal, Urvi Sudhir D'Sa, Adrianna Elnatour, Chafic Fantin, Emma Mirella Luigina Han, Yutong Hang, Vivian Hopson, Hana Hussain, Hamza Syed Ji, Xinrui Kim, Simon Hyesung Klassen, Evan David Johnathon Kompter, Audrey Sienna Lemmens, Shannon Carmel Li, Guocheng Li, Katie Liang, Junwei Liu, Jiawen Ma. Yue Ye McNeil, Scott William Mulley, Brian Paul Parkins, Tyler Craig Qassim, Sara Scott, Ryan James Siong Sin, Aurelie Foong-Chin Suh, Sungwon Thiessen, Matthias Jakob Weiler Tiwari, Drishti Tocsoy, Koray \* - Distinction

(Co-operative Program) (Biotechnology Specialization – Co-operative Program) (Bioinformatics Option – Co-operative Program) (Biochemistry & Joint Honours Mathematics) \* (Co-operative Program) † (Bioinformatics Option – Co-operative Program) (Bioinformatics Option – Co-operative Program) \* (Biotechnology Specialization – Co-operative Program) (Co-operative Program) (Co-operative Program) \* (Co-operative Program) \*

(Co-operative Program) (Legal Studies Minor)

(Psychology Minor – Co-operative Program) \* (Co-operative Program) †

(Co-operative Program) † (Co-operative Program) (Co-operative Program) \*

(Co-operative Program) \* (Co-operative Program) \* (Co-operative Program)

(Computational Specialization – Computing Minor) (Philosophy Minor) (Psychology Minor, Biology Minor – Co-operative Program) (Co-operative Program)

†

(Co-operative Program) † (Co-operative Program) † (Computing Minor – Co-operative Program) (Co-operative Program) (Physics Minor) (Computational Specialization – Mathematics Minor – Co-operative Program) \* † (Co-operative Program) (Co-operative Program) Truong, Kenneth Quang Kien Xu, Haoyang Yang, Xiaofei Yeung, Raymond Yip, Emily Zhang, Hanxiao Zhang, Yichen Zhao, Xingya Zhong, Akeen Zhou, Yang

#### HONOURS EARTH SCIENCES

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) (Geology Specialization – Co-operative Program) † Mesich, Luka Nickolas Rudy, Adrian Zachary Penner (Hydrogeology Specialization – Co-operative Program) Sriharan, Jananee (Geology Specialization - Co-operative Program) \* Tanasoiu, Annamaria (Geology Specialization – Co-operative Program) Warren, Holly Severin (Hydrogeology Specialization) Yu, Chunzhong (Geology Specialization) Zanatta, Corey Michael (Hydrogeology Specialization – Co-operative Program) †

#### 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, Ziying	(Water Science Specialization) *
– Distinction	

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† – Dean's Honours

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(Co-operative Program) (Co-operative Program) \*

(Co-operative Program)

Hausz, Nikita (Ecology – Co-operative Program) (Water Science Specialization) Hu, Jessica (Water Science Specialization) † Hu, Zhiling Huang, Yuehua (Water Science Specialization) Jia, Yuanyuan (Water Science Specialization) † Kang, Han Wen (Ecology) Kokthi, Sarah (Water Science Specialization – Chemistry Minor – Co-operative Program) Lan, Yixuan (Water Science Specialization) \* Lei, Yuxiao (Water Science Specialization) (Water Science Specialization) \* Li, Jingyi (Water Science Specialization) Li, Kaiyuan Li, Tiangi (Water Science Specialization) \* Li, Yixin (Water Science Specialization) † Liang, Yian (Water Science Specialization) Liao, Zhenyu (Water Science Specialization) Lin, Wan Ying (Ecology – Co-operative Program) \* (Water Science Specialization) † Liu, Di Liu, Yue (Water Science Specialization) † Liu, Zeyi (Ecology) \* Long, Xiaoqiu (Water Science Specialization) \* Luo, Yixun (Water Science Specialization) (Water Science Specialization) Lyu, Ang O'Brien, Brianna Hannah Reader (Water Science Specialization – Co-operative Program) \* Pei, Kefan (Ecology) Peng, Jie (Water Science Specialization) \* Peng, Xiaoyan (Water Science Specialization) Rachmadsyah, Syifa Azzahra Bidarea (Water Science Specialization – Co-operative Program) Robertson, Shelby Lynn (Ecology – Co-operative Program) † Rose. Joshua Garfield (Ecology – Co-operative Program) \* Safiullina, Lilia (Water Science Specialization – Geography and Environmental Management Minor – Cooperative Program) (Water Science Specialization) \* Song, Jiayi (Ecology – Earth Sciences Minor – Co-operative Program) \* Spizzirri, Gabriel Joseph Sun, Muhan (Water Science Specialization) Wang, Junqi (Water Science Specialization) \* Wang, Zhuo (Water Science Specialization) \* Wang, Zongyu (Water Science Specialization) \* Wu, Yupeng (Water Science Specialization) Xiong, Zhexian (Water Science Specialization) (Water Science Specialization) † Yang, Xilong Zhang, Catherine Cynyi (Ecology – French Minor – Co-operative Program) \* Zhang, Chao (Water Science Specialization) Zhang, Dongming (Water Science Specialization) † Zhang, Yuxuan (Water Science Specialization) Zheng, Yongqi (Water Science Specialization) Zhou, Yanqin (Ecology – Co-operative Program) †

