UNIVERSITY OF WATERLOO | Senate

SENATE GRADUATE & RESEARCH COUNCIL

MONDAY, MARCH 4, 2024
10:30 A.M. EST
NH 3318 / Zoom
Governing Documents and Resources

Chair – C. Dean

TIMING	AGENDA ITEM	PAGE	ACTION
	OPEN SESSION		
	1. Conflict of Interest	3	Declaration
10:30 a.m. (5 mins)	2. SGRC Governance Review Update (Charmaine Dean & Jeff Casello)	Oral	Information
10:35 a.m. (5 mins)	**Consent Agenda** *Motion: To approve or receive for information the items on the consent agenda, listed as items 3-8 below*		
	3. Minutes of 20 November 2023 Meeting	5	Decision (SGRC)
	4. Research Ethics (Julie Joza)		
	a. Clinical Research Ethics Board (CERB) [membership updates]	8	Decision (SGRC)
	b. Human Research Ethics Board (HREB) [terms of reference revision]	9	Decision (SGRC)
	5. Graduate Awards (Marianne Simm)		
	i. Agenda items for Senate Graduate & Research Council – February 2024		
	a. Keith William Hipel Engineering Graduate Scholarship [endowment]	16	Decision (SGRC)
	b. Buitrago Contingency Bursary in Engineering [trust]	16	Decision (SGRC)
	c. Paul Dirksen Memorial Graduate Scholarship in Computer Science [trust]	16	Decision (SGRC)
	d. Engineering Special Projects Award [operating]	16	Decision (SGRC)
	e. Cohere Graduate Scholarship in Computer Science [trust]	17	Decision (SGRC)
	f. W.K. Thomas Graduate Scholarship [trust/endowment]	17	Decision (SGRC)
	g. I-MED Pharma Graduate Scholarship [trust]	17	Decision (SGRC)
	h. Jerald F. Lawless Graduate Scholarship in Biostatistics [trust]	17	Decision (SGRC)
	i. Brace Family Graduate Scholarship in Electrical and Computer Engineering [trust]	18	Decision (SGRC)
	j. Mary E. Thompson Graduate Scholarship in Statistics [trust]	18	Decision (SGRC)
	k. Efrim Bortiz Doctoral Scholarship in Emerging Technologies [endowment]	18	Decision (SGRC)
	l. Women in Mathematics Directed Reading Mentorship Reading Program [amended]	19	Information
	m. Norman Esch Graduate Scholarship [trust]	19	Information
	n. University of Waterloo Staff Association Awards	19	Information
	o. Math Domestic Graduate Student Award [operating]	20	Information

TIMING	AGENDA ITEM	PAGE	ACTION
	ii. Agenda items for Senate Graduate & Research Council – March 2024		
	a. George and Cathy Raithby Award for Indigenous Students [endowment]	21	Decision (SGRC)
	b. Doctoral Thesis Completion Award [operating]	21	Information
	6. Curricular Submissions		
	a. Faculty of Environment (Peter Deadman)	22	Decision
	b. Faculty of Health (Phil Bigelow)	27	Decision (1 SEN-R, 12-14 SGRC)
	c. Faculty of Mathematics (Bertrand Guenin)	67	Decision (SGRC)
	d. Faculty of Science (Martin Ross)	129	Decision (SGRC)
	7. Graduate Studies Academic Calendar (GSAC) Changes (Jeff Casello & Marianne Simm)		
	i. GSAC Changes Memo 1	167	
	a. Graduate diplomas	168	Decision (SEN-C)
	b. Graduate certificates	171	Decision (SEN-C)
	c. Joint interdisciplinary programs	172	Decision (SEN-C)
	d. TB Skin Test	175	Decision (SEN-C)
	e. Graduate specializations	176	Information
	f. OVGS	178	Information
	ii. GSAC Changes Memo 2	180	
	a. Inactive Status	181	Information
	b. Academic integrity, research integrity and research ethics	184	Decision (SEN-C)
	c. Student's status and academic progress	191	Decision (SEN-C)
	iii. GSAC Changes Memo 3	218	
	a. Approved Doctoral Dissertation Supervisors (ADDS)	219	Decision (SEN-C)
	b. Graduate students' supervisors and committees	225	Decision (SEN-C)
	c. Minimum requirements for Master's degree	229	Decision (SEN-C)
	d. Minimum requirements for PhD degree	233	Decision (SEN-C)
	8. New Program: Graduate Type II Diploma in Climate Change (Peter Deadman)	265	Decision (SEN-R)
	Regular Agenda		
	9. Business Arising from the Minutes	Oral	Input
10:40 a.m. (30 mins)	10. Academic Program Reviews		
	a. Progress Report: Kinesiology (Russ Tupling)	306	Decision (SGRC)
	b. Progress Report: Peace and Conflict Studies (Nathan Funk)	318	Decision (SGRC)
	c. Final Assessment Report: Tri-University History (Susan Roy and Dan Gorman)	330	Decision (SGRC)
	d. Final Assessment Report: Water Collaborative (Dustin Garrick)	346	Decision (SGRC)

TIMING	AGENDA ITEM	PAGE	ACTION
11:10 a.m. (10 mins)	11. Co-chairs' Remarks	Oral	Information
11:20 a.m. (40 mins)	12. Global Futures Network (Bernie Duncker, Christine McWebb, & Fayaz Noormohamed)	Oral	Information/Input
	13. Other Business	Oral	Input
	14. Adjournment	Oral	Input

"Decision (SGRC)" to be approved on behalf of Senate
"Decision (SEN-C)" to be recommended to Senate for approval (consent agenda)
"Decision (SEN-R)" to be recommended to Senate for approval (regular agenda)

26 February 2024

Tim Weber-Kraljevski
Governance Officer
Secretary to SGRC

Important Dates

4 March 2024	Senate Meeting
8 April 2024	SGRC Meeting
8 April 2024	Senate Meeting

Excerpt from Senate Bylaw 1

8. Declarations of conflict of interest

8.01	At the beginning of each meeting of Senate or any of Senate's committees or councils, the chair will call for members to declare any conflicts of interest with regard to any agenda item. For agenda items to be discussed in closed session, the chair will call for declarations of conflict of interest at the beginning of the closed portion of the meeting. Members may nonetheless declare conflicts at any time during a meeting.
8.02	A member shall be considered to have an actual, perceived or potential conflict of interest, when the opportunity exists for the member to use confidential information gained as a member of Senate, or any of Senate's committees or councils, for the personal profit or advantage of any person, or use the authority, knowledge or influence of the Senate, or a committee or council thereof, to further her/his personal, familial or corporate interests or the interests of an employee of the university with whom the member has a marital, familial or sexual relationship.
8.03	Members who declare conflicts of interest shall not enter into debate nor vote upon the specified item upon which they have declared a conflict of interest. The chair will determine whether it is appropriate for said member to remove themselves from the meeting for the duration of debate on the specified item(s).
8.04	Where Senate or a committee or council of Senate is of the opinion that a conflict of interest exists that has not been declared, the body may declare by a resolution carried by two-thirds of its members present at the meeting that a conflict of interest exists and a member thus found to be in conflict shall not enter into debate on the specified item upon which they have declared a conflict of interest. The chair will determine whether it is appropriate for said member to remove themselves from the meeting for the duration of debate on the specified item(s).

University of Waterloo
SENATE GRADUATE & RESEARCH COUNCIL
Minutes of the 20 November 2023 Meeting
[in agenda order]

Present: Sue Ann Campbell, Steven Bednarski, Ramona Bobocel, Jeff Casello (co-chair), Robert de Loe, Peter Deadman, Charmaine Dean (co-chair), Bernard Duncker, Anna Esselment, Aiman Fatima, Bertrand Guenin, Neela Hassan, Julie Joza, Brian Laird, Brian Laird, Joseph Meleshko, Ian Milligan, Marina Mourtzakis, Nicholas Pellegrino, Martin Ross, Marianne Simm, Siva Sivoththaman, Mike Szarka, Shirley Tang, Tim Weber-Kraljevski (secretary), Kevin White, Clarence Woudsma.

Resources/Guests: Simon Courtenay, Maysah Eid, Leanne Ferries, Carrie MacKinnon, Justin Wan, Sarah Wilkins-Laflamme.

Absent: David Clausi*, Alison Hitchens*, Zerihun Kinate.
*regrets

Organization of Meeting: Jeff Casello took the chair, and Tim Weber-Kraljevski acted as secretary. The secretary advised that a quorum was present. The agenda was approved without formal motion.

OPEN SESSION

1. CONFLIT OF INTEREST
No conflicts of interest were declared.

CONSENT AGENDA
Council heard a motion to approve or receive for information the items of the consent agenda. Milligan and Sivoththaman. Carried.

2. APPROVAL OF THE 16 OCTOBER 2023 MINUTES
Council approved the minutes of the meeting as distributed.

3. RESEARCH ETHICS
Council approved the membership updates for the Human Research Ethics Board, as distributed**.**

4. GRADUATE AWARDS
Council approved items a.-e. as presented and received item f. for information.

5. CURRICULAR SUBMISSIONS
Council approved items a.-c. as distributed.

REGULAR AGENDA

7. BUSINESS ARISING FROM THE MINUTES
The chair informed members that the Class Components item approved in February is going forward to November Senate with revised effective date of January 1, 2024. There was no further business arising.

8. CO-CHAIRS' REMARKS

Dean spoke to the success of the Royal Society of Canada Celebration of Excellence and Engagement event that was hosted on campus, and provided an update on the request from the provincial government to identify all major research agreement disclosure document.

Casello spoke to the following: conversations happening on collaboration risks of International Visiting Graduate Student Program (IVGS); the upcoming United College annual Stanley Knowles dinner and lecture featuring Michaëlle Jean and Jody Wilson-Raybould; the Canadian Association for Graduate Studies (CAGS) 61st annual conference; the Grad Vision document; and the Blue-Ribbon Panel recommendations.

Members discussed the Blue-Ribbon Panel recommendations and the potential impact for Waterloo and institutions across the province.

9. SENATE GOVERNANCE REVIEW

Casello gave an overview of the current quality assurance process and Ferries presented the recommendation from Senate Undergraduate Council to create an Academic Quality Assurance Committee of Senate. A motion was heard to endorse the recommendation that Senate provide direction to create an Academic Quality Assurance Committee of Senate to oversee the quality assurance processes, as presented. Deadman and Woudsma. Carried.

10. ACADEMIC PROGRAM REVIEW

Courtenay presented a brief overview of the report. A motion was heard to approve the final assessment report on behalf of Senate, as presented. Deadman and Woudsma. Carried.

10. RESEARCH CENTRES AND INSTITUTES

Wilkins-Laflamme spoke to the report provided. A motion was heard to recommend Senate approve the dissolution of the Survey Research Centre (SRC) as presented. Guenin and Bobocel. Carried.

11. ADJUDICATION COMMITTEE MEMBERS

Casello presented for information and encourage members to serve as committee members to adjudicate applications, as well to encourage their colleagues to serve.

12. REVISIONS TO THE INSTITUTIONAL QUALITY ASSURANCE PROCESS

Casello presented an overview of material provided. A motion was heard to recommend Senate approve the envisions to the Institutional Quality Assurance Process (IQAP), as presented. Mourtzakis and Laird. Carried.

13. CURRICULAR SUBMISSIONS

Esselment provided an overview of the submission from the Faculty of Arts. A motion was heard to recommend Senate approve the major modifications for the Master of Accounting (MAcc) and the Master of Taxation (MTax), and to approve the minor modifications to the MTax on behalf of Senate, as presented. Esselment and Bobocel. Carried.

14. CREATE

Duncker and Copp led members in breakout session discussions on top-down versus bottom-up approaches for generating CREATE proposals.

15. OTHER BUSINESS

There was no other business.

16. ADJOURNMENT

With no further business, the meeting adjourned. The next meeting is Monday, 5 February 2024, 10:30 to 12:00 p.m. in NH 3318

29 November 2023

Tim Weber-Kraljevski
Governance Officer

Memorandum

To: **Members, Senate Graduate and Research Council (SGRC)**

From: **Julie Joza, Director, Research Ethics**

Date: **February 16, 2024**

Subject: **Membership on Waterloo's Research Ethics Boards**

This memo outlines membership changes and updates that will be taking place on one of Waterloo's Research Ethics Boards. This update is for consideration and approval by the Senate Graduate and Research Council.

Clinical Research Ethics Board (CREB)

New Member

Marco Tang, PhD student, is joining CREB as a student member, starting March 1, 2024. This position was previously held by Brendan Pinto, who ended his term on February 29, 2024. Marco is a PhD candidate in the Applied Philosophy program. Marco has a Bachelor of Arts degree in Philosophy and Sociology from McMaster University (2020), and a Master of Philosophy degree from Toronto Metropolitan University (2022). Marco is a teaching assistant for the Philosophy department's biomedical ethics course. Marco's research interests are in clinical and research ethics focusing on how vulnerability is operationalized in policies and the creation of a unified framework of vulnerability. Marco served a term on the Toronto Metropolitan University Research Ethics Board, worked as a research assistant carrying out human participant studies, and been a participant in several research studies. During Marco's time at Toronto Metropolitan University, Marco was involved in helping with the creation of a new Clinical Research Ethics Board for Toronto Metropolitan University.

Role Change

Dr. Tejal Patel, PharmD, Clinical Associate Professor, School of Pharmacy is assuming the role of Vice-Chair starting March 1, 2024. Dr. Patel joined CREB on October 1, 2019, and is currently serving her second term, ending September 30, 2025. Dr. Patel is the Schlegel Specialist in Medication Management and Aging and provides expertise in Pharmacology on CREB.

Reminder: SGRC members who wish to learn more about the qualifications or academic background and interests of the individual being nominated to the REB are encouraged to contact Julie Joza, Director, Research Ethics at jajoza@uwaterloo.ca. Julie will be pleased to discuss with SGRC members in advance of the meeting the information they may need to help support their decision to recommend the nomination of the individual in becoming a member of the REB. On behalf of the SGRC, the research ethics office retains a copy of each member's CV and expression of interest in being a REB member.

Memorandum

To: **Members, Senate Graduate and Research Council (SGRC)**

From: **Julie Joza, Director, Research Ethics**

Date: **February 26, 2024**

Subject: **Terms of Reference update for Waterloo's Human Research Ethics Board**

This memo outlines an update that will be taking place in the terms of reference on one of Waterloo's Research Ethics Boards. This update is for consideration and approval by the Senate Graduate and Research Council.

Human Research Ethics Board (HREB)

Waterloo's Health Services medical director has always held a role as an ex-officio member on the HREB. With reorganization that has occurred within Campus Wellness, we need to revise the terms of reference to state this role will be a physician member who is knowledgeable in research. The proposed change to the HREB terms of reference is attached.

UNIVERSITY OF WATERLOO
HUMAN RESEARCH ETHICS BOARD

TERMS OF REFERENCE

A. Statement of Institutional Authority for Research Ethics Boards

The University of Waterloo has two Research Ethics Boards (REBs): the Human Research Ethics Board and the Clinical Research Ethics Board. As constituted sub-committees of the University of Waterloo's Senate Graduate and Research Council, both of the University of Waterloo's REBs are established and empowered under the authority of the University of Waterloo Senate.

B. Mandate and Accountability of the Research Ethics Boards

The REBs' mandate, on behalf of the University, is to protect the rights and welfare of human participants who take part in research conducted under the auspices of the University. The University of Waterloo's REBs review such research to ensure that it meets ethical principles and that it complies with all applicable regulations, guidelines and standards pertaining to human participant protection. These include but are not limited to the University of Waterloo's Statement on Human Research; its Guidelines for Research with Human Participants (Guidelines) and the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans, 2nd edition (TCPS 2). For clinical trials, the REBs follow Health Canada's Food and Drugs Act, the International Conference on Harmonization (ICH) Good Clinical Practice: Consolidated Guideline, and where applicable, U.S. federal regulations. The University of Waterloo's REBs also operate under applicable laws and regulations of the Province of Ontario and of Canada.

The University of Waterloo requires that all research involving humans or human biological materials conducted in its jurisdiction or under its auspices, undergo ethics review and clearance by one of its two REBs prior to initiation of any research related activities, including recruitment and screening activities.

The Human Research Ethics Board (HREB) has jurisdiction over research involving humans conducted under the auspices of the University of Waterloo with the exception of research that is reviewed by the Clinical Research Ethics Board (CREB). CREB has jurisdiction over clinical trials research (i.e., involving a drug or natural health product or medical device testing), research involving a "controlled act" as defined under the Regulated Health Professionals Act of Ontario, 1991, and other research activities as defined under approved standard operating procedures.

C. Membership of the HREB

Membership shall be consistent with the requirements for REB composition specified in Article 6.4. of the TCPS 2 and ICH Good Clinical Practice: Consolidated Guideline. All Board members shall be competent to judge the ethical acceptability of research ethics applications they review. Members of HREB may be required to serve as reviewers, in either a delegated or an ad-hoc sub-committee capacity for applications made to CREB. This is in accordance with Article 6.3 and Chapter 8 of the TCPS 2, encouraging collaboration and information sharing between both REBs, and facilitating timely and effective reviews for researchers. The CREB chair will

determine if the application requires expertise that the HREB member has been judged to possess.

To fulfill the mandate of the Board, the membership will be comprised of both voting and non-voting members.

The HREB shall consist of a minimum of 12 voting members:

- six faculty members including:
  - one member with expertise in clinical psychology
  - one member with expertise in the science of human movement
  - one member with expertise in the methods or processes used in engineering/technology research for the conduct of research with humans
  - one member with expertise in statistical methodologies
  - one member with expertise in qualitative methodologies
  - Chair of the Delegated Ethics Review Committee (DERC)[1] from the Department of Psychology (ex-officio)
- one member who is knowledgeable in the relevant law
- two graduate students with experience in the conduct of research with humans
- two members of the community who have no affiliation with the institution
- ~~Medical Director, University of Waterloo Health Services (ex-officio)~~ one member who is a physician knowledgeable in research

The committee must reflect gender diversity, including at minimum both men and women.

Non-voting members of the Board act as resource support, offer expertise and assistance on matters under consideration by the Board, and share information as needed[2]. The following additional members are ex-officio, non-voting:

- Director, Research Ethics; Senior Manager/Manager, Research Ethics
- Research Ethics Advisor
- Research Experiences Group (REG) Coordinator and Ethics Administrator for DERC

Faculty members of DERC also serve on HREB as alternate members. When serving as an alternate member they may vote and count in quorum.

D. Terms of Office of the HREB

1. Following consultation with the respective Faculty Deans and Department Chairs/School Directors and HREB, the Director will nominate members of the HREB.

2. The Senate Graduate and Research Council shall appoint members of HREB.

[1] DERC (Psychology) operates under the auspices of HREB with the sole purpose of conducting delegated reviews within Psychology under the Delegated Ethical Review Committee (Psychology) terms of reference.
[2] TCPS 2, Article 6.4 stipulates “where research ethics administration staff have the requisite experience, expertise and knowledge comparable to what is expected of REB members, institutions may appoint them (based on written polices and procedures of the institution) to serve as non-voting members on the REB.

3. The Vice-President Research and International will appoint the Chair and Vice Chair from the HREB members. The Chair will have a minimum of one-year prior experience as a member of the HREB. An additional member may be appointed from the same area as the Chair. The Vice Chair may discharge the responsibilities of the Chair when the Chair is unable to do so, discharge responsibilities assigned by the Chair, and assist in the overall operation of the REB, as requested.

4. Members of the HREB, except ex-officio members, will serve for a three-year term, when possible, normally renewable once. Terms will be overlapping to preserve experience and continuity of function.

E. Meetings of the HREB

1. The HREB normally will meet face to face eleven times per year. In the absence of any business, meetings may be cancelled by the Manager in consultation with the Chair.

2. Additional meetings of the HREB, or of a sub-committee of its members, may be called by the Manager in consultation with the Chair, as necessary.

3. Each meeting will require the involvement of a quorum defined as half the total voting membership plus one. Quorum must also meet membership criteria specified by relevant research ethics guidelines and regulations. Every effort will be made to ensure that each meeting includes at least one community member.

4. Members shall normally attend HREB meetings with at least 70% attendance per year. When unexpected circumstances arise that prevent a regular member from attending an HREB meeting in person, arrangements will be made where feasible with the member to participate through use of technology (e.g., telephone or video link). In cases where a regular member cannot attend HREB meetings for a protracted period (e.g., during a 6 month's sabbatical), a substitute member from the same discipline may be appointed to serve during the regular member's absence.

5. Members shall notify the Manager of an anticipated absence at least one day prior to a meeting. Members who cannot attend a meeting are expected to provide written comments for each of the protocols under review at the respective meeting. This information is provided to other members of the HREB and becomes part of the discussion and meeting minutes.

6. At the outset of each meeting, members shall declare any real, perceived or potential conflict(s) of interest related to the applications under review. Examples of conflicts of interest include but are not limited to applications on which they are listed as principal investigator or co-investigator; current or past research collaborations with investigators listed on the application; applications on which students they supervise are listed. Other members of the HREB will decide whether the member with the conflict of interest should recuse themselves from related discussions.

7. The HREB will reach its decisions concerning the ethical acceptability of research that is undergoing ethics review through a process of open discussion and consensus. When members are unable to reach consensus a vote of the quorum present will be taken and recorded.

8. The HREB's deliberations and decisions will be documented in comprehensive, confidential minutes that are securely maintained. The Research Ethics Advisor shall serve as secretary to the HREB.

9. Detailed written feedback from the HREB including its decision on the ethical acceptability of the research shall be communicated to the researcher(s) by the Manager, following consultation with the Chair, HREB, in an efficient and timely manner according to standard operating procedures. Feedback is based on minutes of discussion of the research project.

10. The HREB may, where appropriate, request that the Principal Investigator (PI) or his/her designate attend a meeting to provide further information about and/or to discuss his/her research. The HREB will also accommodate reasonable requests from a PI to attend a meeting to participate in discussions about their research.

11. The HREB may seek the confidential opinion or advice of an ad hoc advisor/reviewer from among University of Waterloo faculty or from a confidential external consultant on a particular application to ensure it has the necessary background information and knowledge to review the ethical acceptability of the application.

F. Responsibilities and Mandates of the HREB

1. To ensure that all research under HREB jurisdiction or teaching projects involving human participants and conducted by students, staff and faculty affiliated with the University of Waterloo, and all research conducted at Waterloo by unaffiliated students, staff and faculty researchers, undergo ethics review and clearance prior to being conducted. These activities may be conducted on- or off-campus and may be funded or unfunded.

2. To review the ethical acceptability of all research projects, under HREB jurisdiction, involving human participants on behalf of the institution including, but not limited to, those that
    - may pose greater than minimal risk to participants (i.e., physiological, psychological, economic, social, or other);
    - involve recruitment of persons who may be vulnerable as research participants in the context of a specific study, and/or cannot legally give free and informed consent
    - include ethically sensitive issues, topics and/or procedures; and
    - stipulate full REB review as required by certain granting agencies.

    The HREB may grant ethics clearance, propose modifications, disapprove, or terminate proposed or ongoing research conducted within the jurisdiction of the University or under its auspices to ensure that a proportionate review of risks and benefits has occurred in accordance with the ethical framework proposed under the TCPS 2.

G. Delegation of HREB Authority Related to Ethics Review and Clearance

The HREB delegates to the Director and Senior Manager/Manager, and Research Ethics Advisor(s), by virtue of their membership on the HREB, and according to Standard Operating Procedures, authority to conduct:

1. Initial ethics review and clearance of research under its jurisdiction that poses minimal risk to research participants, and includes provision of comprehensive and timely written feedback.

2. Ethics review and clearance of modifications to ongoing research under its jurisdiction that poses minimal risk to research participants, and includes provision of comprehensive and timely written feedback.

3. Annual ethics review and clearance of research under its jurisdiction that continues beyond one year.

4. Ethics review and clearance of all revised materials and related documents associated with the ethics review feedback process involving minimal and greater than minimal risk research with the exception of applications that have been categorized as requiring a review by a sub-committee of the HREB or the full HREB.

H. Delegation of HREB Responsibility for Record Keeping and Research Ethics Education

The HREB ensures through the ORE that:

1. HREB members are provided with opportunities for research ethics education during their tenure on the HREB beginning with a new member orientation session.

2. Comprehensive, accurate records (i.e., paper and electronic) of the initial and continuing (i.e., modifications, annual) ethics review and clearance processes are securely maintained for all research under its jurisdiction. This includes all revised materials associated with initial and continuing ethics review.

3. HREB meeting dates and submission deadlines are easily accessible by researchers through information posted on the Research Ethics website.

4. HREB members receive a monthly report on minimal risk research that has undergone ethics review and clearance through the delegated ethics review.

5. Timely information and regular reports are received on any unanticipated issues (events) that have occurred in association with research under its jurisdiction.

6. University of Waterloo guidelines, procedures and sample materials related to the conduct of research with humans are reviewed and updated on a regular basis (e.g., annually) to ensure that they remain current in an evolving research ethics environment.

7. Educational activities (e.g., in-class presentations, seminars and workshops) are provided to University of Waterloo students, faculty and staff involved in research with human participants.

8. Legal or other advice is sought, as required, on matters related to the protection of human participants in research.

9. Timely information on guidelines, procedures, and other matters related to the conduct of research with human participants is provided to the HREB as well as student, staff and faculty researchers who conduct research with humans.

I. Reconsideration and Appeal of HREB Decisions

1. Reconsideration Process

A Principal Investigator may make a written request for reconsideration of an HREB decision when ethics clearance is not granted, or when ethics clearance is conditional on revisions that the Principal Investigator (PI) believes may jeopardize the feasibility or integrity of the research. In consultation with the Chair, the Director (or delegate) will refer such a request, including documentation and supporting materials received for reconsideration from the PI, to other members of the HREB for discussion at its next meeting. The HREB will review the written documents, and where appropriate, will request an informal meeting with the PI (or his/her designate). Following consideration of all additional information (verbal and written), the HREB will reach a final decision with respect to its position on the original decision. Every attempt will be made in consultation with the PI to reach a resolution by this informal route.

2. Appeal Process

In the event the matter cannot be resolved through a reconsideration or informal process, the institution shall provide the PI with prompt access to an established appeal process through which the PI may appeal the HREB's decision. An appeal can be requested for procedural or substantive reasons. An appeal committee shall be appointed through the same authority that established the REB, ensuring that members of the appeal committee will have expertise and knowledge to be able to competently judge the ethical acceptability of the research ethics application under review. Members of the HREB whose decision is under appeal shall not serve on the appeal committee. The appeal committee will act impartially in its review of documentation provided by the HREB and the PI (or designate), and will consult with others as required, including but not limited to, members of the HREB and the PI (or designate). The appeal committee will issue a written report with its decision on the matter with copies to the PI and HREB. It may approve, reject or request modifications to the research proposal. The appeal committee's decision will be final.

Original Approval, Senate Research Council, September 14, 1989
Revised May 1999; approved Senate Research Council June 10, 1999
Revised May 2000; approved Senate Research Council May 29, 2000
Revised Feb. 2005, approved Senate Graduate & Research Council, May 11, 2005
Revised Feb. 2006; approved Senate Graduate & Research Council, Feb. 27, 2006
Revised Oct. 2011; approved Senate Graduate & Research Council, Nov. 14, 2011
Revised August, 2012; approved Senate Graduate & Research Council, September 10, 2012
Revised January 2014; approved Senate Graduate & Research Council, April 2014
Revised October 2016; Approved Senate Graduate Research Council, November, 2016
Revised December 2019; Approved Senate Graduate Research Council; February 2020
Revised February 2024

UNIVERSITY OF WATERLOO | Graduate Studies and Postdoctoral Affairs

January 22, 2024

TO: Tim Weber-Kraljevski, Governance Officer

FROM: Heidi Mussar, Associate Director, Graduate Financial Aid & Awards

RE: Agenda items for Senate Graduate & Research Council – February 2024

Items for Approval

a) Keith William Hipel Engineering Graduate Scholarship – endowment

A scholarship, valued at $1,500, will be provided annually to a graduate student registered full time in a doctoral program in the Faculty of Engineering. Selection will be based on academic excellence (minimum 80% cumulative average or equivalent). Preference will be given to students conducting research in the area of Environmental Systems in Engineering with applications including but not limited to water resources management, hydrology, environmental engineering and energy and sustainability. Interested students must submit an application found on the Faculty of Engineering website. Selection will be made in the Spring term by the Associate Dean, Graduate Studies in the Faculty of Engineering. This fund is made possible by a donation from Dr. Keith Hipel, a Waterloo Engineering alumnus who pursued MASc'72 in Systems Design Engineering and PhD '75 in Civil Engineering.

Total gift = $50,000 ($25k from donor + $25k from Faculty of Eng'g)

b) Buitrago Contingency Bursary in Engineering – trust

The Buitrago Contingency Bursary in Engineering is available to international students registered full time in a master's or doctoral program in the Faculty of Engineering. Graduate Studies and Postdoctoral Affairs will automatically consider students for funding from this bursary based on their application for a Graduate Student Contingency Bursary. This fund is made possible by a donation from Jorge Buitrago to support international students in the Faculty of Engineering.
Value varies based on the student's situation but will be restricted to a maximum of $5,000 per term.

Total gift = $25,000

c) Paul Dirksen Memorial Graduate Scholarship in Computer Science – trust

Two scholarships, valued at $10,000 each, will be provided annually to full-time graduate students enrolled in the master's program in the David R. Cheriton School of Computer Science in the Faculty of Mathematics. Selection will be based on an application for admission to the program and on academic excellence with a minimum cumulative average of 80% or equivalent. This fund is made possible by a donation from Sandra Dirksen in memory of her late husband, Paul Dirksen who was a pioneer computer scientist at the University of Waterloo.

Total gift = $200k; the period of this defined term award will be from 2024 to 2033.

d) Engineering Special Projects Award – operating

This award was established by the Dean of Engineering in July 2023 to recognize outstanding student contributions to special projects within the Faculty. The number and value of awards

will vary depending on special projects announced. Normally one award at $1,000 will be provided with runner-up awards valued between $250 and $500. Students must be registered full time in any year in the Faculty of Engineering. Selection will be made based on the requirements of special projects, which may vary from year to year.

e) Cohere Graduate Scholarship in Computer Science – trust

One scholarship, valued at $10,000, will be provided annually to a female PhD student registered full time in the School of Computer Science in the Faculty of Mathematics. Selection will be based on academic excellence (minimum cumulative average of 80% or equivalent) and demonstrated research or interest in the area of natural language processing. The School of Computer Science will identify candidates and select recipients based on applications for admission with award payments starting in the fall term. This fund is made possible by a donation from Cohere.
The period of this defined term award will be from 2024 to 2025.

Total gift = $20,000

f) W.K. Thomas Graduate Scholarship – trust / endowment

Originally established in 2007 through an annual trust and awarded as an OGS-matching scholarship. In 2023, upon the death of his wife, Elizabeth Thomas, this scholarship has been turned into an endowment in his name through her estate. The scholarship will no longer have an OGS-matching requirement.

The updated award description is as follows:

One scholarship with a value of at least $1,800, will be awarded annually to a graduate student registered full time in the Department of English Language and Literature in the Faculty of Arts. Selection will be made by the Department based on academic excellence (minimum 80% cumulative average) without the need for a specific scholarship application.

Total gift = $60,000

g) I-MED Pharma Graduate Scholarship – trust

Two scholarships, valued at $5,000 each, will be awarded to master's or doctoral students registered full time in in the School of Optometry & Vision Science in the Faculty of Science. Preference will be given to students working in the Centre for Ocular Research and Education (CORE). Selection will be based on the student's research which must be in the area of dry eye. This can be further defined as research directly related to dry eye or a related field, including clinical trials. This fund is made possible by a donation from I-MED Pharma to encourage research and innovation in the field of dry eye vision care.

Total gift = $10,000 (one-time gift and to be awarded in Jan 2024)

h) Brace Family Graduate Scholarship in Electrical and Computer Engineering – trust

A scholarship, valued at $10,000, will be awarded annually to a student who will be entering and be registered full time in a master's or doctoral program in the Department of Electrical and Computer Engineering in the Faculty of Engineering. Selection will be based on academic excellence, combined with demonstrated proof of research excellence. The department of Electrical and Computer Engineering will identify and select a recipient annually, based on their application for admission to the program. This fund is made possible by Phil Brace (BASc '93 Computer Engineering) whose family has strong connections to Waterloo. Phil, his brother Colin (BMath '96), and sister Amanda (Peel) Hutchinson (BSC '04) are all proud alumni who

credit their successful careers to their education and excellent co-op experience at Waterloo. Phil is happy to support the next generation of excellent Waterloo Engineering students.

Total gift = ~$50k; the period of this defined term award will be from 2024 to 2028 with first selection being made in Winter 2024 and the last in Winter 2028.

i) Jerald F. Lawless Graduate Scholarship in Biostatistics – trust

A scholarship, with a value of at least $2,000, will be awarded annually to a full-time doctoral student who is or will be registered in the Biostatistics program in the Department of Statistics and Actuarial Science (SAS) in the Faculty of Mathematics. Selection will be based on academic excellence (minimum cumulative average of 80% or equivalent) and research potential. Students applying for admission to the program will be considered based on their application for admission; currently registered students will be required to submit a one-page written statement describing their research, along with a nomination form from their graduate supervisor or other supporting SAS faculty member. The Department of Statistics and Actuarial Science will select recipients normally in the winter term with scholarship payments starting in the following fall term. This scholarship is being established to recognize the outstanding achievement of Distinguished Professor Emeritus Jerry Lawless.

Gift = $7,500 has been committed in support of this award and further gifts will be solicited.

j) Mary E. Thompson Graduate Scholarship in Statistics – trust

A scholarship, with a value of at least $2,000, will be awarded annually to a full-time doctoral student who is or will be registered in the Statistics program in the Department of Statistics and Actuarial Science (SAS) in the Faculty of Mathematics. Selection will be based on academic excellence (minimum cumulative average of 80% or equivalent) and research potential. Students applying for admission to the program will be considered based on their application for admission; currently registered students will be required to submit a one-page written statement describing their research, along with a nomination form from their graduate supervisor or other supporting SAS faculty member. The Department of Statistics and Actuarial Science will select recipients normally in the winter term with scholarship payments starting in the following fall term. This scholarship is being established to recognize the outstanding achievement of Distinguished Professor Emerita Mary Thompson.

Gift = $7,500 has been committed in support of this award and further gifts will be solicited.

k) Efrim Bortiz Doctoral Scholarship in Emerging Technologies – endowment

A scholarship, valued at a minimum of $1,500, will be provided annually to a doctoral student registered full time in the School of Accounting and Finance in the Faculty of Arts. Selection will be based on academic excellence (80% cumulative average in their current program) and demonstrated interest in emerging technologies or accounting information systems. Students interested in being considered must submit a written statement, no more than two pages long, outlining how they meet the eligibility criteria to the graduate office in the School of Accounting and Finance by the deadline advertised by the School. This fund is made possible by a donation from Efrim Boritz, along with other donors, including faculty, friends and colleagues led by Douglas Johnson (MAcc'85).

The goal is to provide one or more awards, valued at $5,000 annually. The first award will be paid from the endowment when the fund can sustain an award of $1,500.

Total gift = $100k pledged over 4 years

Items for Information

l) Women in Mathematics Directed Reading Mentorship Reading Program – amended

The Faculty of Mathematics would like to amend the terms of reference, effective as of the Winter 2024 term, with the following changes:

- The number of awards offered will change from "up to 10 awards per term" to "up to 60 awards per year".
- Award will only be permitted to be given to currently active students; currently, the terms are written such that it could have gone to someone who had been registered and had completed the mentorship role.
- Reference to "weekly reports" is being changed to "regular reports".
- The rest of the criteria remain the same.

The updated award description is as follows:

> Women in Mathematics Directed Reading Program Mentorship (WiM DRP) awards, valued at $1,000, are provided to graduate students registered in the Faculty of Mathematics who lead an interesting reading project on a topic relevant in mathematics. Students must demonstrate sustained commitment to mentoring, and inspiring undergraduate students who participate in WiM DRP. The award recognizes the valuable time and work that mentors invest in helping the mentees throughout the term to develop insight and skills in mathematics. Selection will be made at the end of each term by the WiM committee based on a review of regular reports and end-of-term presentations by the undergraduate mentees as a way of demonstrating that the graduate mentors fulfilled their requirements.

m) Norman Esch Graduate Scholarship – trust

Originally established in 2013, this award has been renewed several times, the last of which was in 2022. The award is once again being renewed with a gift of $60,000. A couple of minor updates have been made:

- Awards will be given to students with an undergraduate degree in Engineering and who are actively working on a technology/engineering-based venture.
- Students no longer need to submit a mini business plan.
- Clarification that it is a committee within the MBET program who will identify candidates and select recipients each spring for fall admission.

The updated description is as follows:

> Three scholarships, valued at $10,000 each, will be awarded annually to full-time graduate students enrolled in the Master of Business, Entrepreneurship & Technology Program in the Faculty of Engineering. Recipients must demonstrate academic excellence and possess a strong entrepreneurial outlook with business concepts that have the potential to become viable businesses. Preference will be given to students who are actively working on a technology/engineering-based venture. Decisions will be made in the spring term based on information gathered during the admission process. This fund is made possible by a donation from The Esch Foundation.

n) University of Waterloo Staff Association Awards

The Staff Association has requested revisions to this award as follows:

- Funding is no longer provided by the Education Credit Union; instead the UW Staff Association is providing the full $10k per year to support the award.
- Clarity in the eligibility & selection criteria that awards will be distributed equitably among graduate and undergraduate students based on enrolment and/or award application numbers.

The updated award description is as follows:

Several awards, valued at $500 - $1,000 each, are provided annually to full- or part-time undergraduate or graduate students enrolled in a degree program at the University of Waterloo who are affiliated with the UW Staff Association (UWSA) as a member or as the child, spouse, grandchild, or dependent of a current UWSA member. Award selection will be based on academic merit (minimum 70% cumulative average) combined with contributions to the University or the community through extracurricular or volunteer activities. Applications are due annually by November 15. Awards of $1,000 will be provided to recipients who qualify for the tuition benefit of 50% (per Policy 24) or for those who do not qualify for this benefit at all. Awards of $500 will be provided to recipients who qualify for a tuition benefit of 100% (per Policy 4). This award is supported by the University of Waterloo Staff Association.

o) Math Domestic Graduate Student Award – operating

Originally approved in 2015, the Faculty of Mathematics is amending one of the eligibility criteria effective January 1, 2024 such that it is not tied to a student's citizenship but rather to the tuition they are charged. As such, the criterion will be revised as follows:

Original: Canadian Citizen or Permanent Resident

Revised: graduate students charged domestic tuition

The award description will also be updated as follows:

This award will be provided to graduate students registered full time in a thesis-based program in the Faculty of Mathematics who are assessed domestic tuition. The award will reduce RA funding requirements from supervisors to encourage greater capacity for eligible students and encourage students and supervisors to work together to ensure timely completion of their programs.

UNIVERSITY OF WATERLOO | Graduate Studies and Postdoctoral Affairs

February 21, 2024

TO: Tim Weber-Kraljevski, Governance Officer

FROM: Heidi Mussar, Associate Director, Graduate Financial Aid & Awards

RE: Agenda items for Senate Graduate & Research Council – March 2024

Items for Approval

a) George and Cathy Raithby Award for Indigenous Students – endowment

An award, valued at $1,500, is available annually for an Indigenous undergraduate or graduate student enrolled in any year or Faculty at the University of Waterloo. To be considered, students must have completed the Indigenous Verification section in Quest and have had their Indigenous identity verified by the Office of Indigenous Relations. Selection will be based on demonstrated connection and/or contributions to Indigenous communities through extracurricular and/or volunteer activities. Preference will be given to students who aspire to give back to their communities in the future. Candidates must have a minimum cumulative academic average of 70%.

Gift: $50,000

Items for Information

b) Doctoral Thesis Completion Award – operating

This award is funded through central operating funds with the intention of being given to students who are within two terms of completing their degree. A minor amendment is being made to this award by adding the below criterion for transparency to students and administration:

- Students must not have received the award previously

All other terms and criterion remain.

FACULTY OF ENVIRONMENT - GRADUATE STUDIES COMMITTEE

REPORT TO SENATE GRADUATE & RESEARCH COUNCIL

March 5, 2024

1. **Courses Changes for Approval**
    a. Revision – ERS 669 – Updating the course title and description, adding instructor consent requirement.

2. **Program Revisions for Approval**
    a. Doctor of Philosophy (PhD) in Social and Ecological Sustainability
    b. Doctor of Philosophy (PhD) in Social and Ecological Sustainability – Water
    c. Master of Environmental Studies (MES) in Social and Ecological Sustainability
    d. Master of Environmental Studies (MES) in Social and Ecological Sustainability – Internship
    e. Master of Environmental Studies (MES) in Social and Ecological Sustainability – Water

Revising the title of ERS 669 from "Research and Design Methods" to "Applied Statistics in Ecology and Environment".

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Environment

Effective date: Term: Winter Year: 2025

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☒ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Updating the Course title and Course description. Adding Instructor consent requirement.

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: ERS

Course number: 669

Course ID: 001213

Course title (max. 100 characters including spaces):

Current title: Research and Design Methods

Revised title: Applied Statistics in Ecology and Environment

Course short title (max. 30 characters including spaces): Applied Statistics

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Instructor

Course description:

Current description: This course will examine different ways of knowing and modes of research design relevant for interdisciplinary environmental research. Students will also be introduced to an array of quantitative and qualitative research methods in the natural and social sciences and will explore methods relevant to their research through class discussions and assignments.

Revised description: This course covers study design, and data management, visualization, and statistical analysis. The primary focus will be the development and understanding of generalized linear models as they are foundational to most analyses in Environment and Ecology. Students will learn to fit models to data and assess model fit. Students will also be introduced to the use of the statistical software R and provided the opportunity to use that software to manage and analyze their own data. Special topics will be developed based on the needs and interests of the students and may include hierarchical modelling, multivariate statistics, survey analysis, non-linear modelling, or other topics. Students are expected to bring their own computer and data. For cases in which data have not been collected, students will work with the professor to source similar data or generate simulated data to support their progress through the course.

Meet type(s): Lecture Choose an item. Choose an item. Choose an item.

Primary meet type: Lecture

Delivery mode: On-campus

Requisites:

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

The revised course is a response to recommendations in our seven-year review to provide graduate students in our program with more focused methods training. The revised course draws a sharper focus on quantitative methods and is part of a phased approach to offer more in-depth quantitative and qualitative methods training.

Form completed by: Derek Armitage
Department/School approval date (09/25/23):
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 11/22/23
Faculty approval date (mm/dd/yy): 01/18/24
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Graduate Studies
Program Revision Template

Prior to form submission, review the content revision instructions and information regarding major/minor modifications. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Environment

Programs: 1) Doctor of Philosophy (PhD) in Social and Ecological Sustainability

2) Doctor of Philosophy (PhD) in Social and Ecological Sustainability – Water

3) Master of Environmental Studies (MES) in Social and Ecological Sustainability

4) Master of Environmental Studies (MES) in Social and Ecological Sustainability – Internship

5) Master of Environmental Studies (MES) in Social and Ecological Sustainability – Water

Program contact name(s): Derek Armitage, Amanda Campbell

Form completed by: Amanda Campbell

Description of proposed changes:
Note: changes to courses and milestones also require the completion/submission of the SGRC Graduate Studies Course/Milestone Form.

Revising the title of ERS 669 from "Research and Design Methods" to "Applied Statistics in Ecology and Environment".

Is this a major modification to the program? No

Rationale for change(s):

The revised course is a response to recommendations in our seven-year review to provide graduate students in our program with more focused methods training. The revised course draws a sharper focus on quantitative methods and is part of a phased approach to offer more in-depth quantitative and qualitative methods training.

Proposed effective date: Term: Winter Year: 2025

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

https://uwaterloo.ca/graduate-studies-academic-calendar/environment/school-environment-resources-and-sustainability/doctor-philosophy-phd-social-and-ecological-sustainability

https://uwaterloo.ca/graduate-studies-academic-calendar/environment/school-environment-resources-and-sustainability/doctor-philosophy-phd-social-and-ecological-sustainability-water

https://uwaterloo.ca/graduate-studies-academic-calendar/environment/school-environment-resources-and-sustainability/master-environmental-studies-mes-social-and-ecological-sustainability

https://uwaterloo.ca/graduate-studies-academic-calendar/environment/school-environment-resources-and-sustainability/master-environmental-studies-mes-social-and-ecological-sustainability-internship

https://uwaterloo.ca/graduate-studies-academic-calendar/environment/school-environment-resources-and-sustainability/master-environmental-studies-mes-social-and-ecological-sustainability-water

Current Graduate Studies Academic Calendar content:	**Proposed Graduate Studies Academic Calendar content**:
ERS 669 ~~Research Design and Methods~~	ERS 669 Applied Statistics in Ecology and Environment

How will students currently registered in the program be impacted by these changes?

The students currently registered in the programs will not be impacted by these changes.

Department/School approval date (mm/dd/yy):
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 11/22/23
Faculty approval date (mm/dd/yy): 01/18/24
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):
Senate approval date (mm/dd/yy) (if applicable):

Faculty of Health Grad Motions
SGRC – March 4, 2024

List of Motions

Summaries

Department of Recreation and Leisure Studies (9)

The following motions are associated primarily with changes to the MA Coursework Study Option that were approved in principle by the Department in June 2023. All motions were passed by the Department of Recreation and Leisure Studies at the department meeting on November 03, 2023. The proposed changes include:

- Changing the delivery mode of the MA Coursework from on-campus to online only;
- Changing two of the four required courses in the MA Coursework study option;
- Creating two new courses REC 601 and REC 610;
- Update titles, descriptions, and delivery modes of REC elective graduate courses.

1 – RLS Program Revision – MA Coursework study option

To change the delivery mode of MA Coursework study option from on-campus to online. Also, remove REC 662 and REC 663 as required courses for the MA Coursework study option and replace them with the new course REC 601 and the revised course REC 611. The course requirements for the MA Coursework study option will change <u>from</u>

- Required courses
    - REC 600 Integrative Seminar in Recreation and Leisure Studies
    - REC 620 Program Evaluation in Recreation, Sport and Tourism

    - REC 662 Quantitative Inquiry
    - REC 663 Qualitative Inquiry
- Elective courses
    - 4 elective graduate courses from within or outside the Department.

to

- Required courses
    - REC 600 Integrative Seminar in Recreation and Leisure
    - REC 601 Methods and Analysis for Evaluation
    - REC 611 Leading Organizations
    - REC 620 Program Evaluation in Recreation and Sport
- Elective courses
    - 4 elective graduate courses from within or outside the Department.

There is a two-part **rationale** for these changes. First, online delivery will expand the market reach of the Coursework study option to include current working professionals across Canada and internationally, as well as recent graduates from Recreation and Leisure Studies undergraduate programs. The proposed changes are informed by the outcomes of recent curriculum reviews, a self-study, stakeholder consultations, and student feedback surveys. Second, the current Coursework study option lacks a distinct identity relevant to students and professionals seeking advanced training and learning. Changing the Coursework study option to online delivery and updating the course requirements is intended to create a more cohesive program identity focused on knowledge and skills associated with recreation leadership. The overarching intended learning objectives of the program remain the same.

2-9 - RLS Course Changes – delivery modes, descriptions, titles

Rationale for Motions 2 – 9:

The proposed changes identified in Motions 2 - 7 are in response to our recent departmental integrated review and consultation with stakeholders in the field. The changes are necessary to better meet the needs of non-thesis MA students by replacing two required research/methodology courses with one required research/methodology course, making the courses more substantively oriented, and responding better to the knowledge, skills, and values relevant to the field (i.e., focus on recreation leadership, management). The change to delivery mode to online offering is intended to make each course available to students in the online offering of the MA Coursework study option.

Motion 2

To update the course delivery mode of REC 600 Integrative Seminar in Recreation and Leisure Studies from On-campus to Online Only.

Motion 3

To create a new online course offering *REC 601 Methods and Analysis for Evaluation* with the following course description:

> *A critical exploration of research design, ethics, methodological approaches, methods, and data analysis that can support evaluation in organizations and professional settings.*

Motion 4

To revise the course title, description, and delivery mode of REC 611:

From

Title: Issues in Leisure Organizations and Policy

Description: This elective course will examine contemporary issues related to one of the five thematic areas of the Recreation and Leisure graduate curriculum, specifically leisure services, organizations and policy.

Delivery mode: On-campus

To

Title: Leading Organizations

Description: This course focuses on the foundations of effective organizational leadership. Drawing on concepts from organizational theory and organizational behaviour, students will learn how to successfully lead change, build high performance organizational cultures, manage conflict, and mobilize people. The course will inspire students to develop their own leadership capacity to achieve an organization's vision and objectives.

Delivery mode: Offered online only.

Motion 5

To update the course title and delivery mode of REC 620:

From

Title: Program Evaluation in Recreation, Sport and Tourism

Delivery mode: On-campus

To

Title: Program Evaluation in Recreation and Sport

Delivery mode: Offered online only.

Motion 6

To update the course titles, descriptions, and delivery modes of the following REC elective graduate courses:

REC 621

From
Title: Issues in Leisure and Social Justice
Description: This elective course will examine contemporary issues related to one of the five thematic areas of the Recreation and Leisure Studies graduate curriculum, specifically leisure and social justice.
Delivery mode: On-campus

To
Title: Cultivating Justice in Practice
Description: This course will examine and critique contemporary issues and practices in equity, diversity, and inclusion. Students will consider and reimagine how institutions, organizations, and communities can facilitate culture change for more just futures.
Delivery mode: Offered online only.

Motion 7
REC 641

From
Title: Issues in Leisure and Community
Description: This elective course will examine contemporary issues related to one of the five thematic areas of Recreation and Leisure Studies graduate curriculum, specifically leisure and community.
Delivery mode: On-campus

To
Title: Community Relations and Stakeholder Engagement
Description: Students will learn effective ways to build community through engaging diverse stakeholders including citizens and grassroots organizations, non-profit organizations, business, government, and funders.
Delivery mode: Offered online only.

Motion 8
REC 651

From
Title: Issues in Leisure, Health and Well-being
Description: This elective course will examine contemporary issues related to one of the five thematic areas of Recreation and Leisure Studies graduate curriculum, specifically leisure, health and well-being.
Delivery mode: On-campus

To
Title: Critical Disability and Inclusive Recreation

Description: Using a critical lens, students will explore and analyze topics including disability, illness, health, and well-being in relation to recreation and leisure. Issues more directly connected to practice will also be explored, including practice models, social inclusion, accessibility, relationships, and relationship-building in leisure and recreation settings.
Delivery mode: Offered online only.

Motion 9

To create a new online course offering *REC 610 Knowledge Synthesis and Mobilization* with the following course description:

> An overview of processes for collecting, synthesizing, and communicating information for diverse audiences. Topic areas may include information literacy, knowledge translation, and communication skills specific to marketing, grants, reports, and policy documents.

School of Social Work (4)

10-12 – SSW Program and Related Course/Milestone Changes – Master of Social Work

Feedback from MSW students derived from the MSW Curriculum Survey, MSW student representatives on the MSW Program Committee, and through informal discussion with MSW students indicate repetition between the requirements of the Master's Seminar Presentation (Capstone) milestone and Master's Seminar (Integration Seminar) milestone. For example, both milestones rely heavily on the CASWE Standards of Accreditation – Core Learning Objectives (2014), with overlap in reflective activities related to eight (8) of the nine (9) capstone "competencies" and integration seminar "classrooms".

10 - calendar changes

- removing milestone
- updating the Master's Seminar milestone title and description
- updating the SWK 610R and SWK 654R course titles

11 - Inactivating the Master's Seminar Presentation milestone.
12 – Revising the Master's Seminar to Master's Integration Seminar and Capstone

13 – SSW Course Change – removing department consent for SWK 654R

In the previous course revision process, department consent was listed as being required. The course does not require department consent.

> Note: since this course is cross-listed with HLTH 644, the course revision forms from both units (SSW/SPHS) will need to go to SGRC together. HLTH 644 is moving forward for department approval at the same time as AC on November 15, 2023.

School of Public Health Sciences (1)

14 – SPHS Course Change – removing department consent for HLTH 644

In the previous course revision process, department consent was listed as being required. The course does not require department consent.

> Note: since this course is cross-listed with SWK 654R, the course revision forms from both units (SSW/SPHS) will need to go to SGRC together. HLTH 644 is moving forward for department approval at the same time as AC on November 15, 2023.

Graduate Studies
Program Revision Template

Prior to form submission, review the content revision instructions and information regarding major/minor modifications. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Health

Program: Master of Arts (MA) in Recreation and Leisure Studies

Program contact name(s): Bryan Grimwood

Form completed by: Bryan Grimwood

Description of proposed changes:
Note: changes to courses and milestones also require the completion/submission of the SGRC Graduate Studies Course/Milestone Form.

1) *Changing the delivery mode of the MA Coursework study option from on-campus/in-person to online.*
2) *Changing two of the required courses in the MA Coursework study option.*

Is this a major modification to the program? Yes

Rationale for change(s):

1) *Online delivery will expand the market reach of the Coursework study option to include current working professionals across Canada and internationally, as well as recent graduates from Recreation and Leisure Studies undergraduate programs. The proposed changes are informed by the outcomes of recent curriculum reviews, a self-study, stakeholder consultations, and student feedback surveys.*
2) *The current Coursework study option lacks a distinct identity relevant to students and professionals seeking advanced training and learning. Changing the Coursework study option to online delivery and updating the course requirements is intended to create a more cohesive program identity focused on knowledge and skills associated with recreation leadership. The overarching intended learning objectives of the program remain the same.*

Proposed effective date: Term: Fall Year: 2025

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

https://uwaterloo.ca/graduate-studies-academic-calendar/faculty-health/department-recreation-and-leisure-studies/master-arts-ma-recreation-and-leisure-studies

Current Graduate Studies Academic Calendar content:	**Proposed Graduate Studies Academic Calendar content**:

Program information
 	
• **Admit term(s)**
  ○ Fall
	Program information
	
	• **Admit term(s)**
	  ○ Fall

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:

• **Delivery mode**
  ○ On-campus
 	
• **Length of program**
  ○ Full-time: 6 terms
  ○ Part-time: 12 terms
  ○ Students must obtain permission from their supervisor(s), the Associate Chair of Graduate Studies and the Associate Dean, Graduate Studies, to continue registration beyond the maximum time period stipulated for the program in which they first registered.
 	
• **Program type**
  ○ Master's
  ○ Research
 	
• **Registration option(s)**
  ○ Full-time
  ○ Part-time
 	
• **Study option(s)**
  ○ Thesis
  ○ Coursework
 	
Admission requirements
 	
• **Minimum requirements**
  ○ A four-year honours bachelor's degree (or equivalent) in Recreation and Leisure Studies or related field with at least a 75% standing. If the overall undergraduate average is below 75%, consideration may be given to the applicant's performance during the final year of academic work.
  ○ Competency in written expression, including evidence of ability to conceptualize, organize ideas and reason.
 	
• **Application materials**
  ○ Résumé/Curriculum vitae
  ▪ Indicating past academic and professional experience.
  ○ Supplementary information form
  ○ Transcript(s)
  ○ Writing sample
  ▪ Applicants must submit at least one substantial example of their work completed during the last two years of academic study. Students with professional
	• **Delivery mode**
	  ○ On-campus
	  ○ Online
	
	• **Delivery mode information**
	  ○ The Thesis study option is delivered on-campus. Note: one required course is delivered online.
	  ○ The Coursework study option is delivered online.
	
	• **Length of program**
	  ○ Full-time: 6 terms for the Thesis study option and 3 terms for the Coursework study option.
	  ○ Part-time: 12 terms
	  ○ Students must obtain permission from their supervisor(s), the Associate Chair of Graduate Studies and the Associate Dean, Graduate Studies, to continue registration beyond the maximum time period stipulated for the program in which they first registered.
	
	• **Program type**
	  ○ Master's
	  ○ Research
	
	• **Registration option(s)**
	  ○ Full-time
	  ○ Part-time
	
	• **Study option(s)**
	  ○ Thesis
	  ○ Coursework
	
	Admission requirements
	
	• **Minimum requirements**
	  ○ A four-year honours bachelor's degree (or equivalent) in Recreation and Leisure Studies or related field with at least a 75% standing. If the overall undergraduate average is below 75%, consideration may be given to the applicant's performance during the final year of academic work.
	  ○ Competency in written expression, including evidence of ability to conceptualize, organize ideas and reason.
	
	• **Application materials**
	  ○ Résumé/Curriculum vitae

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
experience may submit a professional report of which they were the sole or senior author. • **References** o Number of references: 2 o Type of references: academic • **English language proficiency (ELP)** (if applicable) **Degree requirements** **Thesis option:** • **Graduate Academic Integrity Module (Graduate AIM)** • **Courses** o Students must complete the following courses: ▪ REC 600 Integrative Seminar in Recreation and Leisure Studies ▪ REC 662 Quantitative Inquiry ▪ REC 663 Qualitative Inquiry ▪ 1 of REC 672 Quantitative Research Data Analysis and Interpretation or REC 673 Designing Advanced Qualitative Inquiry ▪ At least 1 other elective graduate course from within or outside the Department. Graduate courses must be selected in consultation with, and approved by, the student's supervisor or advisor. o All graduate courses except those designated in this Calendar as CR/NCR must be assigned a numerical grade. Any student who registers for a course in a department outside the Faculty of Health must receive a numerical grade for the course. Unless the course is designated CR/NCR in the Graduate Calendar, the student must ask the instructor to submit a numerical grade. The student must clarify this requirement with the instructor within the first two weeks of each term. o Students must obtain an average of at least 72% in the set of courses which they present in fulfillment of course	▪ Indicating past academic and professional experience. o Supplementary information form o Transcript(s) o Writing sample ▪ Applicants must submit at least one substantial example of their work completed during the last two years of academic study. Students with professional experience may submit a professional report of which they were the sole or senior author. • **References** o Number of references: 2 o Type of references: academic • **English language proficiency (ELP)** (if applicable) **Degree requirements** **Thesis option:** • **Graduate Academic Integrity Module (Graduate AIM)** • **Courses** o Students must complete the following <u>5 (0.50 unit weight)</u> courses: ▪ REC 600 Integrative Seminar of Recreation and Leisure ▪ REC 662 Quantitative Inquiry ▪ REC 663 Qualitative Inquiry ▪ 1 of REC 672 Quantitative Research Data Analysis and Interpretation or REC 673 Designing Advanced Qualitative Inquiry ▪ At least 1 other elective graduate course from within or outside the Department. Graduate courses must be selected in consultation with, and approved by, the student's supervisor or advisor. o All graduate courses except those designated in this Calendar as CR/NCR must be assigned a numerical grade. Any student who registers for a course in a department outside the Faculty of Health must receive a numerical grade

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
requirements for any graduate degree. Unsatisfactory academic performance in any one course will result in a review of the candidate's status by the departmental Graduate Committee. If a student with a failed course is permitted to continue, additional work may be required to clear the failure in that course, or by replacement of the failed course. Alternatively, the student may be required to repeat part or all of the program. • **Master's Thesis** o For the MA thesis proposal, the committee consists of at least one faculty member in addition to the supervisor appointed in the student's department, both of whom have academic appointments. The committee member may be drawn from the faculty members of any other department within the University if such an individual has a special contribution to make to the research process or may also have an adjunct appointment with the department. The thesis supervisory committee must be approved by the Associate Chair for Graduate Studies. o For the final MA defense, an independent reader (selected by the supervisor in consultation with the student and the Associate Chair for Graduate Studies) and an independent chair (assigned by the Associate Chair for Graduate Studies) will be added. Normally, the independent reader should have an academic appointment. At least two members of the final thesis committee must be from the student's department (i.e., full-time academic appointment or adjunct appointment in the department). **Coursework option:** • **Graduate Academic Integrity Module (Graduate AIM)** • **Courses** o Required courses ▪ REC 600 Integrative Seminar in Recreation and Leisure Studies	for the course. Unless the course is designated CR/NCR in the Graduate Calendar, the student must ask the instructor to submit a numerical grade. The student must clarify this requirement with the instructor within the first two weeks of each term. o Students must obtain an average of at least 72% in the set of courses which they present in fulfillment of course requirements for any graduate degree. Unsatisfactory academic performance in any one course will result in a review of the candidate's status by the departmental Graduate Committee. If a student with a failed course is permitted to continue, additional work may be required to clear the failure in that course, or by replacement of the failed course. Alternatively, the student may be required to repeat part or all of the program. • **Master's Thesis** o For the MA thesis proposal, the committee consists of at least one faculty member in addition to the supervisor appointed in the student's department, both of whom have academic appointments. The committee member may be drawn from the faculty members of any other department within the University if such an individual has a special contribution to make to the research process or may also have an adjunct appointment with the department. The thesis supervisory committee must be approved by the Associate Chair for Graduate Studies. o For the final MA defense, an independent reader (selected by the supervisor in consultation with the student and the Associate Chair for Graduate Studies) and an independent chair (assigned by the Associate Chair for Graduate Studies) will be added. Normally, the independent reader should have an academic appointment. At least two members of the final thesis committee must be from the student's department (i.e., full-time academic appointment or adjunct appointment in the department).

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
▪ REC 620 Program Evaluation in Recreation, Sport ~~and Tourism~~ ▪ ~~REC 662 Quantitative Inquiry~~ ▪ ~~REC 663 Qualitative Inquiry~~ ○ Elective courses ▪ 4 elective graduate courses from within or outside the Department. ○ All graduate courses except those designated in this Calendar as CR/NCR must be assigned a numerical grade. Any student who registers for a course in a department outside the Faculty of Health must receive a numerical grade for the course. Unless the course is designated CR/NCR in the Graduate Calendar, the student must ask the instructor to submit a numerical grade. The student must clarify this requirement with the instructor within the first two weeks of each term. ○ Students must obtain an average of at least 72% in the set of courses which they present in fulfillment of course requirements for any graduate degree. Unsatisfactory academic performance in any one course will result in a review of the candidate's status by the departmental Graduate Committee. If a student with a failed course is permitted to continue, additional work may be required to clear the failure in that course, or by replacement of the failed course. Alternatively, the student may be required to repeat part or all of the program.	**Coursework option:** • **Graduate Academic Integrity Module (Graduate AIM)** • **Courses** ○ Required courses ▪ REC 600 Integrative Seminar in Recreation and Leisure ▪ REC 601 Methods and Analysis for Evaluation ▪ REC 611 Leading Organizations ▪ REC 620 Program Evaluation in Recreation and Sport ○ Elective courses ▪ 4 elective graduate courses from within or outside the Department. ○ All graduate courses except those designated in this Calendar as CR/NCR must be assigned a numerical grade. Any student who registers for a course in a department outside the Faculty of Health must receive a numerical grade for the course. Unless the course is designated CR/NCR in the Graduate Calendar, the student must ask the instructor to submit a numerical grade. The student must clarify this requirement with the instructor within the first two weeks of each term. ○ Students must obtain an average of at least 72% in the set of courses which they present in fulfillment of course requirements for any graduate degree. Unsatisfactory academic performance in any one course will result in a review of the candidate's status by the departmental Graduate Committee. If a student with a failed course is permitted to continue, additional work may be required to clear the failure in that course, or by replacement of the failed course. Alternatively, the student may be required to repeat part or all of the program.

How will students currently registered in the program be impacted by these changes?

We anticipate limited impact to students currently registered in the MA Coursework study option. Students enrolled full-time as of Fall 2023 or admitted for Fall 2024 will not be impacted as they will complete degree requirements prior to the proposed changes coming into effect. Students enrolled part-time as of Fall 2023 or

admitted for Fall 2024 will continue to have access to on-campus/in-person required and elective courses. These part-time students will also be given the option to complete course requirements with online courses. Students enrolled in the MA Thesis study option will be required to take one online course (REC 600).

Department/School approval date (mm/dd/yy): 11/03/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/30/23
Faculty approval date (mm/dd/yy): 01/26/24
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):
Senate approval date (mm/dd/yy) (if applicable):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Health

Effective date: Term: Fall Year: 2025

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☒ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Updating delivery mode.

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: REC

Course number: 600

Course ID: 002892

Course title (max. 100 characters including spaces): Integrative Seminar in Recreation and Leisure Studies

Course short title (max. 30 characters including spaces): Foundations of Recreation

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description: An examination and discussion of the definitions, concepts and theories used in recreation and leisure studies. The seminar seeks to identify and discuss current theories, methods, and issues, and to examine the concepts of professionalism and scientific inquiry as they apply to the field of recreation.

Meet type(s): Seminar Choose an item. Choose an item. Choose an item.

Primary meet type: Seminar

Delivery mode: Only offered online

Requisites:

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

These changes are in response to our recent departmental integrated review and consultation with stakeholders in the field. They are necessary to better meet the needs of non-thesis students by removing required research/methodology courses, making the courses more substantively-oriented and responding better to the knowledge, skills and values relevant to the field (i.e., focus on knowledge translation, leadership, management).

Form completed by: Bryan Grimwood
Department/School approval date (11/03/23):
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 06/09/23 & 10/12/23
Faculty approval date (mm/dd/yy): 01/26/24
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Health

Effective date: Term: Fall Year: 2025

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☒ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☐ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: REC

Course number: 601

Course ID:

Course title (max. 100 characters including spaces): Methods and Analysis for Evaluation

Course short title (max. 30 characters including spaces): Methods and Analysis

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description: A critical exploration of research design, ethics, methodological approaches, methods, and data analysis that can support evaluation in organizations and professional settings.

Meet type(s): Seminar Choose an item. Choose an item. Choose an item.

Primary meet type: Seminar

Delivery mode: Only offered online

Requisites:

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

These changes are in response to our recent departmental integrated review and consultation with stakeholders in the field. They are necessary to better meet the needs of non-thesis students by removing required research/methodology courses, making the courses more substantively oriented, and responding better to the knowledge, skills, and values relevant to the field (i.e., focus on recreation leadership, management). The change to delivery mode to online offering is intended to make the course available as an elective for students in the online offering of the MA Coursework study option.

Form completed by: Bryan Grimwood
Department/School approval date (11/03/23)
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 06/09/23 & 10/12/23
Faculty approval date (mm/dd/yy): 01/26/24
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Health

Effective date: Term: Fall Year: 2025

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☒ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Updating course title, description, and delivery mode.

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: REC

Course number: 611

Course ID: 015603

Course title (max. 100 characters including spaces):

Current title: Issues in Leisure Organizations and Policy

Revised title: Leading Organizations

Course short title (max. 30 characters including spaces): Leading Organizations

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description:

Current description: This elective course will examine contemporary issues related to one of the five thematic areas of the Recreation and Leisure graduate curriculum, specifically leisure services, organizations and policy.

Revised description: This course focuses on the foundations of effective organizational leadership. Drawing on concepts from organizational theory and organizational behaviour, students will learn how to successfully lead change, build high performance organizational cultures, manage conflict, and mobilize people. The course will inspire students to develop their own leadership capacity to achieve an organization's vision and objectives.

Meet type(s): Seminar Choose an item. Choose an item. Choose an item.

Primary meet type: Seminar

Delivery mode: Only offered online

Requisites:

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

These changes are in response to our recent departmental integrated review and consultation with stakeholders in the field. They are necessary to better meet the needs of non-thesis students by removing required research/methodology courses, making the courses more substantively oriented, and responding better to the knowledge, skills, and values relevant to the field (i.e., focus on recreation leadership, management). The change to delivery mode to online offering is intended to make the course available as an elective for students in the online offering of the MA Coursework study option.

Form completed by: Bryan Grimwood
Department/School approval date (11/03/23)
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 06/09/23 & 10/12/23
Faculty approval date (mm/dd/yy): 01/26/24
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Health

Effective date: Term: Fall Year: 2025

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☒ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Updating course title, delivery mode, and requisite.

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: REC

Course number: 620

Course ID: 0015442

Course title (max. 100 characters including spaces):

Current title: Program Evaluation in Recreation, Sport and Tourism

Revised title: Program Evaluation in Recreation and Sport

Course short title (max. 30 characters including spaces): Program Evaluation

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Department

Course description:

Students work in teams to develop and apply their theoretical knowledge and research skills to an evaluation project. Projects may include, but are not limited to, evaluability studies, needs assessments, outcome evaluations or process evaluations. Teams work with existing organizations to identify relevant projects, carry them out, and ensure the utilization of findings.

Meet type(s): Seminar Choose an item. Choose an item. Choose an item.

Primary meet type: Seminar

Delivery mode: Only offered online

Requisites:

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

These changes are in response to our recent departmental integrated review and consultation with stakeholders in the field. They are part of changing our MA coursework study option from on-campus to online delivery and creating a more cohesive identity within the study option focused on recreation leadership. The proposed title change is a minor change intended to better reflect the content and knowledge areas covered in the course.

The requisite of REC Graduate Students is being removed as it is unnecessary and restricts students from outside the department from enrolling.

Form completed by: Bryan Grimwood
Department/School approval date (11/03/2023):
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/30/23
Faculty approval date (mm/dd/yy): 01/26/24
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Health

Effective date: Term: Fall Year: 2025

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☒ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Updating course title, description, and delivery mode.

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: REC

Course number: 621

Course ID: 015604

Course title (max. 100 characters including spaces):

Current title: Issues in Leisure and Social Justice

Revised title: Cultivating Justice in Practice

Course short title (max. 30 characters including spaces): Justice in Practice

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description:

Current description: This elective course will examine contemporary issues related to one of the five thematic areas of the Recreation and Leisure Studies graduate curriculum, specifically leisure and social justice.

Revised description: This course will examine and critique contemporary issues and practices in equity, diversity, and inclusion. Students will consider and reimagine how institutions, organizations, and communities can facilitate culture change for more just futures.

Meet type(s): Seminar Choose an item. Choose an item. Choose an item.

Primary meet type: Seminar

Delivery mode: Only offered online

Requisites:

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

These changes are in response to our recent departmental integrated review and consultation with stakeholders in the field. They are necessary to better meet the needs of non-thesis students by removing required research/methodology courses, making the courses more substantively oriented, and responding better to the knowledge, skills, and values relevant to the field (i.e., focus on recreation leadership, management). The change to delivery mode to online offering is intended to make the course available as an elective for students in the online offering of the MA Coursework study option.

Form completed by: Bryan Grimwood
Department/School approval date (11/03/23):
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 06/09/23 & 10/12/23
Faculty approval date (mm/dd/yy): 01/26/24
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Health

Effective date: Term: Fall Year: 2025

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☒ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Updating course title, description and delivery mode.

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: REC

Course number: 641

Course ID: 015606

Course title (max. 100 characters including spaces):

Current title: Issues in Leisure and Community

Revised title: Community Relations and Stakeholder Engagement

Course short title (max. 30 characters including spaces): Community Engagement

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description:

Current description: This elective course will examine contemporary issues related to one of the five thematic areas of Recreation and Leisure Studies graduate curriculum, specifically leisure and community.

Revised description: Students will learn effective ways to build community through engaging diverse stakeholders including citizens and grassroots organizations, non-profit organizations, business, government, and funders.

Meet type(s): Seminar Choose an item. Choose an item. Choose an item.

Primary meet type: Seminar

Delivery mode: Only offered online

Requisites:

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

These changes are in response to our recent departmental integrated review and consultation with stakeholders in the field. They are necessary to better meet the needs of non-thesis students by removing required research/methodology courses, making the courses more substantively oriented, and responding better to the knowledge, skills, and values relevant to the field (i.e., focus on recreation leadership, management). The change to delivery mode to online offering is intended to make the course available as an elective for students in the online offering of the MA Coursework study option.

Form completed by: Bryan Grimwood
Department/School approval date (11/03/23):
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 06/09/23 & 10/12/23
Faculty approval date (mm/dd/yy): 01/26/24
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Health

Effective date: Term: Fall Year: 2025

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☒ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Updating course description, title, and delivery mode.

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: REC

Course number: 651

Course ID: 015607

Course title (max. 100 characters including spaces):

Current title: Issues in Leisure, Health and Well-being

Revised title: Critical Disability and Inclusive Recreation

Course short title (max. 30 characters including spaces): Inclusive Recreation

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description:

Current description: This elective course will examine contemporary issues related to one of the five thematic areas of Recreation and Leisure Studies graduate curriculum, specifically leisure, health and well-being.

Revised description: Using a critical lens, students will explore and analyze topics including disability, illness, health, and well-being in relation to recreation and leisure. Issues more directly connected to practice will also be explored, including practice models, social inclusion, accessibility, relationships, and relationship-building in leisure and recreation settings.

Meet type(s): Seminar Choose an item. Choose an item. Choose an item.

Primary meet type: Seminar

Delivery mode: Only offered online

Requisites:

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

These changes are in response to our recent departmental integrated review and consultation with stakeholders in the field. They are necessary to better meet the needs of non-thesis students by removing required research/methodology courses, making the courses more substantively oriented, and responding better to the knowledge, skills, and values relevant to the field (i.e., focus on recreation leadership, management). The change to delivery mode to online offering is intended to make the course available as an elective for students in the online offering of the MA Coursework study option.

Form completed by: Bryan Grimwood
Department/School approval date (11/03/23):
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 06/09/23 & 10/12/23
Faculty approval date (mm/dd/yy): 01/26/24
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Health

Effective date: Term: Fall Year: 2025

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☒ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☐ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: REC

Course number: 610

Course ID:

Course title (max. 100 characters including spaces): Knowledge Synthesis and Mobilization

Course short title (max. 30 characters including spaces): Knowledge Mobilization

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description: An overview of processes for collecting, synthesizing, and communicating information for diverse audiences. Topic areas may include information literacy, knowledge translation, and communication skills specific to marketing, grants, reports, and policy documents.

Meet type(s): Seminar Choose an item. Choose an item. Choose an item.

Primary meet type: Seminar

Delivery mode: Only offered online

Requisites:

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

This new course is proposed as part of changes responding to our recent departmental integrated review and consultation with stakeholders in the field. These changes are necessary to better meet the needs of non-thesis students by removing required research/methodology courses, making the courses more substantively oriented, and responding better to the knowledge, skills, and values relevant to the field (i.e., focus on recreation leadership, management). The online delivery mode is intended to make the course available as an elective for students in the online offering of the MA Coursework study option.

Form completed by: Bryan Grimwood
Department/School approval date (11/03/23):
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 06/09/23 & 10/12/23
Faculty approval date (mm/dd/yy): 01/26/24
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Graduate Studies
Program Revision Template

Prior to form submission, review the content revision instructions and information regarding major/minor modifications. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Health

Program: Master of Social Work (MSW)

Program contact name(s): Trish Van Katwyk

Form completed by: Dr. Andrea Daley

Description of proposed changes:
Note: changes to courses and milestones also require the completion/submission of the SGRC Graduate Studies Course/Milestone Form.

1) *Removing the Master's Seminar Presentation milestone.*
2) *Updating the Master's Seminar milestone title and description.*
3) *Updating the SWK 610R and SWK 654R course titles.*

Is this a major modification to the program? No

Rationale for change(s):

1 & 2) Feedback from MSW students derived from the MSW Curriculum Survey, MSW student representatives on the MSW Program Committee, and through informal discussion with MSW students indicate repetition between the requirements of the Master's Seminar Presentation (Capstone) milestone and Master's Seminar (Integration Seminar) milestone. For example, both milestones rely heavily on the CASWE Standards of Accreditation – Core Learning Objectives (2014), with overlap in reflective activities related to eight (8) of the nine (9) capstone "competencies" and integration seminar "classrooms."

The inactivation of the Capstone milestone is intended to address repetition in the MSW curriculum between the Integration Seminar and the Capstone. The Capstone milestone will continue as a MSW program requirement; however, it will be included in the MSW program as a combined element of the Integration Seminar. That is, an updated version of the Integration Seminar that incorporates new core learning objectives from the Canadian Association of Social Work Education Standards for Accreditation and addresses repetition between the two milestones will be consolidated within the revised Integration Seminar.

While the overall goals of the milestones differ, with the Capstone attending to students' overall MSW learning journey (inclusive of academic courses, practicum, life events and experiences, etc.) and the Integration Seminar milestone attending more specifically to the integration of theory and practice vis-à-vis practicum, the consolidation of the Capstone and Integration Seminar holds the potential to cover the scope of both milestones, addressing the overlap of milestone content and offering students a deep learning opportunity, while avoiding repetition. Both milestones will be 'housed' in the same LEARN shell – likely in the existing Capstone shell, using PebblePad to create an Integration Seminar Workbook.

The Master's Integration Seminar and Capstone will include two inter-related MSW milestones: 1) the Integration Seminar; and 2) the Capstone. As inter-related milestones, the Integration Seminar and Capstone offer a scaffolding approach to critically reflecting on students' MSW learning journeys. The Integration Seminar supports a continuous process of self-directed critical reflection that brings practice experiences in the field into conversation with the MSW course content. This process contributes to a summative reflection on the MSW learning journey through the completion of the Capstone project. The Capstone project draws on

arts-based pedagogy to move beyond cognitive processes of critical reflection to support holistic engagement with emotions, experiences, and knowledges, etc. that have been meaningful to students' MSW learning journeys.

3) The School of Social Work undertook a major review of its Master of Social Work (MSW) curriculum in 2018-19. The review identified a need to change the title of SWK 610R to remove outdated and stigmatizing language and to more accurately reflect contemporary language use in the field of social work, and to underscore the interprofessional focus of the course content and delivery. The proposed change to the title and description of SWK 654R Indigenous Health and Social Justice is to more accurately reflect the content and intentions of the course post development.

Proposed effective date: Term: Spring Year: 2024

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

https://uwaterloo.ca/graduate-studies-academic-calendar/faculty-health/school-social-work-renison-university-college/master-social-work-msw

Current Graduate Studies Academic Calendar content:	**Proposed Graduate Studies Academic Calendar content**:

Degree requirements
• **Courses**
  ○ Required courses
  ▪ SWK 600R Health, Equity & Social Justice (week-long, on-campus Summer Institute block course, in August at the beginning of the program)
  ▪ SWK 601R Health Policy
  ▪ SWK 602R Social Work Practice in Health
  ▪ SWK 603R Social Work Leadership in Health Care (week-long, on-campus Summer Institute block course, in July or August (TBD) at the end of the program)
  ▪ SWK 606R Advanced Social Work Research
  ▪ SWK 608R Health Issues and Ethics
  ○ Students are required to take 2 of the following elective courses:
  ▪ SWK 609R Clinical Practice in Mental Health & Addictions
  ▪ SWK 610R ~~Substance Abuse and Chemical Dependency~~
  ▪ SWK 653R Grief and Palliative Care in Social Work
	Degree requirements
	• **Courses**
	  ○ Required courses
	  ▪ SWK 600R Health, Equity & Social Justice (week-long, on-campus Summer Institute block course, in August at the beginning of the program)
	  ▪ SWK 601R Health Policy
	  ▪ SWK 602R Social Work Practice in Health
	  ▪ SWK 603R Social Work Leadership in Health Care (week-long, on-campus Summer Institute block course, in July or August (TBD) at the end of the program)
	  ▪ SWK 606R Advanced Social Work Research
	  ▪ SWK 608R Health Issues and Ethics
	  ○ Students are required to take 2 of the following elective courses:
	  ▪ SWK 609R Clinical Practice in Mental Health & Addictions
	  ▪ SWK 610R <u>Interprofessional Approaches to Substance Use and Misuse and Mental Health</u>
	  ▪ SWK 653R Grief and Palliative Care in Social Work

Current Graduate Studies Academic Calendar content:	**Proposed Graduate Studies Academic Calendar content**:
▪ SWK 654R/HLTH 644 Indigenous Health and Social Justice ▪ SWK 672R International Experience ▪ SWK 680R Critical Topics in Social Work and Health ▪ SWK 690R Special Topics in Social Work ○ Students cannot take BOTH SWK 609R Clinical Practice in Mental Health & Addictions and SWK 610R ~~Substance Abuse and Chemical Dependency~~ ○ Students must complete all courses with a minimum 75% overall average including the compulsory and elective courses required in order to graduate from the program. • **~~Master's Seminar Presentation~~** • ~~The Master's Seminar Presentation (or Capstone) is graded credit/no-credit.~~ • **Master's Seminar** ○ ~~The Master's Seminar (or Integration Seminar) is~~ graded credit/no-credit, students must obtain a passing credit. • **Graduate Studies Practicum** ○ The program includes a field education experience component of at least 462 hours (minimum of two 7-hour days per week) of supervised practice in an approved agency (normally other than the student's place of employment). ○ The Practicum is graded credit/no-credit, students must obtain a passing credit.	▪ SWK 654R/HLTH 644 Indigenous Wellbeing, Health, and Social Justice ▪ SWK 672R International Experience ▪ SWK 680R Critical Topics in Social Work and Health ▪ SWK 690R Special Topics in Social Work ○ Students cannot take BOTH SWK 609R Clinical Practice in Mental Health & Addictions and SWK 610R Interprofessional Approaches to Substance Use and Misuse and Mental Health ○ Students must complete all courses with a minimum 75% overall average including the compulsory and elective courses required in order to graduate from the program. • **Master's Integration Seminar and Capstone** ○ The Master's Integration Seminar and Capstone milestone includes two inter-related components: 1) the Integration Seminar and 2) the Capstone. ○ The Integration Seminar component is completed simultaneously with the Practicum, offering opportunity for guided critical reflection, drawing on Practicum experiences, other social work practice experiences, and course content to explore the integration of social work theories, frameworks, and approaches and field practice. ○ The Capstone component is completed in the last term of the MSW program, engaging students in a creative and summative project to reflect their MSW learning journey. There are two components to the Capstone: 1) a creative project; and 2) a digitally recorded presentation. ○ Both components of the Master's Integration Seminar and Capstone milestone are graded credit/no-credit and students must obtain a passing credit for both components. • **Graduate Studies Practicum** ○ The program includes a field education experience component of at least 462 hours (minimum of two 7-hour days per week) of supervised practice in an

Current Graduate Studies Academic Calendar content:	**Proposed Graduate Studies Academic Calendar content**:
	approved agency (normally other than the student's place of employment). ○ The Practicum is graded credit/no-credit, students must obtain a passing credit.

How will students currently registered in the program be impacted by these changes?

Students currently registered in the program will not be impacted by these changes.

Department/School approval date (mm/dd/yy): 12/15/21
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/11/23
Faculty approval date (mm/dd/yy): 01/26/24
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):
Senate approval date (mm/dd/yy) (if applicable):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Health

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☒ Inactivate: Master's Seminar Presentation

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☐ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: Choose an item.

Course number:

Course ID:

Course title (max. 100 characters including spaces):

Course short title (max. 30 characters including spaces):

Grading basis: Choose an item.

Course credit weight: Choose an item.

Course consent required: Choose an item.

Course description:

Meet type(s): Choose an item. Choose an item. Choose an item. Choose an item.

Primary meet type: Choose an item.

Delivery mode: Choose an item.

Requisites:

Special topics course: Yes ☐ No ☐

Cross-listed course: Yes ☐ No ☐

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with: Sections combined/held with:

Rationale for request:

Feedback from MSW students derived from the MSW Curriculum Survey, MSW student representatives on the MSW Program Committee, and through informal discussion with MSW students indicate repetition between the requirements of the Master's Seminar Presentation (Capstone) milestone and Master's Seminar (Integration Seminar) milestone. For example, both milestones rely heavily on the CASWE Standards of Accreditation – Core Learning Objectives (2014), with overlap in reflective activities related to eight (8) of the nine (9) capstone "competencies" and integration seminar "classrooms."

The inactivation of the Capstone milestone is intended to address repetition in the MSW curriculum between the Integration Seminar and the Capstone. The Capstone milestone will continue as a MSW program requirement; however, it will be included in the MSW program as a combined element of the Integration Seminar. That is, an updated version of the Integration Seminar that incorporates new core learning objectives from the Canadian Association of Social Work Education Standards for Accreditation and addresses repetition between the two milestones will be consolidated within the revised Integration Seminar.

This milestone should be removed from the following program:
Master of Social Work (MSW)

Form completed by: Andrea Daley
Department/School approval date (mm/dd/yy): 12/15/21
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 01/10/22
Faculty approval date (mm/dd/yy): 01/26/24
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Health

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☒ Revise: from Master's Seminar to Master's Integration Seminar and Capstone

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☐ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: Choose an item.

Course number:

Course ID:

Course title (max. 100 characters including spaces):

Course short title (max. 30 characters including spaces):

Grading basis: Choose an item.

Course credit weight: Choose an item.

Course consent required: Choose an item.

Course description:

Meet type(s): Lecture Choose an item. Choose an item. Choose an item.

Primary meet type: Choose an item.

Delivery mode: Choose an item.

Requisites:

Special topics course: Yes ☐ No ☐

Cross-listed course: Yes ☐ No ☐

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with: Sections combined/held with:

Rationale for request:

Feedback from MSW students derived from the MSW Curriculum Survey, MSW student representatives on the MSW Program Committee, and through informal discussion with MSW students indicate repetition between the requirements of the Master's Seminar Presentation (Capstone) milestone and Master's Seminar (Integration Seminar) milestone. For example, both milestones rely heavily on the CASWE Standards of Accreditation – Core Learning Objectives (2014), with overlap in reflective activities related to eight (8) of the nine (9) capstone "competencies" and integration seminar "classrooms."

While the overall goals of the milestones differ, with the Capstone attending to students' overall MSW learning journey (inclusive of academic courses, practicum, life events and experiences, etc.) and the Integration Seminar milestone attending more specifically to the integration of theory and practice vis-à-vis practicum, the consolidation of the Capstone and Integration Seminar holds the potential to cover the scope of both milestones, addressing the overlap of milestone content and offering students a deep learning opportunity, while avoiding repetition. Both milestones will be 'housed' in the same LEARN shell – likely in the existing Capstone shell, using PebblePad to create an Integration Seminar Workbook.

The Master's Integration Seminar and Capstone will include two inter-related MSW milestones: 1) the Integration Seminar; and 2) the Capstone. As inter-related milestones, the Integration Seminar and Capstone offer a scaffolding approach to critically reflecting on students' MSW learning journeys. The Integration Seminar supports a continuous process of self-directed critical reflection that brings practice experiences in the field into conversation with the MSW course content. This process contributes to a summative reflection on the MSW learning journey through the completion of the Capstone project. The Capstone project draws on arts-based pedagogy to move beyond cognitive processes of critical reflection to support holistic engagement with emotions, experiences, and knowledges, etc. that have been meaningful to students' MSW learning journeys.

This milestone should be revised for the following program:
Master of Social Work (MSW)

Form completed by: Andrea Daley
Department/School approval date (mm/dd/yy): 12/15/21
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 01/10/22
Faculty approval date (mm/dd/yy): 01/26/24
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Health

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☒ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Removing Department consent requirement.

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: SWK

Course number: 654R

Course ID: 016294

Course title (max. 100 characters including spaces): Indigenous Wellbeing, Health, and Social Justice

Course short title (max. 30 characters including spaces): Indigenous Wellbeing

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description: This interdisciplinary course is intended to engage and advance knowledge and practice in Indigenous wellbeing and health through a social justice lens. The course critically links determinants of Indigenous Peoples' wellbeing and health to historical and ongoing colonial priorities and practices. Disparities in health and social issues, access to care, and systemic challenges, including racism experienced by Indigenous

Peoples in different regions and contexts, are shared as points for discussion and reflection. An intersectionality lens is applied in consideration of the unique wellbeing and health experiences among Indigenous Peoples, including Indigenous women, youth, and Two Spirit Peoples. Indigenous approaches to science, healing, and community-based ethical practices are also profiled in social work and health care delivery, research, policy, and programming. The knowledges, values, and perspectives of Indigenous Peoples are highlighted throughout this course, incorporated within a variety of resources including readings, film and other arts-based narratives that include Indigenous scholars and community activists, in the delivery of course content and assignments. This course was created in consultation with a local Indigenous Advisory Circle that included community-based Indigenous Elders, health leaders, social workers, and academics involved in Indigenous initiatives and research. (Note: This is an online course).

Meet type(s): Lecture Online Choose an item. Choose an item.

Primary meet type: Lecture

Delivery mode: Only offered online

Requisites: N/A

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☒ No ☐

Course subject code(s) and number(s) to be cross-listed with and approval status: HLTH 644

Sections combined/held with: N/A

Rationale for request:

In the previous course revision process, department consent was listed as being required. The course does not require department consent.

Form completed by: Dr. Andrea Daley
Department/School approval date (mm/dd/yy): 06/15/22
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 06/29/22
Faculty approval date (mm/dd/yy): 01/26/24
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Health

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☒ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Removing Department consent requirement.

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: HLTH

Course number: 644

Course ID: 016294

Course title (max. 100 characters including spaces): Indigenous Wellbeing, Health, and Social Justice

Course short title (max. 30 characters including spaces): Indigenous Wellbeing

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description: This interdisciplinary course is intended to engage and advance knowledge and practice in Indigenous wellbeing and health through a social justice lens. The course critically links determinants of Indigenous Peoples' wellbeing and health to historical and ongoing colonial priorities and practices. Disparities in health and social issues, access to care, and systemic challenges, including racism experienced by Indigenous

Peoples in different regions and contexts, are shared as points for discussion and reflection. An intersectionality lens is applied in consideration of the unique wellbeing and health experiences among Indigenous Peoples, including Indigenous women, youth, and Two Spirit Peoples. Indigenous approaches to science, healing, and community-based ethical practices are also profiled in social work and health care delivery, research, policy, and programming. The knowledges, values, and perspectives of Indigenous Peoples are highlighted throughout this course, incorporated within a variety of resources including readings, film and other arts-based narratives that include Indigenous scholars and community activists, in the delivery of course content and assignments. This course was created in consultation with a local Indigenous Advisory Circle that included community-based Indigenous Elders, health leaders, social workers, and academics involved in Indigenous initiatives and research. (Note: This is an online course).

Meet type(s): Lecture Online Choose an item. Choose an item.

Primary meet type: Lecture

Delivery mode: Only offered online

Requisites: N/A

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☒ No ☐

Course subject code(s) and number(s) to be cross-listed with and approval status: SWK 654R

Sections combined/held with: N/A

Rationale for request:

In the previous course revision process, department consent was listed as being required. The course does not require department consent.

Form completed by: Dr. Andrea Daley
Department/School approval date (mm/dd/yy): PENDING
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 07/28/22
Faculty approval date (mm/dd/yy): 01/26/24
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Faculty of Mathematics Calendar submissions

1. **Calendar changes to Pure Math**

Motion to change the course number of PM 641 to PM 741 and add an anti-requisite.

Motions to update/change course description for:

- PM 740 to match changes to PM 440
- PM 753 to match changes to PM 453

2. **Calendar changes to Statistics and Actuarial Science**

Motion to create the course STAT 910 Bayesian Statistics

Motion to change the program requirements for:

- Master of Mathematics in Statistics to add a research paper option.

3. **Calendar changes to Statistics and Actuarial Science**

Motion to remove the consent requirement from ACTSC courses 611 – 615

Motion to remove the consent requirement from ACTSC courses 621 – 625 & 631 – 635

Motion to revise the breadth requirements to clarify the current processes from:

- Doctor of Philosophy (PhD) in Actuarial Science

Motion to revise the breadth requirements by adding the newly created course STAT 910 and the recently revised course STAT 923 for:

- Doctor of Philosophy (PhD) in Statistics
- Doctor of Philosophy (PhD) in Statistics – Biostatistics

4. **Calendar changes to Pure Math**

Motion to update/change course description and/or title for:

- PMath 632
- PMath 635
- PMath 733 and adding anti-requisite PMath 433

Motion to create the course PMath 734 Set Theory

5. **Calendar changes to Applied Math**

Motion to update the course breadth requirement list from:

- Doctor of Philosophy (PhD) in Applied Mathematics
- Doctor of Philosophy (PhD) in Applied Mathematics - Aeronautics
- Doctor of Philosophy (PhD) in Applied Mathematics - Water
- Master of Mathematics (MMath) in Applied Mathematics
- Master of Mathematics (MMath) in Applied Mathematics - Aeronautics
- Master of Mathematics (MMath) in Applied Mathematics - Co-operative Program
- Master of Mathematics (MMath) in Applied Mathematics - Quantum Information
- Master of Mathematics (MMath) in Applied Mathematics – Water

Motion to remove the breadth requirement from this program:

- Doctor of Philosophy (PhD) in Applied Mathematics - Quantum Information

6. **Calendar changes to Combinatorics and Optimization**

Motion to update the PhD Lecturing Requirement to correct an error, and include more detail from:

- Doctor of Philosophy (PhD) in Combinatorics and Optimization
- Doctor of Philosophy (PhD) in Combinatorics and Optimization - Internship
- Doctor of Philosophy (PhD) in Combinatorics and Optimization - Quantum Information
- Doctor of Philosophy (PhD) in Combinatorics and Optimization - Quantum Information – Internship

Motions 1, 2 were approved at Math Faculty Council on October 17th, 2023.

Motions 3-6 were approved at Math Faculty Council on November 28th, 2023.

1. Calendar changes to Pure Math

Motion to change the course number of PM 641 to PM 741 and add an anti-requisite.

Motions to update/change course description for:

- PM 740 to match changes to PM 440
- PM 753 to match changes to PM 453

UNIVERSITY OF WATERLOO

Senate Graduate & Research Council
Graduate Studies Course/Milestone Form

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Mathematics

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☒ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Changing the Course number from 641 to 741 and adding PMATH 641 as an anti-requisite.

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: PMATH

Course number: 741

Course ID: 002341

Course title (max. 100 characters including spaces): Algebraic Number Theory

Course short title (max. 30 characters including spaces): Algebraic Number Theory

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description: An introduction to algebraic number theory; unique factorization, Dedekind domains, class numbers, Dirichlet's unit theorem, solutions of Diophantine equations.

Meet type(s): Lecture Choose an item. Choose an item. Choose an item.

Primary meet type: Lecture

Delivery mode: On-campus

Requisites: Antireq: PMATH 441, PMATH 641

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with: PMATH 441

Rationale for request:

The number theory group favours renumbering PMATH 641/441 (Algebraic Number Theory) to PMATH 741/441. In this way, the numbering matches the one with the Analytic Number Theory course, which is PMATH 740/440. The renumbering will allow Ph.D. students to count the course towards their course requirements.

Form completed by: Nancy Maloney
Department/School approval date (mm/dd/yy): 04/18/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 04/21/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Mathematics

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☒ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Updating the Course description.

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: PMATH

Course number: 740

Course ID: 013669

Course title (max. 100 characters including spaces): Analytic Number Theory

Course short title (max. 30 characters including spaces): Analytic Number Theory

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description:

Current description: Summation methods; analytic theory of the Riemann zeta function; Prime Number Theorem; primitive roots; quadratic reciprocity; Dirichlet characters and infinitude of primes in arithmetic progressions; assorted topics.

Revised description: Summation methods, analytic theory of the Riemann zeta function, Prime Number Theorem, primitive roots. Dirichlet characters and infinitude of primes in arithmetic progressions, and assorted topics.

Meet type(s): Lecture Choose an item. Choose an item. Choose an item.

Primary meet type: Lecture

Delivery mode: On-campus

Requisites: Antireq: PMATH 440

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with: PMATH 440

Rationale for request:

Updating the course description to match that of the held with course PMATH 440.

Form completed by: Nancy Maloney
Department/School approval date (mm/dd/yy): 04/18/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 04/21/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Mathematics

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☒ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Updating the Course description.

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: PMATH

Course number: 753

Course ID: 013670

Course title (max. 100 characters including spaces): Functional Analysis

Course short title (max. 30 characters including spaces): Functional Analysis

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description:

Current description: Banach and Hilbert spaces, bounded linear maps, Hahn-Banach theorem, open mapping theorem, closed graph theorem, topologies, nets, Hausdorff spaces, Tietze extension theorem, dual spaces, weak topologies, Tychonoff's theorem, Banach-Alaoglu theorem, reflexive spaces.

Revised description: Banach and Hilbert spaces, bounded linear maps, Hahn-Banach theorem, open mapping theorem, closed graph theorem, topologies, nets, Hausdorff spaces, dual spaces, weak topologies, Tychonoff's theorem, Banach-Alaoglu theorem, reflexive spaces.

Meet type(s): Lecture Choose an item. Choose an item. Choose an item.

Primary meet type: Lecture

Delivery mode: On-campus

Requisites: Antireq: PMATH 453

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with: PMATH 453

Rationale for request:

Updating the course description to match that of the held with course PMATH 453.

Form completed by: Nancy Maloney
Department/School approval date (mm/dd/yy): 04/18/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 04/21/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

2. Calendar changes to Statistics and Actuarial Science

Motion to create the course STAT 910 Bayesian Statistics

Motion to change the program requirements for:

- Master of Mathematics in Statistics to add a research paper option.

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Mathematics

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☒ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☐ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: STAT

Course number: 910

Course ID: N/A

Course title (max. 100 characters including spaces): Bayesian Statistics

Course short title (max. 30 characters including spaces): Bayesian Statistics

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description: This is an in-depth and rigorous course on Bayesian methods for statistical analysis and inference. Topics include fundamentals of Bayesian reasoning: prior and posterior distributions, Bayesian decision theory; Bayesian point and interval estimation, hypothesis testing, model selection, predictive distributions, large sample theory; and Bayesian approaches to topics such as regression, hierarchical models, high-dimensional problems, nonparametrics, latent variable modelling and computational techniques.

Meet type(s): Lecture Choose an item. Choose an item. Choose an item.

Primary meet type: Lecture

Delivery mode: On-campus

Requisites: None

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status: N/A

Sections combined/held with: N/A

Rationale for request:

We currently have STAT 840 which covers some computational aspects of Bayesian inference such as MCMC and STAT 850 which contains an introduction to Bayesian inference. However, our curriculum lacks a designated core Bayesian statistics course that provides a 900-level graduate course on the topic. This course is to fill this gap.

Form completed by: Shoja'eddin Chenouri (Statistics and Actuarial Sciences, Associate Chair, Graduate Studies)
Department/School approval date (mm/dd/yy): 02/10/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 09/27/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Graduate Studies
Program Revision Template

Prior to form submission, review the content revision instructions and information regarding major/minor modifications. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Mathematics

Programs: 1) Master of Mathematics (MMath) in Statistics
2) Master of Mathematics (MMath) in Statistics - Co-operative Program

Program contact name(s): Shoja Chenouri

Form completed by: Heather McLaughlin

Description of proposed changes:
Note: changes to courses and milestones also require the completion/submission of the SGRC Graduate Studies Course/Milestone Form.

Changing the course requirements for the Master's Research Paper study option so that students will have one mandatory course and will choose four additional courses from pre-set categories plus two elective courses.

Is this a major modification to the program? No

Rationale for change(s):

The field of statistics has changed and the course requirements need to be updated to align with the current landscape.

Proposed effective date: Term: Spring Year: 2024

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

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-statistics-and-actuarial-science/master-mathematics-mmath-statistics

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-statistics-and-actuarial-science/master-mathematics-mmath-statistics-co-operative-program

Current Graduate Studies Academic Calendar content:	**Proposed Graduate Studies Academic Calendar content**:
Degree requirements **Thesis option:** • **Graduate Academic Integrity Module (Graduate AIM)** • **Courses**	**Degree requirements** **Thesis option:** • **Graduate Academic Integrity Module (Graduate AIM)** • **Courses** ○ Students must successfully complete 4 one-term (0.50 unit weight) graduate

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
○ Students must complete 4 one-term (0.50 unit weight) courses with an overall average of at least 70%. ○ The 4 courses must include STAT 850 Estimation and Hypothesis Testing and at least 2 900-level STAT courses. • **Graduate Skills Workshop** • **Master's Thesis** ○ Students must complete a thesis and an oral presentation. **Master's Research Paper option:** • **Graduate Academic Integrity Module (Graduate AIM)** • **Courses** ○ Students must complete 7 one-term (0.50 unit weight) courses with an overall average of at least 70%. ○ 3 of the 7 required courses should include: ▪ STAT 830 Experimental Design or STAT 835 Statistical Methods for Process Improvement ▪ STAT 850 Estimation and Hypothesis Testing ▪ STAT 854 Sampling Theory and Practice ○ Exemptions can be made to these required courses at the discretion of the Associate Chair for Graduate Studies. • **Graduate Skills Workshop** • **Master's Research Paper** ○ Students must complete a research paper that will be given a numeric grade which appears on the transcript beside the milestone.	level courses with an overall average of at least 70%. ○ The 4 courses must include STAT 850 Estimation and Hypothesis Testing and at least 2 900-level STAT courses. • **Graduate Skills Workshop** • **Master's Thesis** ○ Students must complete a thesis and an oral presentation. **Master's Research Paper option:** • **Graduate Academic Integrity Module (Graduate AIM)** • **Courses** • Students must successfully complete 7 one-term (0.50 unit weight) graduate level courses with an overall average of at least 70%. These courses must include: • STAT 850 Estimation and Hypothesis Testing, • 4 courses from at least two of the following three breadth categories: • Applied Statistics: ○ STAT 830 Experimental Design ○ STAT 831 Generalized Linear Models and Applications ○ STAT 854 Sampling Theory and Practice • Computational Statistics: ○ STAT 840 Computational Inference ○ STAT 841 Statistical Learning - Classification ○ STAT 844 Statistical Learning - Advanced Regression • Probability and Stochastic Process: ○ STAT 833 Stochastic Processes 2 ○ STAT 901 Theory of Probability 1 • 2 elective courses • Note: If students are considering continuing to a PhD in Statistics program, the Department strongly recommends that they take at least one course from each of the three categories of breadth courses. • Exemptions can be made to these required courses at the discretion of the Associate Chair for Graduate Studies. • **Graduate Skills Workshop** • **Master's Research Paper**

Current Graduate Studies Academic Calendar content:	**Proposed Graduate Studies Academic Calendar content**:
	○ Students must complete a research paper that will be given a numeric grade which appears on the transcript beside the milestone.

How will students currently registered in the program be impacted by these changes?

There will be no impact on the current students, as it will not be effective until at least Spring 2024.

Department/School approval date (mm/dd/yy): 04/14/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 09/12/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):
Senate approval date (mm/dd/yy) (if applicable):

3. Calendar changes to Statistics and Actuarial Science

Motion to remove the consent requirement from ACTSC courses 611 – 615

Motion to remove the consent requirement from ACTSC courses 621 – 625 & 631 – 635

Motion to revise the breadth requirements to clarify the current processes from:

- Doctor of Philosophy (PhD) in Actuarial Science

Motion to revise the breadth requirements by adding the newly created course STAT 910 and the recently revised course STAT 923 for:

- Doctor of Philosophy (PhD) in Statistics
- Doctor of Philosophy (PhD) in Statistics – Biostatistics

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Mathematics

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☒ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Removing the department consent requirement from the courses listed below and adding an "Actuarial Science Masters Students" requisite.