\* – Distinction

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	(Co-operative Program) *
Tapper, Sydney Josee	(Medical Physics Specialization)

#### HONOURS MATERIALS AND NANOSCIENCES

	Byzalov, Lev	
	Chen, Mengyang	(Mathematics Minor)
	Chen, Shuo	t
	Chen, Yijing	*
	Dent, William	
	Gao, Biwen	*
	Guan, Chaoyu	
	Hu, Jingxuan	†
	Huang, Junting	†
	Jiang, Yuelin	*
	Jin, Shangkun	†
	Kang, Yadong	
	Li, Ao	
	Li, Jinghan	
	Li, Meixuan	*
	Li, Renjia	
	Li, Shen	*
	Lin, Weichen	†
	Liu, Puyuan	(Biophysics Minor) *
	Liu, Qirui	(Computing Minor) †
	Liu, Yunfei	
	Liu, Zitong	
	Luo, Kun	†
	Luo, Ma	
	Pei, Zuofan	
	Qian, Chengjia	*
	Qin, Zhihao	
	Ren, Kaiyang	*
*	– Distinction	

Shi, Yiming	
Song, Jiaqi	(Computing Minor) †
Song, Taoran	
Soo, Sebastian Jian Xung	(Co-operative Program) †
Sun, Peihuan	
Vinci, Jackson Stanley	(Chemistry Minor) *
Wang, Xinning	†
Wang, Xulai	*
Wu, LyuYuan	†
Xiao, Yi	*
Xing, Cheng	(Computing Minor) †
Yan, Yutong	*
Yang, Xuqian	
Yang, Zheming	
Yin, Jiayi	†
Ying, Yuanrui	
You, Niewei	†
Zhang, Liyi	*
Zhang, Yaru	*
Zhang, Yiyao	†
Zhang, Yizhou	
Zhang, Zhining	†
Zhong, Xiaoyue	(Sociology Minor)
Zhou, Hao Nan	(Co-operative Program)
Zhou, Kaiwen	

#### HONOURS MATHEMATICAL PHYSICS

Bakshi, Arjun Singh	(Astrophysics Minor, Computing Minor – Co-operative Program)
Bashalkhanova, Olga	(Astrophysics Minor – Co-operative Program)
Chen, Skye Sondheim Gershwin	(Astrophysics Minor – Co-operative Program) †
Chirayath, Rebecca Shajil	(Co-operative Program)
Duff, Petra Mary	(Co-operative Program) †
Fung, Hin Pok Cyrus	(Pure Mathematics Minor) †
Gage, Finnegan Eli	(Astrophysics Minor)
Halbertsma, Emrys Gabriel Tjalling	
Jian, Xiao luo	(Co-operative Program)
Lawrence, Jensen Pierce Thomas	(Astrophysics Minor – Co-operative Program) †
Lyu, Hongliang	
Mazey, Cameron	
Membrere, Ireneo James	(Co-operative Program) †
Morawetz, James Gow	(Astrophysics Minor) †
Moser, Sarah Toshiko	(Astrophysics Minor – Co-operative Program) †
Qualter, Jonathan	(Co-operative Program) *
Ravi, Parmesh	(Co-operative Program) †
René, David	(German Minor, Astrophysics Minor – Co-operative Program)
Schraa, Michael Thomas	(Co-operative Program)

\* – Distinction

Seaward, Grady FrancisShah, 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) †Virally, Paul(Co-operative Program) \*Zhao, JunleZuo, Shen

#### HONOURS MEDICINAL CHEMISTRY

Bingham, Kenneth John	(Co-operative Program) *
Knaggs, Karlene Laurie Myhal	(Co-operative Program)
Ly, Norman	(Biochemistry Minor – Co-operative Program) *
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) †