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: ACTSC

Course numbers:

1) 611
2) 612
3) 613
4) 614
5) 615

Course IDs:

1) 13389
2) 13390
3) 13391
4) 13392

5) 13393

Course title (max. 100 characters including spaces):

1) Financial Mathematics I
2) Life Insurance Mathematics I
3) Statistics for Actuarial Science
4) Corporate Finance and Accounting
5) Economics

Course short title (max. 30 characters including spaces):

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description:

Meet type(s): Lecture Tutorial Choose an item. Choose an item.

Primary meet type: Lecture

Delivery mode: On-campus

Requisites: Actuarial Science Masters Students (ACTSMACTSC)

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

The department consent requirement is being removed and replaced with an “Actuarial Science Masters Students” requisite. Removing the department consent will make it easier for the Actuarial Science Masters Students to enrol in the courses and will reduce the amount of permission numbers that the Department needs to generate.

Form completed by: Trevor Clews
Department/School approval date (mm/dd/yy): 09/29/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 08/11/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Mathematics

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☒ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Removing the department consent requirement from the courses listed below.

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: ACTSC

Course numbers:

1) 621
2) 622
3) 623
4) 624
5) 625
6) 631
7) 632
8) 633
9) 634
10) 635

Course IDs:

1) 13406
2) 13395
3) 13396
4) 13397
5) 13398
6) 13399
7) 13400
8) 13401
9) 13402
10) 13403

Course title (max. 100 characters including spaces):

1) Financial Mathematics II
2) Life Insurance Mathematics II
3) Applied Statistics
4) Stochastic Processes for Actuarial Science
5) Casualty and Health Insurance Mathematics
6) Financial Mathematics III
7) Data Science with Actuarial Applications
8) Actuarial Risk Management
9) Quantitative Risk Management
10) Profession Communications in Actuarial Science

Course short title (max. 30 characters including spaces):

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description:

Meet type(s): Lecture Tutorial Lecture Choose an item.

Primary meet type: Lecture

Delivery mode: On-campus

Requisites: Actuarial Science Masters Students (ACTSMACTSC)

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

These courses currently include a department consent requirement and an “Actuarial Science Master’s Students” requisite. The department consent is overriding the requisite and as such all students must obtain a permission number from the Department to enrol in the courses. Removing the department consent will make it easier for the Actuarial Science Master’s Students to enrol in the courses and will reduce the amount of permission numbers that the Department needs to generate.

Form completed by: Trevor Clews
Department/School approval date (mm/dd/yy): 10/29/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 08/11/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Graduate Studies
Program Revision Template

Prior to form submission, review the content revision instructions and information regarding major/minor modifications. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Mathematics

Program: Doctor of Philosophy (PhD) in Actuarial Science

Program contact name(s): Shoja'eddin Chenouri and Heather McLaughlin

Form completed by: Shoja'eddin Chenouri

Description of proposed changes:
Note: changes to courses and milestones also require the completion/submission of the SGRC Graduate Studies Course/Milestone Form.

The changes proposed clarifies our current process by rewording and restructuring what is currently published. ACTSC 833 was changed to ACTSC 854 in 2019, which is now reflected in the breadth requirements.

Is this a major modification to the program? No

Rationale for change(s):

Sections of the degree requirements were unclear to students.

Proposed effective date: Term: Spring Year: 2024

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

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-statistics-and-actuarial-science/doctor-philosophy-phd-actuarial-science

Current Graduate Studies Academic Calendar content:	**Proposed Graduate Studies Academic Calendar content**:

Degree requirements
 	
• **Courses**
  ○ Students must complete 6 one-term (0.50 unit weight) courses with an overall average of at least 75%; these courses must include ACTSC 900 PhD Research Skills, ~~3 breadth requirement courses from the Category table below and 2 graduate-level STAT or ACTSC courses.~~ 3 of the required 6 courses ~~should~~ be 900-level ~~courses~~ and 3 of the courses should have an ACTSC subject code.
	Degree requirements
	
	• **Courses**
	  ○ Students entering the PhD in Actuarial Sciences program with a Master's degree must complete 6 one-term (0.50 unit weight) courses with an overall average of at least 75%. These courses must include the following:
	  ▪ ACTSC 900 PhD Research Skills
	  ▪ 3 courses from each of the categories listed in Table 1 below to demonstrate breadth:

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
○ Students without a master's degree ~~and entering the PhD with only a bachelor's degree, will be required to take~~ 9 one-term courses with an overall average of at least 75%; these courses must ~~include~~ ACTSC 900 PhD Research Skills, 3 ~~breadth requirement~~ courses from ~~the Category table below and 5 graduate-level STAT or ACTSC courses~~. 3 of the required 9 courses ~~should~~ be 900-level courses and 3 of the courses ~~should~~ have an ACTSC subject code. • **Graduate Skills Workshop** ○ Students must complete the Graduate Skills Workshop during the first year of the program. ○ Students who have ~~successfully completed this requirement in their master's program will be exempt~~. • **Research Presentation** ○ Students are expected to deliver at least 3 seminars during their program. The purpose of this requirement is to provide students with an opportunity to improve their presentation skills. Each seminar should be attended by one, or preferably two, departmental faculty members. • **PhD Comprehensive Examination I** ○ ~~The Comprehensive Examination I requirement ("breadth requirement") ensures that students have sufficient breadth of knowledge to undertake research at the PhD level.~~ ○ ~~For graduate level breadth, students are required to take 3 courses, achieving~~ a grade of at least 75% in each ~~of them; which will cover 3 broad categories in Actuarial Science: Insurance Mathematics, Probability and Statistics, and Finance and Risk Management, see the Category table below. Students should take at least 1 course from each category.~~ ~~Table of category and courses~~ ~~Category~~ | ~~Courses~~ ~~Insurance Mathematics~~ | ~~ACTSC 833, ACTSC 855, ACTSC 962~~	▪ 1 course in Insurance Mathematics ▪ 1 course in Probability and Statistics ▪ 1 course in Finance and Risk Management ▪ 2 graduate-level (800 and 900 level) STAT or ACTSC courses ▪ Additional constraint: 3 of the required 6 courses must be 900-level (including ACTSC 900) and 3 of the courses must have a ACTSC subject code. ▪ Exemptions can be made to the required breadth courses at the discretion of the Associate Chair for Graduate Studies. ○ Students entering the PhD in Actuarial Sciences program without a Master's degree must complete 9 one-term (0.50 unit weight) courses with an overall average of at least 75%. These courses must meet the following criteria to demonstrate breadth: ▪ ACTSC 900 PhD Research Skills ▪ 3 courses from each of the categories listed in Table 1 below: ▪ 1 course in Insurance Mathematics ▪ 1 course in Probability and Statistics ▪ 1 course in Finance and Risk Management ▪ 5 graduate-level (800 and 900 level) STAT or ACTSC courses. ▪ Additional constraint: 3 of the required 9 courses must be 900-level (including ACTSC 900) and 3 of the courses must have a ACTSC subject code. ▪ Exemptions can be made to the required breadth courses at the discretion of the Associate Chair for Graduate Studies. ○ Table 1: List of the three categories required for breadth requirements and their courses. Table of category and courses **Category** | **Courses** Insurance Mathematics | ACTSC 854, ACTSC 855, ACTSC 962

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:

~~Probability and Statistics~~	~~STAT 831, STAT 841, STAT 850, STAT 901, STAT 902, ACTSC 965~~
~~Finance and Risk Management~~	~~ACTSC 964, ACTSC 970, ACTSC 971, ACTSC 972, ACTSC 974, STAT 906~~

- Topics courses will be assigned to the appropriate category by the Graduate Officer.
- ~~The Graduate Officer may ask for specific courses following the entry review.~~
- ~~Each student will be examined by a committee of at least three departmental Faculty members including the supervisor(s). The student will~~ prepare a portfolio and undertake an oral exam. ~~Each committee will grade~~ according to a common grading scheme and all grades in the class will be moderated by the instructor to ensure consistency across committees. If the committee and instructor ~~jointly feel~~ that the student has not reached the required standard for a passing grade, they will prepare detailed comments on the weaknesses that need to be addressed in the portfolio and the oral exam. The student will then address these issues, resubmit the portfolio and retake the oral exam by the end of the following term. If the student fails for a second time they will be required to withdraw from the program.
- By the end of their third term, students are required to (a) take at least 5 graduate level courses including their 900-level course requirements ~~(excluding ACTSC 900) and~~ (b) complete their required breadth requirements.

- **PhD Comprehensive Examination II**
  - Students are required to meet the University-level PhD Comprehensive Examination minimum requirements outlined in the "Minimum requirements for the PhD degree" section of the Graduate Studies Academic Calendar (GSAC), with certain noted differences that are specific to the Faculty of Mathematics Comprehensive Examination minimum requirements:

Probability and Statistics	ACTSC 965, STAT 831, STAT841, STAT 850, STAT 901, STAT 902
Finance and Risk Management	ACTSC 964, ACTSC 970, ACTSC 971, ACTSC 972, ACTSC 974, ACTSC 906

- **Graduate Skills Workshop**
  - Students must complete the Graduate Skills Workshop during the first year of the program.
  - Students who have completed their Master of Mathematics degree at the University of Waterloo and who have completed the Graduate Skills Workshop are exempt from repeating the same workshop.

- **Research Presentation**
  - Students are expected to deliver at least three (3) seminars during their program. The purpose of this requirement is to provide students with an opportunity to improve their presentation skills. Each seminar should be attended by one, or preferably two, departmental faculty members.

- **PhD Comprehensive Examination**
  - The PhD Comprehensive Examination is divided into two stages: Stage I and Stage II. Students must complete Stage I before they can proceed to Stage II.
  - The Stage I requirement consists of courses in the "breadth requirement" and ACTSC 900 PhD Research Skills. The breadth requirement ensures that students have sufficient breadth of knowledge to undertake research at the PhD level.
  - The Stage II requirement, also referred to as the thesis proposal defense, is a diagnostic oral examination, the purpose of which is to test a student's preparedness to undertake thesis research in their specific field.

- **PhD Comprehensive Examination I**
  - By the end of their third term, students are required to (a) take at least 5 graduate level courses including their 900-level course requirements, (b) complete their required breadth

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
▪ Comprehensive examination purpose: Consistent with University-level minimum requirements. ▪ Timing: Consistent with University-level minimum requirements. ▪ Committee: Consistent with University-level minimum requirements. Note: The Faculty of Mathematics wishes to use the option to have the committee approved by a delegate of the Associate Dean, namely by the Graduate Officer in the home department of the student. ▪ Who Chairs an examination: Consistent with University-level minimum requirements. ▪ Format / Content: Consistent with University-level minimum requirements. ▪ Academic integrity: In the Faculty of Mathematics, when a student needs to submit a written document to their comprehensive examination committee prior to the examination, they are required to sign an acknowledgement form affirming their work does not violate the University policy on Academic Integrity. Students are also encouraged to use a plagiarism detection software and include its report with the submission of their written document. Furthermore, the comprehensive examination committee may require the student to use such software and include the report it generated with the submission of their written component. ○ In addition to the University-level and Faculty-level PhD Comprehensive Examination minimum requirements, students in the PhD in Actuarial Science program are also required to meet the following requirements: ▪ ~~The Stage II Comprehensive Examination is a diagnostic examination, the purpose of which is to test a student's~~	requirements (see Table 1 above), and (c) ACTSC 900. ○ Students must achieve a grade of at least 75% in each breadth requirement course. Topics courses will be assigned to the appropriate category by the Graduate Officer. ○ The Graduate Officer may require students to take additional courses beyond the minimum number of courses noted above in the offer letter to the student (i.e., six courses for PhD students with a Masters, or nine courses for PhD students without a Masters). ○ Students must take ACTSC 900 that requires students to prepare a portfolio and undertake an oral exam by the end of their third term. Each student will be examined by the instructor and a ACTSC 900 committee, which includes the supervisor(s) and at least two other departmental Faculty members. This committee will evaluate the student according to a common grading scheme and all grades in the class will be moderated by the instructor to ensure consistency across committees. If the committee and instructor determine that the student has not reached the required standard for a passing grade, then they will prepare detailed comments on the weaknesses that need to be addressed in the portfolio and the oral exam. The student will then address these issues, resubmit the portfolio and retake the oral exam by the end of the following term. If the student fails the course for a second time, they will be required to withdraw from the program. • **PhD Comprehensive Examination II** ○ Students are required to meet the University-level PhD Comprehensive Examination minimum requirements outlined in the "Minimum requirements for the PhD degree" section of the Graduate Studies Academic Calendar (GSAC), with certain noted differences that are specific to the Faculty of Mathematics Comprehensive Examination minimum requirements: ▪ Comprehensive examination purpose: Consistent with

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
~~preparedness to undertake thesis research. The format of this aspect of the comprehensive requirement is that of a public, oral presentation of a thesis proposal,~~ followed by questioning from the student's Stage II Committee and any other members of the university community who may be present. ~~A written thesis proposal is submitted prior to the examination.~~ ▪ The Stage II Comprehensive Examination Committee consists of the supervisor and at least two additional faculty members from the Department. The composition of the Stage II Committee must be approved by the Graduate Committee, and the Associate Chair for Graduate Studies will act as a neutral chair of the Committee of examiners, or will appoint a faculty member to serve in that capacity. • **PhD Thesis** ○ The PhD thesis examination, ~~which is~~ the culmination of the candidate's research efforts as a graduate student, is divided into two stages: ▪ Departmental Thesis Presentation ▪ University Thesis Defence ○ Departmental Thesis Presentation: PhD students are ~~required~~ to present the results of their research before interested members of the department. This departmental thesis presentation is intended to fulfil several purposes. Students have an opportunity to practise their presentation skills and to gain valuable experience in answering questions about their work in a public setting. As well, faculty and graduate students who are interested in the thesis topic are provided with an overview of the student's research prior to the actual thesis examination. ○ PhD Thesis Examination: the student shall defend the thesis in an oral examination before an Examining	University-level minimum requirements. ▪ Timing: Consistent with University-level minimum requirements. ▪ Committee: Consistent with University-level minimum requirements. Note: The Faculty of Mathematics wishes to use the option to have the committee approved by a delegate of the Associate Dean, namely by the Graduate Officer <u>or the Graduate Operations Committee</u> in the home department of the student. ▪ Who Chairs an examination: Consistent with University-level minimum requirements. ▪ Format / Content: Consistent with University-level minimum requirements. ▪ Academic integrity: In the Faculty of Mathematics, when a student needs to submit a written document to their comprehensive examination committee prior to the examination, they are required to sign an acknowledgement form affirming their work does not violate the University policy on Academic Integrity. Students are also encouraged to use a plagiarism detection software and include its report with the submission of their written document. Furthermore, the comprehensive examination committee may require the student to use such software and include the report it generated with the submission of their written component. ○ In addition to the University-level and Faculty-level PhD Comprehensive Examination minimum requirements, students in the PhD in Actuarial Science program are also required to meet the following requirements: ▪ <u>Submit a written thesis proposal to the committee prior to the examination and present it during the comprehensive (Stage II) examination. The</u>

Current Graduate Studies Academic Calendar content:	**Proposed Graduate Studies Academic Calendar content**:
Committee, which shall consist of the supervisor(s), two faculty members in the Department, one faculty member from outside the Department, and an external examiner familiar with the student's research field. The Committee is approved by the Faculty Graduate Committee.	thesis proposal is orally presented to the public, followed by questioning from the student's Stage II Committee and any other members of the university community who may be present. ▪ The Stage II Comprehensive Examination Committee consists of the supervisor(s) and at least two additional faculty members from the Department. The composition of the Stage II Committee must be approved by the Graduate Operations Committee, and the Associate Chair for Graduate Studies will act as a neutral chair of the Committee of examiners, or will appoint a faculty member to serve in that capacity. • **PhD Thesis** ○ The PhD thesis and thesis examination are the culmination of the candidate's research efforts as a graduate student. ○ The examination is divided into two stages: ▪ Optional Departmental Thesis Presentation ▪ University Thesis Defense ○ Departmental Thesis Presentation: PhD students are encouraged to present the results of their research before interested members of the department. This departmental thesis presentation is intended to fulfil several purposes. Students have an opportunity to practice their presentation skills and to gain valuable experience in answering questions about their work in a public setting. As well, faculty and graduate students who are interested in the thesis topic are provided with an overview of the student's research prior to the actual thesis examination. ○ PhD Thesis Examination: the student shall defend the thesis in an oral examination before an Examining Committee, which shall consist of the supervisor(s), two faculty members in the Department, one faculty member from outside the Department, and an external examiner familiar with the

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
	student's research field. The Committee is approved by the Faculty Graduate Operations Committee. ○ Students must submit the PhD thesis to GSPA after it has been accepted by the Department and Faculty.

How will students currently registered in the program be impacted by these changes?

We expect that the changes proposed will improve the students' understanding of their degree requirements. We do not anticipate any negative impacts for the students currently registered in the program.

Department/School approval date (06/23/23):
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/16/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):
Senate approval date (mm/dd/yy) (if applicable):

Graduate Studies
Program Revision Template

Prior to form submission, review the content revision instructions and information regarding major/minor modifications. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Mathematics

Programs: 1) Doctor of Philosophy (PhD) in Statistics

2) Doctor of Philosophy (PhD) in Statistics - Biostatistics

Program contact name(s): Shoja'eddin Chenouri and Heather McLaughlin

Form completed by: Shoja'eddin Chenouri

Description of proposed changes:
Note: changes to courses and milestones also require the completion/submission of the SGRC Graduate Studies Course/Milestone Form.

The changes proposed clarify our current process by rewording and restructuring what is currently published. Additionally, these changes add the newly created course STAT 910 and the recently revised course STAT 923 to the applied statistics category in Table 1 and removes STAT 847 from the computing category.

Is this a major modification to the program? No

Rationale for change(s):

Sections of the degree requirements were unclear to students. By the method of elimination, STAT 910 and STAT 923 seems to fit better into the Applied Statistics category. Stat 847 is restricted to MDSAI students only and removed from the Computing category.

Proposed effective date: Term: Spring Year: 2024

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

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-statistics-and-actuarial-science/doctor-philosophy-phd-statistics

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-statistics-and-actuarial-science/doctor-philosophy-phd-statistics-biostatistics

Current Graduate Studies Academic Calendar content:	**Proposed Graduate Studies Academic Calendar content**:

Degree requirements
 	
• **Courses**
  ○ Students must complete 6 one-term (0.50 unit weight) courses with an overall average of at least 75%; these courses must include STAT 900 PhD Research Skills, ~~3 breadth requirement~~
	Degree requirements
	
	• **Courses**
	  ○ Students entering the PhD program with a Master's degree must complete 6 one-term (0.50 unit weight) courses with an overall average of at least 75%.

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
~~courses from the Category table below and 2 graduate-level STAT or ACTSC courses.~~ 3 of the required 6 courses should be 900-level courses and 3 of the courses should have a STAT subject code. ○ Students without a master's degree ~~and entering the PhD with only a bachelor's degree, will be required to take~~ 9 one-term courses with an overall average of at least 75%; these courses must include STAT 900 PhD Research Skills, 3 ~~breadth requirement courses from the Category table below and 5 graduate-level STAT or ACTSC courses~~. 3 of the required 9 courses should be 900-level courses and 3 of the courses should have a STAT subject code. • **Graduate Skills Workshop** ○ Students must complete the Graduate Skills Workshop during the first year of the program. ○ Students who have ~~successfully completed this requirement in their master's program will be exempt~~. • **Research Presentation** ○ Students are expected to deliver at least 3 seminars during their program. The purpose of this requirement is to provide students with an opportunity to improve their presentation skills. Each seminar should be attended by one, or preferably two, departmental faculty members. • **PhD Comprehensive Examination I** ○ ~~The Comprehensive Examination I requirement ("breadth requirement") ensures that students have sufficient breadth of knowledge to undertake research at the PhD level.~~ ○ ~~For graduate level breadth, students are required to take 3 courses, achieving~~ a grade of at least 75% in each ~~of them; which will cover 3 broad categories in Statistics: Mathematical Statistics and Probability, Computing, and Applied Statistics, see the Category table below. Students should take at least 1 course from each category.~~	These courses must include the following: ▪ STAT 900 PhD Research Skills ▪ 3 courses from each of the categories listed in Table 1 below to demonstrate breadth: ▪ 1 course in Mathematical Statistics and Probability ▪ 1 course in Computing ▪ 1 course in Applied Statistics ▪ 2 graduate-level (800 and 900 level) STAT or ACTSC courses; ▪ Additional constraint: 3 of the required 6 courses must be 900-level (including STAT 900) and 3 of the courses must have a STAT subject code. ▪ Exemptions can be made to the required breadth courses at the discretion of the Associate Chair for Graduate Studies. ○ Students entering the PhD program without a Master's degree must complete 9 one-term (0.50 unit weight) courses with an overall average of at least 75%. These courses must meet the following criteria to demonstrate breadth: ▪ STAT 900 PhD Research Skills ▪ 3 courses from each of the categories listed in Table 1 below: ▪ 1 course in Mathematical Statistics and Probability ▪ 1 course in Computing ▪ 1 course in Applied Statistics ▪ 5 graduate-level (800 and 900 level) STAT or ACTSC courses. ▪ Additional constraint: 3 of the required 9 courses must be 900-level (including STAT 900) and 3 of the courses must have a STAT subject code. ▪ Exemptions can be made to the required breadth courses at the discretion of the Associate Chair for Graduate Studies. ○ Table 1: List of the three categories required for breadth requirements and their courses.

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:

~~Table of category and courses~~

~~Category~~	~~Courses~~
~~Mathematical Statistics and Probability~~	~~STAT 901, STAT 902, STAT 908~~
~~Computing~~	~~STAT 840, STAT 841, STAT 842, STAT 844, STAT 847, STAT 906~~
~~Applied Statistics~~	~~STAT 830, STAT 831, STAT 835, STAT 836, STAT 854, STAT 929, STAT 931, STAT 932, STAT 935, STAT 936, STAT 938, STAT 974~~

- Topics courses will be assigned to the appropriate category by the Graduate Officer.
- ~~The Graduate Officer may ask for specific courses following the entry review.~~
- ~~Each student will be examined by a committee of at least three departmental Faculty members including the supervisor(s). The student will~~ prepare a portfolio and undertake an oral exam. ~~Each committee will grade~~ according to a common grading scheme and all grades in the class will be moderated by the instructor to ensure consistency across committees. If the committee and instructor ~~jointly feel~~ that the student has not reached the required standard for a passing grade, they will prepare detailed comments on the weaknesses that need to be addressed in the portfolio and the oral exam. The student will then address these issues, resubmit the portfolio and retake the oral exam by the end of the following term. If the student fails for a second time they will be required to withdraw from the program.
- By the end of their third term, students are required to (a) take at least 5 graduate level courses including their 900-level course requirements ~~(excluding STAT 900) and~~ (b) complete their required breadth requirements.

- **PhD Comprehensive Examination II**
  - Students are required to meet the University-level PhD Comprehensive

Table of category and courses

Category	Courses
Mathematical Statistics and Probability	STAT 901, STAT 902, STAT 908
Computing	STAT 840, STAT 841, STAT 842, STAT 844, STAT 906
Applied Statistics	STAT 830, STAT 831, STAT 835, STAT 836, STAT 854, STAT 910, STAT 923, STAT 929, STAT 931, STAT 932, STAT 935, STAT 936, STAT 938, STAT 974

- **Graduate Skills Workshop**
  - Students must complete the Graduate Skills Workshop during the first year of the program.
  - Students who have completed their Master of Mathematics degree at the University of Waterloo and who have completed the Graduate Skills Workshop are exempt from repeating the same workshop.

- **Research Presentation**
  - Students are expected to deliver at least three (3) seminars during their program. The purpose of this requirement is to provide students with an opportunity to improve their presentation skills. Each seminar should be attended by one, or preferably two, departmental faculty members.

- **PhD Comprehensive Examination**
  - The PhD Comprehensive Examination is divided into two stages: Stage I and Stage II. Students must complete Stage I before they can proceed to Stage II.
  - The Stage I requirement consists of courses in the “breadth requirement” and STAT 900 PhD “Research Skills”. The breadth requirement ensures that students have sufficient breadth of knowledge to undertake research at the PhD level.
  - The Stage II requirement, also referred to as the thesis proposal defense, is a diagnostic oral examination, the purpose of which is to test a student's

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
Examination minimum requirements outlined in the "Minimum requirements for the PhD degree" section of the Graduate Studies Academic Calendar (GSAC), with certain noted differences that are specific to the Faculty of Mathematics Comprehensive Examination minimum requirements: ▪ Comprehensive examination purpose: Consistent with University-level minimum requirements. ▪ Timing: Consistent with University-level minimum requirements. ▪ Committee: Consistent with University-level minimum requirements. Note: The Faculty of Mathematics wishes to use the option to have the committee approved by a delegate of the Associate Dean, namely by the Graduate Officer in the home department of the student. ▪ Who Chairs an examination: Consistent with University-level minimum requirements. ▪ Format / Content: Consistent with University-level minimum requirements. ▪ Academic integrity: In the Faculty of Mathematics, when a student needs to submit a written document to their comprehensive examination committee prior to the examination, they are required to sign an acknowledgement form affirming their work does not violate the University policy on Academic Integrity. Students are also encouraged to use a plagiarism detection software and include its report with the submission of their written document. Furthermore, the comprehensive examination committee may require the student to use such software and include the report it generated with the submission of their written component. ○ In addition to the University-level and Faculty-level PhD Comprehensive	preparedness to undertake thesis research in their specific field. • **PhD Comprehensive Examination I** ○ By the end of their third term, students are required to (a) take at least 5 graduate level courses including their 900-level course requirements, (b) complete their required breadth requirements (see Table 1 above), and (c) STAT 900. ○ Students must achieve a grade of at least 75% in each breadth requirement course. Topics courses will be assigned to the appropriate category by the Graduate Officer. ○ The Graduate Officer may require students to take additional courses beyond the minimum number of courses noted above in the offer letter to the student (i.e., six courses for PhD students with a Masters, or nine courses for PhD students without a Masters). ○ Students must take STAT 900 that requires students to prepare a portfolio and undertake an oral exam by the end of their third term. Each student will be examined by the instructor and a STAT 900 committee, which includes the supervisor(s) and at least two other departmental Faculty members. This committee will evaluate the student according to a common grading scheme and all grades in the class will be moderated by the instructor to ensure consistency across committees. If the committee and instructor determine that the student has not reached the required standard for a passing grade, then they will prepare detailed comments on the weaknesses that need to be addressed in the portfolio and the oral exam. The student will then address these issues, resubmit the portfolio and retake the oral exam by the end of the following term. If the student fails the course for a second time, then they will be required to withdraw from the program. • **PhD Comprehensive Examination II** ○ Students are required to meet the University-level PhD Comprehensive Examination minimum requirements

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
Examination minimum requirements, students in the PhD in Statistics program are also required to meet the following requirements: ▪ ~~The Stage II Comprehensive Examination is a diagnostic examination, the purpose of which is to test a student's preparedness to undertake thesis research. The format of this aspect of the comprehensive requirement is that of a public, oral presentation of a thesis proposal~~, followed by questioning from the student's Stage II Committee and any other members of the university community who may be present. ~~A written thesis proposal is submitted prior to the examination~~. ▪ The Stage II Comprehensive Examination Committee consists of the supervisor and at least two additional faculty members from the Department. The composition of the Stage II Committee must be approved by the Graduate Committee, and the Associate Chair for Graduate Studies will act as a neutral chair of the Committee of examiners, or will appoint a faculty member to serve in that capacity. • **PhD Thesis** ○ The PhD thesis examination, which is the culmination of the candidate's research efforts as a graduate student, is divided into two stages: ▪ Departmental Thesis Presentation ▪ University Thesis Defence ○ Departmental Thesis Presentation: PhD students are required to present the results of their research before interested members of the department. This departmental thesis presentation is intended to fulfil several purposes. Students have an opportunity to practise their presentation skills and to gain valuable experience in answering questions about their work in a public	outlined in the "Minimum requirements for the PhD degree" section of the Graduate Studies Academic Calendar (GSAC), with certain noted differences that are specific to the Faculty of Mathematics Comprehensive Examination minimum requirements: ▪ Comprehensive examination purpose: Consistent with University-level minimum requirements. ▪ Timing: Consistent with University-level minimum requirements. ▪ Committee: Consistent with University-level minimum requirements. Note: The Faculty of Mathematics wishes to use the option to have the committee approved by a delegate of the Associate Dean, namely by the Graduate Officer or the Graduate Operations Committee in the home department of the student. ▪ Who Chairs an examination: Consistent with University-level minimum requirements. ▪ Format / Content: Consistent with University-level minimum requirements. ▪ Academic integrity: In the Faculty of Mathematics, when a student needs to submit a written document to their comprehensive examination committee prior to the examination, they are required to sign an acknowledgement form affirming their work does not violate the University policy on Academic Integrity. Students are also encouraged to use a plagiarism detection software and include its report with the submission of their written document. Furthermore, the comprehensive examination committee may require the student to use such software and include the report it generated with the submission of their written component. ○ In addition to the University-level and Faculty-level PhD Comprehensive

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
setting. As well, faculty and graduate students who are interested in the thesis topic are provided with an overview of the student's research prior to the actual thesis examination. ○ PhD Thesis Examination: the student shall defend the thesis in an oral examination before an Examining Committee, which shall consist of the supervisor(s), two faculty members in the Department, one faculty member from outside the Department, and an external examiner familiar with the student's research field. The Committee is approved by the Faculty Graduate Committee.	Examination minimum requirements, students in the PhD in Statistics program are also required to meet the following requirements: ▪ Submit a written thesis proposal to the committee prior to the examination and present it during the comprehensive (Stage II) examination. The thesis proposal is orally presented to the public, followed by questioning from the student's Stage II Committee and any other members of the university community who may be present. ▪ The Stage II Comprehensive Examination Committee consists of the supervisor(s) and at least two additional faculty members from the Department. The composition of the Stage II Committee must be approved by the Graduate Operations Committee, and the Associate Chair for Graduate Studies will act as a neutral chair of the Committee of examiners, or will appoint a faculty member to serve in that capacity. • **PhD Thesis** ○ The PhD thesis and thesis examination are the culmination of the candidate's research efforts as a graduate student. ○ The examination is divided into two stages: ▪ Optional Departmental Thesis Presentation ▪ University Thesis Defense ○ Departmental Thesis Presentation: PhD students are encouraged to present the results of their research before interested members of the department. This departmental thesis presentation is intended to fulfil several purposes. Students have an opportunity to practice their presentation skills and to gain valuable experience in answering questions about their work in a public setting. As well, faculty and graduate students who are interested in the thesis topic are provided with an

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
	overview of the student's research prior to the actual thesis examination. ○ PhD Thesis Examination: the student shall defend the thesis in an oral examination before an Examining Committee, which shall consist of the supervisor(s), two faculty members in the Department, one faculty member from outside the Department, and an external examiner familiar with the student's research field. The Committee is approved by the Faculty Graduate Operations Committee. ○ Students must submit the PhD thesis to GSPA after it has been accepted by the Department and Faculty.

How will students currently registered in the program be impacted by these changes?

We expect that the changes proposed will improve the students' understanding of their degree requirements. We do not anticipate any negative impacts for the students currently registered in the program.

Department/School approval date (06/23/23):
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/16/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):
Senate approval date (mm/dd/yy) (if applicable):

Graduate Studies
Program Revision Template

Prior to form submission, review the content revision instructions and information regarding major/minor modifications. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Mathematics

Programs: 1) Master of Mathematics (MMath) in Actuarial Science
2) Master of Mathematics (MMath) in Biostatistics
3) Master of Mathematics (MMath) in Statistics

Program contact name(s): Greg Rice / Heather McLaughlin

Form completed by:

Description of proposed changes:
Note: changes to courses and milestones also require the completion/submission of the SGRC Graduate Studies Course/Milestone Form.

Articulating the length of program in the GSAC.

Is this a major modification to the program? No

Rationale for change(s):

This change achieves greater clarity on program length for programs in the GSAC which has benefits for students in terms of immigration and program administration.

Proposed effective date: Term: Spring Year: 2024

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

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-statistics-and-actuarial-science/master-mathematics-mmath-actuarial-science

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-statistics-and-actuarial-science/master-mathematics-mmath-biostatistics

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-statistics-and-actuarial-science/master-mathematics-mmath-statistics

Current Graduate Studies Academic Calendar content:	**Proposed Graduate Studies Academic Calendar content**:

Program information
 	
• No current length of program content
	Program information
	
	• Length of program
	  ○ Full-time: 4 terms (16 months)
	  ○ Part-time: 8 terms (32 months)

How will students currently registered in the program be impacted by these changes?

This change will not impact currently registered students, it will provide transparency on the duration of the program.

Department/School approval date (mm/dd/yy): 09/29/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 11/07/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):
Senate approval date (mm/dd/yy) (if applicable):

Graduate Studies
Program Revision Template

Prior to form submission, review the content revision instructions and information regarding major/minor modifications. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Mathematics

Programs: 1) Master of Mathematics (MMath) in Biostatistics - Co-operative Program
2) Master of Mathematics (MMath) in Statistics - Co-operative Program

Program contact name(s): Greg Rice / Heather McLaughlin

Form completed by:

Description of proposed changes:
Note: changes to courses and milestones also require the completion/submission of the SGRC Graduate Studies Course/Milestone Form.

Articulating the length of program in the GSAC.

Is this a major modification to the program? No

Rationale for change(s):

This change achieves greater clarity on program length for programs in the GSAC which has benefits for students in terms of immigration and program administration.

Proposed effective date: Term: Spring Year: 2024

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

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-statistics-and-actuarial-science/master-mathematics-mmath-biostatistics-co-operative-program

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-statistics-and-actuarial-science/master-mathematics-mmath-statistics-co-operative-program

Current Graduate Studies Academic Calendar content:	**Proposed Graduate Studies Academic Calendar content**:
Program information • No current length of program content	**Program information** • Length of program ○ 6 terms (24 months)

How will students currently registered in the program be impacted by these changes?

This change will not impact currently registered students, it will provide transparency on the duration of the program.

Department/School approval date (mm/dd/yy): 09/29/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 11/07/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):
Senate approval date (mm/dd/yy) (if applicable):

4. Calendar changes to Pure Math

Motion to update/change course description and/or title for:

- PMath 632
- PMath 635
- PMath 733 and adding anti-requisite PMath 433

Motion to create the course PMath 734 Set Theory

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Mathematics

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☒ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Updating the Course title and Course description.

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: PMATH

Course number: 632

Course ID: 002339

Course title (max. 100 characters including spaces):

Current Course title: First Order Logic and Computability

Revised Course title: Mathematical Logic

Course short title (max. 30 characters including spaces): Mathematical Logic

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description:

Current Course description: The concepts of formal provability and logical consequence in first order logic are introduced, and their equivalence is proved in the soundness and completeness theorems. Goedel's incompleteness theorem is discussed; making use of the halting problem of computability theory. Relative computability and the Turing degrees are further studied.

Revised Course description: First-order languages and structures, syntactic provability and semantic truth, the soundness and completeness theorems, compactness and its consequences, elementary equivalence, the ZFC axioms of set theory, ordinals, cardinals, computability and Goedel's incompleteness theorem.

Meet type(s): Lecture Choose an item. Choose an item. Choose an item.

Primary meet type: Lecture

Delivery mode: On-campus

Anti-Requisites: PMATH 432

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status: N/A

Sections combined/held with: PMATH 432, Course ID: 007687

Rationale for request:

This is part of an update to our logic offerings. We are modifying PMATH 632 so that it can serve as a broader introduction to mathematical logic at the beginner graduate level. The main change is to remove about 2-3 weeks of the more advanced computability theory material and replace it with 2-3 weeks of introductory set theory material. With this broad introductory course in place, this allows the current PMATH 733 (currently titled "Model Theory and Set Theory") to be split into two courses, namely Model Theory (PMATH 733) and Set Theory (PMATH 734) which go deeper into those respective areas. The intent is to offer two advanced logic courses per year (an increase from 1.5), with PMATH 632 every fall and with PMATH 733 and 734 alternating each winter.

Form completed by: Jo-Ann Hardy, Graduate Coordinator on behalf of Grad Chair, Barbara Csima
Department/School approval date (mm/dd/yy): 09/25/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/11/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Mathematics

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☒ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Updating the Course description.

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: PMATH

Course number: 665

Course ID: 002349

Course title (max. 100 characters including spaces): Smooth Manifolds

Course short title (max. 30 characters including spaces): Smooth Manifolds

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description:

Current Course description: Point-set topology; smooth manifolds, smooth maps, and tangent vectors; the tangent and cotangent bundles; vector fields, tensor fields, and differential forms; Stokes's theorem; integral curves, Lie derivatives, the Frobenius theorem; de Rham cohomology.

Revised Course description: Smooth manifolds, smooth maps, and tangent vectors; the tangent and cotangent bundles; vector fields, tensor fields, and differential forms; Stokes' theorem; integral curves, Lie derivatives, the Frobenius theorem; de Rham cohomology.

Meet type(s): Lecture Choose an item. Choose an item. Choose an item.

Primary meet type: Lecture

Delivery mode: On-campus

Anti-Requisites: PMATH 465

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status: N/A

Sections combined/held with: PMATH 465, Course ID: 003350

Rationale for request:

This course is held with PMATH 465, where the corresponding changes are being put forward due to slight changes to our undergraduate program. We would like our held-with courses to have matching course descriptions.

Form completed by: Jo-Ann Hardy, Graduate Coordinator on behalf of Grad Chair, Barbara Csima
Department/School approval date (mm/dd/yy): 09/25/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/11/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Mathematics

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☒ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Updating the Course title and Course description, and adding Anti-Requisite.

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: PMATH

Course number: 733

Course ID: 013668

Course title (max. 100 characters including spaces):

Current Course title: Model Theory and Set Theory

Revised Course title: Model Theory

Course short title (max. 30 characters including spaces): Model Theory

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description:

Current Course description: Model theory: the semantics of first order logic including the compactness theorem and its consequences, elementary embedding and equivalence, the theory of definable sets and types, quantifier elimination, and w-stability. Set theory: well-orderings, ordinals, cardinals, Zermelo-Fraenkel axioms, axiom of choice, informal discussion of classes and independence results.

Revised Course description: Definable sets, quantifier elimination, algebraically closed fields, real closed fields, omitting types and prime models, interpretation and imaginaries, types, saturation, strongly minimal sets and the Zilber trichotomy, forking and independence.

Meet type(s): Lecture Choose an item. Choose an item. Choose an item.

Primary meet type: Lecture

Delivery mode: On-campus

Anti-Requisites: PMATH 433

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status: N/A

Sections combined/held with: PMATH 433, Course ID: 012623

Rationale for request:

This is part of an update to our logic offerings. We are modifying PMATH 632 so that it can serve as a broader introduction to mathematical logic at the beginner graduate level. The main change is to remove about 2-3 weeks of the more advanced computability theory material and replace it with 2-3 weeks of introductory set theory material. With this broad introductory course in place, this allows the current PMATH 733 (currently titled "Model Theory and Set Theory") to be split into two courses, namely Model Theory (PMATH 733) and Set Theory (PMATH 734) which go deeper into those respective areas. The intent is to offer two advanced logic courses per year (an increase from 1.5), with PMATH 632 every fall and with PMATH 733 and 734 alternating each winter.

Form completed by: Jo-Ann Hardy, Graduate Coordinator on behalf of Grad Chair, Barbara Csima
Department/School approval date (mm/dd/yy): 09/25/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/11/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Mathematics

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☒ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☐ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: PMATH

Course number: 734

Course ID:

Course title (max. 100 characters including spaces): Set Theory

Course short title (max. 30 characters including spaces): Set Theory

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description: ZFC axioms, well-orders, ordinals, regular and singular cardinals, the cumulative hierarchy, Boolean algebras, ultrafilters, club and stationary sets, measurable cardinals, the reflection principle, Godel's constructible universe, ordinal definable sets.

Meet type(s): Lecture Choose an item. Choose an item. Choose an item.

Primary meet type: Lecture

Delivery mode: On-campus

Anti-Requisites: PMATH 434

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status: N/A

Sections combined/held with: PMATH 434

Rationale for request:

This is part of an update to our logic offerings. We are modifying PMATH 632 so that it can serve as a broader introduction to mathematical logic at the beginner graduate level. The main change is to remove about 2-3 weeks of the more advanced computability theory material and replace it with 2-3 weeks of introductory set theory material. With this broad introductory course in place, this allows the current PMATH 733 (currently titled "Model Theory and Set Theory") to be split into two courses, namely Model Theory (PMATH 733) and Set Theory (PMATH 734) which go deeper into those respective areas. The intent is to offer two advanced logic courses per year (an increase from 1.5), with PMATH 632 every fall and with PMATH 733 and 734 alternating each winter.

Form completed by: Jo-Ann Hardy, Graduate Coordinator on behalf of Grad Chair, Barbara Csima
Department/School approval date (mm/dd/yy): 09/25/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/11/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

5. Calendar changes to Applied Math

Motion to update the course breadth requirement list from:

- Doctor of Philosophy (PhD) in Applied Mathematics
- Doctor of Philosophy (PhD) in Applied Mathematics - Aeronautics
- Doctor of Philosophy (PhD) in Applied Mathematics - Water
- Master of Mathematics (MMath) in Applied Mathematics
- Master of Mathematics (MMath) in Applied Mathematics - Aeronautics
- Master of Mathematics (MMath) in Applied Mathematics - Co-operative Program
- Master of Mathematics (MMath) in Applied Mathematics - Quantum Information
- Master of Mathematics (MMath) in Applied Mathematics – Water

Motion to remove the breadth requirement from this program:

- Doctor of Philosophy (PhD) in Applied Mathematics - Quantum Information

Graduate Studies
Program Revision Template

Prior to form submission, review the content revision instructions and information regarding major/minor modifications. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Mathematics

Programs: 1) Doctor of Philosophy (PhD) in Applied Mathematics
2) Doctor of Philosophy (PhD) in Applied Mathematics - Aeronautics
3) Doctor of Philosophy (PhD) in Applied Mathematics - Water
4) Master of Mathematics (MMath) in Applied Mathematics
5) Master of Mathematics (MMath) in Applied Mathematics - Aeronautics
6) Master of Mathematics (MMath) in Applied Mathematics - Co-operative Program
7) Master of Mathematics (MMath) in Applied Mathematics - Quantum Information
8) Master of Mathematics (MMath) in Applied Mathematics - Water

Program contact name(s): Kevin Lamb, Associate Chair, Graduate Studies, Applied Math

Form completed by: Kevin Lamb, Associate Chair, Graduate Studies, Applied Math

Description of proposed changes:
Note: changes to courses and milestones also require the completion/submission of the SGRC Graduate Studies Course/Milestone Form.

Updating the course breadth requirements list.

Is this a major modification to the program? No

Rationale for change(s):

The list of courses in the applications breadth courses is incomplete. We would like to add two courses which more than one current student has been given credit for as an applications breadth course in the past several years. It would simplify things if students didn't have to ask to receive credit for these courses. We are also adding a note to make it clearer to students that they can ask to substitute other courses for those in our breadth list.

Proposed effective date: Term: Spring Year: 2024

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

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-applied-mathematics/doctor-philosophy-phd-applied-mathematics

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-applied-mathematics/doctor-philosophy-phd-applied-mathematics-aeronautics

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-applied-mathematics/doctor-philosophy-phd-applied-mathematics-water

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-applied-mathematics/master-mathematics-mmath-applied-mathematics

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-applied-mathematics/master-mathematics-mmath-applied-mathematics-aeronautics

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-applied-mathematics/master-mathematics-mmath-applied-mathematics-co-operative-program

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-applied-mathematics/master-mathematics-mmath-applied-mathematics-quantum-information

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-applied-mathematics/master-mathematics-mmath-applied-mathematics-water

Current Graduate Studies Academic Calendar content:	**Proposed Graduate Studies Academic Calendar content**:
Degree requirements (for the PhD programs) • **Courses** ○ Breadth requirement: to satisfy the breadth requirement, students are required to complete 3 courses from the following lists, with no more than 1 course from each list: ▪ Applications: ▪ AMATH 663 Fluid Mechanics ▪ AMATH 673 Quantum Theory 2 ▪ AMATH 674 Quantum Theory 3: Quantum Information and Foundations ▪ AMATH 675 Introduction to General Relativity ▪ Computation: ▪ AMATH 642 Computational Methods for Partial Differential Equations ▪ AMATH 740 Numerical Analysis ▪ AMATH 741 Numerical Solution of Partial Differential Equations ▪ Differential Equations: ▪ AMATH 651 Introduction to Dynamical Systems ▪ AMATH 653 Partial Differential Equations 2 ▪ AMATH 655 Control Theory ▪ AMATH 751 Advanced Ordinary Differential Equations ▪ AMATH 753 Advanced Partial Differential Equations	**Degree requirements** (for the PhD programs) • **Courses** ○ Breadth requirement: to satisfy the breadth requirement, students are required to complete 3 courses from the following lists, with no more than 1 course from each list: ▪ Applications: ▪ AMATH 663 Fluid Mechanics ▪ AMATH 673 Quantum Theory 2 ▪ AMATH 674 Quantum Theory 3: Quantum Information and Foundations ▪ AMATH 675 Introduction to General Relativity ▪ AMATH 875 Introduction to General Relativity with Applications to Cosmology ▪ AMATH 882 Mathematical Cell Biology ▪ Computation: ▪ AMATH 642 Computational Methods for Partial Differential Equations ▪ AMATH 740 Numerical Analysis ▪ AMATH 741 Numerical Solution of Partial Differential Equations ▪ Differential Equations: ▪ AMATH 651 Introduction to Dynamical Systems ▪ AMATH 653 Partial Differential Equations 2

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
▪ Techniques: ▪ AMATH 656 Calculus of Variations ▪ AMATH 677 Stochastic Processes for Applied Mathematics ▪ AMATH 731 Applied Functional Analysis ▪ AMATH 732 Asymptotic Analysis and Perturbation Theory ▪ AMATH 777 Stochastic Processes in the Physical Sciences **Degree requirements** (for the Master's programs) • **Courses** ○ Breadth requirement: to satisfy the breadth requirement, students are required to complete 2 courses from the following lists, with no more than 1 course from each list: ▪ Applications: ▪ AMATH 663 Fluid Mechanics ▪ AMATH 673 Quantum Theory 2 ▪ AMATH 674 Quantum Theory 3: Quantum Information and Foundations ▪ AMATH 675 Introduction to General Relativity ▪ Computation: ▪ AMATH 642 Computational Methods for Partial Differential Equations ▪ AMATH 740 Numerical Analysis ▪ AMATH 741 Numerical Solution of Partial Differential Equations ▪ Differential Equations: ▪ AMATH 651 Introduction to Dynamical Systems ▪ AMATH 653 Partial Differential Equations 2 ▪ AMATH 655 Control Theory	▪ AMATH 655 Control Theory ▪ AMATH 751 Advanced Ordinary Differential Equations ▪ AMATH 753 Advanced Partial Differential Equations ▪ Techniques: ▪ AMATH 656 Calculus of Variations ▪ AMATH 677 Stochastic Processes for Applied Mathematics ▪ AMATH 731 Applied Functional Analysis ▪ AMATH 732 Asymptotic Analysis and Perturbation Theory ▪ AMATH 777 Stochastic Processes in the Physical Sciences ▪ <u>Note: students may submit requests to substitute breadth requirement courses for other related courses. These requests must be approved by the Associate Chair, Graduate Studies.</u> **Degree requirements** (for the Master's programs) • **Courses** ○ Breadth requirement: to satisfy the breadth requirement, students are required to complete 2 courses from the following lists, with no more than 1 course from each list: ▪ Applications: ▪ AMATH 663 Fluid Mechanics ▪ AMATH 673 Quantum Theory 2 ▪ AMATH 674 Quantum Theory 3: Quantum Information and Foundations ▪ AMATH 675 Introduction to General Relativity ▪ <u>AMATH 875 Introduction to General Relativity with Applications to Cosmology</u>

Current Graduate Studies Academic Calendar content:	**Proposed Graduate Studies Academic Calendar content**:
▪ AMATH 751 Advanced Ordinary Differential Equations ▪ AMATH 753 Advanced Partial Differential Equations ▪ Techniques: ▪ AMATH 656 Calculus of Variations ▪ AMATH 677 Stochastic Processes for Applied Mathematics ▪ AMATH 731 Applied Functional Analysis ▪ AMATH 732 Asymptotic Analysis and Perturbation Theory ▪ AMATH 777 Stochastic Processes in the Physical Sciences	▪ AMATH 882 Mathematical Cell Biology ▪ Computation: ▪ AMATH 642 Computational Methods for Partial Differential Equations ▪ AMATH 740 Numerical Analysis ▪ AMATH 741 Numerical Solution of Partial Differential Equations ▪ Differential Equations: ▪ AMATH 651 Introduction to Dynamical Systems ▪ AMATH 653 Partial Differential Equations 2 ▪ AMATH 655 Control Theory ▪ AMATH 751 Advanced Ordinary Differential Equations ▪ AMATH 753 Advanced Partial Differential Equations ▪ Techniques: ▪ AMATH 656 Calculus of Variations ▪ AMATH 677 Stochastic Processes for Applied Mathematics ▪ AMATH 731 Applied Functional Analysis ▪ AMATH 732 Asymptotic Analysis and Perturbation Theory ▪ AMATH 777 Stochastic Processes in the Physical Sciences ▪ Note: students may submit requests to substitute breadth requirement courses for other related courses. These requests must be approved by the Associate Chair, Graduate Studies.

How will students currently registered in the program be impacted by these changes?

Current students would only be affected in that they have more options for meeting their breadth requirement.

Department/School approval date (mm/dd/yy): 06/08/23

Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 08/25/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):
Senate approval date (mm/dd/yy) (if applicable):

Graduate Studies
Program Revision Template

Prior to form submission, review the content revision instructions and information regarding major/minor modifications. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Mathematics

Program: Doctor of Philosophy (PhD) in Applied Mathematics - Quantum Information

Program contact name(s): Kevin Lamb, Associate Chair, Graduate Studies, Applied Math

Form completed by: Kevin Lamb, Associate Chair, Graduate Studies, Applied Math

Description of proposed changes:
Note: changes to courses and milestones also require the completion/submission of the SGRC Graduate Studies Course/Milestone Form.

Removing the breadth requirement for this program.

Is this a major modification to the program? No

Rationale for change(s):

Students in this program are currently required to complete four QIC (Quantum Information & Computation) courses and in addition meet our Department's breadth requirement. This generally requires students to take six courses instead of the normal four courses after a Master's program. We have found that this makes it difficult to attract students to this program. As it is a specialist program we would like to delete the breadth requirement.

Proposed effective date: Term: Spring Year: 2024

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

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-applied-mathematics/doctor-philosophy-phd-applied-mathematics-quantum-information

Current Graduate Studies Academic Calendar content:	**Proposed Graduate Studies Academic Calendar content**:
Degree requirements • **Courses** ○ Students must complete 4 one-term (0.50 unit) graduate courses after the Master's degree, satisfying a ~~breadth requirement and~~ Quantum Information core course requirement, or 8 one-term (0.50 unit) graduate courses after the Bachelor's degree, satisfying a ~~breadth requirement and~~ Quantum Information core course requirement. Candidates for the PhD degree must maintain a	**Degree requirements** • **Courses** ○ Students must complete 4 one-term (0.50 unit) graduate courses after the Master's degree, satisfying a Quantum Information core course requirement, or 8 one-term (0.50 unit) graduate courses after the Bachelor's degree, satisfying a Quantum Information core course requirement. Candidates for the PhD degree must maintain a grade point

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
grade point average of at least 70% in their coursework. ~~Besides the breadth and Quantum Information requirements, there are no other constraints on course selection.~~ ○ ~~Breadth requirement: to satisfy the breadth requirement, students are required to complete 3 courses from the following lists, with no more than 1 course from each list:~~ ▪ ~~Applications:~~ ▪ ~~AMATH 663 Fluid Mechanics~~ ▪ ~~AMATH 673 Quantum Theory 2~~ ▪ ~~AMATH 674 Quantum Theory 3: Quantum Information and Foundations~~ ▪ ~~AMATH 675 Introduction to General Relativity~~ ▪ ~~Computation:~~ ▪ ~~AMATH 642 Computational Methods for Partial Differential Equations~~ ▪ ~~AMATH 740 Numerical Analysis~~ ▪ ~~AMATH 741 Numerical Solution of Partial Differential Equations~~ ▪ ~~Differential Equations:~~ ▪ ~~AMATH 651 Introduction to Dynamical Systems~~ ▪ ~~AMATH 653 Partial Differential Equations 2~~ ▪ ~~AMATH 655 Control Theory~~ ▪ ~~AMATH 751 Advanced Ordinary Differential Equations~~ ▪ ~~AMATH 753 Advanced Partial Differential Equations~~ ▪ ~~Techniques:~~ ▪ ~~AMATH 656 Calculus of Variations~~ ▪ ~~AMATH 677 Stochastic Processes for Applied Mathematics~~ ▪ ~~AMATH 731 Applied Functional Analysis~~ ▪ ~~AMATH 732 Asymptotic Analysis and Perturbation Theory~~	average of at least 70% in their coursework. ○ Quantum Information core course requirement: students are required to take the 2 Quantum Information core courses listed below. These interdisciplinary courses provide a strong foundation in quantum information science: ▪ QIC 710 Quantum Information Processing ▪ QIC 750 Implementation of Quantum Information Processing ○ The completion of 2 graduate courses in Quantum Information <u>in addition to</u> QIC 710 and QIC 750 is also required. ○ Students may not count more than 1 graduate course that is cross-listed with an undergraduate course for credit towards their PhD degree. This restriction applies to all 600-level AMATH courses and any cross-listed courses offered by other departments. Note: students who transfer directly into the PhD program (without completing the Master's degree) may take up to 2 cross-listed courses. ○ Courses are selected in consultation with the student's supervisor. Students are encouraged to select courses that will help them develop a broad knowledge of Mathematics and its applications: appropriate courses are often offered by other departments in the Faculties of Mathematics, Science and Engineering.

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
▪ ~~AMATH 777 Stochastic Processes in the Physical Sciences~~ ○ Quantum Information core course requirement: students are required to take the 2 Quantum Information core courses listed below. These interdisciplinary courses provide a strong foundation in quantum information science: ▪ QIC 710 Quantum Information Processing ▪ QIC 750 Implementation of Quantum Information Processing ○ The completion of 2 graduate courses in Quantum Information ~~(other than~~ QIC 710 and QIC 750~~)~~ is also required. ○ Students may not count more than 1 graduate course that is cross-listed with an undergraduate course for credit towards their PhD degree. This restriction applies to all 600-level AMATH courses and any cross-listed courses offered by other departments. Note: students who transfer directly into the PhD program (without completing the Master's degree) may take up to 2 cross-listed courses. ○ ~~If a PhD student has taken an equivalent course during a Master's program, this can be counted (upon approval from the Graduate Officer) towards completion of the breadth requirement but does not reduce the number of courses required.~~ ○ Courses are selected in consultation with the student's supervisor. Students are encouraged to select courses that will help them develop a broad knowledge of Mathematics and its applications: appropriate courses are often offered by other departments in the Faculties of Mathematics, Science and Engineering.	

How will students currently registered in the program be impacted by these changes?

They will be positively affected because it reduces the number of courses they need to take to four courses which is what the vast majority of our PhD students are required to take.

Department/School approval date (mm/dd/yy): 06/08/23

Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 08/25/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):
Senate approval date (mm/dd/yy) (if applicable):

6. Calendar changes to Combinatorics and Optimization

Motion to update the PhD Lecturing Requirement to correct an error, and include more detail from:

- Doctor of Philosophy (PhD) in Combinatorics and Optimization
- Doctor of Philosophy (PhD) in Combinatorics and Optimization - Internship
- Doctor of Philosophy (PhD) in Combinatorics and Optimization - Quantum Information
- Doctor of Philosophy (PhD) in Combinatorics and Optimization - Quantum Information – Internship

Graduate Studies
Program Revision Template

Prior to form submission, review the content revision instructions and information regarding major/minor modifications. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Mathematics

Programs: 1) Doctor of Philosophy (PhD) in Combinatorics and Optimization

2) Doctor of Philosophy (PhD) in Combinatorics and Optimization - Internship

3) Doctor of Philosophy (PhD) in Combinatorics and Optimization - Quantum Information

4) Doctor of Philosophy (PhD) in Combinatorics and Optimization - Quantum Information - Internship

Program contact name(s): Ashwin Nayak

Form completed by: Ashwin Nayak

Description of proposed changes:
Note: changes to courses and milestones also require the completion/submission of the SGRC Graduate Studies Course/Milestone Form.

The PhD Lecturing Requirement is being updated to correct an error, and include more detail and an alternative.

Is this a major modification to the program? No

Rationale for change(s):

The earlier wording did not correctly express the intended requirement. Students also found it difficult to satisfy the earlier requirement due to scheduling challenges. The requirement is being updated to fix the error, reflect how the lecturing requirement has been implemented in practice in recent years, describe it more precisely, relax some conditions, and offer an alternative in the form of a suitable course on mathematics teaching (such as MATH 900).

Proposed effective date: Term: **Spring** Year: 2024

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

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-combinatorics-and-optimization/doctor-philosophy-phd-combinatorics-and-optimization

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-combinatorics-and-optimization/doctor-philosophy-phd-combinatorics-and-optimization-internship

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-combinatorics-and-optimization/doctor-philosophy-phd-combinatorics-and-optimization-quantum-information

https://uwaterloo.ca/graduate-studies-academic-calendar/mathematics/department-combinatorics-and-optimization/doctor-philosophy-phd-combinatorics-and-optimization-quantum-information-internship

Current Graduate Studies Academic Calendar content:	**Proposed Graduate Studies Academic Calendar content**:

Degree requirements
 	
PhD Lecturing Requirement
 	
• ~~Every PhD student will be required to lecture under supervision during the program of studies. If a PhD student gives a scheduled course on a regular basis, the same two faculty members will attend three of the lectures and make a confidential, constructive critique of the student's performance to the student.~~
• The PhD Lecturing Requirement should normally be completed within the first eight terms of the student's PhD program. Students may not put their thesis on display until at least the term following that in which the Lecturing Requirement was successfully completed.
	Degree requirements
	
	PhD Lecturing Requirement
	
	• Students are required to complete one of the following activities:
	  ○ Successfully complete a course on mathematics teaching approved by the Graduate Officer. The course will not be counted towards the course requirements for the degree.
	  ○ Give at least three lectures observed by faculty members from the Department of Combinatorics and Optimization, University of Waterloo, during the program of studies. The faculty members will provide confidential, constructive feedback on the lectures to the student. The lectures must additionally satisfy the following conditions:
	  - Two faculty members must each attend at least two lectures with the same format.
	  - The lectures must be at least 20 minutes in duration, and at least two of the lectures must be at least 45 minutes in duration.
	
	• The PhD Lecturing Requirement should normally be completed within the first eight terms of the student's PhD program. Students may not put their thesis on display until at least the term following that in which the Lecturing Requirement was successfully completed.

How will students currently registered in the program be impacted by these changes?

Students who have completed the requirement would not be affected. The remaining students would be asked to follow the updated requirements. The new requirement is a relaxation of existing practice except for the minimum duration of the lectures. It is anticipated that students who have partly completed the requirement will only benefit from the changes.

Department/School approval date (mm/dd/yy): 07/21/23 (with wording that was slightly edited by GSPA)
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 08/29/23

Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):
Senate approval date (mm/dd/yy) (if applicable):

Faculty of Science
SGRC submission

MEMORANDUM

To: Tim Weber-Kraljevski

From: Martin Ross, Associate Dean Graduate Studies – Faculty of Science

Date: January 24, 2024

Re: Science Graduate and Research Council Agenda

I would ask that the motions below be placed on the agenda for the upcoming SGRC meeting. The motions were all approved at the Science Faculty Council (Dec. 1st, 2023).

Biology

1. To approve the following new courses:
    a. BIOL 692, BIOL 701, BIOL 702, BIOL 703, BIOL 704, and BIOL 705

Rationale and form: see Appendix A

2. To approve revision of course description for BIOL 690:

Rationale and form: see Appendix B

3. To deactivate the following courses: BIOL 617, BIOL 622, BIOL 624, BIOL 627, BIOL 642, BIOL 667, BIOL 669, BIOL 675, BIOL 681A,

Rationale and form: see Appendix C

Physics

4. To remove the Graduate Record Examination (GRE) Physics subject test score from the required application materials for students whose post-secondary education is from outside of Canada

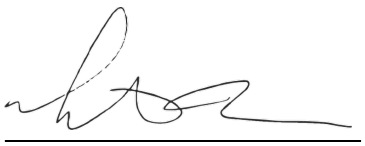
Rationale and form: see Appendix D

Pharmacy

5. To approve revision of course description for PHARM 656

Rationale and form: see Appendix E

Thank you,



Martin Ross, PhD

Associate Dean Graduate Studies – Faculty of Science

Senate Graduate & Research Council
Graduate Studies Course/Milestone Form

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Science

Effective date: Term: Fall Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☒ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☐ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: BIOL

Course number: 692

Course ID:

Course title (max. 100 characters including spaces): Writing Scientific Papers in Ecology and Evolution

Course short title (max. 30 characters including spaces): Sci Writing in Eco & Evo

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Instructor

Course description: This course covers best practices for writing clear, coherent, concise and compelling scientific papers in the field of ecology and evolution and provides hands-on experience implementing those best practices

in a paper draft authored by the student. Students are expected to bring their own data, preliminary results and to write a paper draft around those.

Meet type(s): Seminar Choose an item. Choose an item. Choose an item.

Primary meet type: Seminar

Delivery mode: On-campus

Requisites: n/a

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with: n/a

Rationale for request:

All graduate students are expected to publish their work in international scientific journals, yet the majority of students struggle with writing. This is especially true of writing scientific papers, because it is a genre of its own with its unique set of expectations and guiding principles that do not correspond to those of other genres. These skills are difficult to learn on their own and very slow to acquire through trial and error alone. About half of Biology's graduate students are in the field of Ecology and Evolution, yet the Department lacks a suitable course to help prepare them for this specific writing genre in this field. Taught as a workshop, this course will teach students a set of tools and best practices for writing scientific papers in the field of Ecology and Evolution, which they will serve them well for the rest of their career.

Form completed by: April Wettig
Department/School approval date (mm/dd/yy): 09/26/22
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/27/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Senate Graduate & Research Council
Graduate Studies Course/Milestone Form

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Science

Effective date: Term: Fall Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☒ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☐ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: BIOL

Course number: 701

Course ID:

Course title (max. 100 characters including spaces): Advances in Biochemical and Biomedical Sciences

Course short title (max. 30 characters including spaces): Advances Biochem & Biomed Sci

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description: This course will be presented using a seminar-based approach, covering topics in the broad area of the Biochemical and Biomedical Sciences. In-class discussions, student presentations and written works will be based on the current peer-reviewed literature in the topic area and will foster critical analytical skills, while deepening the students' understanding of major concepts and recent advances in the field. The specific focus and structure of each iteration will be determined by the faculty member serving as the instructor, based on their area

of expertise and research interests. Topics to be covered in individual offerings may include: cancer; cell biology, cell cycle and cell death; model organisms; neurodegeneration; neuroscience; proteostasis.

Meet type(s): Seminar Choose an item. Choose an item. Choose an item.

Primary meet type: Seminar

Delivery mode: On-campus

Requisites: n/a

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

This course was created as part of a suite of courses (701 – 705) to be better aligned with the various research specialties of faculty members in the Department of Biology. These courses are designed to: a) support graduate students in acquiring high-level disciplinary expertise, b) foster disciplinary cohorting, and c) maintain flexibility for faculty members to tailor each offering to the individual students in the class and/or their own research expertise. The "Advances in…" series will: (1) improve flexibility and availability of relevant courses; (2) create resilience in departmental teaching of graduate courses, by having a roster of individuals able to teach in a given area, thereby 'smoothing out' the unintended impacts of sabbaticals, leaves and teaching relief; (3) minimize the administrative burden of course creation to allow (relatively) rapid and painless implementation; (4) promote cohesion of graduate student cohorts within broad research fields and encourage cross-lab interactions; (5) increase the enrolment in individual graduate classes; and (6) reduce the reliance on repeat offerings of BIOL 680/681 to meet basic graduate student course needs. Given the acknowledged over-abundance of graduate courses listed (2016 Cyclical Review) and the dissatisfaction of Biology graduate students with availability of graduate course offerings, the Department was tasked with streamlining graduate course offerings and ensuring consistency in the timing and frequency of courses. This suite of 700-level courses addresses these profound concerns by allowing the Department to offer these courses on a regular basis, with an established roster of instructors, thereby allowing graduate students to be aware of available courses in a timely fashion. With the existence of these new courses, some faculty members will inactivate their current graduate course offering(s) and use the 700-level course in their research area instead, thereby reducing the overall number of Biology graduate courses in the Calendar.

Form completed by: April Wettig
Department/School approval date (mm/dd/yy): 09/26/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/27/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Science

Effective date: Term: Fall Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☒ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☐ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: BIOL

Course number: 702

Course ID:

Course title (max. 100 characters including spaces): Advances in Computational Biology

Course short title (max. 30 characters including spaces): Advances Computational Biology

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description: This course will be presented using a seminar-based approach, covering topics in the broad area of Computational Biology. In-class discussions, student presentations and written works will be based on the current peer-reviewed literature in the topic area and will foster critical analytical skills, while deepening the students' understanding of major concepts and recent advances in the field. The specific focus and structure of each iteration will be determined by the faculty member serving as the instructor, based on their area of expertise and research interests. Topics to be covered in individual offerings may include: bioinformatics, genomics, *in silico*

modelling, mathematical modelling, phylogenetics, proteomics.

Meet type(s): Seminar Choose an item. Choose an item. Choose an item.

Primary meet type: Seminar

Delivery mode: On-campus

Requisites: n/a

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

This course was created as part of a suite of courses (701 – 705) to be better aligned with the various research specialties of faculty members in the Department of Biology. These courses are designed to: a) support graduate students in acquiring high-level disciplinary expertise, b) foster disciplinary cohorting, and c) maintain flexibility for faculty members to tailor each offering to the individual students in the class and/or their own research expertise. The "Advances in…" series will: (1) improve flexibility and availability of relevant courses; (2) create resilience in departmental teaching of grad courses, by having a roster of individuals able to teach in a given area, thereby 'smoothing out' the unintended impacts of sabbaticals, leaves and teaching relief; (3) minimize the administrative burden of course creation to allow (relatively) rapid and painless implementation; (4) promote cohesion of graduate student cohorts within broad research fields and encourage cross-lab interactions; (5) increase the enrolment in individual graduate classes; and (6) reduce the reliance on repeat offerings of BIOL 680/681 to meet basic graduate student course needs. Given the acknowledged over-abundance of graduate courses listed (2016 Cyclical Review) and the dissatisfaction of Biology grad students with availability of graduate course offerings, the Department was tasked with streamlining grad course offerings and ensuring consistency in the timing and frequency of courses. This suite of 700-level courses addresses these profound concerns by allowing the Department to offer these courses on a regular basis, with an established roster of instructors, thereby allowing graduate students to be aware of available courses in a timely fashion. With the existence of these new courses, some faculty members will inactivate their current graduate course offering(s) and use the 700-level course in their research area instead, thereby reducing the overall number of Biology graduate courses in the Calendar.

Form completed by: April Wettig
Department/School approval date (mm/dd/yy): 09/26/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/27/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Science

Effective date: Term: Fall Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☒ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☐ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: BIOL

Course number: 703

Course ID:

Course title (max. 100 characters including spaces): Advances in Ecology and Evolution

Course short title (max. 30 characters including spaces): Advances Ecology & Evolution

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description: This course will be presented using a seminar-based approach, covering topics in the broad area of Ecology and Evolution. In-class discussions, student presentations and written works will be based on the current peer-reviewed literature in the topic area and will foster critical analytical skills, while deepening the students' understanding of major concepts and recent advances in the field. The specific focus and structure of each iteration will be determined by the faculty member serving as the instructor, based on their area of expertise and research interests. Topics to be covered in individual offerings may include: biomonitoring; conservation

biology; community ecology; diversity; ecosystems; ecotoxicology; limnology; plant traits and ecology; population genetics; phylogeny; remediation, restoration and reclamation; taxonomy; wetland ecology.

Meet type(s): Seminar Choose an item. Choose an item. Choose an item.

Primary meet type: Seminar

Delivery mode: On-campus

Requisites: n/a

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

This course was created as part of a suite of courses (701 – 705) to be better aligned with the various research specialties of faculty members in the Department of Biology. These courses are designed to: a) support graduate students in acquiring high-level disciplinary expertise, b) foster disciplinary cohorting, and c) maintain flexibility for faculty members to tailor each offering to the individual students in the class and/or their own research expertise. The "Advances in…" series will: (1) improve flexibility and availability of relevant courses; (2) create resilience in departmental teaching of grad courses, by having a roster of individuals able to teach in a given area, thereby 'smoothing out' the unintended impacts of sabbaticals, leaves and teaching relief; (3) minimize the administrative burden of course creation to allow (relatively) rapid and painless implementation; (4) promote cohesion of graduate student cohorts within broad research fields and encourage cross-lab interactions; (5) increase the enrolment in individual graduate classes; and (6) reduce the reliance on repeat offerings of BIOL 680/681 to meet basic graduate student course needs. Given the acknowledged over-abundance of graduate courses listed (2016 Cyclical Review) and the dissatisfaction of Biology grad students with availability of graduate course offerings, the Department was tasked with streamlining grad course offerings and ensuring consistency in the timing and frequency of courses. This suite of 700-level courses addresses these profound concerns by allowing the Department to offer these courses on a regular basis, with an established roster of instructors, thereby allowing graduate students to be aware of available courses in a timely fashion. With the existence of these new courses, some faculty members will inactivate their current graduate course offering(s) and use the 700-level course in their research area instead, thereby reducing the overall number of Biology graduate courses in the Calendar.

Form completed by: April Wettig
Department/School approval date (mm/dd/yy): 09/26/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/27/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Science

Effective date: Term: Fall Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☒ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☐ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: BIOL

Course number: 704

Course ID:

Course title (max. 100 characters including spaces): Advances in Microbiology

Course short title (max. 30 characters including spaces): Advances in Microbiology

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description: This course will be presented using a seminar-based approach, covering topics in the broad area of Microbiology. In-class discussions, student presentations and written works will be based on the current peer-reviewed literature in the topic area and will foster critical analytical skills, while deepening the students' understanding of major concepts and recent advances in the field. The specific focus and structure of each iteration will be determined by the faculty member serving as the instructor, based on their area of expertise and research interests. Topics to be covered in individual offerings may include: applied and environmental

microbiology; evolution and phylogeny of microorganisms; microbial ecology, genetics, pathogenesis, physiology; public health microbiology.

Meet type(s): Seminar Choose an item. Choose an item. Choose an item.

Primary meet type: Seminar

Delivery mode: On-campus

Requisites: n/a

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

This course was created as part of a suite of courses (701 – 705) to be better aligned with the various research specialties of faculty members in the Department of Biology. These courses are designed to: a) support graduate students in acquiring high-level disciplinary expertise, b) foster disciplinary cohorting, and c) maintain flexibility for faculty members to tailor each offering to the individual students in the class and/or their own research expertise. The "Advances in…" series will: (1) improve flexibility and availability of relevant courses; (2) create resilience in departmental teaching of grad courses, by having a roster of individuals able to teach in a given area, thereby 'smoothing out' the unintended impacts of sabbaticals, leaves and teaching relief; (3) minimize the administrative burden of course creation to allow (relatively) rapid and painless implementation; (4) promote cohesion of graduate student cohorts within broad research fields and encourage cross-lab interactions; (5) increase the enrolment in individual graduate classes; and (6) reduce the reliance on repeat offerings of BIOL 680/681 to meet basic graduate student course needs. Given the acknowledged over-abundance of graduate courses listed (2016 Cyclical Review) and the dissatisfaction of Biology grad students with availability of graduate course offerings, the Department was tasked with streamlining grad course offerings and ensuring consistency in the timing and frequency of courses. This suite of 700-level courses addresses these profound concerns by allowing the Department to offer these courses on a regular basis, with an established roster of instructors, thereby allowing graduate students to be aware of available courses in a timely fashion. With the existence of these new courses, some faculty members will inactivate their current graduate course offering(s) and use the 700-level course in their research area instead, thereby reducing the overall number of Biology graduate courses in the Calendar.

Form completed by: April Wettig
Department/School approval date (mm/dd/yy): 09/26/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/27/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Science

Effective date: Term: Fall Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☒ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☐ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: BIOL

Course number: 705

Course ID:

Course title (max. 100 characters including spaces): Advances in Physiology and Cell Biology

Course short title (max. 30 characters including spaces): Advances Physiol & Cell Biol

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description: This course will be presented using a seminar-based approach, covering topics in the broad area of Physiology and Cell Biology. In-class discussions, student presentations and written works will be based on the current peer-reviewed literature in the topic area and will foster critical analytical skills, while deepening the students' understanding of major concepts and recent advances in the field. The specific focus and structure of each iteration will be determined by the faculty member serving as the instructor, based on their area of expertise and research interests. Topics to be covered in individual offerings may include: cell biology, developmental

biology, immunology, molecular biology, pathobiology, physiology, systems biology.

Meet type(s): Seminar Choose an item. Choose an item. Choose an item.

Primary meet type: Seminar

Delivery mode: On-campus

Requisites: n/a

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

This course was created as part of a suite of courses (701 – 705) to be better aligned with the various research specialties of faculty members in the Department of Biology. These courses are designed to: a) support graduate students in acquiring high-level disciplinary expertise, b) foster disciplinary cohorting, and c) maintain flexibility for faculty members to tailor each offering to the individual students in the class and/or their own research expertise. The "Advances in…" series will: (1) improve flexibility and availability of relevant courses; (2) create resilience in departmental teaching of grad courses, by having a roster of individuals able to teach in a given area, thereby 'smoothing out' the unintended impacts of sabbaticals, leaves and teaching relief; (3) minimize the administrative burden of course creation to allow (relatively) rapid and painless implementation; (4) promote cohesion of graduate student cohorts within broad research fields and encourage cross-lab interactions; (5) increase the enrolment in individual graduate classes; and (6) reduce the reliance on repeat offerings of BIOL 680/681 to meet basic graduate student course needs. Given the acknowledged over-abundance of graduate courses listed (2016 Cyclical Review) and the dissatisfaction of Biology grad students with availability of graduate course offerings, the Department was tasked with streamlining grad course offerings and ensuring consistency in the timing and frequency of courses. This suite of 700-level courses addresses these profound concerns by allowing the Department to offer these courses on a regular basis, with an established roster of instructors, thereby allowing graduate students to be aware of available courses in a timely fashion. With the existence of these new courses, some faculty members will inactivate their current graduate course offering(s) and use the 700-level course in their research area instead, thereby reducing the overall number of Biology graduate courses in the Calendar.

Form completed by: April Wettig
Department/School approval date (mm/dd/yy): 09/26/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/27/23
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Science

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☒ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Updating the Course description.

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: BIOL

Course number: 690

Course ID: 013049

Course title (max. 100 characters including spaces): Scientific Communication

Course short title (max. 30 characters including spaces): Scientific Communication

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Department

Course description:

Current description: The goal of the course is to introduce new graduate students in the department of Biology to the basic skills that will be necessary for them to acquire and organize information as well as present it

effectively. The course will be given in two sections, in different terms; Topic 1: Life Science Research Skills (fall of a student's first year) and Topic 2: Scientific presentation (winter of a student's second or third year). The participants are expected to also attend and participate in the weekly "Biology Brown Bag Gathering" which is a forum for students and post doctoral fellows to present their research results or lead discussions on current topics of general interest. This series will start each fall with a presentation on "How to give a talk".

Revised description: The goal of the course is to introduce new graduate students in the Department of Biology to the skills that will be necessary for them to acquire and organize information, as well as to present/communicate that information effectively in both oral and written form. These skills will be developed through the preparation of a research proposal suitable for scholarship applications, a written reflection on a work from the non-scientific literature and a presentation relevant to the individual student's thesis work. The use of peer review will also allow students to develop their analytical and critical appraisal skills.

Meet type(s): Seminar Choose an item. Choose an item. Choose an item.

Primary meet type: Seminar

Delivery mode: On-campus

Requisites: n/a

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

BIOL 690 has been offered consistently to our graduate students and was team-taught for approximately 10 years until Fall 2020. With the impacts of the pandemic and changes in faculty complement, a new instructor took over the management of the course in 2022. A survey of Biology graduate students indicated that the format for the 2020 version of the course was less-than-desirable, arising from the team-taught approach and a lack of clarity with regard to course structure, and thus required some adaptation. The updated format of the course incorporates Indigenous elements and engages the students in writing a research proposal, as well as writing a reflection on a reading from the non-scientific literature. These changes are reflected in the updated calendar description and favour the formation of a strong Biology graduate student cohort that will serve to support our graduate students as they progress through their programs.

Form completed by: April Wettig
Department/School approval date (mm/dd/yy): 09/26/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/27/23
Faculty approval date (mm/dd/yy):12/01/2023
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Science

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☒ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☐ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: BIOL

Course number: 617

Course ID: 000173

Course title (max. 100 characters including spaces): Advanced Topics in Environmental Toxicology

Course short title (max. 30 characters including spaces):

Grading basis: Choose an item.

Course credit weight: Choose an item.

Course consent required: Choose an item.

Course description:

Meet type(s): Choose an item. Choose an item. Choose an item. Choose an item.

Primary meet type: Choose an item.

Delivery mode: Choose an item.

Requisites:

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

The faculty member that originally taught this course, Dr. M. Servos, would like to inactive the course as there are other courses available to students. This was last taught in Fall 2012.

Form completed by: April Wettig
Department/School approval date (mm/dd/yy): 05/30/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/27/23
Faculty approval date (mm/dd/yy): 12/01/2023
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Science

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☒ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☐ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: BIOL

Course number: 622

Course ID: 000178

Course title (max. 100 characters including spaces): Selected Topics in Plant Physiology

Course short title (max. 30 characters including spaces):

Grading basis: Choose an item.

Course credit weight: Choose an item.

Course consent required: Choose an item.

Course description:

Meet type(s): Choose an item. Choose an item. Choose an item. Choose an item.

Primary meet type: Choose an item.

Delivery mode: Choose an item.

Requisites:

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

The faculty member that originally taught this course has retired. The Department of Biology would like to inactive the course as there are other courses available to students. This was last taught in Spring 2015.

Form completed by: April Wettig
Department/School approval date (mm/dd/yy): 05/30/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/27/23
Faculty approval date (mm/dd/yy): 12/01/2023
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Science

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☒ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☐ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: BIOL

Course number: 624

Course ID: 000180

Course title (max. 100 characters including spaces): Environmental Biogeochemistry

Course short title (max. 30 characters including spaces):

Grading basis: Choose an item.

Course credit weight: Choose an item.

Course consent required: Choose an item.

Course description:

Meet type(s): Choose an item. Choose an item. Choose an item. Choose an item.

Primary meet type: Choose an item.

Delivery mode: Choose an item.

Requisites:

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

The faculty member that originally taught this course has retired. The Department of Biology would like to inactive the course as there are other courses available to students. It is unclear when this course was last offered, but does not appear on any graduate schedule of classes dating back to Fall 2001.

Form completed by: April Wettig
Department/School approval date (mm/dd/yy): 05/30/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/27/23
Faculty approval date (mm/dd/yy): 12/01/2023
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Science

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☒ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☐ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: BIOL

Course number: 627

Course ID: 000183

Course title (max. 100 characters including spaces): Topics in Applied and Industrial Microbiology

Course short title (max. 30 characters including spaces):

Grading basis: Choose an item.

Course credit weight: Choose an item.

Course consent required: Choose an item.

Course description:

Meet type(s): Choose an item. Choose an item. Choose an item. Choose an item.

Primary meet type: Choose an item.

Delivery mode: Choose an item.

Requisites:

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

The faculty member that originally taught this course has retired. The Department of Biology would like to inactive the course as there are other courses available to students. This course was last offered in Winter 2012.

Form completed by: April Wettig
Department/School approval date (mm/dd/yy): 05/30/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/27/23
Faculty approval date (mm/dd/yy): 12/01/2023
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Science

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☒ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☐ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: BIOL

Course number: 642

Course ID: 000197

Course title (max. 100 characters including spaces): Current Topics in Biotechnology

Course short title (max. 30 characters including spaces):

Grading basis: Choose an item.

Course credit weight: Choose an item.

Course consent required: Choose an item.

Course description:

Meet type(s): Choose an item. Choose an item. Choose an item. Choose an item.

Primary meet type: Choose an item.

Delivery mode: Choose an item.

Requisites:

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

The faculty member that originally taught this course has retired. The Department of Biology would like to inactive the course as there are other courses available to students. This course was last offered in Fall 2015.

Form completed by: April Wettig
Department/School approval date (mm/dd/yy): 05/30/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/27/23
Faculty approval date (mm/dd/yy): 12/01/2023
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

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Faculty: Science

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☒ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☐ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: BIOL

Course number: 667

Course ID: 000206

Course title (max. 100 characters including spaces): Animal Molecular Biology

Course short title (max. 30 characters including spaces):

Grading basis: Choose an item.

Course credit weight: Choose an item.

Course consent required: Choose an item.

Course description:

Meet type(s): Choose an item. Choose an item. Choose an item. Choose an item.

Primary meet type: Choose an item.

Delivery mode: Choose an item.

Requisites:

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

The faculty member that originally taught this course has retired. The Department of Biology would like to inactive the course as there are other courses available to students. This course was last offered in Winter 2015.

Form completed by: April Wettig
Department/School approval date (mm/dd/yy): 05/30/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/27/23
Faculty approval date (mm/dd/yy): 12/01/2023
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Science

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☒ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☐ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: BIOL

Course number: 669

Course ID: 000207

Course title (max. 100 characters including spaces): Plant Molecular Biology

Course short title (max. 30 characters including spaces):

Grading basis: Choose an item.

Course credit weight: Choose an item.

Course consent required: Choose an item.

Course description:

Meet type(s): Choose an item. Choose an item. Choose an item. Choose an item.

Primary meet type: Choose an item.

Delivery mode: Choose an item.

Requisites:

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

The faculty member that teaches this course, Dr. S. Chuong, would like to inactive the course as the current number of plant Biologists in the Department is too small to offer the course in the next couple of years. This course was last offered in Winter 2018.

Form completed by: April Wettig
Department/School approval date (mm/dd/yy): 05/30/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/27/23
Faculty approval date (mm/dd/yy): 12/01/2023
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Science

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☒ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☐ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: BIOL

Course number: 675

Course ID: 000209

Course title (max. 100 characters including spaces): Advanced Topics in Animal Behaviour

Course short title (max. 30 characters including spaces):

Grading basis: Choose an item.

Course credit weight: Choose an item.

Course consent required: Choose an item.

Course description:

Meet type(s): Choose an item. Choose an item. Choose an item. Choose an item.

Primary meet type: Choose an item.

Delivery mode: Choose an item.

Requisites:

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

The faculty member that taught this course is no longer with the Department. The Department of Biology would like to inactive the course as there are other courses available to students. This course was last offered in Fall 2001.

Form completed by: April Wettig
Department/School approval date (mm/dd/yy): 05/30/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/27/23
Faculty approval date (mm/dd/yy): 12/01/2023
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Science

Effective date: Term: Spring Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☒ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☐ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: BIOL

Course number: 681A

Course ID: 000225

Course title (max. 100 characters including spaces): Plant Biogeography

Course short title (max. 30 characters including spaces):

Grading basis: Choose an item.

Course credit weight: Choose an item.

Course consent required: Choose an item.

Course description:

Meet type(s): Choose an item. Choose an item. Choose an item. Choose an item.

Primary meet type: Choose an item.

Delivery mode: Choose an item.

Requisites:

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

The Department of Biology would like to deactivate the course as it has never been offered.

Form completed by: April Wettig
Department/School approval date (mm/dd/yy): 05/30/23
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/27/23
Faculty approval date (mm/dd/yy): 12/01/2023
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Graduate Studies
Program Revision Template

Prior to form submission, review the content revision instructions and information regarding major/minor modifications. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Science

Programs: 1) Doctor of Philosophy (PhD) in Physics

2) Doctor of Philosophy (PhD) in Physics - Nanotechnology

3) Doctor of Philosophy (PhD) in Physics - Quantum Information

4) Master of Science (MSc) in Physics

5) Master of Science (MSc) in Physics - Nanotechnology

6) Master of Science (MSc) in Physics - Quantum Information

Program contact name(s): Jan Kycia, Holly Haig-Brown

Form completed by: Holly Haig-Brown

Description of proposed changes:
Note: changes to courses and milestones also require the completion/submission of the SGRC Graduate Studies Course/Milestone Form.

Removing the Graduate Record Examination (GRE) Physics subject test score from the required application materials for students whose post-secondary education is from outside of Canada.

Is this a major modification to the program? No

Rationale for change(s):

The requirement for graduate applicants to provide a GRE Physics subject test score has been waived since the onset of COVID-19. The Department of Physics and Astronomy has not noticed any impact on the quality of admitted students. This change is also in line with other top Canadian universities (University of Toronto, University of British Columbia). Removing the GRE will help reduce costs associated with applying to graduate programs and should increase the number of applicants.

Proposed effective date: Term: Spring Year: 2024

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

https://uwaterloo.ca/graduate-studies-academic-calendar/science/department-physics-and-astronomy

Current Graduate Studies Academic Calendar content:	**Proposed Graduate Studies Academic Calendar content**:
Admission requirements • **Application materials**	**Admission requirements** • **Application materials** ○ Supplementary information form

Current Graduate Studies Academic Calendar content:	**Proposed Graduate Studies Academic Calendar content**:
~~Graduate Record Examination (GRE) Physics subject test scores for all students who have completed their post-secondary education outside of Canada.~~ Supplementary information form Transcript(s)	Transcript(s)

How will students currently registered in the program be impacted by these changes?

This change does not impact current students.

Department/School approval date (mm/dd/yy): 11/03/2023
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 07/31/23
Faculty approval date (mm/dd/yy): 12/01/2023
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):
Senate approval date (mm/dd/yy) (if applicable):

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Science

Effective date: Term: Fall Year: 2024

Milestone

Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course

Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☒ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Updating the Course description and Meet type/course components.

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: PHARM

Course number: 656

Course ID: 016247

Course title (max. 100 characters including spaces): Analysis of Quantitative Health Care Data

Course short title (max. 30 characters including spaces): Data analysis

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Department

Course description:

Current description: This course is designed to teach students the fundamentals of planning, conducting, and communicating the analysis of quantitative data within the context of applied health research. Students will

learn quantitative data analysis through hands-on experience using different sources of data (e.g., clinical trial, cross-sectional survey, prospective cohort, etc.). Topics will include descriptive statistics, t-Test, ANOVA, linear regression, logistic regression, poisson regression, and proportional hazards regression. Several techniques to adjust for confounding will be covered. Students will learn to apply their analytic skills using SAS.

Revised description: This introductory course is designed to teach students the fundamentals of planning, conducting, and communicating the analysis of quantitative data within the context of health research. Students will learn quantitative data analysis, including descriptive and inferential techniques, through hands-on experience using different data sources with a focus on biomedical and clinical examples. Statistical methods for biomedical experiments and real-world health care data will be covered. Methods for reproducible research will be emphasized. . .

Meet type(s): Lecture Lab Tutorial Choose an item.

Primary meet type: Lecture

Delivery mode: On-campus

Requisites:

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

To generalize the course description, to allow for teaching of other statistical software applications and methods of quantitative analysis.

Form completed by: Melinda Recchia
Department/School approval date (mm/dd/yy): 09/28/2023
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/25/23
Faculty approval date (mm/dd/yy): 12/01/2023
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

GRADUATE STUDIES AND POSTDOCTORAL AFFAIRS
519-888-4567 I uwaterloo ca/gspa

Memo

DATE: February 23, 2024

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

FROM: Jeff Casello, Associate Vice-President, Graduate Studies and Postdoctoral Affairs
Marianne Simm, Director, Graduate Studies and Postdoctoral Affairs

RE: Graduate Studies Academic Calendar (GSAC) changes [memo 1 of 3]

Items for approval:

a) Graduate diplomas
b) Graduate certificates
c) Joint interdisciplinary programs
d) TB skin test

Items for information:

e) Graduate specializations
f) OVGS

Description and rationale for proposed changes:
The process of review and renewal began in the Fall 2023 term, with a number of sections coming forward. This work continues, with the intent of reviewing all sections under “General information and regulations” within the GSAC.

As described in the Fall, like many University of Waterloo governance documents, the GSAC has evolved over time. Despite the regular modifications to the GSAC, and its importance, the Calendar has not been holistically reviewed or updated for some time.

Increasingly students, and administrators are relying on the Calendar, and so the re-write is intended to present the Calendar elements in language that is accessible to both audiences.

This work has been done collaboratively and in partnership with the Faculties and other Academic Support Units that have expertise in the content (e.g., Office of Indigenous Relations, Office of Equity Inclusion and Anti-Racism, the Office of Research). The proposed changes have been reviewed and endorsed by the Graduate Operations Committee and Graduate Student Relations Committee.

Proposed effective date: Term: Spring Year: 2024

Current **Graduate Studies Academic Calendar (GSAC)** page:

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

a) Graduate Diplomas

New stand-alone section for Graduate Diplomas. Inclusion of Type 1 Graduate Diploma, and further articulation of the Type 2 and Type 3 Graduate Diplomas.

At a time when the University is reviewing and introducing various forms of micro-credentials and professional development focused programs, the section on Graduate Diplomas has been revised to provide greater clarity and guidance on these types of credentials by explicitly stating the intent, composition, and approval process for Graduate Diplomas. The updates are also in alignment with the rules/regulations of the Ontario Quality Council.

New Calendar copy has been included for Type 1 Graduate Diplomas.

Current Calendar copy	Proposed Calendar copy
~~Minimum requirements for graduate diplomas~~ **Graduate Diploma ~~programs~~** **Type 2** A type 2 Graduate Diploma (GDip) is intended to demonstrate mastery of a topic area that is usually complementary to, but not embedded within, a graduate student's primary area of study. The goal of ~~the~~ GDip is to encourage breadth at the graduate level, often through interdisciplinary studies. A student who completes a degree program and a GDip should have achieved different learning outcomes than a student who has completed only the normal degree requirements. GDips at the University of Waterloo are achieved by successfully completing the academic requirements of the student's program and additional academic requirements – a combination of courses and/or academic milestones – specific to the GDip that total to the equivalent of 1.0 (academic) units. Normally, obtaining a GDip will require at least: • two 0.5 unit courses ~~in addition to the program's normal requirements; or~~	**Graduate Diplomas – Definitions and Requirements** Graduate Diplomas are guided by the Ontario Quality Council. At the University of Waterloo, Graduate Diplomas take the following forms. A **Type 1 Graduate Diploma** (GDip1) may be awarded when a candidate admitted to a course-based Master's program leaves the program after completing the specified requirements, normally half the course requirements, where such an option has been specified through the program's approval process. A GDip1 can be later rescinded to earn a full degree in the same academic program. A **Type 2 Graduate Diploma** (GDip2) is intended to demonstrate mastery of a topic area that is usually complementary to, but not embedded within, a graduate student's primary area of study. As such, the GDip2 is pursued concurrent with the student's primary Masters or PhD program. The goal of a GDip2 is to encourage breadth at the graduate level, often through interdisciplinary studies. A student who completes a degree program and a GDip2 should have achieved different learning outcomes than a student who has completed only the normal degree requirements. GDip2s at the University of Waterloo are achieved by successfully completing the

• one additional 0.5 unit course and one or more milestones the academic requirements of which are equivalent to a 0.5 unit course; ~~or~~ • a set of milestones the academic equivalent of which are two 0.5 unit courses. ~~The Department offering the GDip may also require specific courses that replace electives in the student's core program~~. ~~GDips:~~ • ~~require Quality Council approval;~~ • ~~should normally contain course or milestone options that promote interdisciplinarity; and~~ • ~~are recognized on the student's transcript and on the diploma~~. **~~Type 3~~** A type 3 Graduate Diploma (GDip) is ~~awarded by the University upon completion of an approved GDip program with a minimum of four graduate-level courses.~~ For ~~direct entry~~ GDip programs, the minimum admission requirements ~~are the same as for a master's program, a four-year honours bachelor's degree or equivalent, with an overall 75% average in the last two years.~~ A regular graduate studies application for admission is required. ~~A collaborative or interdisciplinary GDip program may be proposed by one or more departments for collaborative or interdisciplinary type diploma program which is offered in conjunction with a master's or doctoral program. Entry is approved by the Graduate Officer or Director of the Graduate Diploma program and the student's home Department Graduate Officer and Faculty Associate Dean.~~ All GDips programs require Department, Faculty, Senate Graduate and Research Council (SGRC) and Senate approval, followed by review and approval from the	academic requirements of the student's program and additional academic requirements – a combination of courses and/or academic milestones – specific to the GDip2 that total to the equivalent of 1.0 (academic) units. Normally, obtaining a GDip2 will require at least one of the following in addition to the program's normal requirements: • two 0.5 unit courses; • one additional 0.5 unit course and one or more milestones the academic requirements of which are equivalent to a 0.5 unit course; • a set of milestones the academic equivalent of which are two 0.5 unit courses. A **Type 3 Graduate Diploma** (GDip3) is earned when a student completes a direct entry, stand-alone program with an articulated set of learning outcomes achieved through a minimum of four 0.5 unit graduate-level courses, and may include additional milestones. For GDip3 programs, the minimum admission requirements align with the minimum requirements for a Master's degree. A regular graduate studies application for admission is required. All GDips (Types 1, 2, and 3) are recognized on the student's transcript and on the diploma. **Approval Process** All GDips (Types 1, 2, and 3) programs require Department/School, Faculty, Senate Graduate and Research Council (SGRC) and Senate approval. For Types 2 and 3, the internal approvals are followed by review and approval from the Ontario Universities Council on Quality Assurance (Quality Council). The approval process is described in the University's Institutional Quality Assurance Process.

Ontario Universities Council on Quality Assurance (Quality Council). The approval process is described in the University's Institutional Quality Assurance Process. ~~A GDip program and qualification is recorded on the official student academic record, and conferred at convocation. Diploma types are defined by the Ontario Universities Council on Quality Assurance.~~	

b) Graduate Certificates

New section, under the heading section **Concurrent academic offerings | Graduate certificates**

The current language about a Graduate Certificate of Participation has been replaced with a more developed outline of what a Graduate Certificate entails. The version presented outlines the structure of the certificate program and approval process.

Current Calendar copy, under Minimum requirements graduate diplomas	Proposed Calendar copy
Graduate Certificate ~~of~~ ~~Participation/Completion~~ ~~A Graduate Certificate of Participation or Completion is prepared and awarded by the Department/Faculty to acknowledge participation or completion of one or more courses, seminars or workshops. Awarding of a Graduate Certificate of Participation or Completion is not recorded on the official University record and academic transcript.~~ ~~Proposals for Graduate Certificates of Participation/Completion require Department and Faculty approval and are normally completed in conjunction with a master's or doctoral program, or non-degree graduate enrolment. All Certificates of Participation/Completion approved by a Department and Faculty must be reported to SGRC for information.~~	**Graduate Certificates** Graduate Certificates at the University of Waterloo are intended to recognize graduate students' accomplishments, typically co-curricular, that are in addition to their primary degree programs. Graduate Certificates require an articulation of the students' learning outcomes and the pathways to achieve and demonstrate the attainment of those learning outcomes. New Graduate Certificates shall be approved by Senate Graduate and Research Council (SGRC). Elements completed in pursuit of a Graduate Certificate will not generate academic credit for the student and may not be used in satisfying the requirements of a degree or diploma program. Graduate Certificates will be recognized and included on a student's academic transcript.

c) Joint interdisciplinary programs

This section has been rewritten to provide better guidance for establishing joint interdisciplinary programs.

Key elements include the development and confirmation of a written agreement of program outcomes, including required courses and milestones. Identifying that the custom academic program will meet, at a minimum, the requirements that satisfy the less rigorous of the two program requirements. This varies from the current text that states the most rigorous requirements will normally apply. In practice, however, the current text has not been followed, the proposed copy aligns better with current practice.

The formalization of the establishment of joint interdisciplinary programs is intended to support the development and promotion of these programs in line with the University's strategic objectives.

This section is under the Calendar section **Focused academic programs and outcomes | Joint interdisciplinary research programs.**

Current Calendar copy	Proposed Calendar copy

Joint interdisciplinary programs

Students interested in Doctoral or Master's study involving more than one discipline may undertake a joint research degree program provided Waterloo offers the degree level sought in both of the units involved~~, and their proposed program of study is approved by the units and Faculty (or Faculties). Professional programs are ineligible. Interested students should contact their department/program graduate co-orinator to obtain the Memorandum of Understanding - Joint/Interdisciplinary Graduate Degree Program form.~~

~~If the academic units involved have different requirements for the degree, the most rigorous requirements will normally apply. For example, if one department requires an oral defence of the Master's thesis and the other does not, a defence will be required. If the academic units involved offer different degrees, the degree granted will be that of the home unit with the applicable joint designation, e.g., MSc in Kinesiology and Sociology, MASc in Management Sciences and Biology.~~

Joint interdisciplinary research programs

The University of Waterloo values interdisciplinarity and encourages research graduate students to pursue their studies through diverse disciplinary lenses. Students interested in Doctoral or research Master's study involving more than one discipline may undertake a joint research degree program provided Waterloo offers the degree level sought in both of the units involved.

Prior to admission, a student contemplating a joint interdisciplinary research program is strongly encouraged to contact potential supervisors in both programs to assess the student's candidacy.

Entering a Joint interdisciplinary research program

A student wishing to pursue a joint interdisciplinary research program will apply to one of the programs comprising the joint program. Subsequent to admission and enrolment, but prior to the completion of term four for PhD students and term two for Master's students, the student may begin the process of defining the joint program. This process will include:

1. Demonstrating that the student meets the admission requirements for the second of the joint programs;
2. Coordinating with the student's primary supervisor to identify a co-supervisor in the second of the joint programs;
3. Defining the student's home Faculty for academic (including appropriate degree designation e.g., MA in Planning and Civil Engineering or an MASc in Civil Engineering and Planning), financial, administrative, and record-keeping purposes;
4. Creating a custom academic program that at a minimum satisfies the less rigorous of the two program requirements in the following categories:

	a. The total number of courses and any required courses to be completed successfully; b. The milestones to be completed successfully; c. The construct of the student's advisory and examining committees; 5. Establishing an expected sequencing of courses and milestones, as well as the consideration of prerequisites, as appropriate. 6. Redefining the student's expected funding with identified sources that may supersede the student's original offer of admission. Items 2 through 6 shall be recorded in writing, and shall be approved by: • the student; • the co-supervisors; • the Graduate Officers representing both of the Joint Programs; and • the applicable Associate Dean(s). Upon approval, the completed document shall be shared with the student and become part of the student's official University Record.

d) TB skin test

Remove this section. There is no over-arching requirement with public health for all students to present this test. Some programs may have specific health requirements related to placements and/or programming, which are included in the program level information. The government of Canada does require some students to provide a medical examination upon entry to Canada, and TB skin test is often included, but we (University of Waterloo) do not collect/store this information.

Consultations occurred at the start of our Calendar review project (2021):
Medical Director - Clark Baldwin
SSO - Amelia Burton, Manager, International Student Experience and Boon Khoo, Immigration Consulting Manager

Current Calendar content under the section **Admissions | TB skin test**:
https://uwaterloo.ca/graduate-studies-academic-calendar/general-information-and-regulations/tb-skin-test

Current Calendar content	Proposed Calendar content
~~**TB skin test**~~ ~~Newly admitted students who have been living and/or pursuing their education outside Canada must have documented evidence that they have had a recent TB skin test before undertaking studies at the University of Waterloo. Upon arrival or while attending the University, students must be prepared to present documentation if requested by a University official. This documentation must include the type of skin test taken, the date performed, and the number of millimeters of induration. Students who are requested to provide documentation but are unable to do so, or students who are unsure about the safety of the needles and/or injection procedures in their previous country of residence, must report to Health Services upon arrival on campus. Where applicable, Health Services will administer the TB skin test. There is a cost for this service.~~ ~~In addition, students who have travelled outside Canada or the United States for four weeks or longer should contact their health care provider to discuss the need for TB skin testing~~.	Remove this section

e) Graduate specializations

Minor revisions are being made to reflect current practice in relation to awarding these specializations.

Current Calendar copy	Proposed Calendar copy
Graduate specializations A graduate specialization reflects expertise achieved by a graduate student in a sub-discipline of their primary area of study. Specializations are normally available in course-based graduate programs or research programs where there is sufficient required coursework to allow for the customization of the student's program. For example, a Master's research program with two required courses and two electives (four total courses), would not qualify for a specialization because there is insufficient flexibility for the student to demonstrate mastery of a sub-discipline. In contrast, a research program with four required courses and four electives could easily be designed with multiple specializations achieved by completing a specific set of courses as the electives. A specialization is achieved at the University of Waterloo by successfully completing a set of courses defined by the academic unit that collectively contain the necessary depth of material to ensure a student's level of mastery. Graduate specializations: • do not require Quality Council approval; • do not require additional (to the host program) coursework or milestones; • should include at least four 0.5 unit courses or 2.0 academic units in total specific to the specialization; • should reflect themes that are emerging or established in the discipline, such that the completion of the specialization has meaning to an external audience; • should only be offered in disciplines where sufficient breadth of scholarship or professional areas exists to warrant such a distinction;	**Graduate specializations** A graduate specialization reflects expertise achieved by a graduate student in a sub-discipline of their primary area of study. Specializations are normally available in course-based graduate programs or research programs where there is sufficient required coursework to allow for the customization of the student's program. For example, a Master's research program with two required courses and two electives (four total courses), would not qualify for a specialization because there is insufficient flexibility for the student to demonstrate mastery of a sub-discipline. In contrast, a research program with four required courses and four electives could easily be designed with multiple specializations achieved by completing a specific set of courses as the electives. A specialization is achieved at the University of Waterloo by successfully completing a set of courses defined by the academic unit that collectively contain the necessary depth of material to ensure a student's level of mastery. <u>An assessment of whether or not the student's academic record warrants the specialization should be completed by the Department or Faculty at the time of degree completion.</u> Graduate specializations: • do not require Quality Council approval; • do not require additional (to the host program) coursework or milestones; • should include at least four 0.5 unit courses or 2.0 academic units in total specific to the specialization; • should reflect themes that are emerging or established in the discipline, such that the completion

• are recognized on a student's official transcript, but not recognized on a student's diploma.	of the specialization has meaning to an external audience; • should only be offered in disciplines where sufficient breadth of scholarship or professional areas exists to warrant such a distinction; • are recognized on a student's official transcript, but not recognized on a student's diploma.

f) Ontario Visiting Graduate Student (OVGS)

Minor revisions are being made to reflect current practice. Revisions include:

- Clearly articulating the approvers for the OVGS form;
- Including maximum units/credits granted; and
- Identifying when an exception to maxims may be granted.