#### HONOURS PHYSICS

Ahmed, Yusuf	(Astrophysics Minor)
Bian, Boyan	
Brenner, Thomas Owen	(Mathematics Minor, Astrophysics Minor – Co-operative Program) †
Cat, Michael Thai	(Co-operative Program)
Cheng, Cheng	(Astrophysics Minor)
Cornick, Elena Rose Willett	(Co-operative Program) †
Dyment, Delaney Leigh	(Co-operative Program) *
Follett, Callum Alexander	
Hirano, Joshua Mitsuo	(Co-operative Program)
Johnston, Nolan Anthony Paul	(Biophysics Minor – Co-operative Program)
Lahiouel, Hichem	(Co-operative Program)
Li, Yifan	*
Liu, Ruolin	*
Peters, Cameron Emil	(Mathematics Minor – Co-operative Program)
Rutherford, Jayden Harrison William	
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) *

Bayat, Nouralhoda Chander, Suhail Defend, Xander Douglas Doshi, Dhvani Chetan Forrester, Sabrina Isabella Ghosal, Tanisha Gupta, Ridhee Hedley, Kohl Gregory James Hermez, Andy Hyatt, Benjamin William Andrew Issa, Joshua Kavanagh, Hayley Michaela Shannon Klys, Michael Jan Ko, Graeme Grant Lepage, Renée Juliette Nguyen, Chi Nguyen Ormen, Alp Kaan Pacholko, Taylor Rae Pappur, Thrishal Reddy Paquette, Olivier Patel, Darshak Atul Rodrigues, Serene Francis Rourke, Sarah Alexandra Russell, Stephen Schweinle-Stewart, James Alexander Sow, Maimouna Suri, Shubhang Tang, Chen Tathed. Gaurav Ashish Vilcacundo Tulcanaza, Andrea Carolina Wright-Mellone, Dylan Xu, Angqing

HONOURS SCIENCE Abdulle, Omar Muktar Ambrose, Lexi Brae Bains, Komalpreet Kaur Bains, Sagar Singh Bednarchik, Nicole Gabriella Bertrand, Laura Bhangu, Simran Bhatla, Sonali Sunil Bhullar, Rabab Bunha, Miral Rasikbhai Cambu, Lee Cader Chaudhry, Saad Anwar (Physics and Astronomy & Joint Honours Mathematics - Co-operative Program) \*

(Co-operative Program) † (Co-operative Program) (Mathematics Minor – Co-operative Program) \* (Computing Minor – Co-operative Program) (Co-operative Program) †

(Co-operative Program) † (Philosophy Minor – Co-operative Program) \* (Mathematics Minor – Co-operative Program) (History Minor – Co-operative Program) (Biophysics Minor – Co-operative Program) (Co-operative Program)

(Co-operative Program) (Co-operative Program) \* (Co-operative Program) (Co-operative Program) \* (Co-operative Program) † (Co-operative Program) (Fine Arts Studio Minor – Co-operative Program) \*

(Computing Minor)

(Co-operative Program)

(Co-operative Program) \*
\*
(Co-operative Program)

(Biology Minor) \* (Biology Minor, Psychology Minor) (Biology Minor) (Biology Minor) † (Psychology Minor, Biology Minor) † (Biology Minor, Psychology Minor) (Medical Physiology Minor) †

(Biology Minor) (Biology Minor, Psychology Minor) \* (Biology Minor, Political Science Minor) (Bioinformatics Option – Chemistry Minor)

Chaytor, Sarah Emma Elizabeth Chen, Yuxiang Cheng, Clifton Cho, Julie Choe, Jonathan Eugene Chow, James Hoyin Clancy, Burak Patrick Crawford, Braydon Mackenzie Cucci, Michela Cunningham, Julia Taylor De Ciancio, James Thomas Denomme, Jenna Alyssa Denomme, Jordan Stanley Dhaliwal, Kareena Dhanju, Manraj Dorcich, Megan Eid, Seema Furgal, Caitlin Anne Furtado-Crannie, Courtney Anne Gan, Tian Gao, Ye Garzon Llanos, Valentina Paola Gayne, Ethan Daniel Ghiasi, Romina Giesen, Sarah Elizabeth Katrina Gill, Puneet Gill, Tajpreet Kaur Gu, Wenjun Guo, Vincent Hallam, Julia Anne Handy, Robyn Elizabeth Hanson, Mark Steven Hansra, Jashan Singh Hasan, Saad Mohammed Hua, Anna Thanh Nhan Imrie, Reis Alexandra Ith, Laura Sotheara Jamali, Wagma Javaheri, Kousha Jayandan, Amshula Jewett, Emma Jane Llewelyn Joshi, Aishwarya Kang, Eric Karklins, Andrew David Kereliuk, Allison Jane Khalid, Marria

(Medical Physiology Minor, Biology Minor) (Bioinformatics Option – Biology Minor) † (Biology Minor)

(Fine Arts Studio Minor, Biology Minor) \* (Biology Minor, Psychology Minor) \* (Biology Minor) (Biology Minor, Psychology Minor) †

(Biology Minor) (Biology Minor) (Biology Minor, Psychology Minor) † (Biology Minor) (Bioinformatics Option – Biology Minor, French Minor) (Biology Minor, Chemistry Minor, Sociology Minor) (Psychology Minor)

(Biology Minor) \* (Psychology Minor, Chemistry Minor, Biology Minor) \* (Science & Joint Honours Psychology – Biology Minor)

(Biology Minor) (Biology Minor, Geography and Environmental Management Minor) (Mathematics Minor, Biology Minor) \* (Biology Minor, Chemistry Minor) † (Biology Minor) (Biology Minor) (Biology Minor) (Biology Minor, Psychology Minor) (Biology Minor, East Asian Studies Minor) \* (Biology Minor, Management Studies Minor) (Biology Minor)

(Biology Minor, Psychology Minor, French Minor) (Earth Sciences Minor) (Science & Joint Honours Economics – Physics Minor) (Biology Minor) †

(Chemistry Minor, Psychology Minor) \* (Biology Minor) †

\* – Distinction † – Dean's Honours

Khan, Anisa Tsering Khan, Hasseb Ali Killins, Ashley Faith Kim, Seungwan Kobaner, Binnaz Ece Kwan, Alexa Carolyn Lalchandani, Geetu Lam, Davis Lok Ching Lam, Tyler Lammel, Kayley Langlois, Emma Michelle Le, Kim Bao Li, Kevin Xutong Li, Victor Liang, Sandy Limanta, Natasya Nadia Lin, Kelly Yasi Lui, Ming Wai Ashley Lyu, Yanqi MacDonald, Curran Conrod MacDonald, Jane Mia Mahajan, Mahika Maiurro, Madison Rose Mehani, Marly Mounir Merali, Sahil Ali Mesman, Bennett Cameron Mohammed, Azharuddin Alfaz Sarfraz Moorkoth Nellikkal, Vyshnav Ng, Ka Tie Ngan, Hillary Obiha, Blossom Chukwudumebi Oh, Erin Chae Eun Oleskiewicz, Natalia Patel, Hawa Patel, Vidhi Pun, Hazel Sigrid Qi, Kevin Ramgarib, Kavita Rocca, Julianna Christine Sabonjian, Natalie Safi, Zahra Farida Samra, Rose Sauve, Grace Marie Servellon, Carlos Roberto Sharif, Alisha Shen Cao, Jenny Lixian

(Biology Minor, Psychology Minor) (Biology Minor) † (Astrophysics Minor) (Biology Minor) (Biology Minor, Psychology Minor) (Biology Minor) \* (Biology Minor) \* † (Biology Minor) † (Chemistry Minor) (Medical Physiology Minor) † (Biochemistry Minor) (Biology Minor, Chemistry Minor) (Biology Minor) (Earth Sciences Minor, Biology Minor) \* (Biophysics Minor, Computing Minor) \* \* (Biology Minor) (Biology Minor) †

(Biology Minor) (Chemistry Minor) (Biology Minor) (Biology Minor) (Biology Minor, Mathematics Minor) \* (Medical Physiology Minor) (Chemistry Minor, Psychology Minor, Biology Minor) † (Biology Minor, History Minor) \* (Biology Minor, Sociology Minor) † (Biology Minor) †

(Biology Minor) (Medical Physiology Minor, Earth Sciences Minor) (Science & Joint Honours Psychology – Biology Minor) \* (Biology Minor) (Medical Physiology Minor, Studies in Islamic and Arab Cultures Mino

(Medical Physiology Minor, Studies in Islamic and Arab Cultures Minor) † (Biology Minor) † (Biology Minor)