Current Calendar copy	Proposed Calendar copy
Ontario Visiting Graduate Student (OVGS) The Ontario Visiting Graduate Student Plan (OVGS) allows a graduate student of an Ontario University (Home University) to take graduate courses at another Ontario University (Host University) while remaining enrolled at their own University. The plan allows the student to bypass the usual application for admission procedures and resultant transfer of credit difficulties. The student enrols and pays fees to their Home University and ~~is classed~~ as an "Ontario Visiting Graduate Student" at the Host University where they pay no fees. **OVGS courses - University of Waterloo students** The course(s) selected must be at the graduate level and there must be no comparable course(s) offered at the University of Waterloo. The course(s) selected must be required for the student's degree program. Such courses may not be "extra" or "audit" courses for the student. **OVGS ~~admission~~** The student completes an Ontario Visiting Graduate Student form which they must obtain from the graduate office of their Home University. On this form the student must indicate the course(s) to be taken and the term during which the course is offered at the Host University. Admission is not complete until the form has been approved ~~(signed) by the Department Chair and Graduate Dean of both the Home University and Host University.~~ The student is subject to any regulations of their Home University with respect to the maximum number of courses which may be	**Ontario Visiting Graduate Student (OVGS)** The Ontario Visiting Graduate Student Plan (OVGS) allows a graduate student at an Ontario university (Home University) to take graduate courses at another Ontario university (Host University) while remaining enrolled at their Home University. The plan allows the student to bypass the usual application for admission process. The student enrols and pays fees to their Home University and <u>is designated</u> as an "Ontario Visiting Graduate Student" at the Host University where they pay no fees. **OVGS courses - University of Waterloo Students** The course(s) selected must be at the graduate level and there must be no comparable course(s) offered at the University of Waterloo. The course(s) selected must be required for the student's degree program. Such courses may not be "extra" or "audit" courses for the student. **OVGS <u>accessing courses at the University of Waterloo</u>** The student completes an Ontario Visiting Graduate Student form which they must obtain from the graduate office of their Home University. On this form the student must indicate the course(s) to be taken and the term during which the course is offered at Waterloo (Host University). Admission is not complete until the form has been approved <u>by all of the following signatories</u>;

taken at another Ontario University. At the University of Waterloo there is a two course maximum.	• the Department Chair of the student's program at the Home University; • the AVP GSPA Equivalent at the student's Home University; • the Chair / Director of the Program offering the course at the University of Waterloo; • the Associate Vice President Graduate Studies and Postdoctoral Affairs at the University of Waterloo. The student is subject to any regulations of their Home University with respect to the maximum number of courses which may be taken at another Ontario University. At the University of Waterloo there is a two 0.5 unit weight courses or one 1.0 unit weight/credit maximum. Inter-University programs (e.g., Global Governance) may be exempt from the OVGS course limits.

UNIVERSITY OF WATERLOO
GRADUATE STUDIES AND POSTDOCTORAL AFFAIRS
519-888-4567 I uwaterloo ca/gspa

Memo

DATE: February 23, 2024

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

FROM: Jeff Casello, Associate Vice-President, Graduate Studies and Postdoctoral Affairs
Marianne Simm, Director, Graduate Studies and Postdoctoral Affairs

RE: Graduate Studies Academic Calendar (GSAC) changes [memo 2 of 3]

GSPA continues the review of GSAC to ensure that the information presented is complete, clear and consistent with current practice. The following items are being brought forward for approval and information.

Items for information:

a) Inactive status

Items for approval:

b) Academic integrity, research integrity and research ethics
c) Student's status and academic progress

Description and rationale for proposed changes:
This work has been done collaboratively and in partnership with the Faculties and other Academic Support Units that have expertise in the content (e.g., Office of Indigenous Relations, Office of Equity Inclusion and Anti-Racism, the Office of Research). The proposed changes have been reviewed and endorsed by the Graduate Student Relations Committee and the Graduate Operations Committee.

Proposed effective date: Term: Spring Year: 2024

Current **Graduate Studies Academic Calendar (GSAC)** page:
https://uwaterloo.ca/graduate-studies-academic-calendar/general-information-and-regulations

a) Inactive status

This section to be added under Student definitions with an intro (taken from Enrolment and time limits), and link to more detailed information found under current students section (change of enrolment status). The new text contains clarifications on the reasons for which students may seek inactive status. "Leaves", including "leaves of absence" are defined and the impacts of leaves in terms of students' support, access to resources, funding, etc. are explained.

Current calendar copy under **Student's status and academic progression | Enrolment and time limits | Inactive status**: https://uwaterloo.ca/graduate-studies-academic-calendar/general-information-and-regulations/enrolment-and-time-limits#Inactive%20status

Proposed calendar location **Definition – students | Inactive status**

Current Calendar copy	Proposed Calendar copy
Inactive status Students may request up to two consecutive terms of Inactive status by completing a Change of enrolment status form, ~~which must be approved by the Associate Dean (Graduate Studies) of their Faculty~~. Inactive status for Parental leave or Medical leave is not restricted to two consecutive terms. ~~Valid reasons for Canadian citizens or permanent residents to request Inactive status include illness, limited external research or work opportunity which is not related to their University of Waterloo program, personal or family obligations, lack of suitable courses (for students in coursework-only programs), or temporary financial difficulties for which the University cannot provide funds.~~ ~~Valid reasons for international graduate students to request Inactive status include illness, personal or family obligations, lack of suitable courses (for students in coursework-only programs), or temporary financial difficulties for which the University cannot provide funds.~~ International students must consider the immigration regulations/conditions (R220.1 (1)) pertaining to their Study Permit and eligibility for the Post Graduation Work Permit Program when requesting Inactive status. Individual circumstances may vary. International students should meet with an	**Inactive status** A graduate student proceeding to a degree must maintain continuous enrolment in each successive term from the time of initial admission until the end of the term during which the requirements for the degree are completed. A student may be active, pursuing their degree as a full or part-time student, or a student may seek to hold inactive status – an approved, temporary, and defined-duration pause in the student's pursuit of satisfying the requirements of a degree program. Students who are granted inactive status: • will be referred to as being on a "Leave"; • continue to be students at the University of Waterloo, meaning that there is no need to apply for re-admission to the University; • are not entitled to the University's funding commitment made in the student's offer of admission, though in some instances (e.g., parental leaves or health leaves) alternative funding may be provided for qualifying students; • shall not expect access to university academic resources (e.g., research support from their supervisors). International students who seek inactive status are responsible for understanding the

Immigration Consultant in the Student Success Office for advice. Students should not request Inactive status to work on their thesis or any other activity related to their graduate program. ~~Normally, Inactive status is approved for a maximum of two consecutive terms (Parental leave and Medical leave are not restricted to two consecutive terms).~~ Students who request more than two consecutive terms of leave because they have other commitments such as a full-time job or travel plans, should voluntarily withdraw from their program and may reapply when they are prepared to resume their studies. ~~Normally, students who have incomplete courses on their record are not eligible for Inactive status.~~ ~~Students who have been granted Inactive status for a term are not expected to study or conduct research while on leave, and thus should not expect access to their supervisor.~~ **Exceptions to inactive status process** Students in the Mathematics for Teachers (MMT) program who do not enroll in a course by the end of the third week of classes will be considered to be taking an inactive term and will automatically be changed to inactive status for a maximum of two consecutive terms. Students who have not enrolled in at least one course for three or more consecutive academic terms will be discontinued from their program and must apply for readmission to continue studies in their academic program. Note: students who need to take a third inactive term for one of the permitted reasons (e.g. medical leave or parental leave) must complete a Change of enrolment status form prior to the third week of classes.	impacts of an inactive status related to immigration regulations / conditions (R220.1 (1)) pertaining to their Study Permit and eligibility for the Post Graduation Work Permit Program. Individual circumstances may vary. International students should meet with an Immigration Consultant in the Student Success Office for advice. Students may request up to two consecutive terms of inactive status by completing a change of enrolment status. Inactive status for Parental leave or Medical leave is not restricted to two consecutive terms. Valid reasons to request Inactive status include: • Parental leave; • Personal/family obligations; • Temporary financial difficulties; • Medical/illness; or • No suitable courses available (for students in course-based programs only). Students who are Canadian Citizens or Permanent Residents may also seek inactive status to pursue a limited external research or work opportunity which is not related to their University of Waterloo program. Students should not request inactive status to work on their thesis or any other activity related to their graduate program. Students who request more than two consecutive terms of inactive status because they have other commitments, such as a full-time job or travel plans, should voluntarily withdraw from their program and may reapply when they are prepared to resume their studies. Students who are seeking inactive status should consult with their home program regarding any incomplete courses on their academic record. **Exceptions to inactive status process**

	Students in the Mathematics for Teachers (MMT) program who do not enrol in a course by the end of the third week of classes will be considered to be taking an inactive term and will automatically be changed to inactive status for a maximum of two consecutive terms. Students who have not enrolled in at least one course for three or more consecutive academic terms will be discontinued from their program and must apply for readmission to continue studies in their academic program. Note: students who need to take a third inactive term for one of the permitted reasons (e.g. medical leave or parental leave) must complete a Change of enrolment status form prior to the third week of classes.

b) Academic integrity, research integrity and research ethics

The current 'Academic integrity' and 'Research ethics' sections are being expanded to include subsections on research integrity and research ethics. The new text introduces iThenticate and its uses for graduate student research at Waterloo. Similarly, the new text presents information on the responsible conduct of research, as well as specific guidance on research involving human participants or animals. The latter three sections have been drafted by appropriate units in the Office of Research.

The research ethics updates were drafted by the Office of Research. The academic integrity updates were drafted by the Office of Academic Integrity. There will be only one combined section, Academic integrity, research integrity and research ethics.

New section on iThenticate has been added.

Current Calendar sections under **General information | Academic integrity**:
https://uwaterloo.ca/graduate-studies-academic-calendar/general-information-and-regulations/academic-integrity

General information | Research ethics:
https://uwaterloo.ca/graduate-studies-academic-calendar/general-information-and-regulations/research-ethics

Proposed Calendar location **General information | Academic integrity, research integrity and research ethics**

Current Calendar copy	Proposed Calendar copy
Academic integrity In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. The Office of Academic Integrity's website contains detailed information on University of Waterloo policies for students and faculty. This site explains why Academic Integrity is important and how students can avoid academic misconduct. It also identifies resources available on campus for students and faculty to help achieve academic integrity in--and out--of the classroom. The University of Waterloo recognizes that its graduate students come from a variety of cultural and educational backgrounds, and that expectations about academic integrity can differ from one institution to another. To satisfy this need for consistency across graduate programs and to inform and support our graduate students, the University of	**Academic integrity, research integrity and research ethics** In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect, and responsibility. The Office of Academic Integrity's website contains detailed information on University of Waterloo policies for students and faculty. This site explains why academic integrity is important and how students can avoid academic misconduct. It also identifies resources available on campus for students, instructors, and teaching assistants to help achieve academic integrity in--and out--of the classroom. The University of Waterloo recognizes that its graduate students come from a variety of cultural and educational backgrounds, and that expectations about academic integrity can differ from one institution to another. To satisfy this need for consistency across

Waterloo has created the Graduate Academic Integrity Module (Graduate AIM). The Graduate AIM is an online course that all new graduate students are required to take through Waterloo LEARN. Students must read the information about academic integrity and then receive a mark of at least 75% on an online quiz. The quiz must be successfully completed within the first 8 weeks of the term. **Turnitin®** The University licenses the text matching software (Turnitin®) that may be used to screen student assignments. The following text must appear in all course outlines: **Turnitin.com**: Text matching software (Turnitin®) may be used to screen assignments in this course. Turnitin® is used to verify that all materials and sources in assignments are documented. Students' submissions are stored on a U.S. server, therefore students must be given an alternative (e.g., scaffolded assignment or annotated bibliography), if they are concerned about their privacy and/or security. Students will be given due notice, in the first week of the term and/or at the time assignment details are provided, about arrangements and alternatives for the use of Turnitin® in this course. It is responsibility of the student to notify the instructor if they, in the first week of term or at the time assignment details are provided, wish to submit the alternate assignment.	graduate programs and to inform and support our graduate students, the University of Waterloo has created the Graduate Academic Integrity Module (Graduate AIM). The Graduate AIM is an online course that all new graduate students are required to take through Waterloo LEARN. Students must read the information about academic integrity and then receive a mark of at least 75% on an online quiz. The quiz must be successfully completed within the first 8 weeks of the student's first term. Failure to complete will result in a service indicator that would limit a student's academic options, and potentially graduation. **Turnitin®** The University licenses the text matching software (Turnitin®) that may be used to screen student assignments. The following text must appear in all course outlines in courses where Turnitin is being used: **Turnitin.com**: Text matching software (Turnitin®) may be used to screen assignments in this course. Turnitin® is used to verify that all materials and sources in assignments are documented. Students' submissions are stored on a U.S. server, therefore students must be given an alternative (e.g., scaffolded assignment or annotated bibliography), if they are concerned about their privacy and/or security. Students will be given due notice, in the first week of the term and/or at the time assignment details are provided, about arrangements and alternatives for the use of Turnitin® in this course. It is responsibility of the student to notify the instructor if they, in the first week of term or at the time assignment details are provided, wish to submit the alternate assignment. For more information on Turnitin®, visit the Office of Academic Integrity Turnitin® webpage. **iThenticate®** iThenticate® is text matching software that is designed to be used by researchers to

	ensure the originality of their written work. iThenticate® cannot be used for coursework. Graduate students can check their original documents only, such as articles and book chapters to be submitted for publication, grant proposals, comprehensive examinations, theses and dissertations, and writing created by individuals in connection with their role at the University of Waterloo. For more information about using iThenticate®, including how to request an account, visit the Office of Academic Integrity iThenticate® webpage. **Responsible Conduct of Research (Research Integrity)** All members of the University of Waterloo are expected to conduct research activities with integrity and ensure all aspects of the research is conducted responsibly and ethically. Some obligations are internally mandated (e.g., Waterloo policies, guidelines, or processes), where others are externally mandated (e.g., funders' requirements or legal requirements). These policies apply in all formal and informal settings in which research is being conducted, both on-and-off campus as well as in virtual environments. Through our research integrity policies, the University of Waterloo keeps the public, fellow researchers, governments, and funding agencies assured of the rigour of our policies and procedures. Seeing "University of Waterloo" next to a researcher's name should imply good, trustworthy research. As a recipient of Tri-Agency funds, the University of Waterloo is governed by the Tri-Agency Framework on the Responsible Conduct of Research. For graduate students, these principles are found in the Integrity in Research Administrative Guidelines, available via the University of Waterloo's Research Integrity webpage. Research misconduct includes, but is not limited to, fabrication, falsification, the destruction of research data/records, plagiarism, redundant publications, invalid authorship, inadequate acknowledgement, the mismanagement of conflict of interest, as well as several other regulations specific to grant applications.

As a member of the University of Waterloo community, students have both a right and a responsibility to report any instances of irresponsible conduct of research. Allegations can be reported (anonymously or named) in confidence to the Vice-President, Research and International or the Associate Vice-President, Research Oversight & Analysis.

Research with human participants

The University of Waterloo has two Research Ethics Boards (REBs): the Human Research Ethics Board (HREB) and the Clinical Research Ethics Board (CREB).
HREB reviews all types of research involving human participants where CREB reviews mainly clinical research and clinical trials.

The mandate of the REBs, on behalf of the University, is to protect the rights and welfare of human participants who take part in research. The ethics review process is intended to ensure the research meets ethical principles and complies with all applicable regulations, guidelines, and standards pertaining to human participant protection. -

At Waterloo, activities requiring ethics review include, but are not limited to, interviews, questionnaires (web-based or paper format), focus groups, oral histories, unobtrusive observations on individuals or groups where there is no expectation of privacy, physiological assessments and measurements, clinical research and clinical trials, analysis of secondary data not in the public domain and not anonymous, human tissue, remains, and bodily fluid as well as program evaluation, quality assurance and quality improvement activities being used for research purposes. These activities may be conducted on- or off-campus and may be funded or unfunded.

For more information visit the Office of Research Ethics website.

Research using animals

All research and teaching activities involving the use of live, non-human vertebrate animals conducted on or off-campus must

	undergo prior review and approval through the Animal Care Committee. Animals are only used in projects deemed to have scientific merit, and in teaching when there are no alternatives. These activities must conform with the Canadian Council on Animal Care standards and guidelines, the Animals for Research Act for the province of Ontario, and the University of Waterloo statement on animal use in research and teaching. For more information visit the Office of Research Ethics website.
Research ethics **~~Research with animals~~** ~~In association with the University of Waterloo's Animal Care Committee, the Office of Research Ethics (ORE) oversees the ethics review of research and teaching projects involving live, non-human vertebrate animals conducted by its students, staff and faculty, on or off-campus, to ensure that the proposals conform with the Canadian Council on Animal Care Guide to the Care and Use of Experimental Animals; the Animals for Research Act; and the University of Waterloo's Guidelines for the Care and Use of Animals in Research and Teaching.~~ ~~The ORE develops and distributes procedural information and educational materials associated with the ethics review process, monitors animal housing facilities, and provides educational workshops and training courses on animal research issues. The Office also liaises with provincial and federal government agencies with respect to application of their guidelines and animal utilization in research and teaching at Waterloo.~~ ~~Additional details about the ethics review process, educational materials and workshops can be obtained from the Office of Research Ethics website.~~ **~~Research with human participants~~**	

The University of Waterloo requires all research involving human participants conducted by its students, staff and faculty, on or off-campus to undergo prior ethics review and clearance through the Office of Research Ethics (ORE). The ethics review and clearance process is intended to ensure that projects comply with the Office's Guidelines for Research with Human Participants (Guidelines), the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans, and guidelines of various professional organizations, and that the safety, rights and welfare of participants are adequately protected. All applications for ethics review of research with human participants are submitted to the Office of Research Ethics. The ethics review process is conducted by the Director, Manager, ORE, and/or the Human Research Ethics Committee and is determined in the basis of risk level associated with the projects. The Guidelines inform researchers about ethical issues that must be of concern when conducting research with humans (e.g. anonymity, confidentiality, risks and benefits, informed consent process etc.). The Director and Manager develop and distribute educational materials, guidelines, procedural information, and sample documents related to research with human participants, and provide consultation, assistance and support to researchers at all stages of the application and review processes. The Director liaises with government agencies on matters pertaining to research with humans. The Manager coordinates University research within local elementary and secondary schools and coordinates ongoing monitoring of human research projects with ethics clearance. Additional details about the application and review procedures, guidelines, and educational materials can be obtained from the Office of Research Ethics website. ## Integrity in research The University of Waterloo expects members of its faculty, staff, and students to conform to the highest standards in research and	

~~scholarship. Misconduct is a violation of the principles of intellectual honesty, including the misappropriation of writings, research, and discoveries of others. Included in this category are: false recording, manipulation of reporting of information; plagiarism; unauthorized use of confidential research results of others.~~ ~~Additional information and resource materials on the topic of integrity in research can be obtained from the Office of Research Ethics website~~.	

c) Student's status and academic progress

This section was formerly titled "Enrolment and time limits" – renamed to better reflect content.

Current Calendar copy for **Enrolment and time limits** includes the following sub-sections:
Residence requirements - graduate programs
Enrolment
Continuous enrolment
Co-operative work terms
Full-time off-campus
Leave of Absence from study
Inactive status
Exceptions to inactive status process
Medical leave
Birth leave
Partner leave
Parental leave
Enrolment - international students on Study Permits
Voluntarily withdraw
Required to withdraw
Course drop/add date
Retaking graduate courses
Program time limits

Proposed Calendar section **Student's status and academic progress** will include the following sub-sections:

Sub-Heading section	Overview of proposed changes
Enrolment	Brief introduction to section added.
Structure of academic terms	Breakdown of important dates, with explanation of each item. Identification of requirement to be fees arranged and implications of not meeting requirement.
Continuous enrolment status	Expanded explanation of continuous enrolment status for graduate students, including the status of inactive.
Co-operative work terms	Explanation of how student status is recorded during co-op work terms, including use of co-op credit towards progression.
Course add/drop date	No substantive changes, minor spelling updates.
Enrolling in undergraduate courses	Removal of language related to 'petition' to enrol in undergraduate course. Updated text to reflect current approval practice (approval through course drop/add form).
Retaking graduate courses	No changes to this section. https://uwaterloo.ca/graduate-studies-academic-calendar/general-information-and-regulations/enrolment-and-time-limits#Retaking%20graduate%20courses
Enrolment – international students on study permits	Removal of references that GSPA will collect and retain study permit information. (change made in 2021, replaced by Workday for students engaged in TAship). Direction to students to seek advice regarding study permit status.

Academic progression	New section. Expanding on requirement for students to remain in "good academic standing".
Grades and grading	Reorganized section. Updated to remove references to changes made in 2001. Further explanation provided for INC, XTRA, and GS Continuing/etc. or administrative courses. New section headings added for; graduate students enrolled in undergraduate courses, grade submission and conversion of incompletes, to provide greater clarity.
Monitoring and supporting student progression	New section added. Direction on supporting students throughout their program.
Good academic standing	New section added. We often refer to "good academic standing" but there hasn't been a definition of what this means. This section provides clarity on grade performance, cumulative average, milestone completion and research progress. If students fail to meet the standards indicated, they will be deemed not to be in "good standing" and granted "conditional standing".
Conditional standing	New section. Conditional standing has been articulated in terms of student expectations while on conditional standing, and how to return to good academic standing.
Research progress	New section. Guidance on how students in research-based programs are assessed.
Program completion time limits	Updated guidance (clarity) on how student's term counts advance.
Requests for times extension for program completion	New section. Information on how, and when, to request an extension, including deadline dates.
Resident requirements	Updated language related to 'residence requirements'.
Leave of absence from study	Greater guidance on requesting a leave of absence.
Student status when on a leave of absence	New section. Students who are seeking a 'brief absence' (between two to six weeks) may be granted without a change of enrolment status. Leaves greater than six weeks must involve a change in enrolment status.
Permitted reasons for requesting a leave	Section header.
Medical leave	Additional information added around process to confirm a medical leave, and what happens at the end of the approved leave, including potential impact on funding obligations.
Birth leave	Expanded direction of birth leave, and if/when a change of status will be required.
Partner leave	Clarifying 'entitlement' to partner leave of two weeks and direction on communications expected.

Parental leave	Minor updates to clarify that student status will be inactive during parental leave.
Personal leave	New section. Personal leave covers any other personal circumstance not covered within medical, birth, partner, or parental leaves.
Voluntary withdrawal	Updated text.
Required to withdraw	No changes other than link and title added to Policy reference.
Convocation and apply to graduate/program completion	Added statement, similar to Undergraduate calendar, that accepting conferred degree, diploma or certificate, student is ratifying their academic record.
Posthumous degrees and certificates	No changes to the section. https://uwaterloo.ca/graduate-studies-academic-calendar/general-information-and-regulations/posthumous-degrees-and-certificates

For review, the proposed sections will be matched with the current sections, however, the order and organization is as proposed.

Current Calendar copy	Proposed Calendar copy
Enrolment and time limits Residence requirements - graduate programs Enrolment Continuous enrolment Co-operative work terms ~~Full-time off-campus~~ [under proposed moved to new section under **Student – definitions**] Leave of Absence from study Inactive status Exceptions to inactive status process Medical leave Birth leave Partner leave Parental leave Enrolment - international students on Study Permits Voluntarily withdraw Required to withdraw Course drop/add date Retaking graduate courses Program time limits	**Enrolment** • Structure of academic terms • Continuous enrolment status • Co-operative work terms • Course add/drop date • Enrolling in undergraduate course • Retaking graduate courses • Enrolment – international students on study permits
Enrolment ~~**Enrolment and residence:** On successful completion of each four-month period (Fall, Winter, Spring) students advance as follows:~~ ~~• full-time students will advance at the rate of one term (1.0);~~	**Enrolment** A student who wishes to engage in academic activities at the University of Waterloo, and who wishes to access University resources must be enrolled as a student. This section of the Calendar builds upon the student definitions – full-time, full-time off campus, part-time, or inactive – and provides guidance

• part-time students will advance at the rate of one-half term (0.5); • inactive enrolment has a term value of 0.0. **Term enrolment:** Students will not be allowed to enrol after the government reporting date in a term (for relevant dates refer to the Academic deadlines and events page). If they are not Enroled, students will not receive credit for course work completed up to that date and will have to apply for readmission to their program. **Enrolment and time limits** (additional Program time limits information is provided below): Students who have Enroled and paid fees, but have reached the the program time limits are required to submit a Request for program extension form to their department by the specified dates prior to the term that the extension is required (i.e., Fall: August 1, Winter: December 1; Spring: April 1; unless an academic unit specifies different deadlines). Students who do not submit their form by the specified deadline will be required to withdraw from their program. **Fees:** To avoid late fees, students must pay their fees or become fees arranged by specified dates (see Academic deadlines and events page). Students who are not fees arranged and have Enroled in classes will have their classes dropped at the end of the third week of classes (end of open Enrolment; to request re-Enrolment, students must submit a Graduate Studies course drop/add form and make a fee payment arrangement). Students who do not arrange fees by the specified last day to arrange tuition and fees (i.e., considered to be non-payment of fees) will be withdrawn from their program. Enrolment may be re-established only if an application for readmission is approved. Students who are readmitted to a program must enrol for a minimum of one academic term.	on the structure and implications of students' enrolments in their graduate programs.
(under heading Enrollment)	**Structure of academic terms**

At the University of Waterloo the calendar year is divided into three academic terms known as Fall (September-December), Winter (January-April) and Spring (May-August). ~~Graduate students normally enrol for the first time in September at the beginning of the Fall term. In some cases, a department permits new students to enrol in January or May. To enrol, a new student must have been issued a Letter of Acceptance by Graduate Studies and Postdoctoral Affairs (GSPA) which specifies the date for which enrolment is authorized.~~	At the University of Waterloo the calendar year is divided into three academic terms known as Fall (September-December), Winter (January-April) and Spring (May-August). Courses are offered in each term with start and end dates approved by the University Senate and published annually. Graduate students who receive financial support from the University do so on a term-by-term basis. The number of academic terms a student has completed is an important metric for monitoring graduate student progression and may influence a student's eligibility for funding. In each academic term, there are Important Dates about which students should be aware. These include: • The Tuition Refund dates - the dates by which if a student unenrols they may be eligible to receive 100% and 50% refunds for their tuition. • The official count date. Each term, the University is required to report the number of students enrolled to the Province of Ontario. If a student's registration status remains uncertain at the time in which government reporting is due, the University will actively seek to resolve the enrolment status. In this case, students will not receive credit for course work completed up to that date in that term and will have to apply for readmission to their program. Students will not normally be allowed to enrol, change their enrolment status, or change their program of study after the official count date in a term. For students enrolled in courses, additional Important Dates include: • Course start and end dates. • The course enrolment period, during which a student may add or drop a course to their schedule for the current term. • The class drop with grade of Withdrawn, no credit granted (WD)

	period, during which a student may drop a course, with a grade of WD listed on the transcript for that course. A student may also add a course with the Graduate Studies course drop/add form. • Outside of these periods, students with special circumstances can seek to drop or add a class, normally through the petition process. For courses with non-traditional meeting schedules, alternative dates may be arranged. Students should contact their Graduate Officer. For courses with enrolment restrictions, students must obtain permission through their Department Graduate Coordinator. A student who is not fees arranged by the end of the class enrolment period will automatically be unenrolled from their courses.
Continuous enrolment ~~A graduate student proceeding to a degree must maintain continuous enrolment, either active or inactive, in each successive term from the time of initial admission until the end of the term during which the requirements for the degree are completed. Students are responsible for ensuring that they enrol and arrange fees by the deadline each term (formal dates are available on the Finance website).~~ ~~Graduate students must Enrol as Active, and pay appropriate fees plus incidentals, in each term in which they are engaged in coursework, research, or thesis preparation including the term in which the completion of degree requirements is anticipated.~~ ~~**Notes:**~~ 1. ~~Students must remain Enroled and fee arranged until their final degree requirements are completed. For programs with a thesis, completion includes submission and approval from Graduate Studies and~~	**Continuous enrolment status** Graduate students enrolled in an academic program must have an active enrolment status – part-time or full-time – and pay appropriate fees plus incidentals in each term in which they are engaged in coursework, research, or thesis preparation. This requirement includes the term in which the completion of program requirements is anticipated. For programs with a thesis, completion includes submission and approval from Graduate Studies and Postdoctoral Affairs of the thesis in UWSpace. A graduate student may also be formally enrolled in an academic program, but not be actively working towards their program requirements. In these cases, a student shall seek to be enrolled with inactive status using a change of enrolment form. When a student is inactive, the student is not required to pay tuition or fees to the University. Continuous UHIP enrolment is required for international students. Failing to maintain an active or inactive status will result in a student being withdrawn from

~~Postdoctoral Affairs of the thesis in UWSpace.~~ ~~2. Faculties and/or departments and schools will verify degree completion.~~ ~~3. Graduate students are notified of degree completion approval by Graduate Studies and Postdoctoral Affairs.~~ ~~4. The completion, degree, and convocation dates will appear on student academic records/transcripts.~~ ~~If a student plans to Enrol in courses beyond the degree requirements, they must apply for non-degree admission for the term following the term of degree completion.~~	their program and require the student to reapply for admission to resume their studies. By default, a student's enrolment status when full-time or part-time automatically carries forward unchanged from the previous term. A student who wishes to change their status may do using a change of enrolment form.
Exceptions to inactive status process Students in the Mathematics for Teachers (MMT) program-who do not enroll in a course by the end of the third week of classes will be considered to be taking an inactive term and will automatically be changed to inactive status for a maximum of two consecutive terms. Students who have not enrolled in at least one course for three or more consecutive academic terms will be discontinued from their program and must apply for readmission to continue studies in their academic program.-Note: students who need to take a third inactive term for one of the permitted reasons (e.g. medical leave or parental leave) must complete a Change of enrolment status form prior to the third week of classes.	Moved this section to 'Inactive status'
Co-operative work terms Students on a work term must ~~change~~ enrollment status to part-time/work term. ~~Students requesting a status change, must complete a Change of enrolment status form~~. Enrolment in a course is allowed with permission from the student's home department. Failure to maintain continuous enrolment will cause their registration in Graduate Studies to lapse (see the Co-Operative Education page for more information).	**Co-operative work terms** Students on a work term must have their enrolment status changed to part-time/co-operative work term, after they have secured a job for the term. Once a student's work term is completed, their status will automatically be reverted to their status, prior to the work term. Enrolment in a course is allowed with permission from the student's home department. Failure to maintain continuous enrolment will cause their registration in Graduate Studies to lapse (see the Graduate work-integrated learning page for more information).

	Work term requirements are specified in the section Graduate work-integrated learning. Program pages will outline specific program requirements. Each co-operative work term shall carry academic credit and be recorded as a course with a unit weight of 0.50. A final grade of Credit granted (CR) or No credit granted (NCR) shall be assigned. Only grades of CR can be counted towards successfully completing co-operative work term requirements. These co-operative work term courses are extra academic requirements to those listed above for minimum Master's or PhD degree requirements.
Course drop/add date Students can enrol in courses until the end of the third week of classes. Students who drop a course prior to the ~~completion of the third week of classes~~ will have no record of that course on their transcript. Students who drop a course in the period between the fourth and tenth week of classes will have a record of the course on their transcript and a grade of withdrawn (WD). After the tenth week of classes, students may not drop or add a course except by ~~petition~~ using the Graduate Studies course drop/add form, and only under exceptional circumstances with the signature of the instructor, supervisor, Department Graduate Officer, and the Associate Dean (Graduate Studies) of their home Faculty. Comparable dates will be used for courses with non-traditional meeting schedules. For courses with enrolment restrictions, students must obtain permission through their Department Graduate Coordinator. These are Graduate Studies and Postdoctoral Affairs (GSPA) deadlines. Individual Faculties may have earlier deadlines (please check with your Associate Dean's Office).	**Course drop/add date** Students can enrol in courses until the end of the class enrolment period (normally the third week of classes). Students who drop a course prior to the end of the class enrolment period will have no record of that course on their transcript. Students who drop a course in the period between the fourth and tenth week of classes (referred to as the Class drop with grade of Withdrawn, no credit granted period) will have a record of the course on their transcript and a grade of withdrawn (WD). After the tenth week of classes, students may not drop or add a course except by using the Graduate Studies course drop/add form, and only under exceptional circumstances with the signature of the instructor, supervisor, Department Graduate Officer, and the Associate Dean (Graduate Studies) of their home Faculty. Comparable dates will be used for courses with non-traditional meeting schedules. For courses with enrolment restrictions, students must obtain permission through their Department Graduate Coordinator. These are Graduate Studies and Postdoctoral Affairs (GSPA) deadlines. Individual Faculties may have earlier

	deadlines (please check with your Associate Dean's Office).
Undergraduate courses ~~s~~ ~~Graduate students who wish to enrol in an undergraduate course may petition using a Graduate Studies course drop/add form, obtainable through their Department or Graduate Studies and Postdoctoral Affairs (GSPA). Signature of the instructor, supervisor, Department Graduate Officer, and the Associate Dean (Graduate Studies) of their home Faculty are required.~~	**Enrolling in undergraduate courses** In some circumstances, in consultation with their supervisor or Graduate Officer, a graduate student may benefit from enrolment in an undergraduate course. Graduate students who wish to enrol in an undergraduate course may seek approval using a Graduate Studies course drop/add form.
Enrolment - international students on Study Permits ~~Students without valid Study Permits will not be allowed to enrol at the University of Waterloo.~~ All international students admitted to graduate studies degree programs at the University of Waterloo must have a valid Study Permit issued by Immigration, Refugees and Citizenship Canada (IRCC). ~~A copy of the Study Permit must be submitted to Graduate Studies and Postdoctoral Affairs (GSPA) upon arrival at the University.~~ If a Study Permit expires prior to program completion, students must apply to IRCC for renewal ~~and submit a copy of the renewed Study Permit to Graduate Studies and Postdoctoral Affairs (GSPA)~~ (check the 'valid until' date on the Study Permit). ~~Make sure you~~ apply at least 30 days before ~~your~~ current permit expires. ~~If your Study Permit expires and you have made an application to renew it, but have not had a decision yet, you can continue studying until you receive a decision. Proof of application for renewal must be submitted to Graduate Studies and Postdoctoral Affairs (GSPA) to permit continuing enrolment.~~	**Enrolment – international students on study permits** All international students admitted to graduate studies degree programs at the University of Waterloo must have a valid Study Permit issued by Immigration, Refugees and Citizenship Canada (IRCC), or meet the conditions as determined by IRCC. Students without valid Study Permits will not be allowed to enrol in a graduate program at the University of Waterloo that requires the student's physical presence in Canada. If a Study Permit expires prior to program completion, students must apply to IRCC for renewal (check the 'valid until' date on the Study Permit). Students are advised to apply at least 30 days before their current permit expires. If a student's Study Permit has expired but they have made an application to renew it, but have not had a decision yet, they can continue studying until they receive a decision. Immigration consultants in the Student Success Office are available to provide guidance and support.
	Academic progression • Grades and grading • Monitoring and supporting student progression • Good academic standing • Conditional standing • Research progress • Program completion time limits • Requests for time extensions for program completion

<table>
<tr><td></td><td></td></tr>
<tr><td>No section</td><td><h2><u>Academic Progression</u></h2><u>Graduate students are required to remain in “good academic standing” in their graduate program and within time limits.</u></td></tr>
<tr><td><h3>Grades and grading</h3>Grade ~~submission~~

~~Instructors must submit final grades to Graduate Studies and Postdoctoral Affairs (GSPA) by the end of the term in which the course was given or by the beginning of the following term. Interim grades may not be assigned. Once a grade has been assigned, it cannot be changed.~~

Conversion of incompletes

~~An incomplete grade status (INC) submitted by an instructor may remain on a student's academic record for at most two terms of enrolment following the term in which the course was taken. A student may seek a one-term extension by submitting a petition to the course instructor and the Department prior to the end of the two terms. If a grade has not been submitted by the end of the second term and an extension has not been granted, the INC will automatically convert to a failure to complete (FTC). For average calculation, FTC value equals 0. An FTC status may be reverted to an INC on the academic record only if a petition from the student is approved by the Department, Faculty, and the Associate Vice-President, Graduate Studies and Postdoctoral Affairs. Such a petition is granted only in exceptional circumstances.~~

Grading scheme

~~The grading system of the University changed in Fall 2001. Grades for all courses taken prior to Fall 2001 appear on grade reports and transcripts either as one of 15 letter grades from A+ through F, or as numeric marks on a percentage scale depending upon the Faculty of enrolment.~~

~~Effective Fall 2001, numeric grades on a scale from 0 - 100 are used by all Faculties.~~</td><td><h3>Grades and grading</h3>Grad<u>ing scheme</u>

<u>Numeric grades on a scale from 0 - 100 are used by all Faculties for courses; averages (overall, program, etc.) are reported on the same 0-100 scale.</u>

Students must obtain an average of at least 70% in the set of courses which they present in fulfilment of course requirements for any graduate degree. Some programs may require higher program averages or course grades for graduate degrees.

Any course with a numeric grade below 60% will not be counted for credit and is considered a failure. In some programs a higher than 60% grade is required for the course to count towards degree completion.

<u>In some instances (e.g., grades granted by the University of Waterloo prior to 2001 or a student seeking transfer credit achieved elsewhere), a student may require a conversion from a letter grade to a numeric percentage.The following conversion scale applies to these cases.</u>

<table>
<tr><td colspan="3">Table of grading scheme</td></tr>
<tr><th>Letter grade</th><th>Percentage ranges</th><th>Weighting factors for letter grades</th></tr>
<tr><td>A+</td><td>90-100</td><td>95</td></tr>
<tr><td>A</td><td>85-89</td><td>89</td></tr>
<tr><td>A-</td><td>80-84</td><td>83</td></tr>
<tr><td>B+</td><td>77-79</td><td>78</td></tr>
<tr><td>B</td><td>73-76</td><td>75</td></tr>
<tr><td>B-</td><td>70-72</td><td>72</td></tr>
<tr><td>C+</td><td>67-69</td><td>68</td></tr>
</table>
</td></tr>
</table>

~~Averages are reported in all Faculties as percentages. Average calculation values are used for overall averages for students with letter grades on their records.~~

~~The following conversion scale applies to courses taken prior to Fall 2001. In alignment with this conversion scale, effective Fall 2001, numeric grades on a scale from 0 - 100 are used by all Faculties.~~ Any course with a numeric grade below 60% will not be counted for credit and is considered a failure. In some programs a higher than 60% grade is required for the course to count towards degree completion.

Table of grading scheme		
Letter grade	**Percentage ranges**	**Weighting factors for letter grades**
A+	90-100	95
A	85-89	89
A-	80-84	83
B+	77-79	78
B	73-76	75
B-	70-72	72
C+	67-69	68
C	63-66	65
C-	60-62	62
F	0-59	0

Non-numeric grades/grade status

Table of non-numeric grades/grade status	
Designation	**Description**
ACC	Accepted (thesis)
AEG [1]	Aegrotat, credit granted due to illness or extenuating circumstances
AUD	Audit only, no credit granted
CR [2]	Credit granted
DNW	Did not write examination, no credit granted (value 0)
FTC	Failure to complete course requirements in a course with a grade of INC, no credit granted (value 0)

C	63-66	65
C-	60-62	62
F	0-59	0

Note, for admissions purposes, an applicant's previous average will be calculated using the values articulated by the home university on the student's transcript.

Non-numeric grades/grade status

Table of non-numeric grades/grade status	
Designation	**Description**
ACC	Accepted (thesis)
AEG [1]	Aegrotat, credit granted due to illness or extenuating circumstances
AUD	Audit only, no credit granted
CR [2]	Credit granted
DNW	Did not write examination, no credit granted (value 0)
FTC	Failure to complete course requirements in a course with a grade of INC, no credit granted (value 0)

INC [3]	Course requirements not complete, no credit granted, not in average
NAC	Not Accepted (thesis)
NCR [2]	No credit granted
NMR	No mark reported, no credit granted (value 0)
UR	Under review, no credit granted
WD	Withdrawn, no credit granted
XTRA[4]	Extra course, not counted towards program average or degree requirements

[1]AEG: The aegrotat designation signifies the granting of credit for a course when some coursework has been completed but no further assessment is possible because of illness or other extenuating circumstances. The aegrotat designation is used only in exceptional circumstances and must be

INC	~~Incomplete course work, no credit granted~~
NAC	Not Accepted (thesis)
NCR [2]	No credit granted
NMR	No mark reported, no credit granted (value 0)
UR	Under review, no credit granted
WD	Withdrawn, no credit granted

Students must obtain an average of at least 70% in the set of courses which they present in fulfilment of course requirements for any graduate degree. Some departments may require higher program averages or course grades for graduate degrees.

~~If a graduate student takes an undergraduate course for graduate credit the above grading scheme will apply. Undergraduate courses taken for graduate credit or to meet probationary or transitional requirements for a graduate program are subject to the same regulations as graduate courses, i.e., interim grades may not be assigned, once a grade has been assigned it may not be changed; incomplete grade status (INC) converts to failure to complete (FTC) after two terms following the term in which the course was taken. Students may petition for an extension of incomplete status.~~

[1]The aegrotat designation signifies the granting of credit for a course when some coursework has been completed but no further assessment is possible because of illness or other extenuating circumstances. The aegrotat designation is used only in exceptional circumstances and must be approved by the Faculty Associate Dean.

[2]Departments may offer, for graduate credit, courses that carry no grades, and satisfactory work in such courses will be indicated on the transcript by CR. CR/NCR courses are so designated in the calendar. No degree candidate can fulfil more than half of the minimum department course requirements by courses of this type.

approved by the Faculty Associate Dean, graduate studies.

[2]CR/NCR: Departments may offer, for graduate credit, courses that carry no grades, and satisfactory work in such courses will be indicated on the transcript by CR. CR/NCR courses are so designated in the calendar. CR/NCR grades are not calculated in a student average. No degree candidate can fulfil more than half of the minimum department course requirements by courses of this type.

[3]INC (Incomplete): In exceptional circumstances, an instructor may grant a student an INC interim grade – reflecting an extension for the student to complete specific outstanding course element(s). If the circumstance is related to a documented accommodation, students are encouraged to connect with AccessAbility Services. The instructor will determine completion dates for outstanding course element(s).

[4]XTRA: Students who wish to enrol in courses that are not required and are not to be used in satisfying degree requirements, may have that course designated as XTRA such that marks earned in that course will not be calculated in the student's overall or program averages. A student must seek approval for a course to be designated as XTRA.

In some cases, students may be enrolled in administrative courses (e.g., "GS – Continuing Graduate Studies" and "GS 999 Continuing Degree Requirement") to demonstrate the student's enrolment, which are not graded and do not carry any credit weight.

Graduate students enrolled in undergraduate courses

If a graduate student takes an undergraduate course for graduate credit the above grading scheme will apply. Undergraduate courses taken for graduate credit or to satisfy admissions requirements for a graduate

	program are subject to the same regulations as graduate courses. **Grade submission** Instructors must submit final grades to Graduate Studies and Postdoctoral Affairs (GSPA) by the grade submission deadline of the term in which the course was given. Interim grades other than INC may not be assigned. **Conversion of incompletes** An incomplete grade status (INC) submitted by an instructor may remain on a student's academic record for at most two terms of enrolment following the term in which the course was taken. If a grade has not been submitted by the end of the second term and an extension has not been granted, the INC will automatically convert to a failure to complete (FTC). For average calculation, FTC value equals 0. An FTC status may be reverted to an INC on the academic record only if a petition from the student is approved by the Department and Faculty.
No section	**Monitoring and supporting student progression** As graduate students progress through their programs, it is beneficial for students, their supervisors, or academic programs to monitor the students' progress and support the students' pathways towards program completion. The University provides specific requirements for the monitoring of academic progress for research graduate students and course-based graduate students. Students, supervisors, advisory committee members, program directors and graduate officers are encouraged to be familiar with these guidelines.
No section	**Good Academic Standing** A student is deemed to be in Good Academic Standing when they are satisfying their

	academic requirements which, depending on the program may include: • Minimum grade performance in courses. All graduate students are required to achieve grades in those courses satisfying their degree requirements that meet or exceed the minimum academic performance as indicated by the program. • Minimum cumulative average, at least 70%; higher averages may be indicated by the academic program. • Successful completion of milestones / examinations within articulated time limits. Specific examples include the Academic Integrity Module for all graduate students; comprehensive or qualifying examinations for PhD students; and in some programs, proposal presentations or defenses. • Satisfactory progress in research leading to the successful presentation or defense of a student's Master's Research Paper (MRP) or thesis, as determined by the student's supervisor or supervisory committee. A student will lose their status of Good Academic Standing if one or more of the following outcomes occur: • The student achieves a grade in an individual course that does not satisfy the minimum required performance. • A student fails to satisfy a mandatory milestone or examination within the time limits articulated in this Calendar or by the Program / Department. • A student is deemed to be progressing in research at an unsatisfactory rate. A student deemed not to be in Good Academic Standing may be designated in Conditional Standing. Alternatively, a student may be Required to Withdraw, at the discretion of the program. Normally, a student will not be granted Conditional Standing more than once in their graduate career.
	Conditional Standing

	A student with Conditional Standing is at risk of being required to withdraw if substantive improvements in performance are not observed. The student will normally be given one to two terms (at the discretion of the Program Director/Graduate Officer) to complete an articulated set of academic requirements – e.g., completing courses with grades that exceed a minimum threshold; completing satisfactorily outstanding academic milestones; or making substantive progress in the student's research. Students with Conditional Standing will receive written notice of the conditions under which they may continue their studies, as determined by the Graduate Program Committee and the Associate Dean, Graduate Studies. A copy of this decision will be added to the student's internal University record. Students with Conditional Standing will receive financial support consistent with their offer of admission for at least one term. Students who do not return to Good Academic Standing within one term, may continue to receive support at the discretion of the student's Program or Faculty. A student who fails to meet the articulated requirements will normally receive a Required to Withdraw decision. Successful completion of the articulated requirements will allow the student to return to Good Academic Standing. A student whose Academic Standing has changed from Good Academic Standing to Conditional Standing or Required to Withdraw may petition or grieve the decision under Policy 70 – Student Petitions and Grievances.
	Research progress For research-stream master's or doctoral students, research progress will be reviewed by their supervisors, normally with input from the student's supervisory committee.

When a student is within Program Time Limits, research progress shall be formally evaluated at minimum once a year, though higher frequency may be specified at the discretion of the supervisor, the supervisory committee or the Graduate Officer in the student's home program.

The outcomes for a student within program time limits are that a student may be deemed to be making satisfactory or unsatisfactory progress in their research, at the discretion of the supervisor with input from the supervisory committee. In the event of an unsatisfactory outcome, the results shall be communicated to the Graduate Officer in the student's home program and will normally trigger a change of standing from Good Academic Standing.

When a student is beyond Program Time Limits, research progress shall be formally evaluated through the Request for extension beyond program time limits.

For more information, see the Guidelines for evaluating and providing feedback on graduate student progress in PhD and research Master's programs.

Program time limits

The University Senate has set the following program time limits:

Table of program time limits	
Program level	**Time limits**
Master's	6.0 terms
PhD from an Honours Bachelor's	18.0 terms
PhD from a Master's	12.0 terms
PhD from an MA (Clinical Psychology)	15.0 terms

~~If a student reaches the time limit for their program, they may request to continue their studies beyond these limits by submitting a Request for program extension form to their academic department. This is an important process that is intended to facilitate a conversation about academic progression~~

Program completion time limits

The University Senate has set the following program time limits for graduate programs.

Table of Program Time Limits

Program level	Time limits
Master's	6.0 terms
PhD from an Honours Bachelor's	18.0 terms
PhD from a Master's	12.0 terms
PhD from an MA (Clinical Psychology)	15.0 terms

On successful completion of each four-month term (Fall, Winter, Spring), students' term counts advance as follows:

- full-time students will advance at the rate of one term (1.0);
- part-time students will advance at the rate of one-half term (0.5);

~~and a plan for completion of the degree. For the first 3.0 terms after program limits have been reached, the approval process takes place at the Department/School level. Further extensions must be approved by the Associate Dean (Graduate Studies) of the Faculty. If the Request is not approved, the student will be required to withdraw from their program. Given the importance of this process, if students fail to submit a Request by the specified dates (i.e., for a Fall term extension: August 1; for a Winter term extension: December 1; for a Spring term extension: April 1; unless an academic unit specifies different deadlines), they will be required to withdraw from their program. A student receiving a Required to Withdraw decision (resulting from lack of request approval or failure to submit their form) may challenge that decision through Policy 70.~~ ~~For the purposes of these time limits a term is counted as 1.0 per term of full-time enrollment, and 0.5 per term of part-time enrollment.~~	• inactive enrolment status has a term value of zero terms (0.0). A student whose cumulative term count is less than or equal to the articulated duration of the program is deemed to be **within program time limits**. A student whose cumulative term count is greater than their program duration is **beyond program time limits**. A student who is beyond program time limits: • is normally ineligible for University, Faculty or Program-level funding. • will be required to seek a Request for extension beyond program time limits. The program time limits listed in the Table above reflect University maximums. Some programs have expected program durations that are shorter than these program time limits. Programs may enact the process to review a student's academic progression when the student exceeds the expected program duration.
No comparable section, some text in section above (Program time limits)	**Requests for time extensions for program completion** A graduate student who is at or beyond time limits is required to complete a Request for extension beyond program time limits. The time extension request process serves as an opportunity for students, their supervisor(s), committee members, program and faculty administrators to review students' academic and research progress. For students who are progressing well, the process will normally result in an approved request accompanied by constructive feedback. It is also the intent that the process results in an agreed upon timeline for completion. For students who have experienced documented challenges with their academic progress, the request for program extension is a time to collectively (with their supervisor(s), Program Directors, Graduate Officers, or Associate Dean) assess their

	likelihood of success to complete their program. If a student's academic progression may have been influenced by a known or unknown disability, illness, or condition, the student is encouraged to connect with AccessAbility Services. Unless the student's department specifies otherwise, requests for time extensions must be submitted to the students' home academic department not later than: • August 1 for the fall term; • December 1 for the winter term; • April 1 for the spring term. Students are required to submit a request for extension even if they anticipate that will complete their degree requirements within the next term. If the necessary request for extension is not submitted by the given deadline, the student will automatically receive an academic decision of Required to Withdraw. If the student's term count is within three terms of the program limits, the decision is made by the student's department Graduate Officer. If the student's term count exceeds the program limits by more than three terms, the student's request is reviewed by the Graduate Officer and then sent to the Associate Dean, Graduate Studies of the Faculty for a decision. Normally, requests for time extensions will be considered on a term-by-term basis. Only in rare cases, will a request for multi-term extensions be considered. Requests for extensions longer than three terms will not be considered. Possible outcomes for a student who requests a time extension are: • The time extension is approved for the requested number of terms. • The time extension is approved for fewer terms than was requested by the student.