(Biology Minor) †

\* – Distinction

Shienh, Gurveer Singh	(Bioinformatics Option – Chemistry Minor)
Sivananthalingam, Vinujen	(Bioinformatics Option – Biology Minor) *
Sood, Abhishek	(Biology Minor) *
Su, Camila	(Biology Minor)
Sue, Meghan Alicia	
Sumithrarachchige Don, Saduni Udeesha	(Biology Minor) *
Syed, Shaza Kamal	(Biology Minor, Psychology Minor)
Tran, Cindy Thanh	(Human Nutrition Minor, Biology Minor) *
Tsao, Madelan Kwei-Ling	
Ung, Samantha	(Medical Physiology Minor) *
Uppal, Manrohit Singh	(Biology Minor)
Vo, Tri Anh Brian	(Biology Minor)
Weiler, Kevin John	(Chemistry Minor, Biology Minor)
Xue, Queenie	
Xue, Ruixuan	(Biology Minor)
Yang, Yue Han	
Yasmin, Syeda Lamia	(Biology Minor, Economics Minor)
Yau, Aaron Ming Fai	
Zhang, Eileen	
Zhao, Addison Yide	
Zhu, Rui	(Biochemistry Minor)
Zonis, Danielle	(Geography and Environmental Management Minor, Biology Minor) $^{\star}$
HONOURS SCIENCE AND AVIATION	
Ajith, Abhijith	(Earth Sciences Minor) †
Collins, Zachary Robert Luis	
Gan, Oscar Yuecheng	(Earth Sciences Minor) *
Goulbourne, Tiffany Grace	(Chemistry Minor) *
Gu, Andrew	(Earth Sciences Minor)
Hudspeth, Jacob Edward	(Earth Sciences Minor)
Jing, Tyler Tailai	(Earth Sciences Minor) †
Lai, Jacob	<i>†</i>
Levytskyy, Maksym	
Rahman, Abdul	(Earth Sciences Minor)
Sandhu, Gurkirat Singh	(Earth Sciences Minor)
Weisberg, Jeremy Parker	(Chemistry Minor) *

# **DIPLOMA IN CHINESE LANGUAGE I**

Su, Camila

Zheng, Wenjun

# DIPLOMA IN ECOLOGICAL RESTORATION AND REHABILITATION

(Earth Sciences Minor)

- 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	<b>(Pharmacy)</b>	
"The Associations Between Insulin, Hypoglycemia, an	d Dementia: Combating Threats to Internal Validity in a Series of Population-Based Cohort Studies''	
<b>Bose, Susmita</b>	(Vision Science)	
"Fabrication of an Enzyme Responsive Biomaterial fo	r the Treatment of Recurrent Corneal Erosion''	
Dowling, Nicole Victoria	(Biology)	
"A Structural Investigation of Novel Fungal Polyglyci	ine Hydrolases''	
Heath, George Alexander "Development of Protein Level Cytokine Assays and . (Oncorhynchus mykiss) Immune System"	<b>(Biology)</b> Assessment of the Impact of Implanted Acoustic Telemetry Tags on the Rainbow Trout	
Huang, Jiahao "In-Solution and Physical State Properties of Polymer Drugs"	(Pharmacy) and Lipid Excipients and Their Effects on the Supersaturation Evolution of Poorly Water-Soluble	
Johnson, Lisa Anne	(Biology)	
"Microbial Composition and Functional Diversity in	Waste Environments''	
Mohammed, Wathiq Jassim	<b>(Biology)</b>	
"Development and Application of Periphyton-Based B	<i>biomonitoring Methods to Elucidate Aquatic Ecosystem Responses of Lakes in a Water-Rich</i>	
Northern Landscape (Old Crow Flats, Yukon, Cana	<i>ida) to Climate Change</i> ''	
Robinson, Morgan	(Pharmacy)	
"The Interplay Between the Neuronal Plasma Membr	ane and Cell Signaling in Alzheimer's Disease''	
Sunga, Julia Carmen	(Biology)	
"The Role of Social Preferences in the Organization of	<sup>e</sup> a Gregarious Mammal Colony''	
Yeung, Cindy Hoi Ting	<b>(Pharmacy)</b>	
"Pediatric Physiologically Based Pharmacokinetic (PB	PK) Modeling to Advance Knowledge of Breastfeeding Infant Exposure to Maternal Medications''	
Yu, Jacky Ka-Hei	<b>(Pharmacy)</b>	
"Pharmacokinetic and Economic Implications When S	Switching Between Hemophilia A Treatments''	
Yun, Yejin	<b>(Pharmacy)</b>	
"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**

GENERAL SCIENCE – Three Year	
Ali, Nazia Sajid	
Bardell, Cameron Drake	
Bhandal, Navreet Kaur	
Ciftci, Koray	
Deng, Sunny Y	(Psychology Minor)
Desrocher, Claire Elizabeth	(Biology Minor) †
Dhugga, Sunjum Kaur	
Dolcine, Kimberly Margarette	
Gray, Lachlan Flynn Eyman	(Physics Minor) *
Grovera, Jasjeet Kaur Saene	<i>†</i>
Hamdavi, Ayman	(Earth Sciences Minor, Geography and Environmental Management Minor)
Ho, Wing Fung Rafi	
Isaac, Claudia	(Biology Minor) *
Krishnakumar, Saumiyaa	(Biology Minor)
Lail, Rajveer Kaur	(Legal Studies Minor)
Leung, Nathan Lap-Tuen	
Li, Chenze	
Malhan, Jason	
Maung, Matthew Zarni	
Mcgarry, Haig Stephen	(Physics Minor)
Menendez-Garcia, Samuel Alejandro	*
Mittal, Kashish	
Mobayed, Qamar	(Biology Minor) *
Moutafova, Mira	
Pasumarthy, Venkateswara Pranav	
Ratnani, Neeraj	
Rivers-Garcia, Ethan Gabriel	
Selliah, Manish	
Smith, Calvin Whittaker	(Classical Studies Minor)
Tang, Zhiyi	
Wang, Rui Qi	(Mathematics Minor)
Wiseman, Noah	(Psychology Minor)
Zaheed, Ahamed Razeen	(Legal Studies Minor)
Zheng, Marina Zixin	(Biology Minor) †
	(,,, _,, _
HONOURS BIOLOGY	
Ali, Aisha Abdullahi	<i>t</i>
Andress, Samuel Jacob	(Microbiology Specialization)
Arends, Melissa Kate	(Biotechnology Specialization – Co-operative Program)
Banaag, Jaden Rose	(Co-operative Program)
Beatty, Janel Erin	(Molecular Genetics Specialization – Co-operative Program) †
Biram, Hadeel Raid	(Co-operative Program)
Bobb, Rachel Nicole	(Co-operative Program)
Carpani, Justin Mark	(Microbiology Specialization – Co-operative Program) †
Chan, Alexander	(French Minor)

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 Rogozynski, Noah Peter Sasitharan, Ambikai Serravalle, Erika Ann Sinanios, Lodi Maria Singh, Siddharth Sivagunalan, Vahesan Sriram, Aadhira Stoicoiu, Elisa Ioana Stragapede, Elena Jessica Tan, Sophia

(Psychology Minor – Co-operative Program) † (Applied Language Studies Minor) (Environmental Biology Specialization – Psychology Minor – Co-operative Program) † (Co-operative Program) (Biotechnology Specialization – Co-operative Program) (Medical Physiology Minor, Psychology Minor) \* (Medical Physiology Minor)

† (Medical Physiology Minor – Co-operative Program) \* (Medical Physiology Minor)

#### †

(Environmental Biology Specialization – Co-operative Program) (Microbiology Specialization – Co-operative Program)

(Management Studies Minor) (Biotechnology Specialization/Bioinformatics Option – Co-operative Program) \* (Catholic Studies Minor) (Co-operative Program) \*

(Co-operative Program) (Molecular Genetics Specialization – Co-operative Program) (Co-operative Program) (Psychology Minor – Co-operative Program) (Microbiology Specialization) (Molecular Genetics Specialization) (Economics Minor – Co-operative Program) \* (Computing Minor)

†
(Environmental Biology Specialization – Economics Minor)
(Medical Physiology Minor – Co-operative Program) †
(Co-operative Program) †
†
(Co-operative Program) \*
(Co-operative Program)
(Co-operative Program)
(Co-operative Program)
(Bioinformatics Option)
(Animal Biology Specialization) †

\* – Distinction

† – Dean's Honours

(Co-operative Program)

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	(Disterniningy openalization)
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	<i>†</i>
Adeyemi, Olufunminire Adebukunola	
Akanni, Oluwadurotimi Wilson	<i>t</i>
Alsakani, Afnan	(Medical Physiology Minor, Anthropology Minor)
Alshehabi, Yasmeen	(French Minor, Psychology Minor, Medical Physiology Minor) †
Andonian, Natalie Anna	<i>t</i>
Bains, Justin Singh	*
Berends, Conor William	
Bidarkar, Ashita	<i>t</i>
Boston, Camryn Mackenzie	<i>†</i>
Bradley, Mya Michelle	(Psychology Minor) *
Brar, Bikram Singh	(Medical Physiology Minor) *
Cai, Benny Yong Hui	
Chong, Relena Sarah	<i>t</i>
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	<i>t</i>
Flanagan, Kate Rosemary	(Human Nutrition Minor) †
Ghauri, Saif Uddin	(Medical Physiology Minor)