	• The time extension is not approved. A student will be notified in writing by the Graduate Officer or the Associate Dean of the outcome of their request for a time extension. If a student's request for an extension of time limits is not approved, the student will receive an academic decision of Required to Withdraw. When this decision is communicated to the student, they may: • Elect to voluntarily withdraw from their program which will result in their academic record reflecting a voluntary withdrawal. • Petition or grieve the decision under Policy 70 – Student Petitions and Grievances. A student who voluntarily withdraws or is Required to Withdraw may be eligible for a refund of tuition and fees paid (if applicable).
Residence requirements - ~~graduate programs~~ ~~Residence is related to terms of enrolment and on-campus activity. It is calculated based on a student's enrolment status in their program (part-time or full-time). Additional enrolment information is provided below.~~ Table of residence requirements **Master's** • ~~**Normal:** three terms of full-time enrolment (6 terms part-time) from an Honours Bachelor's degree~~ • ~~**Minimum:** two terms of full-time enrolment (4 terms part-time) from an Honours~~ **PhD** • ~~**Normal:** six terms of full-time enrolment from Master's degree, nine terms from Honours Bachelor's degree~~ • ~~**Minimum:** four terms of full-time enrolment from Master's degree, six terms from~~	**Residence requirements** In order for a student to receive a University of Waterloo degree, the student must satisfy a residence requirement – a cumulative student term count that exceeds minimum values. A student's time in residence at the University is calculated using the values associated with the student's enrolment status in their program (part-time or full-time). The minimum residence requirements are contained in the table below. Table of residence requirements (term counts) **Master's** • 2.0 terms in the Masters of Accounting Program • Three terms (3.0) from an Honours Bachelor's degree **PhD** • Six terms (6.0) from Master's degree • Nine terms (9.0) from Honours Bachelor's degree

~~Bachelor's degree~~ ~~Honours Bachelor's degree~~ ~~In exceptional cases, and on the recommendation of the Faculty, some or all of the residence requirements may be waived.~~	A student who, based on unique circumstances, seeks to have these residence requirements waived must seek and receive written approval from the Associate Dean, Graduate Studies in the student's home Faculty.
Leave of Absence from study ~~In certain circumstances,~~ students may wish to request a Leave of Absence from their studies. ~~Types of leave are outlined below.~~ ~~Leaves of absence must normally be requested and approved prior to the start of the term in which the leave will take place.~~ When a student is funded by an external agency or sponsor, the guidelines for such agencies should be consulted prior to planning a leave.	**Leave of absence from study** Students may wish to request a Leave of Absence from their studies. The timing, feasibility and implications of a leave of absence should be discussed with a student's supervisor (where appropriate), Program Director or Graduate Officer. When a student is funded by an external agency or sponsor, the guidelines for such agencies should be consulted prior to planning a leave. Specific considerations are given below for international students considering a leave of absence. A leave with Inactive status will not be approved in the first term of a student's program. Instead, prior to or during the first term of their program a student may request a deferral or a withdrawal of their offer of admission. Deferrals are managed by the academic program. Students wishing to defer their admission should contact their Graduate Program Co-ordinator.
No section	**Student status while on a leave of absence** A student who is seeking a brief absence from their studies, typically between two and six weeks, may be granted this leave without a change to their enrolment status. Requests for short leaves are normally received by, vetted, and approved or denied by the Program Director or Graduate Officer, with input from the student's supervisor (when appropriate). When a student is on leave from the University for an extended period, normally longer than six weeks, the student must request a change in their enrolment status to

	inactive for that term via the change of enrolment form. Decisions to approve or deny these requests are made by the Associate Dean, Graduate Studies in the student's home Faculty typically with input from the student, the supervisor where appropriate, Program Director or Graduate Officer. At the conclusion of a leave with inactive status, a student shall be automatically returned to their enrolment status prior to the leave. If a student seeks a leave with inactive status in a term when they would have required a program extension (had the student stayed active), the student is encouraged to pursue the approval of the time extension prior to or concurrent with their request for a leave. The student must submit a program extension form by the extension deadline for their next active term.
Medical leave ~~Students who require a medical leave (as a result of their physical or mental health) must follow the process outlined on the Graduate Student Medical Leave web page. The process will involve:~~ ~~a) requesting a change of enrolment status to Inactive by completing the Change of enrolment status form, and~~ ~~b) submitting a Graduate Student Medical Leave Verification Form.~~ ~~Students should discuss any possible effects to funding, TA/RA appointments and academic progress with their supervisor(s) and/or department/school/program~~. Eligible research-based master's and doctoral students who go inactive for medical reasons will be automatically considered for the Graduate Student Medical Leave Award.	**Permitted reasons for requesting a leave** **Medical leave** Students whose health precludes them from making adequate academic progress may seek a medical leave. Given the sensitive nature of a student's personal wellness information, the University has established a specific process for requesting medical leaves that is outlined on the Graduate Student Medical Leave web page. While on a medical leave, a student's academic status will be inactive. A student may request a medical leave for one, two or three terms. The approved duration of the leave will be at the discretion of the University's AccessAbility Services in consultation with the student and their medical professionals. Multiple consecutive medical leaves are permitted but must be requested by a student prior to the end of a Leave. When a student seeks to resume their studies after a medical leave of 24 months or longer, the student's academic progression and the University's financial commitments will be evaluated and potentially reassessed.

	Eligible research-based master's and doctoral students who go inactive for medical reasons will be automatically considered for the Graduate Student Medical Leave Award.

Birth leave Students who are expecting to give birth may ~~take up to six weeks of leave from study, research and teaching duties starting no later than their due date. In the case of illness or other complications, leaves may start earlier or be extended.~~ Students are not expected to study, conduct research or teach while on birth leave. A student planning to take birth leave should inform their supervisor (if applicable) and department as soon as possible. ~~The student's registration status remains Active during birth leave.~~ Students who are Teaching Assistants should refer to Policy 30 regarding absence from these duties.	**Birth leave** Research graduate students who are expecting to give birth may seek either: • A six-week birth leave that will begin not later than the student's due date. A student's status while on a six-week birth leave will remain unchanged*. • A one-term birth leave that will begin not later than the student's due date. If the student's due date is prior to the term's official count date, the one-term birth leave shall be from the due date to the end of the current term. If the student's due date is later than the term's official count date, the student's one-term birth leave shall be from the due date to the end of the subsequent term. Students wishing to take a one-term birth leave will need to submit a change of enrolment status form to request inactive status. *Course based graduate students will normally be expected to change their enrolment status to inactive in a term in which they are giving birth. Exceptions may be considered through a request to the student's Program Director or Graduate Officer. Students are not expected to study, conduct research or teach while on birth leave. A student planning to take birth leave should inform their supervisor (if applicable) and department as soon as possible. Students who are Teaching Assistants should refer to Policy 30 – Employment of Graduate Student Teaching Assistants regarding absence from these duties.

Partner leave The partner of a birth mother ~~may take up to~~ two weeks ~~leave from study~~, research and teaching duties at the time of their child's birth. In the case of illness or other complications, the duration of the leave may be extended. A student planning to take partner leave should inform their supervisor (if applicable) ~~and department~~ as soon as possible. The student's registration status remains ~~Active~~ during partner leave. Students who are Teaching Assistants should refer to Policy 30 regarding absence from these duties.	**Partner leave** The partner of a birth mother is entitled to an informal leave of up to two weeks from their studies, research and teaching duties at the time of their child's birth. A student planning to take Partner leave should inform their supervisor (if applicable) or Program Director or Graduate Officer as soon as possible. Partners of birth mothers who wish to have a leave longer than two weeks shall follow the process for approval described under personal leaves. In the case of illness or other complications, the duration of the leave may be extended. The student's registration status remains unchanged during the two-week partner leave. Students who are Teaching Assistants should refer to Policy 30 – Employment of Graduate Student Teaching Assistantships regarding absence from these duties.
Parental leave Students who become parents through birth or adoption may take up to 5 terms of uninterrupted leave during the first 20 months of birth or adoption. If both parents are University of Waterloo students, the leave can be split between the two. Both University of Waterloo parents cannot be on parental leave at the same time; however, one partner can be on parental leave while the other partner is on birth leave. Parental leaves must coincide with the start and end dates of academic terms. Students planning on going on parental leave must request a change of their enrolment status to Inactive by completing the Change of enrolment status form. Students on parental leave are not expected to study or conduct research while on leave, and thus should not expect access to their supervisor. Students who wish to apply for a University of Waterloo parental leave bursary should complete the Graduate Student Parental Leave Bursary application.	**Parental leave** Students who become parents through birth or adoption may take up to 5 terms of uninterrupted leave during the first 20 months of birth or adoption. Parental leave may follow birth leave. If both parents are University of Waterloo students, the leave can be split between the two. Both University of Waterloo parents cannot be on parental leave at the same time; however, one partner can be on parental leave while the other partner is on birth leave. Parental leaves must coincide with the start and end dates of academic terms. While on parental leave, a student's status will be inactive. Students planning on going on parental leave must request a change of their enrolment status to Inactive by completing the Change of enrolment status form. Students on parental leave are not expected to study or conduct research while on leave, and thus should not expect access to their supervisor. Students who wish to apply for a University of Waterloo parental leave bursary should

	complete the Graduate Student Parental Leave Bursary application.
No section	**Personal leaves** A student who is experiencing personal circumstances that warrant consideration (other than medical, birth, partner, or parental leaves) may seek a leave of absence for personal reasons. If the leave is approved, the student's status during the leave will be governed by the duration of the leave, as described in the section, student status while on a leave of absence. No more than two consecutive terms of inactive status for personal leaves will be approved.
Voluntarily withdraw ~~Students who are unable to continue in their program, or who have been inactive for more than two consecutive terms (outside of parental leave or an approved inactive period beyond the usual limit of two terms for exceptional circumstances), should voluntarily withdraw from the program by completing a change of enrolment status.~~ ~~If students wish to have the option to reapply to the program from which they are withdrawing, they should discuss with their department any conditions which must be met to be granted readmission.~~ Students who reapply to a program and are approved for readmission, will be required to be enrolled for a minimum of one full term, without tuition refund, to complete their program. Readmission is not guaranteed. Students who voluntarily withdraw will have "voluntary withdrawal" reflected on their transcripts.	**Voluntary withdrawals** At any point in their academic program, a student may voluntarily withdraw from their program by completing a change of enrolment status form. If a student voluntarily withdraws from their program and later wishes to resume their studies, they will need to reapply for admission. Re-admission is not guaranteed. Prior to voluntarily withdrawing, a student should discuss with their department any conditions which are likely to be imposed to be granted re-admission. Students who voluntarily withdraw, then reapply to a program and are approved for re-admission, will be required to be enrolled for a minimum of one full term, without tuition refund, to complete their program. Students who voluntarily withdraw will have "voluntary withdrawal" reflected on their transcripts.
Required to withdraw A Required to Withdraw decision is made by a Faculty and a department/school or program, when a student cannot continue at the University of Waterloo (without subsequent re-application). These reasons may include but are not limited to:	**Required to withdraw** A Required to Withdraw decision is made by a Faculty and a department/school or program, when a student cannot continue at the University of Waterloo (without subsequent re-application). These reasons may include but are not limited to: • a failed PhD thesis examination;

• a failed PhD thesis examination; • failure to maintain minimum academic standing; • an unsuccessful comprehensive exam; • insufficient progress in program; • failure to submit or a “not approved” program extension; • the absence of a graduate research supervisor, following the discontinuation with a previous supervisor, as identified in the University responsibilities regarding supervisory relationships; and • a penalty as outlined in Policy 71.	• failure to maintain minimum academic standing; • an unsuccessful comprehensive exam; • insufficient progress in program; • failure to submit or a “not approved” program extension; • the absence of a graduate research supervisor, following the discontinuation with a previous supervisor, as identified in the University responsibilities regarding supervisory relationships; and • a penalty as outlined in Policy 71 – Student Discipline.
Prior to arriving at a Required to Withdraw decision, if a student is struggling in their program, support for that student must be provided consistent with the practices outlined in the guidelines for evaluating and providing feedback on graduate student progress: • Guidelines for evaluating and providing feedback on graduate student progress in PhD and research Masters programs • Guidelines for evaluating and providing feedback on graduate student progress in coursework programs	Prior to arriving at a Required to Withdraw decision, if a student is struggling in their program, support for that student must be provided consistent with the practices outlined in the guidelines for evaluating and providing feedback on graduate student progress: • Guidelines for evaluating and providing feedback on graduate student progress in PhD and research Masters programs • Guidelines for evaluating and providing feedback on graduate student progress in coursework programs
When a Required to Withdraw decision is reached, the Graduate Officer (or Faculty Associate Dean, Graduate Studies) shall communicate that decision formally to the student, in writing, specifying the sequence of events that led to the decision. This letter will be reviewed by the Faculty Associate Dean, Graduate Studies prior to distribution to ensure that decisions are consistent with the Faculty’s practices. The Faculty Associate Dean, Graduate Studies and the University’s Associate Vice-President, Graduate Studies and Postdoctoral Affairs must be copied on the final correspondence.	When a Required to Withdraw decision is reached, the Graduate Officer (or Faculty Associate Dean, Graduate Studies) shall communicate that decision formally to the student, in writing, specifying the sequence of events that led to the decision. This letter will be reviewed by the Faculty Associate Dean, Graduate Studies prior to distribution to ensure that decisions are consistent with the Faculty’s practices. The Faculty Associate Dean, Graduate Studies and the University’s Associate Vice-President, Graduate Studies and Postdoctoral Affairs must be copied on the final correspondence.
Upon receipt of the letter, the student may elect to Voluntarily Withdraw if they are not being Required to Withdraw under Policy 71. The student’s transcript will reflect whether	Upon receipt of the letter, the student may elect to Voluntarily Withdraw if they are not being Required to Withdraw under Policy 71 – Student Discipline. The student’s transcript

the student's withdrawal was voluntary or required. A student receiving a Required to Withdraw decision may challenge that decision through Policy 70.	will reflect whether the student's withdrawal was voluntary or required. A student receiving a Required to Withdraw decision may challenge that decision through Policy 70 – Student Petitions and Grievances.
Convocation and apply to graduate/program completion All graduate students who expect to receive degrees at either the Spring (June) or Fall (October) convocations must apply for graduation in Quest, approximately one month prior to completing their degree requirements. The name printed on the diploma will be the student's Legal/Primary name as indicated on their Names page in Quest.	**Convocation and apply to graduate/program completion** All graduate students who expect to receive degrees at either the Spring (June) or Fall (October) convocations must apply for graduation in Quest, approximately one month prior to completing their degree requirements. The name printed on the diploma will be the student's Legal/Primary name as indicated on their Names page in Quest. By accepting the degree, diploma, or certificate conferred, a student is ratifying the graduate academic record upon which it was based. Therefore, student-initiated changes to that record will not be made.

UNIVERSITY OF WATERLOO
GRADUATE STUDIES AND POSTDOCTORAL AFFAIRS
519-888-4567 I uwaterloo ca/gspa

Memo

DATE: February 23, 2024

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

FROM: Jeff Casello, Associate Vice-President, Graduate Studies and Postdoctoral Affairs
Marianne Simm, Director, Graduate Studies and Postdoctoral Affairs

RE: Graduate Studies Academic Calendar (GSAC) changes [memo 3 of 3]

GSPA continues the review of GSAC to ensure that the information presented is complete, clear and consistent with current practice. The following items are being brought forward for approval and information.

Items for approval:

a) Approved Doctoral Dissertation Supervisors (ADDS) – renamed Sole-Supervisory Privilege Status (SSPS). This section also contains, for information to SGRC web content which provides further context around SSPS.
b) Graduate students' supervisors and committees
c) Minimum requirements for Master's degree
d) Minimum requirements for PhD degree

This work has been done collaboratively and in partnership with the Faculties and other Academic Support Units that have expertise in the content (e.g., Office of Indigenous Relations, Office of Equity Inclusion and Anti-Racism, the Office of Research). The proposed changes have been reviewed and endorsed by the Graduate Operations Committee.

The section related to the ADDS [item for approval a)] was presented at the Faculty Relations Committee for review.

Proposed effective date: Term: Spring Year: 2024

Current **Graduate Studies Academic Calendar (GSAC)** page:
https://uwaterloo.ca/graduate-studies-academic-calendar/general-information-and-regulations

a) Approved Doctoral Dissertation Supervisor (ADDS) renamed Sole-Supervisory Privilege Status (SSPS)

The following is a **new stand-alone section to be added to the Graduate Studies Academic Calendar** which will replace program page references to ADDS status, and listing of faculty with ADDS, currently linked to at the end of every PhD program page.

Current content:	**Proposed content:**
~~**Approved Doctoral Dissertation Supervisors (ADDS)**~~ ~~The reputation and quality of an established Faculty depends in large measure on the quality of its PhD programs. In turn, this quality is very sensitive to the qualifications of the individuals to whom the Faculty delegates the responsibility for supervising PhD students. Identification as an Approved Doctoral Dissertation Supervisor (ADDS) is the personal accreditation of an individual faculty member and is based on their activity. The individuals so identified constitute the ADDSs in each Faculty.~~ ~~Other faculty members may co-supervise PhD students along with a faculty member with ADDS status, and may serve on PhD Committees. Information on recent changes in the availability of ADDS can be obtained from the Graduate Officer of the particular department.~~ ~~The Graduate Studies Academic Calendar lists the ADDS status faculty members below. A complete list of all University of Waterloo faculty members appears on the university departmental websites.~~	**Sole-supervisory privilege status (SSPS)** The University of Waterloo recognizes the integral roles that supervisors and graduate students play in advancing the research mission of the University. The University also acknowledges its responsibility in ensuring that faculty members who sole-supervise graduate students are well-prepared to be successful in that role. The granting of the privilege to sole-supervise graduate students (SSPS1 or SSPS2) is the accreditation of an individual faculty member and is based on their demonstrated ability to successfully meet the expectations articulated in the guide to graduate research and supervision. Faculty members who hold SSPS1 may sole-supervise Master's students. Faculty members who have SSPS2 may sole-supervise Master's students and PhD students. Normally, SSPS1 is granted at the time of appointment or subsequently, at the discretion of the Associate Dean Graduate Studies in the faculty member's home Faculty. The ways in which a faculty member can achieve SSPS2 for PhD students, can be found in the Organization of Graduate Studies section of the GSPA website.

The following ADDS status content appears on the GSPA site and is **being shared with SGRC for information**, as it relates to the Calendar content above: https://uwaterloo.ca/graduate-studies-postdoctoral-affairs/about/organization-graduate-studies#ADDS

Web information.

~~Approved Doctoral Dissertation Supervisor (ADDS)~~

Preamble

The ~~Approved Doctoral Dissertation Supervisor (ADDS) status is governed by a series of regulations governing how faculty members gain the privilege of sole-supervising PhD students. As such, they are regulations whose authority is~~ vested in the Senate, and any changes to ~~them~~ are to be discussed at Faculty Relations Committee, Graduate Student Relations Committee and the Faculties, and then approved by Senate Graduate and Research Council and by Senate.

Introduction

These regulations set out the qualifications necessary for faculty members to supervise PhD students. Faculty members who demonstrate the qualifications set out in these regulations will receive ~~Approved Doctoral Dissertation Supervisor (ADDS) status, and only they~~ will be:

- permitted to independently supervise PhD students;
- eligible for membership on the Graduate Studies Committee of a Faculty;
- eligible for membership on the University of Waterloo Senate Graduate and Research Council;
- eligible to be Graduate Officers, Faculty Associate Deans, Graduate Studies, or Associate Vice-President, Graduate Studies and Postdoctoral Affairs.
- eligible to chair PhD Examining Committees.

Sole Supervisory Privilege Status (SSPS)

Preamble

The Sole Supervisory Privilege Status (SSPS1 or SSPS2) is a regulation for which authority is vested in the Senate, and any changes to this governance are to be discussed at Faculty Relations Committee, Graduate Student Relations Committee and the Faculties, and then approved by Senate Graduate and Research Council and by Senate.

Introduction

These regulations set out the qualifications necessary for faculty members to sole supervise PhD and Master's students. Faculty members who demonstrate the qualifications set out in these regulations will receive Sole Supervisory Privilege Status (SSPS1 or SSPS2). A faculty member who holds SSPS2 status will be:

- permitted to independently supervise PhD students;
- permitted to independently supervise Master's students;
- eligible for membership on the Graduate Studies Committee of a Faculty;
- eligible for membership on the University of Waterloo Senate Graduate and Research Council;
- eligible to be Graduate Officers, Faculty Associate Deans, Graduate Studies, or Associate Vice-President, Graduate Studies and Postdoctoral Affairs.
- eligible to chair PhD Examining Committees.

Normally, a faculty member will be granted the privilege to sole supervise Master's students at the time of the faculty member's appointment or SSPS1. Faculty members who do not hold SSPS1 may, at the discretion of the Associate Dean Graduate Studies, sole-supervise Master's students.

Qualification for ~~ADDS Status~~	**Qualification for SSPS2**

Faculty members who qualify for ~~ADDS status~~ must:
 	
• Be a faculty member at the professorial rank at the University of Waterloo (this includes clinical faculty);
• Normally hold a PhD degree or a terminal degree in their field;
• Demonstrate continuing competence and achievement in research or scholarship appropriate for the discipline;
• Demonstrate appropriate familiarity with University of Waterloo policies and procedures on ~~PhD~~ supervision. This is preferably achieved by the faculty member attending a University-provided workshop or receiving training on supervisory procedures at the Faculty level;
• Demonstrate appropriate supervisory experience: this can be achieved by the faculty member choosing one of the following:
  ○ Successfully completing a workshop series organized by the office of the Associate Vice-President, Graduate Studies and Postdoctoral Affairs, and facilitated by CTE on graduate supervision, over the course of one year;
  ~~○ Successfully supervising to completion at least one Master's thesis;~~
  ○ Having co-supervised or supervised a PhD thesis to completion (see Guidelines for Best Practice in Co-Supervision).
 	
The above criteria are meant to ensure that faculty members have acquired the appropriate knowledge to facilitate ~~becoming excellent PhD supervisors~~ at Waterloo. For new faculty, ~~ADDS status~~ is to be awarded on potential excellence since building a proven track record of successful graduate supervision requires many years, numerous
	Faculty members who qualify for SSPS2 must:
	
	• Be a faculty member at the professorial rank at the University of Waterloo (this includes clinical faculty);
	• Normally hold a PhD degree or a terminal degree in their field;
	• Demonstrate continuing competence and achievement in research or scholarship appropriate for the discipline;
	• Demonstrate appropriate familiarity with University of Waterloo policies and procedures on graduate student supervision. This is preferably achieved by the faculty member attending a University-provided workshop or receiving training on supervisory procedures at the Faculty level;
	• Demonstrate appropriate supervisory experience: this can be achieved by the faculty member choosing one of the following:
	  ○ Successfully completing a workshop series organized by the office of the Associate Vice-President, Graduate Studies and Postdoctoral Affairs, and facilitated by CTE on graduate supervision, over the course of one year;
	  ○ Having co-supervised or supervised a PhD thesis to completion (see Guidelines for Best Practice in Co-Supervision).
	
	The above criteria are meant to ensure that faculty members have acquired the appropriate knowledge to facilitate satisfactory graduate student supervision at Waterloo. For new faculty, SSPS2 is to be awarded on potential excellence since building a proven track record of successful graduate supervision requires many years, numerous students and, depending on the discipline, can extend beyond the granting of tenure.

students and, depending on the discipline, can extend beyond the granting of tenure.

Acquiring ~~ADDS Status~~

The process of acquiring ~~ADDS status~~ for a faculty member in the tenure-stream at the University of Waterloo is defined as follows:

- Faculty members satisfying all ~~5~~ criteria for qualification listed above can request consideration for ~~ADDS status~~ by their Department Chair;
- The Chair ~~must confirm all 5 criteria are met and then pass along the request and~~ any written comments to the Faculty Associate Dean, Graduate Studies ~~for approval;~~
- ~~If the Chair deems that any of the 5 criteria are not met, s/he will provide the faculty member in writing information as to which criteria are not met and guidance as to how to satisfy those criteria in order to become eligible. Faculty members can appeal the Chair's negative decision to the Faculty Associate Dean, Graduate Studies and (in the event of a negative decision from the Faculty Associate Dean) to the Associate Vice-President, Graduate Studies and Postdoctoral Affairs~~
- ~~Individual Faculties may opt to constitute an appropriate advisory committee to the Associate Dean, Graduate Studies to adjudicate ADDS status requests;~~
- ~~After the application is approved by the Faculty Associate Dean, Graduate Studies the recommendation for the granting of ADDS status will be forwarded to the Associate Vice-President, Graduate Studies and Postdoctoral Affairs for approval;~~
- ~~If either the Faculty Associate Dean, Graduate Studies or the Associate Vice-President, Graduate Studies and Postdoctoral Affairs does not approve ADDS status at the present time, s/he will provide in writing guidance as to what is needed for the faculty member to become eligible. Faculty members can appeal denial of ADDS status by the Faculty Associate Dean to the~~

Acquiring <u>SSPS2</u>

The process of acquiring <u>SSPS2</u> for a faculty member in the tenure-stream at the University of Waterloo is defined as follows:

- Faculty members satisfying all <u>five</u> criteria for qualification listed above can request consideration for <u>SSPS2</u> by their Department Chair;
- The Chair <u>will evaluate the candidate's having satisfied all five criteria and, when those criteria are deemed to be met, recommend the approval with</u> any written comments to the Faculty Associate Dean, Graduate Studies;
- <u>The Faculty Associate Dean, or (at the discretion of the Associate Dean) an appropriate advisory committee, will evaluate the candidate's SSPS2 qualifications and, when the qualifications are deemed to be satisfied, will recommend the granting of SSPS2 by the Associate Vice President Graduate Studies and Postdoctoral Affairs;</u>
- <u>The Associate Vice-President, Graduate Studies and Postdoctoral Affairs will vet the request and determine if SSPS2 will be granted; if either the Faculty Associate Dean, Graduate Studies or the Associate Vice-President, Graduate Studies and Postdoctoral Affairs does not approve SSPS2 at the present time, they will provide in writing guidance as to what is needed for the faculty member to become eligible. Faculty members can appeal denial of SSPS2 status by the Faculty Associate Dean to the Associate Vice-President, Graduate Studies and Postdoctoral Affairs.</u>

Retired Faculty

Those faculty members who are supervising graduate students when they retire may continue to sole-supervise these students until these students complete their degrees.

~~Associate Vice-President, Graduate Studies and Postdoctoral Affairs.~~

Retired Faculty

Those faculty members who are supervising doctoral students when they retire may continue to sole-supervise these students until these students complete their degrees.

~~Adjunct Faculty and Research Professors~~

~~Co-supervision with a regular faculty member with ADDS status is normally a requirement for Adjunct Faculty and Research Professors. The Faculty Associate Deans, Graduate Studies, have the authority to waive the co-supervision requirement for a specific student, on the recommendation of the Department/School.~~

Revoking ~~ADDS Status~~

When circumstances appear to warrant the revocation of ~~ADDS status~~ of a faculty member; the process for doing so is as follows:

- The Chair/Director of the faculty member's unit will recommend revocation of ~~ADDS status~~ to the Faculty Associate Dean, Graduate Studies. Justification for the recommendation should be provided in writing, along with information on efforts that have been made for remediation, and the faculty member in question should be notified in advance of the recommendation and the reasons for it;
- The Faculty Associate Dean, Graduate Studies may reject the recommendation but must provide a written explanation for doing so;
- In some cases information may come to the attention of the Faculty Associate Dean, Graduate Studies, suggesting that revocation of ~~ADDS status~~ should be considered. In such circumstances, ~~s/he~~ should approach the Chair/Director to investigate, and if appropriate initiate the process;
- If the Faculty Associate Dean, Graduate Studies accepts the

A retired faculty member may not begin a new sole-supervisory role.

Revoking SSPS

When circumstances appear to warrant the revocation of SSPS1 or SSPS2 of a faculty member, the process for doing so is as follows:

- The Chair/Director of the faculty member's unit will recommend revocation of SSPS (SSPS1, SSPS2 or both) to the Faculty Associate Dean, Graduate Studies. Justification for the recommendation should be provided in writing, along with information on efforts that have been made for remediation, and the faculty member in question should be notified in advance of the recommendation and the reasons for it;
- The Faculty Associate Dean, Graduate Studies may reject the recommendation but must provide a written explanation for doing so;
- In some cases information may come to the attention of the Faculty Associate Dean, Graduate Studies, suggesting that revocation of SSPS should be considered. In such circumstances, they should approach the Chair/Director to investigate, and if appropriate initiate the process;
- If the Faculty Associate Dean, Graduate Studies accepts the Chair/Director's recommendation, the faculty member may appeal the decision to the Associate Vice-President, Graduate Studies and Postdoctoral Affairs, whose decision is final; the Associate Vice-President, Graduate Studies and Postdoctoral Affairs shall provide reasons for their decision in writing;
- If SSPS2 is revoked/ the Faculty Associate Dean, Graduate Studies will notify Graduate Studies and Postdoctoral Affairs to update the University list;
- A faculty member who has had their SSPS2 revoked will not be eligible to sole-supervise Master's or PhD students;

Chair/Director's recommendation, the faculty member may appeal the decision to the Associate Vice-President, Graduate Studies and Postdoctoral Affairs , whose decision is final; the Associate Vice-President, Graduate Studies and Postdoctoral Affairs shall provide reasons for ~~his/her~~ decision in writing; • If ~~ADDS status~~ is revoked/ the Faculty Associate Dean, Graduate Studies will notify Graduate Studies and Postdoctoral Affairs to update the University list; • Faculty members whose ~~ADDS status~~ has been revoked have the opportunity to requalify for ~~ADDS status~~, if they can demonstrate the appropriate competencies required. **Other** • All faculty members of a Faculty Graduate Studies Committee should hold ~~ADDS status~~. (~~Departments/Schools not offering PhD programs would be exempt.)~~ • ~~Faculty members from departments that do not have a PhD program may acquire ADDS status and supervise graduate students from other departments within their Faculty where departmental regulations permit.~~ • An interim supervisor, who supports a graduate student during a supervisor's absence during a planned (e.g., sabbatical) or unplanned (e.g., medical) leave, is not required to hold ~~ADDS status~~.	• Faculty members whose SSPS has been revoked have the opportunity to requalify for SSPS, if they can demonstrate the appropriate competencies required. **Other** • All faculty members of a Faculty Graduate Studies Committee should hold SSPS2. • An interim supervisor, who supports a graduate student during a supervisor's absence during a planned (e.g., sabbatical) or unplanned (e.g., medical) leave, is not required to hold SSPS2.

b) Graduate students' supervisors and committees

This is a new Calendar section found under the heading:

START SECTION

Graduate students' supervisors and committees

The University of Waterloo strongly encourages regular and productive engagements between graduate students, their supervisors and committees that are purposefully constituted to promote students' attainment of their goals. The University recognizes the value of diverse areas of scholarship and lived experiences of those who support graduate students' research. This section of the Calendar defines and provides the regulatory frameworks for graduate student research committees.

The University defines the following roles in support of research graduate students:

> **A Supervisor** is the primary point of contact for a graduate student. The supervisor meets or exceeds the expectations articulated in the roles and responsibilities of supervisors typically a combination of academic, administrative, funding, and personal supports for the graduate student.
>
> **A Co-supervisor**, when appropriate, may share the responsibilities of the Supervisor. Co-supervisory arrangements are desirable when the co-supervisors have complementary knowledge, skills, academic training, professional networks, or other attributes that benefit the student. Co-supervisory relationships may also provide more timely administrative support for graduate students. No more than two co-supervisors are permitted.
>
> Normally, the supervisor's or one of the co-supervisor's faculty appointment will be in the academic unit administering the student's program.
>
> **An Advisory Committee** is formed to provide academic, professional and personal support to graduate students and their supervisors. Because of the broad mandate of the Advisory Committee, membership may be purposefully large, including members internal and external to the University with disparate training and experience, provided that a proposed member can contribute meaningfully to the student's academic endeavors.
>
> The advisory committee (as a whole or select members) may also play roles in evaluating a graduate student's academic progress related to their research.
>
> **An Examining Committee** evaluates a graduate student's performance on major academic milestones which, at the PhD level, may include comprehensive or qualifying examinations, research proposals, and thesis defenses.
>
> At the Master's level, an Examining Committee may be constituted, typically to evaluate a student's proposal or thesis.

In many instances, there will be common membership between a student's advisory committee and the student's examining committee, though examining committees are typically composed of those with academic credentials that are equivalent to the student's degree program.

Summary of Supervisory/Examining Committee Membership

Role	Tenure Track faculty			Teaching Stream Faculty	External member with adjunct faculty status [4]	Research Professor	Postdoctoral Scholar
	With SSPS2	With SSPS1	Without SSPS				
PhD sole supervisor	YES	NO	NO	NO	NO	NO	NO
PhD co-supervisor	YES	YES [1]	YES [1]	YES [1] [2]	YES [1] [2]	YES [1] [2]	NO
Master's sole supervisor	YES	YES	YES [2]	NO	NO	NO	NO
Master's co-supervisor	YES	YES	YES [2]	YES [3]	YES [3]	YES [3]	YES [3]
PhD and Masters Advisory	YES	YES	YES	YES	YES – adjunct status recommended	YES	YES

[1] with co-supervisor with SSPS2
[2] with Associate Dean (Graduate Studies) approval
[3] with Graduate Officer approval
[4] including retired faculty members who maintain adjunct status

In unique circumstances, the Associate Dean Graduate Studies in the Student's home Faculty may recommend to the Associate Vice President Graduate Studies and Postdoctoral Affairs (AVP-GSPA) a supervisory or advisory relationship that differs from the regulations presented here. The AVP-GSPA shall make the decision to approve or reject the proposed relationship.

The following section provides the regulatory framework for graduate supervision at Waterloo.

PhD Supervisors

In order to sole-supervise PhD students, the proposed supervisor must be a tenured or tenure track member of the University faculty with Sole Supervisory Privilege Status (SSP2).

When a proposed supervisor does not have SSPS2 they may co-supervise with a colleague who satisfies the requirements for sole-supervision.

Similarly, colleagues external to the University of Waterloo who hold adjunct positions at the University may, at the discretion of the Associate Dean Graduate Studies in the student's home Faculty, co-supervise with a colleague who satisfies the requirements for sole-supervision when:

- The adjunct holds a PhD in a related discipline; and
- The adjunct remains active in research.

Research Professors and Teaching Stream faculty are permitted to serve as co-supervisors for PhD students. Postdoctoral scholars may not serve as supervisors or co-supervisors for PhD students.

A faculty member who is sole-supervising PhD students at the time of their retirement may continue to sole-supervise those students to completion. Following their retirement, faculty members may not begin sole-supervising new students.

Masters Supervisors

Any tenure track faculty member who holds SSPS1 at the University of Waterloo may sole-supervise research master's students. Faculty members without SSPS1 may only sole-supervise Research Master's students with approval from the Associate Dean, Graduate Studies, in the student's home Faculty.

Teaching stream Faculty may not normally sole-supervise Master's students.

Co-supervision by other members of the University community (e.g., postdocs, research associate professors, adjunct faculty) is permitted at the discretion of the Graduate Officer in the student's home unit when:

- the co-supervision adds value to the student's learning outcomes (e.g., research or professional development) and
- for internal members of the University, the role of co-supervisor is permitted by the terms of the proposed co-supervisor's appointment.

Advisory Committee

Purpose and Functions

A student's Advisory Committee acts as a partner with the student and the supervisor(s) in guiding and advising the student on research and assisting supervisor(s) in their monitoring functions. Advisory committee members provide the student with expert guidance or advice in specific areas of the student's research work; for the supervisor(s), advisory committee members provide critical and constructive feedback on the student's research. Procedures for appointing and confirming advisory committees will vary between Faculties.

Collectively, advisory committees are intended to be sources of support to supervisors and students in promoting the resolution of issues and promoting positive academic outcomes.

Advisory committees (in full or in part) in some Faculties provide regular, formal assessments on students' academic progress, the successful attainment of which is necessary for a student to remain in Good Academic Standing.

Advisory committees are mandatory for PhD students and are recommended for research Master's students.

Membership and Voting

Advisory committees must include the student's supervisor(s) and at least two other full-time faculty members from the University of Waterloo whose complementary fields of expertise will support the planning and execution of the student's research work.

Advisory Committees may include additional members, internal or external to the University, who possess expertise that will add value to the student's research work. Adjunct status is recommended for external members of an advisory committee but is not required.

When an advisory committee is performing an evaluative role for the student, such as assessing academic progression through committee meetings, additional members (other than the supervisor(s) and two Waterloo faculty members) will normally not be voting members of the committee. Exceptions can be made by the Associate Dean Graduate Studies in the student's home Faculty, on the recommendation of the student and the supervisor(s).

The role(s) of advisory committees should be made clear to both the committee members and the student, including the role in supporting and evaluating academic progression.

The minimum membership of a PhD student's advisory committee shall be the supervisor(s) plus two regular members of the University faculty, at least one of whom will have their primary appointment in the student's home academic program.

The University recommends the formation of the advisory committee as soon as is practical. For PhD students, the committee shall be established not later than the month following the student's successful completion of the Comprehensive or Qualifying examination.

Jurisdiction on Membership

Normally, the composition of a PhD student's advisory committee shall be jointly decided by the student and the supervisor(s) and communicated to the Graduate Officer in the student's home unit.

In some Faculties, membership of the Advisory Committee is at the discretion of the Associate Dean Graduate Studies.

Distinction between Advisory and Examining Committees

The primary role of the advisory committee is to provide support/feedback to the student throughout their research progression.

The primary role of the examining committee is to serve as evaluators of graduate students' research work at defined points coinciding with PhD comprehensive (or qualifying) examinations, PhD thesis defenses and where appropriate, Master's defenses.

The examining committee evaluates the suitability of the student's research relative to the discipline and the stated degree level expectations of the student's level of study. In many cases, there will be overlap in membership of these committees. However, there may be members of the advisory committee who do not meet the requirements for membership on the examining committee.

A member of a student's advisory committee, who is not part of the examining committee, is not required to be a part of an examination. However, it is recognized that there may be value in the participation of all advisory committee members and thus, members are encouraged, where possible and appropriate, to play an active role in a student's examination (as a non-voting participant). This may include asking questions of the candidate during oral components of a comprehensive (or qualifying) examination or a defense.

The membership of Examining Committees for PhD students is defined for comprehensive exams and for defenses. For Master's programs, see Master's degree with thesis.

Where applicable, the membership of Examining Committees for master's students is specified by the Faculty or the Academic Unit delivering the student's academic program.

END SECTION

c) Master's degree requirements

Updates to this section have been made to better reflect practices, and in some instances clarify requirements.

Current calendar	Proposed calendar
Minimum requirements for the Master's degree This section of the Graduate Studies Academic Calendar includes minimum requirements for the Master's degree: ~~Master's degree with Research Paper~~ ~~Master's degree with Thesis~~ ~~Completion of Master's degree requirements~~ ~~Each candidate for the Master's degree shall have a supervisor who will submit a program of study for approval by the department in which the candidate is enrolled.~~ ~~The minimum period of enrolment for the Master's degree is two terms from an Honours Bachelor's degree or equivalent. In practice, students take longer than the minimum period to complete the degree; they should check with their home department to find out about typical completion times. For information on required full-time attendance at the University refer to the Definitions - students section.~~ ~~The minimum requirements for the Master's degree are satisfied when candidates have successfully completed either:~~ ~~1. Four two-term (1.0 unit weight) or eight one-term (0.5 unit weight) courses accepted for graduate credit by their department. These must include a master's research paper requiring an in-depth study on a topic approved by the department.* Or:~~ ~~2. Two two-term (1.0 unit weight) or four one-term (0.5 unit weight) courses accepted for graduate credit by their department, plus a thesis embodying the result of their research on a topic approved by the department.* Or:~~	**Minimum requirements for the Master's degree** This section of the Graduate Studies Academic Calendar includes minimum requirements for the Master's degree: At the University of Waterloo, graduate Master's programs may be: • A research program in which a student satisfies the degree requirements through courses, a Master's Research Paper (MRP) or thesis and, in some programs, milestones; or • A coursework program in which a student satisfies the degree requirements through the successful completion of courses, and in some programs, milestones. In principle, research Master's students achieve their programs' learning outcomes through a combination of elements that must include courses and independent research, an MRP or a thesis. To this end, the following minimum requirements are established for research programs: 1. 2.0 units of courses, normally achieved as four one-term (0.5 unit weight) courses accepted for graduate credit by their department, plus a thesis embodying the result of their research on a topic approved by the department; or 2. 3.0 units of courses, normally achieved as six one-term (0.5 unit weight) courses accepted for graduate credit by their department, plus a Master's Research Paper embodying the result of their research

3. ~~Three two-term (1.0 unit weight) or six one-term (0.5 unit weight) courses accepted for graduate credit by their department, plus a master's research paper embodying the result of their research on a topic approved by the department.* Or:~~
4. ~~Eight one-term (0.5 unit weight) courses accepted for graduate credit by the department for coursework only degrees.*~~

~~*~~Faculties and departments ~~may set additional requirements. Please check the relevant sections of this calendar for further information, or with the appropriate department or Faculty authority.~~ It is the student's responsibility to become aware of requirements which are in addition to the stated minima.

~~Graduate students admitted to co-operative graduate degree programs are normally required to complete one two-term work term, or two one-term co-operative work terms. Effective the Spring 2002 academic term, each co-operative work term shall carry academic credit and be recorded as a course with a unit weight of 0.50. These co-operative work term courses are additional academic requirements to those listed above for minimum Master's degree requirements.~~

~~For information concerning the transfer of academic credits refer to the Transfer of academic credit page.~~

Candidates must obtain an average of at least 70% in the courses presented in fulfilment of the degree requirements. A failing grade in any course will occasion an automatic review of a candidate's status by the department and may, in some cases, ~~result in the requirement to withdraw from the program~~.

Master's degree with Research Paper

In the case of a Master's program involving a Research Paper, the research paper must be evaluated by ~~at least two faculty members, one of whom should be the student's supervisor.~~

on a topic approved by the department.

Coursework Master's students achieve their programs' learning outcomes through a combination of elements that must include courses. To this end, the following minimum requirement is established for these programs:

1. 4.0 units of courses, normally achieved as eight one-term (0.5 unit weight) courses accepted for graduate credit by the department for coursework only degrees.

Faculties and departments may exceed these requirements through additional coursework and various milestones, which may include GradWIL. Additional information can be found in the program pages within this Calendar or from the department or Faculty.

It is the student's responsibility to become aware of requirements which are in addition to the stated minima.

Candidates must obtain an average of at least 70% in the courses presented in fulfilment of the degree requirements. A failing grade in any course will occasion an automatic review of a candidate's status by the department and may, in some cases, influence the student's academic standing.

Master's degree with Research Paper

In the case of a Master's program involving a Master's Research Paper, the research paper must be evaluated by at a minimum:

- The student's supervisor or co-supervisors; and
- at least one regular faculty member who is not a supervisor or co-supervisor.

In cases where the number of evaluators of an MRP exceeds the minimum requirements, the program must make students aware of who will examine the MRP.

Master's degree with Thesis ~~In the case of a Master's program involving a thesis, one copy of the thesis is required for each member of the Reading Committee or Examining Committee. The Committee shall be comprised of: at least one tenured or tenure track faculty member of the student's home department who will normally be the student's supervisor(s); an additional tenured or tenure track faculty member from the University of Waterloo; and at least one additional examiner whose expertise can support the evaluation of the Master's thesis. External adjunct appointments require the approval of the Associate Dean, Graduate from the student's home Faculty. No more than one adjunct faculty member (including Professors Emeriti) may serve on the Examining Committee. One copy of the thesis is submitted either to the department or to the Office of the Associate Dean (Graduate Studies) of the Faculty upon being given to the Reading/Examining Committee for acceptance/defence. The thesis should normally be on public display for two weeks.~~ ~~In departments that do not normally require an oral defence of the Master's thesis the Associate Dean (Graduate Studies) may require such defence if circumstances warrant it or if the department or student requests it.~~ ~~When an oral defence for a Master's thesis is a requirement and where the protection of intellectual property is sought by the filing of a patent application, the student and supervisor(s) may request a closed thesis examination and/or a restriction on the circulation of the thesis as outlined in the Graduate Thesis Regulations.~~ ~~When the thesis is accepted by the department and Faculty, and all other requirements for the degree have been met, the student must provide the University with an electronic copy of their approved thesis as a final University degree requirement. Theses must be prepared and submitted as outlined in the Graduate Thesis Regulations.~~	**Master's degree with Thesis** As part of the degree requirements, a student's Master's Thesis must be examined for its satisfaction of demonstrating the student's attainment of the learning outcomes and degree level expectations associated with the research. In all cases, the written thesis is evaluated. The written thesis must be accepted to satisfy the thesis milestone. In some programs, the student is required to defend the thesis, through an oral presentation of the research work. In these programs the thesis milestone is considered complete when both the written and oral components are accepted. In other programs, the thesis milestone includes the written thesis and a presentation that differs from a defence in that the presentation of the research work is not evaluated by an examining committee. The written thesis and the defence, as appropriate, are evaluated by an examining committee. The University establishes the following minimum requirements for Master's with Thesis Examining Committees: • the student's supervisor or co-supervisors; and • an additional tenured or tenure track faculty member from the University of Waterloo; and • at least one additional examiner whose expertise can support the evaluation of the Master's thesis. External adjunct appointments to the Examining Committee require the approval of the Associate Dean, Graduate Studies from the student's home Faculty. No more than one adjunct faculty member (including Professors Emeriti) may serve on the Examining Committee. Normally, the version of the thesis to be examined is provided to the members of the examining committee two weeks prior to the student's defence or presentation. Concurrently, the student shall provide an electronic copy, as appropriate, of the thesis

Completion of Master's degree requirements The requirements for the degree must be completed within the time periods stipulated by the Senate of the University. Normally these are: • Master's: 6.0 terms Students must petition the Faculty Graduate Committee to continue their enrolment beyond these limits. Progress of students who have been granted extensions will be reviewed every term. For more information on time limits see the Enrolment and time limits page. Part-time students who have been in a regular Master's program for more than six terms must be reviewed every term. Students whose work does not measure up to the standards of their program may be required to withdraw from the program. Such students may be readmitted although there will be a limit on the time-span in which readmission may occur. In any case, candidates must remain continuously enrolled at the University, to the end of the term in which they complete the degree requirements. For additional information, see the Continuous enrolment section of the Enrolment and time limits page.	to their home department or to the Office of the Associate Dean Graduate Studies of the Faculty to be on public display, normally for two weeks, however each Faculty may specify a slightly different display period. When an oral defence for a Master's thesis is a requirement and where the protection of intellectual property is sought , the student and supervisor(s) may request a non-publicly attended thesis examination and/or a restriction on the circulation of the thesis as outlined in the Graduate Thesis Regulations. When the thesis is accepted by the department and Faculty, and all other requirements for the degree have been met, the student must provide the University with an electronic copy of their approved thesis as a final University degree requirement. Theses must be prepared and submitted as outlined in the Graduate Thesis Regulations.

d) **Minimum requirements for PhD degree**

Content currently outside of the Calendar, https://uwaterloo.ca/graduate-studies-postdoctoral-affairs/current-students/thesis/phd-thesis-examination-regulations, related to PhD thesis examination regulations has now been included under the proposed Calendar sections:

PhD thesis examination
- Thesis submission
- Prior to defence
- Thesis examining committee
- Display period
- Guidelines for thesis examination and public disclosure
- Theses written in French
- Thesis Defence
- Procedural guidelines
- Format for defences
- Participation through electronic media (remote participation)
- Absent committee members
- Decision
- Academic integrity and the PhD Thesis
- Grievance

Current calendar	Proposed calendar

Minimum requirements for the PhD degree

This section of the Graduate Studies Academic Calendar includes minimum requirements for the PhD degree:

Completion of PhD degree requirements
Comprehensive examination
Qualifying examination
~~Language requirement~~
~~Program of study and supervision~~
~~Advisory Committee~~
PhD thesis examination
Recommendation: awarding of the degree
Thesis submission

~~The required period of enrolment for the Doctor of Philosophy (PhD) degree is six terms from the completion of a Master's degree, or nine terms from the completion of an Honours Bachelor's degree. The actual time taken to satisfy the degree requirements may be considerably longer. For information on required full-time attendance at the University refer to the Definitions - students section. The acceptance of the transfer of credits for prior enrolment at another university will be determined in individual cases by the Associate Dean (Graduate Studies) of the Faculty at the time of admission to the program.~~

Completion of PhD degree requirements

~~The requirements for the degree must be completed within the time periods stipulated by the Senate of the University. A maximum of 18.0 terms from an Honours Bachelor's degree or its equivalent, 12.0 terms from a Master's degree or its equivalent, and 15.0 terms from a Master's degree or its equivalent for the PhD in Clinical Psychology. Students must petition the Associate Dean of Graduate Studies to continue their enrolment beyond these limits. Progress of students who have been granted extensions will be reviewed every term. For more information on time limits see the Enrolment and time limits page.~~

Minimum requirements for the PhD degree

This section of the Graduate Studies Academic Calendar includes minimum requirements for the PhD degree:

Completion of PhD degree requirements
Course requirements
Accommodations and milestones
Comprehensive examination
Qualifying examination
PhD Thesis examination
Thesis submission
Prior to defence
Thesis examining committee
Display period
Guidelines for thesis examination and public disclosure
Theses written in French
Thesis Defence
Procedural guidelines
Format for defences
Participation through electronic media (remote participation)
Absent committee members
Decision
Academic integrity and the PhD Thesis
Grievances
Recommendation: awarding of the degree

Completion of PhD degree requirements

PhD programs are comprised of coursework requirements, academic milestones, and research activity leading to the development of new knowledge in or across disciplines. PhD degrees are granted by the University to candidates who have demonstrated both achievement in independent research in a particular field and a broad knowledge of that field.

This section of the Calendar articulates the required elements of a PhD program and their administration. Student requirements related to enrollment in PhD programs are addressed in the Enrollment section of the Calendar.