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	t
Huang, Zi Yi	t
Hui, Lok Yew Chloe	
Huseljić, Denis	<i>†</i>
lancu, Rebeca	(Computing Minor) *
Imran, Ahmed Mohammad	<i>t</i>
Jeffery, Curtis Glenn	*
Kandias, Annamaria	(Biophysics Minor)
Karanassios, Alexandros	<i>t</i>
Krairojananan, Atchareeya	(Medical Physiology Minor, Psychology Minor)
Lakhi, Sabiha	<i>t</i>
Li, Leo	
Li, Xinyue	<i>†</i>
Lif, Autumn Kathleen	(Medical Physiology Minor) *
Li-Yim-Feng, Jenna Meryl	(Mathematics Minor, Chemistry Minor) †
Lo, Chak Nam	*
Lu, Ivy Oi-Yee	<i>†</i>
Macci, Sumayyah	(Medical Physiology Minor)
Magyar, Mitchell Lightfoot	
Mascarenhas, Shyan	(Psychology Minor) *
Mendes, Shaelie 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	t
Pablo, Ashley Jade	(Medical Physiology Minor) *
Palaparty, Srinija	(Bioinformatics Option – Medical Physiology Minor, Psychology Minor) *
Pamidimukkala, Mayura	t
Patel, Karan	, †
Patel, Sneha Mayur	' (Human Resources Management Minor, Psychology Minor) *
Peia, Michael Ioan	
,	

\* – Distinction

Pirhonen, Kyla Anne Rana, Ramal Iftikhar Roostan, Abtin Sabo, Emma Grace Salas, Ethel Maeryn Sandhu, Pavneet Kaur Schmidt, Chloe Diane Sennaoui, Sara Sethupathy, Sri Akshaya Shaik, Rehan Sigler, Marissa Nicole Spitzl, Noah Christian Stewart, Mary Ainsleigh Stojić, Vanessa Syed, Hiba Szerwinski, Natalie Alice Taugher, Katherine Grace Thandi, Joshdeep Singh Thevasenan, Sharanya Tian, Joanie Trajceska, Liliana Truong, Anson Wa Tsui, Oscar Ho Yiu Upton, Isabelle Uy, Ryan Christopher Balancio Vargas Andrade, Johanna Carolina Vu, Chi My Worsdell, Kaitlyn Wu, Conan Yaseen, Aseid Zafiris, Eudoxia Zeng, Xiaojun

(Human Nutrition Minor) † (Psychology Minor) † † (Medical Physiology Minor) † (Legal Studies Minor) (Medical Physiology Minor) † (Medical Physiology Minor) (Medical Physiology Minor, Chemistry Minor) † (Psychology Minor, Medical Physiology Minor) \* (Medical Physiology Minor) \* (Management Studies Minor) (Biomedical Sciences & Joint Honours Psychology - Research Intensive Specialization) (Medical Physiology Minor) (Medical Physiology Minor, Human Resources Management Minor) \* (Biomedical Sciences & Joint Honours Mathematics) (French Minor) † \*

(Medical Physiology Minor) (Psychology Minor) † (Medical Physiology Minor)

(Chemistry Minor) † (Medical Physiology Minor) \*

(French Minor)

\*

#### 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

Zhang, Jingshu

Novillo Morán, Ángel David (Co-operative Program) † Ou, Yuetong (Co-operative Program) Puranik, Aman Vivek (Co-operative Program) Wong, Julianne Tan (Co-operative Program) \* HONOURS PSYCHOLOGY Al-Ghannam, Ghazal (Biology Minor – Co-operative Program) \* Baral, Neeharika Becerra, Maria Paz (Biophysics Minor) † Budge, Joshua Rafe Campbell (Co-operative Program) \* Bumra, Kiran Kaur Chowdhury, Nabilah † Chuong, Jerika Weisum Park (Co-operative Program) \* Cyr, Emily Michelle (Biology Minor) † Dash, Kasturi D'Gama Rose, Aliyah Sitara (Biology Minor – Co-operative Program) † Dhode, Isha Duong, Christine (Co-operative Program) † Gammag, Kyla Denise Edu (Biology Minor – Co-operative Program) Garth, Kristina Anne Melissa Hamid, Madiha Bano (Co-operative Program) Hamilton, Ian Fraser Rinko (Biology Minor) Haroon, Abida (Human Resources Management Minor, Biology Minor) Karmakar-Johnson, Maya † Kuwar, Anushka Ashish (Biology Minor, Legal Studies Minor – Co-operative Program) † Kwak, Gyeongwon † Leung, Yuk Hei † Manohar, Hannah Maria (Biology Minor – Co-operative Program) \* Mitchell, Ryan William Mustafa, Laith Abdel Hadi Awad (Biology Minor) Olaleye, Oladimeji Solomon (Co-operative Program) \* Omdara, Jacqueline (Co-operative Program) Parray, Mehnoor Jehangir (Biology Minor) \* Patel, Brinda (Human Resources Management Minor, Biology Minor – Co-operative Program) Rachmadita, Christina (Bioinformatics Option – Co-operative Program) † (Bioinformatics Option – Co-operative Program) Salikhov, Arslan Thomson, Helen Julia (Medical Physiology Minor – Co-operative Program) † Un, Suevin † Wang, Sirui (Bioinformatics Option – Co-operative Program) \* Washington, Zofia Joy (Biology Minor – Co-operative Program) † White, Nicholas Christopher (Biology Minor – Co-operative Program) † Wicaksana, Namira Dani (Biology Minor – Co-operative Program) \* Wilkinson, Leslie Ada (Biology Minor) Yan, Yuxin (Bioinformatics Option – Biology Minor – Co-operative Program) † Yin, Li (Biology Minor)