Course Requirements

~~Students whose work does not measure up to the standards of their program may be required to withdraw from the program. Such students may be readmitted although there will be a limit on the time-span in which readmission may occur.~~ ~~Candidates must remain continuously enrolled at the University to the end of the term in which they complete the degree requirements. For additional information, see the Continuous enrolment section of the Enrolment and time limits page.~~ ~~For further information the minimum degree requirements specified by each Faculty should be consulted.~~ ~~The~~ PhD degree ~~is~~ granted by the University to candidates who have demonstrated both achievement in independent research in a particular field and a broad knowledge of that field. ~~The first requirement is satisfied when candidates have demonstrated a broad knowledge of their field to the satisfaction of the Faculty, normally by the successful completion of an assigned program of courses and the passing of a comprehensive examination, as determined by the department in which they are enrolled.~~ ~~The second requirement is satisfied when candidates have presented and defended a thesis embodying the results of their own original research on an approved topic.~~ **Comprehensive examination** ~~PhD programs, except those noted here,~~ require doctoral students to successfully complete a comprehensive exam as part of their academic requirements. In some cases, students may be required to successfully complete a series of exams in order to satisfy the comprehensive requirement. ~~The purpose of this document is to provide~~ University-level guidance to students, supervisors and Departments / Schools ~~(referred to as Departments in this document)~~ on comprehensive exams. ~~This document also presents links to~~ Faculty level guidelines	The learning outcomes for PhD programs are achieved through a combination of courses, milestones, and research leading to a PhD thesis. Course requirements for students may vary based on the student's previous experience. Normally, students entering a PhD program directly from a Bachelor's degree, or with a Master's degree in an unrelated field, will have an increased course load compared to those students who enter the program with a Master's degree in the discipline. For students with a related Master's degree entering a PhD program, the minimum course requirements is 1.0 units, normally achieved as two, one-term (0.5 unit weight) courses accepted for graduate credit by their department. For students entering a PhD program from a Bachelor's program, or from an unrelated Master's program, the minimum course requirements are 2.0 units of courses, normally achieved as four one-term (0.5 unit weight) courses accepted for graduate credit by their department. These values represent University minima. Students are directed to the individual program pages for actual course requirements in each PhD program. **Accommodations and milestones** Students may warrant an accommodation to allow for an alternative exam format other than that which is described by Department or Program. For accommodations related to health, the student shall provide supporting medical documentation to the University's AccessAbility Services. AccessAbility Services shall determine whether an accommodation is warranted. When an accommodation is determined to be appropriate, AccessAbility Services shall communicate the decision and the nature of the accommodation to the Graduate Officer in the student's home Department who will coordinate with the chair of the examining committee on the implementation of the Accommodation.

that are consistent with the principles established here. ~~Links to Departments' guidelines are available on the Faculty pages.~~ **Comprehensive examination purpose** Comprehensive exams serve multiple purposes depending on the discipline. Permitted purposes for comprehensive exams at the University of Waterloo include demonstrating that: • PhD students have the appropriate academic background – a foundation and breadth of knowledge in the field of study – to be successful in their PhD program; • PhD students have the capacity to engage in scholarly communications – both oral and written – necessary to be successful in their PhD studies; • PhD students have developed a novel research topic to be evaluated during their PhD studies. The purpose(s) of the exam shall be communicated clearly to students. **Comprehensive examination timing** The comprehensive exam is an important accomplishment in the completion of students' PhD program. Normally, completing the comprehensive exam allows students to advance to the research or dissertation phase of their studies. The timing of the exam should allow sufficient time for students to achieve the foundational knowledge to be successful in their programs. The exam timing should allow for timely feedback to students on their progress and should motivate appropriate times to completion. To balance these two objectives, the University requires that: • Students with no previous studies at the PhD level successfully complete the comprehensive exam not later than the end of their seventh term of studies; • Students who have completed previous studies in another PhD program at the University of Waterloo	Requests for accommodation not related to health issues shall be made by students to the Graduate Officer in the students' home Department, who will coordinate the process by which the request for accommodation will be advanced. **Comprehensive examination** Most PhD programs require doctoral students to successfully complete a comprehensive exam as part of their academic requirements. In some cases, students may be required to successfully complete a series of exams in order to satisfy the comprehensive requirement. This section provides University-level guidance to students, supervisors, and Departments / Schools on comprehensive exams. Faculty level guidelines that are consistent with the principles established here are available on the program pages. *Comprehensive examination purpose* Comprehensive exams serve multiple purposes depending on the discipline. Permitted purposes for comprehensive exams at the University of Waterloo include demonstrating that: • PhD students have the appropriate academic background – a foundation and breadth of knowledge in the field of study – to be successful in their PhD program; • PhD students have the capacity to engage in scholarly communications – both oral and written – necessary to be successful in their PhD studies; • PhD students have developed a novel research topic to be evaluated during their PhD studies. The purpose(s) of the exam shall be communicated clearly to students. *Comprehensive examination timing* The comprehensive exam is an important accomplishment in the completion of

or at another university, successfully complete the comprehensive exam not later than their fourth term of studies in their current program or their seventh term of study at the PhD level, whichever is longer. Earlier deadlines are at the discretion of the Faculty, Department or Program ~~level.~~ A student who anticipates not meeting these requirements (up to the final evaluation of the exam) may seek an extension to the deadline to complete the comprehensive exam. The student is required to submit a petition providing evidence of extenuating circumstances to the student's Associate Dean, Graduate Studies. Valid extenuating circumstances are normally limited to issues related to the student's (or student's immediate family's) health or documented incidents involving graduate student supervision that can be demonstrated to have delayed the student's progress. The conduct of research or other projects is not considered a valid extenuating circumstance to delay beyond the normal comprehensive examination completion deadline. Guidance on seeking accommodation due to health reasons shall be managed by the University's AccessAbility Services. If the petition is granted, the Associate Dean, Graduate Studies shall coordinate with the student's Graduate Officer to establish a new deadline by which the comprehensive exam shall be completed. This deadline shall be communicated to the student in the notice of decision on the petition. If no petition has been previously adjudicated, and a student fails to meet these requirements by the end of the seventh term, the student's academic status will be changed to Required to Withdraw. Students may seek to have their standing changed to allow them to continue in their programs by submitting a petition under Policy 70 to the student's Associate Dean, Graduate Studies, ~~not later than 10 business days from the change of status. The petition rules described in this section apply.~~	students' PhD program. Normally, completing the comprehensive exam allows students to advance to the research or dissertation phase of their studies. The timing of the exam should allow sufficient time for students to achieve the foundational knowledge to be successful in their programs. The exam timing should allow for timely feedback to students on their progress and should motivate appropriate times to completion. To balance these two objectives, the University requires that: • Students with no previous studies at the PhD level successfully complete the comprehensive exam not later than the end of their seventh term of studies; • Students who have completed previous studies in another PhD program at the University of Waterloo or at another university, successfully complete the comprehensive exam not later than their fourth term of studies in their current program or their seventh term of study at the PhD level, whichever is longer. Earlier deadlines are at the discretion of the Faculty, Department or Program. A student who anticipates not meeting these requirements (up to the final evaluation of the exam) may seek an extension to the deadline to complete the comprehensive exam. The student is required to submit a petition providing evidence of extenuating circumstances to the student's Associate Dean, Graduate Studies. Valid extenuating circumstances are normally limited to issues related to the student's (or student's immediate family's) health or documented incidents involving graduate student supervision that can be demonstrated to have delayed the student's progress. Normally, the conduct of research or other projects is not considered a valid extenuating circumstance to delay beyond the normal comprehensive examination completion deadline. Guidance on seeking accommodation due to health reasons shall

Comprehensive examinations and students' academic requirements A student is encouraged to communicate with supervisor(s) and / or instructors regarding the need to balance the student's effort toward preparing for and completing the comprehensive exam, and any other academic requirements in the term during which the comprehensive exam takes place. Additional guidance for students serving as a TA are outlined in Policy 30. In cases where agreement cannot be reached on revised expectations, the Department's Graduate Officer shall determine and communicate the revised expectations, if any, to the student and the supervisor / instructor. **Comprehensive Examining Committee** In many cases a student's comprehensive exam written and / or oral components are evaluated by an examining committee constituted for a given student. These rules govern the composition of these examining committees. The comprehensive examining committee shall engage those who can advance the purpose(s) of the exam. The University requires that the committee includes at least three examiners who: • Hold a PhD or equivalent degree (as determined by the Associate Vice-President, Graduate Studies and Postdoctoral Affairs), • Two of whom are not the student's supervisor(s), • At least one of whom is a tenured or tenure-track member of the student's Department or School, and • At least two of whom hold regular faculty appointments at the University of Waterloo. Additional committee members may be required at the discretion of the Faculty, Department or Program. When examining committee members are external to the University of Waterloo, their purpose in the	be managed by the University's AccessAbility Services. If the petition is granted, the Associate Dean, Graduate Studies shall coordinate with the student's Graduate Officer to establish a new deadline by which the comprehensive exam shall be completed. This deadline shall be communicated to the student in the notice of decision on the petition. If no petition has been previously adjudicated, and a student fails to meet these requirements by the end of the seventh term, the student's academic status will be changed to Required to Withdraw. Students may seek to have their standing changed to allow them to continue in their programs by submitting a petition under Policy 70 – Student Petitions and Grievances to the student's Associate Dean, Graduate Studies. *Comprehensive examinations and students' academic requirements* A student is encouraged to communicate with supervisor(s) and / or instructors regarding the need to balance the student's effort toward preparing for and completing the comprehensive exam, and any other academic requirements in the term during which the comprehensive exam takes place. Additional guidance for students serving as a TA are outlined in Policy 30 – Employment of Graduate Student Teaching Assistants. In cases where agreement cannot be reached on revised expectations, the Department's Graduate Officer shall determine and communicate the revised expectations, if any, to the student and the supervisor / instructor. *Comprehensive Examining Committee* In many cases a student's comprehensive exam written and / or oral components are evaluated by an examining committee constituted for a given student. These rules govern the composition of these examining committees. The comprehensive examining committee shall engage those who can advance the

exam process shall be clearly communicated to the student. Normally, the examining committee will not exceed five examiners. The comprehensive exam shall be Chaired by a tenured or tenure-track faculty member at the University of Waterloo with ~~Approved Doctoral Dissertation Supervision (ADDS) status~~, normally from the student's home Department / School, who is not the student's supervisor or co-supervisor. The Chair's role is at a minimum to ensure that this portion of the exam is conducted in a manner that is consistent with appropriate guidelines. The Chair is a non-voting member of the comprehensive examining committee. The composition of the comprehensive examining committee will be approved by the Associate Dean, Graduate Studies for the student's Faculty, or delegate. The method by which the comprehensive examining committee is constituted and the timing of the examining committee formation shall be clearly articulated and communicated to students. **Comprehensive examination format and content** The format and content of the comprehensive exam shall be directly related to the stated purpose(s) of the exam. These elements shall be clearly articulated and communicated to students to ensure transparency and clarity of expectations. If a student in a program perceives a lack of clarity on these issues, these concerns should immediately be communicated to the student's Department's Graduate Officer. ~~Students may warrant an accommodation to allow for an alternative exam format other than the norm as described by a Faculty or Department. For accommodations related to health, the student shall provide supporting medical documentation to the University's AccessAbility Services where the request will be vetted. As a result of that evaluation, AccessAbility Services shall determine whether an accommodation is warranted.~~	purpose(s) of the exam. The University requires that the committee includes at least three examiners who: • Hold a PhD or equivalent degree (as determined by the Associate Vice-President, Graduate Studies and Postdoctoral Affairs), • Two of whom are not the student's supervisor(s), • At least one of whom is a tenured or tenure-track member of the student's Department or School, and • At least two of whom hold regular faculty appointments at the University of Waterloo. Additional committee members may be required at the discretion of the Faculty, Department or Program. When examining committee members are external to the University of Waterloo, their purpose in the exam process shall be clearly communicated to the student. Normally, the examining committee will not exceed five examiners. The comprehensive exam shall be Chaired by a tenured or tenure-track faculty member at the University of Waterloo with Sole-Supervisory Privilege Status (SSPS2), normally from the student's home Department / School, who is not the student's supervisor or co-supervisor. The Chair's role is at a minimum to ensure that this portion of the exam is conducted in a manner that is consistent with appropriate guidelines. The Chair is a non-voting member of the comprehensive examining committee. The composition of the comprehensive examining committee will be approved by the Associate Dean, Graduate Studies for the student's Faculty, or delegate. The method by which the comprehensive examining committee is constituted and the timing of the examining committee formation shall be clearly articulated and communicated to students.

~~When an accommodation is determined appropriate, AccessAbility Services shall communicate the decision and the nature of the accommodation to the Graduate Officer in the student's home Department.~~
 	
~~Requests for accommodation not related to health issues shall be made by students to the Graduate Officer in the student's home department, who will coordinate the process by which the request for accommodation will be advanced.~~
 	
Outcomes of the comprehensive examination
 	
This section defines permitted outcomes of comprehensive exams at the University of Waterloo. On a candidate's first attempt at the comprehensive exam, the outcome shall be one of:
 	
• Passed: the candidate successfully completed all requirements of the exam;
• Passed conditionally: the candidate will be considered to have completed the exam successfully upon having satisfied conditions established by the examining committee. The conditions shall:
  ○ Be communicated to the student in writing;
  ○ Contain the date by which the conditions must be satisfied;
  ○ Identify the member(s) of the examining committee responsible for determining that the conditions have been met. Normally, this determination will be made by at least one member of the committee other than the student's supervisor or cosupervisors. Failure to satisfy the conditions within the designated time limit shall result in an outcome of Re-examination.
• Re-examination: the candidate will be required to repeat the exam. In this case, the student shall be provided written communication that identifies the deficiencies in the exam that led
	Comprehensive examination format and content
	
	The format and content of the comprehensive exam shall be directly related to the stated purpose(s) of the exam. These elements shall be clearly articulated and communicated to students to ensure transparency and clarity of expectations. If a student in a program perceives a lack of clarity on these issues, these concerns should immediately be communicated to the student's Department's Graduate Officer.
	
	Outcomes of the comprehensive examination
	
	This section defines permitted outcomes of comprehensive exams at the University of Waterloo. On a candidate's first attempt at the comprehensive exam, the outcome shall be one of:
	
	• Passed: the candidate successfully completed all requirements of the exam;
	• Passed conditionally: the candidate will be considered to have completed the exam successfully upon having satisfied conditions established by the examining committee. The conditions shall:
	  ○ Be communicated to the student in writing;
	  ○ Contain the date by which the conditions must be satisfied;
	  ○ Identify the member(s) of the examining committee responsible for determining that the conditions have been met. Normally, this determination will be made by at least one member of the committee other than the student's supervisor or co-supervisors. Failure to satisfy the conditions within the designated time limit shall result in an outcome of Re-examination.
	• Re-examination: the candidate will be required to repeat the exam. In this case, the student shall be provided written communication that identifies the deficiencies in the exam that led

to this outcome and the deadline by which the re-examination must take place. In the case of re-examination it is anticipated that the committee membership will be the same as the initial committee. Any change in membership must adhere to committee guidelines and be approved by the student's Associate Dean Graduate Studies or delegate. When a candidate is re-examined, the outcomes are limited to: • Passed; • Exam Unsuccessful: the candidate will be deemed to have failed to satisfy the program's comprehensive exam requirement. In this case, the student shall receive written communication identifying the deficiencies in the exam that led to this outcome. A student who is deemed to have failed to satisfy the comprehensive exam requirement (Exam Unsuccessful) may not continue in the current PhD program. The student's status will change to Required to Withdraw in the term immediately following the term in which the examination took place. The student may seek admission to another PhD program or to any Master's degree program at the University of Waterloo. The outcome of the exam is determined by the majority vote of the examining committee. The following rules govern the voting process: • In the case where the student is co-supervised, the co-supervisors' votes shall count collectively as one vote. In the case where co-supervisors vote for different outcomes, these votes shall count as 0.5 votes for each outcome. • In the case where only two outcomes receive votes and the number of votes is equal for both outcomes, the decision shall be for the less positive outcome, provided that outcome is not exam unsuccessful.	to this outcome and the deadline by which the re-examination must take place. In the case of re-examination it is anticipated that the committee membership will be the same as the initial committee. Any change in membership must adhere to committee guidelines and be approved by the student's Associate Dean Graduate Studies or delegate. • Failed: In cases where academic integrity violations are committed by a student in a comprehensive examination, an Associate Dean may determine as guided by Policy 71 – Student Discipline that the student has Failed the examination, the examination outcome will be recorded as No credit granted (NCR) and the student may be expelled or Required to Withdraw. When a candidate is re-examined, the outcomes are limited to: • Passed; • Exam Unsuccessful: the candidate will be deemed to have failed to satisfy the program's comprehensive exam requirement. In this case, the student shall receive written communication identifying the deficiencies in the exam that led to this outcome. The exam outcome will be recorded as NCR. • Failed: In cases where academic integrity violations are committed by a student in a comprehensive examination, an Associate Dean may determine as guided by Policy 71 – Student Discipline that the student has Failed the examination, the examination outcome will be recorded as NCR and the student may be expelled or Required to Withdraw. A student who is deemed to have failed to satisfy the comprehensive exam requirement (Exam Unsuccessful) may not continue in the current PhD program. The student's status will change to Required to Withdraw in the term immediately following the term in which the examination took place. The student may seek admission to another PhD program or to

• If the previous case results in an exam unsuccessful outcome, or if no majority is obtained, the case shall be referred to the Associate Dean, Graduate Studies, who shall make the final determination of the outcome of the exam. Those members of the examining committee who are voting members shall be clearly communicated to the candidate. In programs where the comprehensive exam involves multiple components, a student may obtain different outcomes on each component of the exam. The comprehensive exam will be considered satisfied when the candidate has passed all components of the exam. The comprehensive exam will be considered failed if the candidate receives an exam unsuccessful outcome on any component. No component may be repeated more than once. A student may seek reassessment of the exam evaluation only when the outcome is re-examination or exam unsuccessful based on the written element of the comprehensive exam. A student may not seek a reassessment of the oral component. A request for reassessment shall follow the process described in Policy 70 (reassessment challenge). **Academic integrity and the comprehensive examination** The University considers academic integrity to be an integral part of all scholarship. Violations of academic integrity are handled under University Policy 71. When the comprehensive exam involves a written submission of original work by the candidate completed in a non-invigilated setting, the student shall employ the University's plagiarism detection software leading up to the submission of the written document to the examining committee. The student is encouraged to discuss the reports generated from the software with their supervisor(s) to avoid academic integrity violations. The report generated related to the document submitted to the examining	any Master's degree program at the University of Waterloo. The outcome of the exam is determined by the majority vote of the examining committee. The following rules govern the voting process: • In the case where the student is co-supervised, the co-supervisors' votes shall count collectively as one vote. In the case where co-supervisors vote for different outcomes, these votes shall count as 0.5 votes for each outcome. • In the case where only two outcomes receive votes and the number of votes is equal for both outcomes, the decision shall be for the less positive outcome, provided that outcome is not exam unsuccessful. • If the previous case results in an exam unsuccessful outcome, or if no majority is obtained, the case shall be referred to the Associate Dean, Graduate Studies, who shall make the final determination of the outcome of the exam. Those members of the examining committee who are voting members shall be clearly communicated to the candidate. In programs where the comprehensive exam involves multiple components, a student may obtain different outcomes on each component of the exam. The comprehensive exam will be considered satisfied when the candidate has passed all components of the exam. The comprehensive exam will be considered failed if the candidate receives an exam unsuccessful outcome on any component. No component may be repeated more than once. A student may seek reassessment of the exam evaluation only when the outcome is re-examination or exam unsuccessful based on the written element of the comprehensive exam. A student may not seek a reassessment of the oral component. A request for reassessment shall follow the process described in Policy 70 – Student

committee shall be included with the student's written element and shall be made available to the committee. In cases where comprehensive exams involve the submission of a written document followed by an oral exam component, the following process shall be followed regarding suspected violations of academic integrity on the written element: the person identifying the possible violation shall communicate the concern in writing only to the Associate Dean, Graduate Studies in the student's home Faculty. The Associate Dean shall then assess the allegations. If the vetting cannot be completed prior to the scheduled date of the oral component of the exam, the oral exam shall be postponed, pending the outcome of the investigation. If the vetting is completed prior to the oral exam, and no violation is identified, then the exam can be held as scheduled. When a change in comprehensive exam date is necessary, the Associate Dean Graduate Studies shall inform the candidate, the supervisor or co-supervisors and the Graduate Officer not later than one week prior to the date of the scheduled exam. If a violation is determined to have happened, the Associate Dean shall proceed under Policy 71. If no violation is deemed to have occurred, the exam shall be rescheduled to the satisfaction of the student, the supervisors, and the examining committee. This rescheduling of the exam shall be considered a valid extenuating circumstance to extend the exam deadline. If an academic integrity violation is believed to have occurred during the oral component of the comprehensive exam, the person suspecting the violation shall ask the Chair to pause the exam. The concerns identified shall be communicated to the Chair (only) who will then determine the course of action. If the Chair believes that uncertainty exists regarding the concerns identified, the Chair may determine that the exam shall continue and the potential academic integrity violation will be vetted after the completion of the exam. If the Chair believes that the suspected violation is likely to be valid or that	Petitions and Grievances (reassessment challenge). **Academic integrity and the comprehensive examination** The University considers academic integrity to be an integral part of all scholarship. Violations of academic integrity are handled under University Policy 71 – Student Discipline. When the comprehensive exam involves a written submission of original work by the candidate completed in a non-invigilated setting, the student shall employ the University's plagiarism detection software leading up to the submission of the written document to the examining committee. The student is encouraged to discuss the reports generated from the software with their supervisor(s) to avoid academic integrity violations. The report generated related to the document submitted to the examining committee shall be included with the student's written element and shall be made available to the committee. In cases where comprehensive exams involve the submission of a written document followed by an oral exam component, the following process shall be followed regarding suspected violations of academic integrity on the written element: the person identifying the possible violation shall communicate the concern in writing only to the Associate Dean, Graduate Studies in the student's home Faculty. The Associate Dean shall then assess the allegations. If the vetting cannot be completed prior to the scheduled date of the oral component of the exam, the oral exam shall be postponed, pending the outcome of the investigation. If the vetting is completed prior to the oral exam, and no violation is identified, then the exam can be held as scheduled. When a change in comprehensive exam date is necessary, the Associate Dean Graduate Studies shall inform the candidate, the supervisor or co-supervisors and the Graduate Officer not later than one week prior to the date of the scheduled exam. If a violation is determined to have happened, the

the alleged occurrence precludes a fair evaluation of the candidate, the Chair shall then suspend the exam until a determination can be made as to whether an academic integrity violation has occurred. In both cases, the suspected academic integrity violation shall be reported to and investigated by the Associate Dean, Graduate Studies in the student's home Faculty under Policy 71. When the comprehensive exam includes the completion of a written exam in a controlled environment, suspected violations of academic integrity in these cases should be reported to the Associate Dean, Graduate Studies in the student's home Faculty. **Qualifying examination** Some PhD programs at the University of Waterloo require doctoral students to successfully complete a qualifying exam(s) instead of, or in addition to, a comprehensive exam as part of their academic requirements. The differentiating features between a qualifying exam and a comprehensive exam are: • A qualifying exam is developed and administered for a cohort of students (e.g. all PhDstudents in a program) whereas the comprehensive exam is developed and administered foran individual student; • A qualifying exam is developed, administered and evaluated by a committee formed for a cohort of students, whereas a comprehensive exam committee is constituted for an individual student. The purpose of this document is to provide University-level guidance to students, supervisors and Departments / Schools (referred to as Departments in this document) on qualifying exams. **Qualifying examination purpose** A qualifying exam is a cohort-based exam where all students being examined answer the same set of questions or problem(s) with	Associate Dean shall proceed under Policy 71 - Student Discipline. If no violation is deemed to have occurred, the exam shall be rescheduled to the satisfaction of the student, the supervisors, and the examining committee. This rescheduling of the exam shall be considered a valid extenuating circumstance to extend the exam deadline. If an academic integrity violation is believed to have occurred during the oral component of the comprehensive exam, the person suspecting the violation shall ask the Chair to pause the exam. The concerns identified shall be communicated to the Chair (only) who will then determine the course of action. If the Chair believes that uncertainty exists regarding the concerns identified, the Chair may determine that the exam shall continue, and the potential academic integrity violation will be vetted after the completion of the exam. If the Chair believes that the suspected violation is likely to be valid or that the alleged occurrence precludes a fair evaluation of the candidate, the Chair shall then suspend the exam until a determination can be made as to whether an academic integrity violation has occurred. In both cases, the suspected academic integrity violation shall be reported to and investigated by the Associate Dean, Graduate Studies in the student's home Faculty under Policy 71 – Student Discipline. When the comprehensive exam includes the completion of a written exam in a controlled environment, suspected violations of academic integrity in these cases should be reported to the Associate Dean, Graduate Studies in the student's home Faculty. **Qualifying examination** Some PhD programs at the University of Waterloo require doctoral students to successfully complete a qualifying exam(s) instead of, or in addition to, a comprehensive exam as part of their academic requirements. The differentiating features between a

a common time allotment. The purposes of qualifying exams at the University of Waterloo may include demonstrating that: • PhD students have the appropriate academic background and foundation in the discipline within which their own research is going to be situated. This may include knowledge of established theories, concepts, methods or models and the necessary skill sets required before students can move to the research component of the program; • PhD students have the capacity to engage in the scholarly communication necessary to be successful in their PhD studies. The purpose(s) of the exam shall be communicated clearly to students. **Qualifying examination timing** The timing requirements of the qualifying exam – the latest date by which students must successfully complete the exam and the process for managing exceptions to this requirement – are equivalent to those specified for the comprehensive examination. Earlier deadlines are at the discretion of the Faculty, Department, or Program level. Please see the comprehensive examination regulations. **Qualifying examinations and students' academic requirements** The guidelines on supporting students' effort toward preparing for and completing the qualifying exam are equivalent to those for a comprehensive exam. Additional guidance for students serving as a TA are outlined in Policy 30. **Qualifying examining committee** A student's qualifying exam written and/or oral components are evaluated by an examining committee constituted for a given cohort. These rules govern the composition of such an examining committee.	qualifying exam and a comprehensive exam are: • A qualifying exam is developed and administered for a cohort of students (e.g. all PhD students in a program) whereas the comprehensive exam is developed and administered for an individual student; • A qualifying exam is developed, administered and evaluated by a committee formed for a cohort of students, whereas a comprehensive exam committee is constituted for an individual student. The purpose of this document is to provide University-level guidance to students, supervisors and Departments / Schools (referred to as Departments in this document) on qualifying exams. *Qualifying examination purpose* A qualifying exam is a cohort-based exam where all students being examined answer the same set of questions or problem(s) with a common time allotment. The purposes of qualifying exams at the University of Waterloo may include demonstrating that: • PhD students have the appropriate academic background and foundation in the discipline within which their own research is going to be situated. This may include knowledge of established theories, concepts, methods or models and the necessary skill sets required before students can move to the research component of the program; • PhD students have the capacity to engage in the scholarly communication necessary to be successful in their PhD studies. The purpose(s) of the exam shall be communicated clearly to students. *Qualifying examination timing* The timing requirements of the qualifying exam – the latest date by which students must successfully complete the exam and the

The qualifying exam committee shall include those who can advance the purpose(s) of the exam. Committee members are subject matter experts in areas in which the students will be examined. The University requires that the committee includes at least three members: • Who hold a PhD or an equivalent degree as approved by the Associate Vice-President, Graduate Studies and Postdoctoral Affairs; • At least one of whom is a tenured or tenure-track member of the offering Department or Program, and • At least two of whom hold regular faculty appointments at the University of Waterloo. Additional committee members may be required at the discretion of the Department or Program. When examining committee members are external to the University of Waterloo, their purpose in the exam process shall be clearly communicated to the student(s) taking the exam. Normally, the committee will not exceed five members. The qualifying exam committee shall be Chaired by a tenured or tenure-track faculty member at the University of Waterloo with ~~Approved Doctoral Dissertation Supervision (ADDS)~~ ~~status~~, normally from the offering Department or Program. The Chair's role is at a minimum to ensure that the exam is conducted and evaluated fairly and equitably, consistent with academic best practices. The Chair is a non-voting member of the qualifying examining committee. Members of the committee who are supervising student(s) completing the qualifying exam shall make this relationship known to the Chair and other members of the committee prior to evaluation of the student's (or students') exam(s). The composition of the qualifying examination committee will be approved by the Associate Dean, Graduate Studies, or a delegate.	process for managing exceptions to this requirement – are equivalent to those specified for the comprehensive examination. Earlier deadlines are at the discretion of the Faculty, Department, or Program level. Please see the comprehensive examination regulations. *Qualifying examinations and students' academic requirements* The guidelines on supporting students' effort toward preparing for and completing the qualifying exam are equivalent to those for a comprehensive exam. Additional guidance for students serving as a TA are outlined in Policy 30 – Employment of Graduate Student Teaching Assistants. *Qualifying examining committee* A student's qualifying exam written and/or oral components are evaluated by an examining committee constituted for a given cohort. These rules govern the composition of such an examining committee. The qualifying exam committee shall include those who can advance the purpose(s) of the exam. Committee members are subject matter experts in areas in which the students will be examined. The University requires that the committee includes at least three members: • Who hold a PhD or an equivalent degree as approved by the Associate Vice-President, Graduate Studies and Postdoctoral Affairs; • At least one of whom is a tenured or tenure-track member of the offering Department or Program, and • At least two of whom hold regular faculty appointments at the University of Waterloo. Additional committee members may be required at the discretion of the Department or Program. When examining committee members are external to the University of Waterloo, their purpose in the exam process shall be clearly communicated to the student(s) taking the exam.

The method by which the qualifying examining committee is constituted and the timing of the examining committee formation shall be clearly articulated and communicated to students. **Qualifying examination format and content** The exam format is designed to test an entire cohort of students who attempt this milestone simultaneously, based on a common examination in a given time. The content of the qualifying exam shall be directly related to the stated purpose(s) of the exam. These elements shall be clearly articulated and communicated to students to ensure transparency and clarity of expectations. If a student in a program perceives a lack of clarity on these issues, these concerns should immediately be communicated to the student's Department's Graduate Officer. ~~**Accommodations**~~ ~~Students may warrant an accommodation to allow for an alternative exam format other than that which is described by Department or Program. For accommodations related to health, the student shall provide supporting medical documentation to the University's AccessAbility Services. AccessAbility Services shall determine whether an accommodation is warranted. When an accommodation is determined to be appropriate, AccessAbility Services shall communicate the decision and the nature of the accommodation to the Graduate Officer in the student's home Department who will coordinate with the chair of the examining committee on the implementation of the Accommodation.~~ ~~Requests for accommodation not related to health issues shall be made by students to the Graduate Officer in the students' home Department, who will coordinate the process by which the request for accommodation will be advanced.~~	Normally, the committee will not exceed five members. The qualifying exam committee shall be Chaired by a tenured or tenure-track faculty member at the University of Waterloo with Sole-Supervisory Privilege Status (SSPS2), normally from the offering Department or Program. The Chair's role is at a minimum to ensure that the exam is conducted and evaluated fairly and equitably, consistent with academic best practices. The Chair is a non-voting member of the qualifying examining committee. Members of the committee who are supervising student(s) completing the qualifying exam shall make this relationship known to the Chair and other members of the committee prior to evaluation of the student's (or students') exam(s). The composition of the qualifying examination committee will be approved by the Associate Dean, Graduate Studies, or a delegate. The method by which the qualifying examining committee is constituted and the timing of the examining committee formation shall be clearly articulated and communicated to students. *Qualifying examination format and content* The exam format is designed to test an entire cohort of students who attempt this milestone simultaneously, based on a common examination in a given time. The content of the qualifying exam shall be directly related to the stated purpose(s) of the exam. These elements shall be clearly articulated and communicated to students to ensure transparency and clarity of expectations. If a student in a program perceives a lack of clarity on these issues, these concerns should immediately be communicated to the student's Department's Graduate Officer. *Evaluation and outcomes of the qualifying examination* All voting members of the committee shall complete their assessment of students'

Evaluation and outcomes of the qualifying examination All voting members of the committee shall complete their assessment of students' submissions individually. Each student's submission shall be assessed by at least two members of the qualifying examination committee. All student submissions made available to the committee for review shall be anonymous. Normally, the committee will meet to deliberate the outcomes. The permitted outcomes and re-examination process for a qualifying examination are equivalent to that of a comprehensive examination. **Academic integrity and the qualifying examination** The University considers academic integrity to be an integral part of all scholarship. Perceived violations of academic integrity are handled under University Policy 71. The guidelines surrounding process and academic integrity with respect to qualifying examinations are equivalent to that of comprehensive examinations. ~~**Language requirement**~~ ~~When a department considers that a candidate must have some level of competence in a particular foreign language or languages, the successful demonstration of this competence becomes a requirement for the degree.~~ ~~**Program of study and supervision**~~ ~~Candidates shall have their program of study and research approved by the department (or delegated committee) in which they are enrolled. In certain Faculties, a candidate will be responsible, upon entry to the program, to a supervisor who will be approved by the Associate Dean (Graduate Studies) of the Faculty. In other Faculties, the candidate will be responsible to a provisional supervisor to be approved by the departmental Graduate Studies Committee.~~ ~~**Advisory Committee**~~	submissions individually. Each student's submission shall be assessed by at least two members of the qualifying examination committee. All student submissions made available to the committee for review shall be anonymous. Normally, the committee will meet to deliberate the outcomes. The permitted outcomes and re-examination process for a qualifying examination are equivalent to that of a comprehensive examination. **Academic integrity and the qualifying examination** The University considers academic integrity to be an integral part of all scholarship. Perceived violations of academic integrity are handled under University Policy 71 – Student Discipline. The guidelines surrounding process and academic integrity with respect to qualifying examinations are equivalent to that of comprehensive examinations. **PhD thesis examination** The PhD thesis examination is the culmination of the candidate's research program. The examination is intended to allow the candidate to demonstrate their mastery and expertise in the chosen area of study through a presentation of their research. The examination also presents an opportunity for the candidate's work to be subject to scholarly criticism by members of the academic community. Through the process of defending the thesis, the candidate further demonstrates their capacity to engage meaningfully in scholarly discourse in their chosen area. Based on an evaluation of the written thesis and the candidate's performance in the thesis examination, the examining committee will render a decision as to whether the candidate's work has satisfied the requirements for a PhD. **Thesis submission** When the thesis is accepted by the department and Faculty, and all other requirements for the degree have been met,

~~When a department wishes to appoint a supervisor (at the latest a month after the comprehensive), the departmental Graduate Officer shall consult with the candidate about an Advisory Committee and shall recommend to the Associate Dean (Graduate Studies) of the Faculty the composition of that three to five person Committee. In certain Faculties the Advisory Committee is appointed upon the passing of the comprehensive examination. This Committee must consist of the supervisor(s) and at least one other faculty member from the department. The supervisor must be a regular member of the University faculty with Approved Doctoral Dissertation Supervisor (ADDS) status; or, when a supervisor has adjunct status, another on-campus professor must serve as co-supervisor. The Associate Dean (Graduate Studies) of the Faculty has the authority to waive the co-supervision requirement on the recommendation of the department / school. Two other faculty members, one of whom may be external to the department or Faculty, may also participate in this Committee. In any event, the Advisory Committee must have a minimum of the supervisor and two other faculty members or a maximum of two supervisors and three other faculty members.~~

PhD thesis examination

The PhD thesis examination is the culmination of the candidate's research program. ~~It exposes the candidate's work to scholarly criticism by members of the University and gives them the opportunity to defend it.~~

~~All PhD candidates must successfully present and defend their thesis according to the procedures outlined in the Graduate Thesis Regulations.~~

Recommendation: awarding of the degree

On the basis of the PhD Thesis Examining Committee's report and its own records of candidates' progress in their assigned program of study, the Associate Dean (Graduate Studies) of the Faculty, or a committee specifically appointed by a faculty

the student must provide the University with an electronic copy, as appropriate, of their approved thesis as a final University degree requirement. Theses must be prepared and submitted as outlined on the Graduate Studies and Postdoctoral Affairs thesis submission page.

Prior to defence

Prior to submitting the thesis, it is recommended that the candidate meet with their supervisor and the advisory committee. The candidate should seek endorsement that the research is of sufficient quality to proceed to defence and that the candidate is able to meet the requirements of the oral defence. Although a negative assessment does not prohibit the candidate from proceeding to defence, this should occur only in rare cases and is not recommended.

The responsibility for identifying possible external examiners lies with the supervisor or the co-supervisors. In no cases should a student be asked to lead that effort.

The Graduate Officer of the department in which the candidate is enrolled will recommend to the Faculty Associate Dean, Graduate Studies a PhD Thesis Examining Committee for approval. Sufficient information should be supplied in order to facilitate the Associate Dean's decision, including notes on adjunct appointments and declarations of any conflicts of interest.

A date and location for the examination will be set according to availability of Examining Committee members. The candidate should be prepared to defend the thesis within 4 - 6 weeks of depositing it in the Faculty Graduate Studies Office (see Display Period below).

PhD thesis examining committee

The PhD Thesis Examining Committee evaluates the quality of the student's written and oral communications related to the thesis relative to the standards of the discipline, the state of the practice in the field, and the degree expectations at the University of

for this purpose, decides whether candidates have fulfilled the requirements for the PhD degree. If the decision is that they have, supporting documentation is forwarded to the Associate Vice-President, Graduate Studies and Postdoctoral Affairs with the request that they recommend to Senate that the degree be awarded. The Associate Vice-President, Graduate Studies and Postdoctoral Affairs examines this request in light of the report from the Chair of the thesis examination. If the Associate Vice-President, Graduate Studies and Postdoctoral Affairs has any reason to feel that the acceptance of the thesis is open to dispute, the Associate Vice-President will take the matter before the Associate Deans (Graduate Studies) for advice or, if necessary, to the Senate Graduate and Research Council, which is specifically given authority to decide in such cases. **Thesis submission** When the thesis is accepted by the department and Faculty, and all other requirements for the degree have been met, the student must provide the University with an electronic copy of their approved thesis as a final University degree requirement. Theses must be prepared and submitted as outlined on the Graduate Studies and Postdoctoral Affairs thesis submission page.	Waterloo. The committee consists of a minimum of five voting members: • External Examiner • Supervisor or Co-supervisors • Internal Member (from the home department) • Internal-external Member (external to the home department) • Other Member(s) The PhD Thesis Examination is chaired by an impartial faculty member with SSPS2 status from outside the candidate's department. The Chair is appointed by Graduate Studies and Postdoctoral Affairs (GSPA). The Chair is responsible for proper conduct of the examination and does not vote. *External Examiner* The external examiner must hold a doctorate and be knowledgeable in the field of the candidate's research. In addition, to ensure fairness and impartiality, the external examiner must be at arm's length from the candidate's thesis, candidate and supervisor(s), and must not be in a potential conflict of interest with regards to the outcome of the thesis examination. An external examiner should be selected such that there are no perceptions of potential bias or conflicts of interest between the external examiner, the student being evaluated and the supervisor(s). There is a conflict of interest when: • A proposed external examiner is, or was in the last six years, from the same university, organization or department, or belongs or belonged, in the last six years, to the same research unit as the supervisor(s) or candidate; or • There is an administrative or family link between the proposed external examiner and the supervisor(s) or candidate (e.g., head of the department, Dean of the Faculty, etc.); or • A proposed external examiner is an industrial or government representative or professional who is or was in the last six years directly

	involved in collaborative activities with the supervisor(s) or candidate; or • A proposed external examiner is a former research supervisor or graduate student of the supervisor(s) or candidate; or • A proposed external examiner has collaborated or published with the supervisor(s) or candidate within the past six years; or • A proposed external examiner is a planned future research supervisor or employer of the candidate or plans to collaborate or publish with the candidate in the foreseeable future; or • The proposed external examiner is uncomfortable with reviewing the proposal due to previous conflicts or any other reason (e.g., past student or supervisor, even if more than six years ago, or personal conflict); or • The Faculty Associate Dean, Graduate Studies, has reason to believe that a specific proposed external examiner should not be involved in the review. In cases where the candidate's thesis research has involved collaborations with other local members of the examining committee beyond the supervisor(s) within the past six years, the external examiner must be free of potential conflict of interest under the guidelines above with those members as well. Recommendation of an individual to serve as external examiner is made by the supervisor(s) or Graduate Officer/Associate Chair, Graduate Studies, as appropriate, to the Faculty, Associate Dean, Graduate Studies for approval. The Graduate Officer/Associate Chair is responsible for determining that the requirements for arm's length have been met, and the recommendation must be accompanied by a curriculum vitae covering the past six years and a conflict of interest statement, as well as full disclosure of any past affiliations involving the candidate and supervisor(s) to assist in confirming an arm's-length relationship. The Associate Dean is the contact for the external examiner regarding the thesis and its defence. At no point should the candidate be

	in communication with the external examiner prior to the defence. The Department may communicate with the external only for the purposes of other arrangements not related to the defence (e.g. arrangements for a research talk). The external examiner must provide the Faculty Associate Dean, Graduate Studies with a written assessment of the thesis at least one week before the scheduled defence. Whether the assessment is positive or negative, the Associate Dean will copy the report of the external examiner only to the supervisor, who will inform the candidate of any major criticisms of the thesis, so that the student can respond to these, but the evaluation must not be shown to the candidate. The candidate may be shown the evaluation after the defence, with the permission of the external examiner. Should the assessment be negative, the Associate Dean may wish to advise that the candidate withdraw the dissertation and defend with the same external examiner at a later date. A candidate may withdraw the thesis only once. Despite a negative assessment, a candidate has the right to proceed to a defence. *Supervisor or Co-supervisors* The student's supervisor serves on the Examining Committee. In the case that there is more than one supervisor, all co-supervisors are expected to attend the defence and the supervisor vote is divided fractionally among the co-supervisors such that each may vote independently but the total supervisor vote (one) remains unchanged. Only with the approval of the Faculty Associate Dean, Graduate Studies may a co-supervisor be absent from the exam. In that case, the other co-supervisor, who must have SSPS1 or SSPS2 status, will represent them. *Internal Member* The internal member is from the student's home department and normally drawn from the student's Advisory Committee.

	Internal-External Member The internal-external should have suitable knowledge of the subject matter of the dissertation and is normally external to the student's home department. The internal-external member ensures that the thesis meets University standards of quality and helps to assess the performance of the candidate at the defence. In rare cases, identifying an internal-external who is able to make a meaningful contribution to the examination is problematic. In such circumstances, the requirement that the Internal-External be external to the department may be waived by the Faculty Associate Dean, Graduate Studies based on a rationale provided by the Graduate Officer. Holding an adjunct or cross appointment in the student's home department does not preclude serving as an internal-external. *Member* Normally, this committee member is drawn from the student's Advisory Committee. The member normally holds a tenured or tenure track position at the University of Waterloo or has another type of ongoing faculty appointment. *Adjunct faculty on Examining Committees* In some cases it may be beneficial for a student to have access to the expertise of a particular adjunct faculty member. The Faculty Associate Dean, Graduate Studies may give permission for an adjunct faculty member to serve on the Examining Committee as the Internal-External or Member, provided that the Adjunct faculty members holds a PhD. No more than one adjunct faculty member (including Professors Emeriti) may serve on the Examining Committee, with the exception of cotutelle student defences, which may involve the participation of more than one adjunct faculty member. **Display period**

	When a candidate is ready to proceed to defence, they must submit an electronic copy, as appropriate, of the thesis to the Faculty Graduate Office. The thesis is distributed to members of the PhD Thesis Examining Committee and a copy is available in the Faculty Graduate Office for at least four weeks, where it may be requested by any member of the University for examination. The submission of the thesis, as well as the date and location of its defence, are announced publicly. In cases where a student's research contains content that may warrant restrictions on its dissemination (e.g., for intellectual property or personal safety reasons), the student may request to have the display of the thesis restricted and the defence closed to the public. Guidelines on these situations are below. Members of the PhD Thesis Examining Committee who have major criticisms of the thesis are encouraged to submit written comments to the Faculty Associate Dean, Graduate Studies no later than one week before the thesis defence. The Faculty Associate Dean will share these concerns with the supervisor and candidate. If written comments are not submitted in advance, criticisms can be discussed at the defence but should not be discussed with other members of the Examining Committee prior to the defence. **Guidelines for thesis examination without public disclosure** Central to the University of Waterloo's mission is the creation and dissemination of knowledge. As new scholars, graduate students are expected to disclose and publicly defend their research results to ensure review from their peers and acceptance and inclusion of their findings in open scholarly discourse. At times, graduate students may wish to protect their research results, particularly when they contain material of commercial or marketable value, or when restricted by a publication agreement. It is expected that in

	the vast majority of these cases that protection of the intellectual property will be obtained in a timely manner, well before the preparation and examination of the student's thesis (for example in the form of filing a patent application). Similarly, students may engage in sensitive research areas which may present personal risks. In these rare cases, it may be necessary to restrict the disclosure of thesis results from the public arena. In cases where private companies or other supporting organizations are involved in the research through a research contract or agreement, this request may be required by the terms of that agreement. In these cases, the student with supervisor's endorsement shall at the time of thesis submission request that the thesis be shared only with the examining committee. Similarly, the student and the supervisor shall request a defence that is not open to the public. The student and supervisor shall articulate the motivations for the restriction of the thesis and attendance at the defence. These requests will be received and adjudicated by the Associate Dean Graduate Studies in the student's home Faculty. If granted, the student's thesis will not be available publicly prior to the defence. The members of the examining committee, including the external examiner, may be asked to sign a non-disclosure agreement prior to evaluating the completed thesis or attending the defence. When the thesis is accepted by the examining committee, the student may seek to have their thesis embargoed. **Thesis written in French** L'université de Waterloo offre aux étudiants la possibilité de rédiger les thèses de doctorat et de maîtrise en français. Ceci n'est pas un droit de l'étudiant ou de l'étudiante. Mise à part la condition évidente de la compétence linguistique du candidat ou de la candidate

	par rapport au domaine étudié, il est nécessaire de satisfaire à d'autres exigences. Lorsqu'un candidat ou une candidate demande à son département de rédiger sa thèse en français dans le cadre de ce règlement, il ou elle doit soumettre une déclaration d'appui de la part de son directeur ou sa directrice de thèse, des membres éventuels du comité de supervision et d'évaluation, ainsi que leur accord d'appartenir à ce comité. Tous les membres du comité doivent posséder un niveau de compétence linguistique tel qu'il leur permettra d'évaluer avec pertinence, à la fois le contenu et la présentation du matériel examiné. The University of Waterloo offers students the opportunity to write doctoral and master's theses in French. This is not a right of the student. Apart from the obvious condition of the candidate's linguistic competence in relation to the field studied, there are other requirements that must be met. When a candidate asks their department to write their thesis in French within the framework of this regulation, they must submit a declaration of support from their supervisor, any members of their advisory and examining committee, and their agreement to serve on this committee. All committee members must possess a level of linguistic proficiency that will enable them to appropriately evaluate both the content and presentation of the material examined. **Thesis defence** **Procedural guidelines** The thesis defence is an oral examination of the student by the student's PhD Thesis Examining Committee, chaired by an impartial faculty member with SSPS2 from outside the candidate's department and preferably from outside of the Faculty. The candidate, the supervisor(s), members of the examining committee, and the Chair are

	essential participants that must attend the defence (physically or remotely). Any member of the University may attend a defence, unless the defence is restricted to the examining committee. The Chair is responsible for the proper conduct of the examination. Candidates first present their thesis orally with whatever aids are required to make an effective presentation. This presentation should be limited to no more than thirty minutes with the focus being on the main contributions and conclusions of the work. The presentation is followed by questioning. Normally, the round of questioning begins with the external examiner, followed by other members, then the internal external member, the internal member, and ends with the supervisor(s). The Chair is encouraged to administer the exam in such a way that a period is set aside at the end of the examination for questions from non-Committee members. If the exam duration has exceeded normal limits, the Chair may at their discretion preclude questions from non-committee members. If the Chair of the PhD Thesis Examining Committee is unsure of the appropriateness or relevance of a question, they should ask the members of the Committee whether any of them wishes to have the candidate answer the question, thus in effect making the question posed one which would be authorized by a member of the Committee. The Chair, with agreement of the Examining Committee, will decide when to conclude the questioning. The candidate and audience will be asked to leave the room (either physically or remotely) and the Examining Committee will deliberate in a closed session. The Graduate Officer, Departmental Chair, Faculty Associate Dean, Graduate Studies and Associate Vice-President, Graduate Studies and Postdoctoral Affairs may attend the closed session. Once a decision is made, the candidate is invited back into the room and informed by the Chair of the Committee's

	decision. The Chair will provide a report to the Associate Vice-President, Graduate Studies and Postdoctoral Affairs on the conduct of the examination, any issues or problems that arose, and the decision of the Examining Committee. **Format for defences** The University provides the option for students to complete their thesis defence in person, in a fully remote, or hybrid format. The decision on the format of the defence will be upon agreement between the supervisor and student. Chairs should be prepared to support either an in-person or remote defence. It is the responsibility of the Chair to ensure the structure of the defence supports the integrity of the process and all can participate appropriately and equally either in-person or virtually. Chairs will receive, regardless of format of delivery, a standard Chair package in electronic format from the Faculty Administrative Assistant that is coordinating the examination, one week prior to the defence. The Chair package will include the following: 1. Report of the Chair, 2. PhD Thesis Committee Composition, 3. PhD Thesis Examination Report, 4. External Examiner's Report, 5. Committee Members' Reports, 6. A guide to chairing a PhD thesis examination, 7. Instructions for the defence, including location of in person defence or process for remote defences. Chairs will document the conduct of the examination on the "Report of the Chair" form. This form will be made available in Word format and/or in fillable .pdf so that defence Chairs can complete it electronically. Chairs will document the decision of the examination on the "PhD Thesis Examination Report" and "Report of the Chair" forms. These forms will be made available in Word format and/or in fillable .pdf so that

	defence Chairs can complete them electronically. Outcomes of the defence, regardless of format of delivery, will be communicated orally to the student by the Chair on behalf of the committee at the conclusion of the in-camera deliberations. **Participation through electronic media (remote participation)** In situations where a student and their supervisor collaboratively decide to hold the defence in a remote format, Faculties will internally provide logistical guidelines on setting up remote defences. Please contact the Faculty Administrative Assistant to obtain Faculty-specific procedures. As there are limitations to supporting hybrid defences, the expectation is that only one participant may participate remotely, with the balance of the committee in-person, unless there has been specific approval from the Faculty Associate Dean, Graduate Studies. The Chair, student and supervisor must all be present in person for any hybrid defence arrangement. If any one of these individuals are not able to be physically present, the defence should be held in a remote format with everyone participating remotely. Any member of the PhD Thesis Examining Committee, including the external examiner, participating by remote connection must make allowances for the possibility of a failed connection. In the event that remote connection is lost, the Chair will determine whether or not the duration of the disruption has had a material impact on the committee member's ability to assess the candidate's defence. If there has not been a material impact, and the connection has been reestablished, then the examiner may cast their vote as if the loss of communication had not occurred. If there has been a material impact, and there was a report submitted in advance, the report will be read by the Chair and the vote indicated in the report will be counted. When there is no such report, the vote may be nullified. The Chair's report must note the lost connection,

	including the timing and whether or not the vote was included in the decision. Normally the defence can proceed as long as the supervisor, external examiner and two other committee members are present and subject to the agreement of the candidate and supervisor. The decision as to when to postpone the defence, if the technology fails, will be up to the Chair of the defence. **Absent committee members** It is expected that all members of the PhD Examining Committee attend the defence (physically or remotely). If a committee member is unable to attend a defence being held in person, that member may be given the option to participate remotely. The alternative option may be to move the entire defence to a remote format. In cases where a committee member is unable to attend either remotely or in person, and sufficient time allows, it is preferably to secure a new committee member to replace the unavailable committee member. In the case of an unanticipated, last-minute emergency absence of a committee member, the defence can proceed subject to the agreement of the candidate and the supervisor(s) as long as the following committee members are available (in person or virtually) to present their votes: • Supervisor • External Examiner • Two other members of the committee Any exceptions to this regulation must be approved by the Faculty Associate Dean, Graduate Studies. **Decision** The decision of the PhD Thesis Examining Committee is based both on the thesis and on the candidate's ability to defend it. The decision of the Examining Committee is made by majority vote. Should the external examiner's vote differ from that of the majority, or if there is a tie vote, the decision shall be deferred and referred to the

	Associate Vice-President, Graduate Studies and Postdoctoral Affairs. The Associate Vice-President will consult with the Faculty Associate Deans, Graduate Studies and will make the final determination. The following decisions are open to the PhD Thesis Examining Committee: **A. Accepted** The thesis and the oral defence have been completed to the satisfaction of the examining committee. The thesis may require typographical and/or minor editorial corrections to be made to the satisfaction of the supervisor and submitted and approved in UWSpace within one month of the date of the defence. If more time is required to make these corrections, the Committee should consider whether a Category B decision is merited. If the thesis is not submitted within this timeline, the student will be withdrawn from the program. Any extension to the time limits must be requested in writing and approved by the Graduate Officer and Faculty Associate Dean, Graduate Studies. **B. Accepted Conditionally** The oral defence has been completed to the satisfaction of the examining committee. The thesis is acceptable but requires content changes which are minor enough that reexamination is not required. The PhD Thesis Examining Committee's report must include a brief outline of the nature of the changes required and must indicate the time by which the changes are to be completed. Changes must be completed to the satisfaction of the full Committee or a subset of the committee that will include at least one member who is not the student's supervisor(s). The revised thesis must be submitted and approved in UWSpace within four months of the date of the defence or the student will be withdrawn from the program. Any extension to the time limits must be requested in writing and approved by the Graduate Officer and Faculty Associate Dean, Graduate Studies.