#### HONOURS SCIENCE AND BUSINESS

- \* Distinction
- † Dean's Honours

Aboulhoda, Souhail Mouhannad Afridi, Minahil Ahmed, Dua Jawad Ali. Adiba Arumaithurai, Vithun Asif, Ayesha Babulal, Zachary Kishan Etan Badakhshan, Sophia Chakma, Shannon Chekhovtsov, Vlas Chen, Xiaoxiao Chisholm, Neil Alexander Cookson, Katelyn Brianna De Lorenzi, Martina Alejandra Dewan, Jagrit Dicastri, Nathan Phillip Drago, Andia Fayaz, Leyla Fatma Fingado, Marisa Carolyn Ghuman, Nipinder Kaur Grewal, Jazleen Ha, Jennifer Hsu, William Janendran, Kishanthan Khera, Puneet Knezic, Sonja Lai, Sheldon Ying-Lin Leong, Jackson Li, Runze Liang, Zhanming Liu, Jiangyuan Liu, Sanon Mahendrarajah, Thulasi Manivannan, Ludshiya Shalini Meraj, Maheen Muniz Simas, Carolina Marega Nandeesha, Nikhita

Nazarowicz, Victor Nguyen, Celine Quynh Nhu Opia-Evans, Naomi Chisome Ozaki, Ngawang Loden Kenji Paiwand, Sulaimon Ali Piao, Jiaoying Ravichandran, Riyanitha Ravinthiran, Ravicha

\* – Distinction

† – Dean's Honours

(Co-operative Program) (Biology – Co-operative Program) (Co-operative Program) \* (Co-operative Program)

(Biology – Co-operative Program) (Biology – Co-operative Program) † (Biotechnology – Co-operative Program) (Co-operative Program) (Chemistry – Economics Minor – Co-operative Program) (Economics Minor) (Chemistry – Economics Minor – Co-operative Program) (Chemistry – Economics Minor – Co-operative Program) \* (Co-operative Program) † (Biotechnology - Co-operative Program) \* (Chemistry Minor) (Co-operative Program) (Co-operative Program) (Biochemistry – Co-operative Program) † (Co-operative Program) (Economics Minor – Co-operative Program) (Biology – Co-operative Program) \* (Chemistry – Economics Minor – Co-operative Program)

(Biology – Economics Minor – Co-operative Program) (Biotechnology) (Earth Sciences Minor – Co-operative Program) \* (Earth Sciences – Economics Minor) \*

(Physics Minor) (Economics Minor) \* (Co-operative Program) (Co-operative Program) (Biotechnology – Human Resources Management Minor, Economics Minor – Co-operative Program) \*

(Biochemistry – Co-operative Program) (Biotechnology – Co-operative Program) \*

(Co-operative Program) (Biochemistry – Co-operative Program) \* (Earth Sciences Minor – Co-operative Program) (Co-operative Program)

(Biology – Co-operative Program) (Biology Minor, Economics Minor) \*

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	(Biotechnology – Co-operative Program)
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	<i>t</i>
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

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	†
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\* – 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	*
Toulch, 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

Mittal, Kashish Sigler, Marissa Nicole Velu Sundaralingam, Nitharshani

# Memo

SUBJECT:	Additions and Changes to the Fall 2022 Conferment of Degrees Listings
FROM:	Catherine Newell Kelly, Registrar Jeff Casello, Associate Vice-President, Graduate Studies and Postdoctoral Affairs
TO:	Vivek Goel, President & Vice-Chancellor
DATE:	June 1, 2023

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

M. Casello

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

#### Faculty of Arts Additions to Senate

Bachelor of Arts, Three-Year General F Brubacher, David	Program (Peace and Conflict Studies) Added October 26, 2022; student request
<u>Graduate Diploma</u> Du, Yu Ming	(Theoretical Neuroscience) Added March 29, 2023; student request
Faculty of Engineering Additions to Senate	
<u>Bachelor of Applied Science</u> 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



Subject:	Access to Senate Orientation Module
Date:	Monday, June 12, 2023
From:	Vivek Goel, President & Vice-Chancellor Andrea Kelman, Acting University Secretary
То:	University of Waterloo Senators

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: <u>https://uwaterloo.ca/secretariat/governing-bodies/senate</u>

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 <u>senate@uwaterloo.ca</u>.

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 This page intentionally left blank.