	C. Reexamination Reexamination is required in either of the following situations: • The oral defence is not to the satisfaction of the Examining Committee. The PhD thesis examination requires that the candidate demonstrates their mastery and expertise and engages meaningfully in scholarly discourse in their chosen area. If the candidate fails to satisfy these requirements, the Examining Committee may require reexamination. The PhD Thesis Examining Committee's report must contain a recommended set of activities that aims to improve the candidate's abilities to present their research and respond to inquiries related to their studies. • The written thesis requires modifications of a substantial nature, the need for which makes the acceptability of the thesis questionable. The PhD Thesis Examining Committee's report must contain an outline of the modifications expected and indicate the time by which the changes are to be completed. In this case, the revised thesis must be resubmitted to the Faculty Graduate Office for reexamination. Reexamination must occur within one year of the date of the first defence. Normally, reexamination will follow the same procedures as for the initial submission except that the display period may be reduced or eliminated at the discretion of the Associate Dean. Normally, the same PhD Thesis Examining Committee will serve, with the exception that in some circumstances, a new External Examiner can be found. A decision to reexamine is open only once for each candidate. **D. Failed** If after reexamination the candidate does not achieve Category A or B, then the student will be withdrawn from the program. The PhD Thesis Examining Committee shall report the reasons for rejection to the Faculty Associate Dean, Graduate Studies, who will confirm the

	decision in writing to the student within one week of the date of the examination, as well as the requirement to withdraw. *Deferral of Decision* If the PhD Thesis Examining Committee is not prepared to reach a decision concerning the thesis at the time of the thesis defence, it is the responsibility of the Chair to determine what additional information is required by the Committee to reach a decision, to arrange to obtain this information for the Committee, and to call another meeting of the Committee as soon as the required information is available. It is also the responsibility of the Chair to inform the candidate that the decision is pending. Candidates are not normally present at this second meeting of the Committee. **Academic integrity and the PhD Thesis** The University considers academic integrity to be an integral part of all scholarship. Anyone who believes that a thesis contains content that constitutes an academic integrity violation shall make the Associate Dean, Graduate Studies in the student's home Faculty aware of the perceived academic integrity violation as soon as the concern is discovered. The Associate Dean shall: 1. Acknowledge receipt of the concern; 2. Communicate to the supervisor and the student that a concern has been brought forward, and seek their input in the process of resolving the concern; 3. Investigate to the extent possible the validity of the concern; 4. If warranted, postpone the defence pending the resolution of the alleged academic integrity violation; 5. Engage the Research Integrity group in the Office of Research if the nature of the academic integrity violation may include the improper treatment of intellectual property – core contributions to the research presented in the thesis. 6. Pursue disciplinary actions, as appropriate, as described in

	University Policy 71 – Student Discipline. **Grievance** A request for reexamination of a graduate thesis is a type of academic grievance, as per Policy 70 – Student Petitions and Grievances. A student who wishes to request a reexamination of their thesis should contact the Associate Vice-President, Graduate Studies and Postdoctoral Affairs, who will form a committee of Associate Deans, Graduate. This committee will determine the appropriate course of action, which may involve a reexamination of the thesis or the denial of the student's request. **Recommendation: awarding of the degree** On the basis of the PhD Thesis Examining Committee's report and its own records of candidates' progress in their assigned program of study, the Associate Dean (Graduate Studies) of the Faculty, or a committee specifically appointed by a faculty for this purpose, decides whether candidates have fulfilled the requirements for the PhD degree. If the decision is that they have, supporting documentation is forwarded to the Associate Vice-President, Graduate Studies and Postdoctoral Affairs with the request that they recommend to Senate that the degree be awarded. The Associate Vice-President, Graduate Studies and Postdoctoral Affairs examines this request in light of the report from the Chair of the thesis examination. If the Associate Vice-President, Graduate Studies and Postdoctoral Affairs has any reason to feel that the acceptance of the thesis is open to dispute, the Associate Vice-President will take the matter before the Associate Deans (Graduate Studies) for advice or, if necessary, to the Senate Graduate and Research Council, which is specifically given authority to decide in such cases.

UNIVERSITY OF WATERLOO

GRADUATE EXPEDITED PROPOSAL*

OF

GRADUATE TYPE II DIPLOMA IN CLIMATE CHANGE

Submitted to the
Ontario Universities Council on Quality Assurance

VOLUME I - PROPOSED BRIEF

(FEB 24/2024)

*The Quality Council will normally require only an Expedited Approval process where:

a) there is a proposal for a **new Collaborative Program** at the graduate level; or
b) there is a proposal for **a new for-credit graduate diploma**.

NOTE: This template **must** be used for submission of a new program proposal.
Please consult the University of Waterloo Institutional Quality Assurance Process and the Quality Assurance Framework (QAF) for details or the Quality Assurance Office.
****Volumes I, II must be reviewed and approved by the Quality Assurance Office, GSPA and IAP prior to submission to your Faculty Council****

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1. Introduction

Brief Listing of the Program

This new Type II interdisciplinary graduate diploma in Climate Change will build on existing disciplinary strengths to train graduates from any Faculty to go beyond the context of their own academic-professional concentrations to broadly engage with the complexity of whole-of-society climate change solutions from community to global scales. Participating students will be required to take two courses: a foundation course in climate change for breadth, and an approved climate change elective from outside of the student's home Faculty for depth. In addition, students will be required to participate in a minimum of 4 approved climate change seminars and conferences to achieve the professional networking and interdisciplinary milestone.

The Type II Graduate Diploma in Climate Change will be open to all full-time and part-time, Master's and PhD students except for Master in Climate Change students and students pursuing the Type III Diploma in Climate Risk Management. Students will take this diploma alongside their normal degree within the regular timeframe and no additional tuition fees are required. It is expected that 75-100% of the program will be delivered in person, but some of the climate change elective course options and milestones may be completed online.

Method Used for Preparation of the Brief

Conversations with the Associate Vice-President, Graduate Studies and Postdoctoral Affairs (GSPA), Jeff Casello, were started in 2021; with more focused discussions about this interdisciplinary cross-campus climate change program with the following faculty members in Spring of 2022.

Environment

- Daniel Scott, Professor, Geography and Environmental Management
- Johanna Wandel, Associate Professor, Geography and Environmental Management
- Sarah Burch, Associate Professor, Geography and Environmental Management and Executive Director, Waterloo Climate Institute

Arts

- Andy McMurry, Professor, English Language and Literature
- Daniel Henstra, Professor, Political Science
- Angela Carter, Associate Professor, Political Science

Health

- Warren Dodd, Assistant Professor, School of Public Health Sciences
- Hannah Neufeld, Assistant Professor, School of Public Health Sciences
- Kelly Skinner, Associate Professor, School of Public Health Sciences
- Sharon Kirkpatrick, Associate Professor, School of Public Health Sciences

Engineering

- Maya Przybylski, Interim Director, School of Architecture
- Jason Grove, Associate Chair, Undergraduate Studies, Chemical Engineering
- Mario Ioannidis, Chair, Chemical Engineering
- Monica Emelko, Professor, Civil and Environmental Engineering, Associate Director, Waterloo Climate Institute

Math

- Francis Poulin, Professor, Applied Math and Associate Director, Waterloo Climate Institute
- Marek Stastna, Professor, Applied Math and Associate Dean Computing

Science

- Mario Coniglio, Chair, Earth and Environmental Science
- Martin Ross, Associate Dean, Graduate Studies

Following these consultations, Professors Johanna Wandel and Peter Deadman submitted a proposal to the Dean for the Provost's Interdisciplinary Fund in July 2022. With the support of these Faculty members and that of other Faculty Deans, the Faculty of Environment was approved for funding from the Provost's Interdisciplinary Fund in late 2022 to develop the Diploma, including hiring a Climate Training Program Specialist to assist with establishing the program. Dr. Michele Martin began in this position in May 2023 and is co-author of this brief with Professor Daniel Scott and Rebecca Wickens, Director, Strategic Initiatives and Communications for the Faculty of Environment.

A Program Advisory Committee with representation from the Waterloo Climate Institute (WCI) members from all Faculties was set up at the end of May 2023 to oversee the development of this proposal and the program itself. The members of the Program Advisory Committee (PAC) are:

1. Daniel Scott, Faculty of Environment
2. Francis Poulin, Faculty of Math
3. Kirsten Muller, Faculty of Science
4. Monica Emelko, Faculty of Engineering
5. Allison Kelly, Faculty of Arts
6. Sharon Kirkpatrick, Faculty of Health

The first meeting of the PAC was held on Thursday June 15th, 2023 and all members were in support of the brief, in general, the proposed Diploma structure, and approach.

In addition to support from Faculty members, members of the WCI's Climate Students group have also expressed support for this new program.

The Statement of Interest form for this new program was submitted to the Dean of the Faculty of Environment on May 19, 2023, and approved on May 24, 2023. It was approved by the QA office on May 29, 2023.

Other important dates:

DATE (2023)	STEP
June 15th	First meeting of Program Advisory Committee to review the proposal and get input from members of all 6 Faculties
June 23rd	Proposal Brief, Volume 1 to Graduate Studies Committee (GSC), Dean for initial review and discussion.
July-September	The Dean and Faculty Financial Officer or Executive Officer finalize the financial addendum, then submit for review by IAP. Submit Volume 1 for review by QA. Address comments from IAP and QA. .
Oct 6th	Revised Volume I sent to QA for final approval
Oct 16th	Submission of Volume 1 and Calendar description for new course to GEM for approval at Oct 27th meeting
Oct 27th	GEM Department Council meeting – package approved.
Dec 1st	GSC meeting – review package
Dec 7th	Once GSC approval is granted, Proposal Brief, (Vol I) and calendar description for new course are sent to Admin Committee for review for inclusion in their Nov 2nd meeting
Jan 4th	Admin Committee approves addition of GSC items to the Faculty Council agenda. If approved, package is included in Faculty Council agenda for Nov 16th meeting.
Jan 18th	Faculty Council meeting – review package for recommendation to SGRC.
Jan 18th	If approved by FC, package is sent to QA – and QA forwards it to SGRC.
Jan 18th	If approved by FC, package is also forwarded directly to SGRC by the Faculty of Environment
Feb 5th	SGRC meeting – package is reviewed for approval of the foundation course and recommendation of the program to Senate.
Mar 4th	Senate meeting – the new Type II GDip Program is approved; package is submitted to the Quality Council.
Mar 4th	Soft launch of GDip in Climate Change with introduction of new foundation climate change course in Fall 2024
Sept 2024	New GDip in Climate Change is formally launched

2. Objectives of the Program (QAF 2.1.1)

Both the University of Waterloo strategic plan, Connecting Imagination with Impact, and the Waterloo at 100 strategic vision highlight Waterloo's integrated and collaborative way of tackling complex global challenges through disciplinary and interdisciplinary curricula, experiential learning and research. Consistent with the Waterloo strategy and vision, the GDip in Climate Change leverages disciplinary strengths across campus to provide a unique opportunity for graduate students to engage in interdisciplinary education, academic

community, and professional network building with others interested in understanding and finding solutions to the global climate crisis.

This GDip is also well positioned to support the implementation of several recommendations of the UW Interdisciplinary Task Force Report (2020) including:

- *Build on success and increase interdisciplinary opportunities within existing academic programming.*
- *Offer more flexible credentialing so students can complete joint degrees or minors in other areas, or even create areas of specialization themselves.*
- *Build capacity for interdisciplinary education.*
- *Increase opportunities for interacting with others who have a different academic lens. (Provide students with additional opportunities to work with peers from different programs or faculties and cultivate opportunities for students from different Faculties to get to know one another, combat siloing.)*
- *Work toward a culture of respect for different ways of understanding.*

Students in the GDip in Climate Change will have access to a foundational interdisciplinary climate change literacy course and campus-wide electives courses open to all graduate students. The foundation course will help students develop new perspectives on climate change, strengthen community among faculty members and students across disciplines, and give students the opportunity to explore how their research and career choices can help to address the climate crisis. The elective courses will challenge students to increase their depth of knowledge in a specific area related to climate change. Following a scan of offerings at other Canadian universities, this new GDip appears to be the most flexible and accessible graduate diploma in climate change on offer in Canada.

Key Benefits of this new GDip in Climate Change:
The new graduate diploma will bring interdisciplinary education in climate change to graduate students across campus and strengthen community among this cohort and alumni practicing in diverse climate change fields. Participating students will be better prepared for careers and societally relevant research activities through the provision of opportunities to share ideas, skills, methodologies, professional ethics, and partnerships of other disciplines. Some of the anticipated benefits of the new program include:

- Create a university community of scholars with common interests in climate action (faculty, postdocs, graduate students, and alumni) through co-curricular programming.
- Promote “big picture” thinking by framing climate change as a fundamentally cross- and inter-disciplinary challenge that cannot be solved by working in disciplinary silos.
- Attract talented students, who are demanding climate action by government and business leaders, to the University of Waterloo.
- Enable students to speak beyond their own field and embrace diverse approaches to solving the climate crisis.
- Provide support for graduate students who want to integrate interdisciplinary climate perspectives into their research.

- Foster new interdisciplinary connections among faculty, research groups and students to amplify innovation and new areas of inquiry and advance UW's agenda for interdisciplinary research and education.
- Enhance the reputation of the University of Waterloo as a leader for research and education on climate change.

The learning outcomes and skills that students are expected to acquire from the GDip in Climate Change include the following:

Graduate Degree Level Expectations (GDLE's)	Learning Outcomes By the end of this Interdisciplinary GDip in Climate Change, students should be able to
1. Depth and Breadth of Knowledge	*1) Recognize interdisciplinary knowledge of the concepts, information, and techniques relevant to the main dimensions of climate change research and practice.* *2) Analyze current climate change problems and solutions from outside of their academic discipline or field of study, providing new insights into research and professional practice in their discipline.*
2. Research and Scholarship	*3) Use terminology that facilitates interdisciplinary research and professional practice on climate change and draws on multiple fields of inquiry to address complex scientific and social challenges related to climate change.* *4) Describe new interdisciplinary insights into research and/or professional practice related to climate change problems and solutions.*
3. Level of Application of Knowledge	*5) Synthesize knowledge, creativity, insight, and diverse approaches to inform more impactful climate action.*
4. Professional Capacity/ Autonomy	*6) Participate in an interdisciplinary network of students and faculty passionate about solving the climate crisis.*
5. Level of Communication Skills	*7) Produce professional quality written reports and presentations, summarizing new concepts and insights into climate change as it relates to their discipline.* *8) Communicate and network with other course participants via seminars, web forums, networking events, and other experiences.*
6. Awareness of Limits of Knowledge	*9) Recognize complexity of knowledge and of the potential contributions of other interpretations, methods, and disciplines.*

These learning outcomes are directly aligned with several objectives from the UW Strategic Plan (2020-2025):

Theme 1: Developing Talent for a Complex Future

- Find new ways to work together and remove barriers to collaboration, interdisciplinarity and the integration of knowledge.

- Foster an interdisciplinary environment for graduate students and post-doctoral scholars to increase the impact of their work.
- Strengthen academic, personal, and professional supports for our graduate student community.
- Stimulate opportunities for interdisciplinary research by developing more flexible graduate programs.

Theme 2: Advancing Research for Global Impact

- Waterloo will use its disciplinary and interdisciplinary strengths to solve increasingly complex, real-world problems.

Theme 3: Strengthening Sustainable and Diverse Communities

- Nurture relationships between faculty and students to promote academic curiosity and risk-taking in a safe and supportive community of learners.
- Develop a culture of involvement that fosters inclusivity and a sense of belonging.
- Embrace and act upon the Truth and Reconciliation Commission's recommendations and calls to action and build stronger relationships with our local Indigenous community.
- Intentionally develop programming to inspire collaboration for shared research, teaching, learning and community building opportunities among our students, faculty, staff, and alumni.

The new Climate Change Diploma is also well aligned in content and timing with the *Strategic Vision and 5 Futures Framework* , and collaborative approaches to research and learning to build a better, more sustainable future for all. The Sustainable Futures Initiative currently being implemented by the Waterloo Climate Institute, the Waterloo Institute for Sustainable Energy and the Water Institute will provide multiple opportunities for students engaged in the program to participate in collaborative events and projects focused on climate solutions, and more broadly help to achieve the United Nation's Sustainable Development Goals in Canada and elsewhere. the United Nation's Sustainable Development Goals in Canada and elsewhere.

A Type II Graduate Diploma in Climate Change is the most appropriate name for this certification for graduate students, being broad enough to provide flexibility and reflect the diverse related areas of interest and research encompassed by this societal challenge and expanding area of professional practice. Because the program focuses on climate literacy and is broad in scope, the general title "Climate Change" is easily understandable by students and by their future potential employers or research supervisors. This Type II Graduate Diploma is available to all UW students who want to pursue graduate studies in their primary discipline of interest, but at the same time develop a specialization in climate change.

3. Admission Requirements (QAF 2.1.2)

This program is open to all students already accepted and enrolled in a University of Waterloo master's or doctoral degree program (except for Master of Climate Change students and Diploma in Climate Risk Management students). As a Type II graduate diploma program, the standard admissions procedure would not apply to this proposed program. Once a student is admitted to a University of Waterloo master's or doctoral program, they would be eligible to enroll in the Graduate Diploma, subject to the following.

To be eligible, students must be in good standing in their home master's or doctoral program to pursue the GDip and will be encouraged to discuss their intention to pursue the GDip with their supervisor/Graduate Officer.

Students will indicate their intention to complete the Graduate Diploma by completing the Climate Change (CC) Diploma Enrollment Form developed by the Faculty of Environment. The form will be posted on the Diploma's page (hosted in the Faculty of Environment) and linked from the Graduate Studies Academic Calendar. The student will specify the elective course they would like to take in fulfillment of the GDip requirements and will receive an admission notification from the Program Director.

Graduate students can enroll in the Diploma at any time, but must have completed all program requirements, including the milestones, by the time of degree completion from their regular master's or doctoral program. Notwithstanding the foregoing, students will be encouraged to enrol in the GDip as early as possible in their graduate studies so that they can fully benefit from the community of interdisciplinary learning integral to the program and take the foundation course early in their graduate studies. The foundation course will be offered every Fall term and normally would be completed prior to taking the climate change electives course.

Once the CC Diploma Enrollment form is received by the Faculty of Environment, staff will track the students' progress using LEARN and an internal tracking process. At the time of degree completion, the Program Director and graduate administrators from the student's home department/school will review the student's record to ensure that the GDip requirements have been met and will provide confirmation to Graduate Studies and Postdoctoral Affairs.

4. Structure (QAF 2.1.3)

The GDip in Climate Change will be administered by the Department of Geography and Environmental Management in the Faculty of Environment. There will be a Program Director from the Faculty of Environment appointed by the Dean (Professor Daniel Scott, Director of the Master of Climate Change program is proposed), who will be responsible for the overall administration of the program, student support and leading the cyclical review process. The Program Director will ensure that a sufficient number of relevant course electives are available to students, that the courses meet the Diploma requirements and communicate student Diploma completion with graduate administrators in the students' home departments.

The Program Director will be assisted by a Program Advisory Committee consisting of representatives from all six Faculties, as well as the Climate Training Program Specialist at the Waterloo Climate Institute. The Faculty of Environment will provide administrative assistance with tracking students' completion of requirements and qualification for the GDip in Climate Change by the time of degree completion (the Master of Climate Change program co-ordinator is proposed).

In order to obtain the GDip in Climate Change, students will be required to successfully complete 2 (0.50) graduate level courses and one networking milestone (equivalent to one 0.50 graduate level course) which can be completed within the normal time period of students' primary degree, whether they are enrolled full-time or part-time. Collectively, these three requirements will allow students to achieve the GDip learning outcomes outlined in Section 2 (above) and contribute towards the associated GDLEs as demonstrated in the Table in Appendix 1.

1) The first course "Climate Change and Society" (0.50 credit) will be taken by all participating students to meet the breadth requirement of the GDip in addition to their normal course load. This new course is being developed by the proposed Program Director in collaboration with the Program Advisory Committee and with assistance from the Waterloo Climate Institute's training programs specialist. The anti-requisites for this course will include GEMCC 600 as well as the MCC core required courses GEMCC 601, 602 and 603.

2) The second course will be chosen from a list of eligible electives (climate change focused graduate courses worth 0.50 credit) from the six Faculties which have been reviewed by the Program Director and the Program Advisory Committee to ensure sufficient climate change content to meet the "depth" requirement of the GDip. The elective chosen by the student must be from outside the student's home Faculty and/or area of study. An indicative list of electives and their course descriptions is provided in Section 5 (Program Content). This list will be updated regularly as new climate focused graduate courses are added to the course catalog.

3) Periodic interaction with other students and researchers is a key building block to fostering a community of scholars. To achieve the networking milestone, students will be required to participate in a minimum of four extra-curricular in person and/or online climate change lectures, events, workshops, conferences, or other activities at UW or offered by external organizations (e.g., the United Nations, industry associations, non-governmental organizations). There are many such opportunities already in place both at UW as well as on offer by diverse local, regional, and international organisations. An indicative list of networking opportunities and guidance on what counts towards the milestone will be shared with participating students. Students can also find their own event or experience but must first seek approval from the Program Director and/or Program Advisory Committee to count it toward the diploma milestone.

   Progress toward the networking milestone will be tracked via a Learn course extending beyond a single term – all Diploma students will be enrolled in the Learn site as soon as they enroll in the GDip program. The Learn shell will also be open to researchers and, via announcements and discussion forums, can become the central meeting point for the community of scholars seeking the Diploma and a supplementary venue for publicizing lectures and other networking events. Students completing the Diploma will upload short reflections on the four extra-curricular activities they participate in, and these will be reviewed by the Program Director and Co-ordinator to track milestones completion.

5. Program Content (QAF 2.1.4)

The goal of this new graduate diploma is to make foundational interdisciplinary climate change programming at the graduate level available to all graduate students regardless of their Faculty and program. This new GDip will help Waterloo graduate students develop new perspectives on climate change, strengthen community among faculty members and students across disciplines, and give students the opportunity to explore how their research and career choices can help to address the climate crisis. Based on a scan of offerings by other universities in Canada, this is currently the most accessible and flexible climate change diploma of its kind available to graduate students.

Students will achieve the learning outcomes listed above by taking two graduate level climate change courses and achieving a networking milestone. Further information about these two courses and the milestone is provided below.

1) Core Course (to meet breadth requirement of the GDip): Climate Change and Society

All students enrolled in the diploma will be required to take this core course, which is under development. It is envisioned as a graduate level survey course engaging students in foundational knowledge on climate change science, impacts and adaptation, and emissions and mitigation (the UN IPCC three core working groups), which will leverage the strength of the Waterloo Climate Institute's members in these core fields. The course will be developed as an in-class offering to foster cohort building and exchanges critical to

interdisciplinary learning. The anti-requisites for this course will include GEMCC 600 as well as the MCC core required courses GEMCC 601, 602 and 603. The GDip Program Director will teach this course, which is being co-developed with the Program Advisory Committee.

This core course is being carefully designed to draw on Climate Institute member strengths from climate modeling and services, to climate change communication, to deep decarbonization and just transitions, to adapting to future climates, and climate governance and finance. The course is being designed in a manner such that all graduate students, regardless of disciplinary background, are able to succeed. The structure of the course is being carefully designed to guide learners from causes to impacts to solution spaces: requiring deliberate and carefully crafted connections among the contributions of researchers. Done well, this will be a truly interdisciplinary course rather than a survey course where topics, while all connected to climate change, are presented in a multi- but not interdisciplinary way.

2) **Elective Course (to meet depth requirement of the GDip): Disciplinary Approaches to Climate Change Solutions**

UWaterloo already offers a number of graduate courses that are thematically focused on climate change, with more taught under special topics designations. The Program Director, in consultation with the Program Advisory Committee, will maintain a list of all courses that meet the climate change depth requirement for the GDip, potentially including special topics/one off courses. Students will choose one of these courses from outside their own Faculty and/or area of focus to complete the Depth requirement of the diploma. Many of the courses on this list can be offered online or in person.

Proposed current eligible elective courses are listed below (although it should be noted that all may not be offered every year).Several new discipline-specific graduate courses on climate change are currently under development and will be considered for eligibility once they are in the University Academic Calendar. Consultations are underway with the respective departments/schools and course instructors to confirm if all courses are still on offer and can be included.

List of current eligible electives:

ENV	ENBUS 652/ ENBUS 652	Business and Climate Change
ENV	GEMCC 610	Climate Prediction, Modeling and Scenarios
ENV	GEMCC 620	Climate Data and Analytics
ENV	GEMCC622	Climate Change, Natural Hazards and Disaster Risk Reduction
ENV	GEMCC 630	Land Use and the Carbon Cycle

ENV	GEMCC 640	Climate Change Governance: From Global Treaties to Local Innovation
ENV	GEMCC 644	Climate Resilient Canadians and Health Systems
ENV	GEMCC 652	Climate Change and Community Planning
ENV	GEMCC 660	Carbon Accounting and Management
ARTS	GGOV 628	Governing a World in Climate Crisis
ARTS	HIST 624	Environmental & Climate History, Premodern
ARTS	HIST 660	Transnational and Global History: Old Problems and New Directions
ENG	ARCH 672	Energy Effective Design
ENG	ARCH 673	The Science of the Building Envelope
ENG	ECE 632	Photovoltaic Energy Conversion
ENG	ECE 660	Operation and Control of Future Integrated Energy Systems
MATH	STAT 946	Topics in Probability and Statistics: A Quantitative Approach to Sustainable Finance
HEALTH	PHS 604	Public Health and the Environment

More detail about these courses can be found below from their course descriptions:

Eligible electives from the Faculty of Environment:

ENBUS 652: Business and Climate Change
Course Description:
This course examines the intersection of business management, climate change, and the evolving policy environment within which mitigation and adaptation occurs. A Canadian lens is applied to understanding: climate change business economics; the changing policy and regulatory landscape at the international, national and provincial levels; the ways in which a price on carbon and the need to disclose carbon and climate risk can affect business decision-making; and various opportunities for companies to reduce their carbon footprint to operate in emerging low-carbon economies, make their business more resilient to the impacts of climate change, and identify value-creation opportunities. Leadership cases from businesses worldwide will be explored, including multi-nationals and small and medium sized enterprises.

GEMCC 610: Climate Prediction, Modeling and Scenarios
Course Description:
Computer models of the physical climate system are essential tools for investigating future climate change. This course will introduce students to the basic formulation of these models, and their strengths and limitations. Inter-linkages between climate modeling and mitigation and adaptation policy agendas is reviewed and critiqued. The types of climate modeling experiments performed with such models and scenarios will be reviewed. The latest projections of future climate on a variety of temporal and spatial scales will be presented and evaluated.

GEMCC 620: Climate Data and Analytics
Course Description:
This course examines the scientific and practical challenges of finding and utilizing climate data to derive useful information in order to inform research and decision-making processes. Through lectures, readings, videos and assignments, this course will introduce different types of climate data (historical, contemporary measurements and modelled) and discuss how they can be realistically analyzed to derive useful information (both within a research and policy context). From a general discussion on what climate data is and its value, this course will then focus on finding/collected climate data and critically evaluating how it can and should be used. Further, this course will introduce students to the development of data management plans, climate data curation, and effective ways of visualizing and contextualizing climate data to a variety of target audiences. Building upon this foundational knowledge, strategies and methodologies for analyzing climate data to derive useful information related climate risk in a variety of sectors with be explored. This includes areas such as community planning, human health, engineering/infrastructure among others. Students must have access to spreadsheet software for assignments.

GEMCC622: Climate Change, Natural Hazards and Disaster Risk Reduction
Course Description:
This course explores the complex links between climate change and natural hazards, and related disasters, including disaster risk reduction as an adaptation strategy. Emphasis is placed on examining these concepts in a developing country context.

GEMCC 630: Land Use and the Carbon Cycle
Course Description:
This course examines contemporary theories, approaches, and technologies used to study coupled natural-human systems at the intersection of land-use and land-cover change, land management, and the carbon cycle. Topics covered include measurement and modelling techniques to improve carbon accounting, the effects of land use and land management on carbon storage and flux, and international and national policy frameworks influencing carbon sequestration and climate change mitigation.

GEMCC 640: Climate Change Governance: From Global Treaties to Local Innovation
Course Description:
This course explores the theories behind, and practical approaches to, the multi-level governance of climate change. The United Nations Framework Convention on Climate Change, the Kyoto Protocol, national climate action plans and local innovation are viewed through the lenses of legitimacy, effectiveness, and participation. Finally, we consider the challenge of transformative change, and the possibility of finding synergies among climate change responses and other pressing social and environmental priorities.

GEMCC 644: Climate Resilient Canadians and Health Systems
Course Description:
Climate change is a growing threat to the health of Canadians, their communities and health systems. Over two decades of increasing research, partnerships, awareness building and adaptation development among health authorities has demonstrated that significant opportunities exist to make strides in efforts to protect Canadians from current and future impacts. This course examines climate-change related health risks to Canadians, including to populations of highest concern - seniors, young children, people with chronic illnesses, the socially and economically disadvantaged, and Indigenous Populations - and the potential for impacts on communities and health systems. New tools such as climate change and health vulnerability and adaptation assessments and health system stress testing are discussed along with their application to policy and program development by Canadian and international partners. Guest lectures and case studies are used to illustrate and learn from the actions of leading health adaptors in efforts being taken to prepare people for the future climate.

GEMC652: Climate Change and Community Planning
Course Description:
Climate change has complex implications for communities across Canada and Planners are at the forefront of developing and implementing strategies to both reduce greenhouse gas (GHG) emissions and build resilience to current and future climate. This course focuses on some of the opportunities and challenges associated with the integration of climate change into urban and rural planning, including climate vulnerability of urban systems, low-carbon transport systems, urban greening and green infrastructure for climate resilience, regenerative designs that reduce social vulnerability, the role of information and communication technologies for system efficiency and resilience, and assessing synergies and conflicts between mitigation and adaptation. Leading policy and design cases from communities across Canada and internationally will be examined.

GEMCC 660: Carbon Accounting and Management
Course Description:
Carbon management is fundamental to achieving international and national policy objectives to avoid dangerous climate change. With more jurisdictions implementing carbon pricing and cap and trade programs, carbon accounting and reporting is rapidly expected to become a central part of the global business environment. This course focuses on best practices in GHG measurement and management from the perspective of a business or organization. The course includes organization emission reduction target setting strategies; techniques and standards for organizational GHG inventories with reference to international-regional-sectoral reporting/trading schemes; auditing and verification processes; GHG information management systems; evolving expectations and approaches to disclosure of GHG emissions; supply-chain carbon accounting; and evolving carbon markets (voluntary, sectoral and regulated).

Electives from the Faculty of Arts:

HIST 624: Environmental & Climate History, Premodern
Course Description:
This course introduces graduate students to the major authors, works, and themes of preindustrial environmental and climate history. It demonstrates how historians frame the historical interaction of mutable human culture and natural environment. The locus of study is western Europe, the period between the end of antiquity and the start of the industrial revolution. Each week, students will read assigned texts and discuss them in a seminar format. Ultimately, each student must write a final research essay. Department consent required.

HIST 660: Transnational and Global History: Old Problems and New Directions
Course Description:
This course examines transnational and global historical processes, focusing on temporal and geographic scales of analysis outside of traditional national histories, and promotes linking the local and the global. It looks at global forces influencing particular societies and encourages students to place themselves outside conventional local, regional, and national boundaries, and will critically consider a number of the metanarratives that have informed and continue to inform historiography, particularly idea such as modernity, progress, and the ongoing preoccupation with the 'rise of the west'. Given these questions, and the almost endless scope of a course that purports to take the world as its focal point, weekly seminars will begin with a discussion of the possibilities offered by as well as the limits to transnational/global/world history, the various interpretative frameworks in use and their proponents as well as the challenges that transnational/global/world history poses. We will then focus on particular case studies or themes so as to promote discussion that is as much historiographical as it is historical. Such themes/case studies may include: feminism and imperialism, famine and climate change, disease and ecology, military technology and governmentally, global trade and the rise of consumer society(s), colonial knowledge and shifting ideas of race. Department consent required.

GGOV 628: Governing a World in Climate Crisis
Course Description:
Our time is defined by the climate crisis. As acknowledged in no uncertain terms by the UN's Intergovernmental Panel on Climate Change, we are living in a "code red for humanity" moment: without transformative policy changes, our future will be one of continually worsening climate crises. Meanwhile, calls for climate justice—for solutions that are both equitable and ecologically sustainable—are growing around the world. This is, of course, a massive global governance challenge. Therefore, this seminar invites you to engage with key themes in this field: anti-colonial climate governance, "death and damage" as experienced by Least Developed Countries, "supply side" climate governance, global worker-led climate action, transnational grassroots opposition to climate policy obstructionism, opportunities for a rapid just transition, and more. This scope might be too ambitious and yet it is by no means comprehensive. Consider this seminar instead as an opportunity to explore many of the foundational elements of governing the climate crisis that give you a strong basis for thinking and acting in a climate-changed world. This seminar also provides you with an opportunity to develop your research in this field, as well as your "real world" writing and communication skills, via two research-based policy briefs.

Electives from the Faculty of Engineering:

ARCH 672 Energy Effective Design
Course Description:
Vernacular building techniques once manifested the principles of passive solar heating, passive cooling and daylighting by solar orientation. Searching for ways to design energy efficient, comfortable and functional buildings, this workshop revisits the principles of passive heating, cooling and solar lighting, and explores the operation and use of energy simulation computer programs and post occupancy analysis within the context of sustainable design. The methods will be tested in two design projects: a freestanding suburban house and an urban row house. Consent of instructor required for those outside of the M.Arch program.

ARCH 673 The Science of the Building Envelope
Course Description:
The building envelope has become the single most significant and element within the contemporary economy of building. It bears much of the identity and amenity of buildings, is the site of significant expenditure, the occasion of environmental concern and attention, the object of much technological innovation, and the locus of entropy. This course provides an advanced study of the building envelope as the place where design, technology, building science, and environmental concerns converge. It discusses matters such as natural light and ventilation or the short- and long-term behaviours of building materials and assesses the use of new generations of "smart" mechanical environmental devices. Consent of instructor required for those outside of the M.Arch program.

ECE 660 Operation and Control of Future Integrated Energy Systems
Course Description:
The course will provide a comprehensive overview of the operation and control of the integrated energy systems of the future. The course will be offered in modules, each module discussing one aspect of the subject, so as to provide a broad spectrum of coverage and understanding. Many emerging issues related to the paradigm of smart electricity grids, such as energy storage, demand response, microgrids, and others, will be discussed. The course will provide a multi-disciplinary perspective on the energy system of the future, and will be open to graduate students from all engineering streams.

ECE 632 Photovoltaic Energy Conversion
Course Description:
Physical source of solar radiation; direct & diffuse radiations; review of electronic materials; semiconductor concepts; optical absorption; generation and recombination processes in semiconductors; operating principles of photovoltaic devices; homo- and hetero- junction devices; equivalent circuits; quantum efficiency; current-voltage characteristics; Efficiency limits in photovoltaic devices; short circuit current and open circuit voltage losses; temperature effect; material-imposed limits; theoretical and practical limits; Photovoltaic device design and fabrication; silicon-based devices; gallium arsenide devices; thin film devices; device simulation; fabrication technologies; Advanced photovoltaic concepts; nano-structure and organic PV devices; System-level photovoltaics; module structure and design; back-end electronics; stand-alone and grid-interactive systems; photovoltaic hybrid systems.

Electives from the Faculty of Math:
STAT 946: A Quantitative Approach to Sustainable Finance
Course Description:
The course is structured around two broad quantitative perspectives of sustainable finance as applied to Investment and Corporate Finance. The first part of the course deals with investors who are investing in green assets, while the second part of the course focuses on companies who are adjusting to climate change.

Electives from the Faculty of Health:
PHS 604: Public Health and the Environment
Course Description (syllabus currently being revised and will include more climate content): This course will explore the major sources of environmental stressors and types of environmental processes posing a risk to public health, and the mechanisms through which these interact with biological systems to exert adverse effects on human health.

3) **Networking Milestone:**

Students will be required to attend and participate in a minimum of four climate change events or experiences that provide opportunities for interdisciplinary interaction and networking, in order to achieve the Networking Milestone. These events could include a range of extracurricular climate change lectures (including the Waterloo Climate Institute lecture series), professional workshops and training on/off campus or online (e.g., UN training module on climate negotiations), participation in community or university climate related committee work or volunteer work etc., to be approved by the Program Director. To achieve credit, students will upload reflections for each of these four experiences to LEARN, in order to demonstrate what they learned, their insights into other disciplinary contributions toward climate solutions, and how they are integrating these experiences and learnings into their chosen discipline or research area. A list of pre-approved networking events and other opportunities would be shared with students at regular intervals, as will guidance on what counts as a networking opportunity.

Here are some examples of networking events offered at or through UW that would be eligible:

1. Participation in the Waterloo Climate Institute lecture series and other seminars, discussion groups and workshops on climate change offered on campus that provide scope for interdisciplinary interaction and networking.

2. Participation in UW Delegation to the UNFCCC Conference of Parties: https://uwaterloo.ca/climate-institute/programs/conference-parties-delegations

3. **2023 Fields Institute / WICI "Math for Complex Climate Challenges Workshop"**

This is an example of a UW event that could provide opportunities for GDip students to present and network across disciplines. Building on two successful Fields Mathematics for Climate Change (MfCC) workshops held in 2022, The Fields Institute partnered with the Waterloo Institute for Complexity and Innovation (WICI) to organize a hybrid (both in-person and virtual) 4-day workshop titled "Math for complex climate challenges" at the University of Waterloo from May 1-4th, 2023. The workshop aimed to:

- Facilitate interdisciplinary cross-communication and fertilization in select climate research and mathematical methods topics
- Identify researchable questions where collaboration would add value
- Lay the groundwork for one or more large interdisciplinary distributed research network proposals.

4. Participation in ongoing committees and working groups related to climate change coordinated by groups on campus for example:
   - Waterloo Climate Institute's Student Climate Council
   - President's Advisory Committee on Environmental Sustainability

Here are some examples of climate change networking events offered externally that could also be eligible if they provide sufficient scope for networking and interdisciplinary collaboration/learning, subject to approval by the Program Director:

1. UNFCC – Dialogues on Action for Climate Empowerment: https://unfccc.int/ace-dialogues

2. Webinars, courses and networking events organised by non-profits such as Climate Access https://climateaccess.org/ , Climate Outreach https://climateoutreach.org/ , the International Union for Conservation of Nature https://www.iucn.org/nature-2030/climate , Engineers without Borders https://www.ewb.ca/en/xchange-2023/ . These events should provide clear opportunities for interaction with other participants.

3. Online synchronous or hybrid courses available on the UN CC e-Learn site or others that include a forum for discussion and exchange between active participants.

4. Online webinars and events offered by the Federation of Canadian Municipalities' Green Municipal Fund : https://greenmunicipalfund.ca/events

5. Island Innovation's online global conferences such as the annual Virtual Island Summit: https://islandinnovation.co/events/virtual-island-summit/

6. UNFCCC COP or side conference networking events and webinars, in person or online. These are offered on a regular basis by diverse organisations representing the private sector, government and civil society. For one example see the Digital Innovation for Climate Action and Just Transition: Blockchain Technology, Data Economy & AI for Climate Action @COP28.

How the Networking Milestone will contribute to the GDip's overall learning outcomes is articulated in Appendix A (Table 1).

6. Mode of Delivery (QAF 2.1.5)

The Core course "Climate Change and Society" will be taught on-campus in a traditional classroom setting with weekly seminar scheduled during the fall term. The elective courses may be offered in person or online and during any of the three terms, depending on the arrangements and course schedule of the home Faculty.

Although the completion of the GDip in Climate Change does not lead to the awarding of a graduate degree, the program and its courses have been designed to address Graduate Degree Level Expectations (GDLEs) to ensure a) that these courses deliver content appropriate to the backgrounds of participating students; and b) that these courses impart unique skills with respect to interdisciplinary approaches climate change and climate solutions.

Table 1 lists the University of Waterloo's Masters GDLEs, which are based directly on the Ontario Council of Academic Vice Presidents (OCAV) GDLEs 1-6 and the associated Learning Outcomes mapped to GDLEs for the GDip in Climate Change.

7. Assessment of Teaching and Learning (QAF 2.1.6)

Monitoring and Assessment of Overall Quality of the Program

The GDip Climate Change program will be monitored and assessed on a continuous basis using the following methods:

- Participating course instructors will be invited to discuss feedback from students and their suggestions for improvements to the program.
- Participating students will be asked to complete an exit survey upon completion of the program providing feedback on the program and learning outcomes
- Networking events will provide opportunities for participating students and instructors to provide verbal feedback and suggestions for improving the GDip program on an ongoing basis.
- The Program Director and Climate Training Program Specialist will compile information from all sources into an annual report, which will be reviewed by the Program Advisory Committee in reference to overall program outcomes, and recommendations for any changes needed
- The GDip will also be part of the GEMCC program review cycle which will provide opportunities for improvements to the program

Assessment of Teaching and Instructor Effectiveness

The GDip Climate Change course evaluation plan will include collection and analysis of the following data:

- Students are asked to complete course evaluations of online courses during the last two weeks of term using the University of Waterloo's standard, online evaluation instrument. This instrument includes specific questions for both the course and instruction.
- The number and type of technical help requests for each course will be logged and evaluated by the design team.
- Instructors will have the ability to add individual feedback questions throughout the course content, assessing student satisfaction with content presentation, order, and effectiveness.
- The Program Advisory Committee will meet on a regular basis to discuss overall student achievement and satisfaction in the program.

Course design improvements and enhancements will be made after student and instructor feedback after initial and subsequent offers. The Program Advisory Committee will use this information to plan course development, improvements, and offerings

Achievement of Program-Level Learning Outcomes

To monitor and assess overall achievement of program-level learning outcomes, students will be asked to reflect on these as part of the exit survey when completing the program.

Assessment of Student Learning

Assessment of Coursework:

Each course has its own specific learning outcomes, consistent with the learning outcomes listed in Table 1. Each course will use unique evaluation tools, and specific evaluation tools are at the discretion of the instructor but may include quizzes, written assignments, research papers, project work, and examinations.

Assessment of the Networking Milestone

The networking milestone is intended to provide students with opportunities to interact and engage with students, faculty members and community organisations representing a wide range of disciplines and interests related to climate change. To achieve credit, students will upload reflections for each of these four experiences to LEARN, in order to demonstrate how they are integrating these experiences and learnings into their chosen discipline or research area. The achievement of the networking milestone will be assessed by the Program Director with assistance from other Diploma faculty members and recorded as complete on the student's transcript.

Integration of Climate Change into Research / Dissertation

Some students may be able to integrate learning about climate change from the Diploma into their research and dissertation. While this is not a mandatory requirement for achievement of the GDip, it may provide further evidence of the achievement of the Gdip's Learning Outcomes. Students will be encouraged to self-report on this as part of the enrollment process as well as through other monitoring and feedback opportunities.

8. Resources for All Programs (QAF 2.1.7)

Human Resources

Faculty Members

The Foundation course will require a regular instructor drawn from the ranks of Environment-based Climate Institute members. The course instructor has primary responsibility for course updates and will function as the Program Director with responsibility for the ongoing Learn shell for the Networking Milestone. This will require two course releases per year on an ongoing basis.

The following Faculty members have joined the new Program Advisory Committee for this new Type II Diploma in Climate Change:

- Professor Daniel Scott, Faculty of Environment
- Professor Francis Poulin, Faculty of Math

- Professor Kirsten Muller, Faculty of Science
- Professor Monica Emelko, Faculty of Engineering
- Associate Professor Allison Kelly, Faculty of Arts
- Associate Professor Sharon Kirkpatrick, Faculty of Health

In addition, the following Faculty members teach and/or coordinate the eligible graduate course electives that will count towards completion of the Graduate Diploma (when available):

ENBUS 652/ ENBUS 652	Business and Climate Change	Komal Habib
GEMCC 610	Climate Prediction, Modeling and Scenarios	Chris Fletcher
GEMCC 620	Climate Data and Analytics	Wes Van Wychen
GEMCC622	Climate Change, Natural Hazards and Disaster Risk Reduction	Brent Doberstein
GEMCC 630	Land Use and the Carbon Cycle	Derek Robinson
GEMCC 640	Climate Change Governance: From Global Treaties to Local Innovation	Sarah Burch
GEMCC 644	Climate Resilient Canadians and Health Systems	Peter Berry (Health Canada)
GEMCC 652	Climate Change and Community Planning	Mark Seasons
GEMCC 660	Carbon Accounting and Management	Dan Scott
GGOV 628	Governing a World in Climate Crisis	Angela Carter
HIST 624	Environmental & Climate History, Premodern	Steve Bednarski
HIST 660	Transnational and Global History, Old Problems and New Directions	Doug Peers
ARCH 672	Energy Effective Design	
ARCH 673	The Science of the Building Envelope	John Straube
ECE 660	Operation and Control of Future Integrated Energy Systems	
ECE 632	Photovoltaic Energy Conversion	Siva Sivoththaman
STAT 946	Topics in Probability and Statistics: A Quantitative Approach to Sustainable Finance	Tony Wirjanto
PHS 604	Public Health and the Environment	Brian Laird

Waterloo Climate Institute

With the grant from the Interdisciplinary Fund, the Waterloo Climate Institute has created a new position, the Climate Training Program Specialist. Dr. Michele Martin began in this full-time position on May 1st, 2023 and a key part of her role is to support the development and implementation of this new Type II Diploma. The Climate Institute Communications

Officer also has time allocated to support the lecture series and other events for the Networking Milestone.

Administration

Some administrative support may be needed to track and report on completion of requirements so that students can progress and, ultimately, be granted the diploma. The Faculty and department will review resource options to support the program.

Physical Resources

There are no new physical resources required for this Type II GDip in Climate Change.

Financial Resources

In November, 2022, the Provost Interdisciplinary Fund approved a grant of $160,330 over a three-year period. These funds will cover 2 course releases per year for the Program Director and staff time for the Climate Institute's Training Program Specialist and Communications Officer. The funds will also support expenses for a lecture series offered by the Climate Institute, targeting students and faculty, that will provide experiences students can use towards their networking milestone.

Beyond year three, any costs associated with running the GDip are intended to be covered by the revenues raised by a Lifelong Learning professional development program which is also being developed (in collaboration with the Waterloo Climate Institute) under the Faculty of Environment's grant from the Provost Interdisciplinary Fund.

Financial costs associated with developing and teaching new courses that qualify as electives for the program are expected to be covered by the unit offering the course.

9. Resources for Graduate Programs (QAF 2.1.8)

The GDip in Climate Change is a Type 2 Graduate Diploma that is only open to graduate students currently registered at the University of Waterloo. Students do not incur additional tuition fees for the GDip. Hence, the GDip does not require or provide any further financial assistance.

This diploma will not generate additional tuition or grant revenues and the resources required to run the diploma are mostly all already in place and will not put additional strain on the current funding model. There is no additional space, equipment, or technical staff required or requested for this diploma program. In addition, students will not be writing a Masters level Major Research Paper or Thesis as part of this GDip, therefore faculty resources will not be required for any supervisory duties.

There are no new library resources needed for this GDip. Library resources to support the new core course for this GDip are all already in place to support the Master in Climate Change and Type 3 GDip in Climate Risk Management. Library resources are all already in place to support the electives (which are courses already on offer).

Resources that are needed for this new program have already been approved by the Dean and the Provost has approved funding from the Interdisciplinary Fund. The primary resources required are for release time/stipend support for the Program Director, partial salary for a training programs specialist to support the development of courses, funding for the partial offset of support provided by the Waterloo Climate Institute communications officer and funding to support the development of a climate change lecture series. Additional one-time resources may be required to support new interdisciplinary course development.

On an ongoing basis, the diploma will require two course release/stipends per year for the Program Director, who also acts as the instructor for the core (breadth) course.

Human Resources:

We are proposing Dr. Daniel Scott from the Faculty of Environment initially as both the Program Director and initial core course instructor. Dr. Scott has been the Director of the Master's in Climate Change program and Graduate Diploma in Climate Risk Management (CRM) since their respective inceptions in 2013 and 2018 and can ensure coordination across these programs, as well as provide guidance to students considering each option. He also served as Executive Director of the IC3 (now WCI – Waterloo Climate Institute) for 8 years, has been involved in UN IPCC Assessments since 2003, and was rated as one of the 300 most influential global climate change scientists by Reuters in 2021. In September 2023, he was named a Fellow of the Royal Society of Canada for his leadership in climate change research. He has taught the foundation course of the CRM GDip multiple times, bringing insights into course content and interactions valued by disciplinary and professionally diverse learners.

The Program Director will be supported by staff from the Waterloo Climate Institute including the new Training Programs Specialist, Dr. Michele Martin and the Communications Officer. Additional support will be provided by the Program Advisory Committee with representation from all six faculties.

Institutional Analysis & Planning has reviewed the proposed Graduate Type 2 Diploma in Climate Change and has not identified any significant financial challenges to this proposal moving forward. The program understands that as a Type 2 diploma, this program will not generate any additional revenues for the university (either tuition or grant). The program has attested that the majority of the courses required for this diploma are already in place, and there is no additional space, or resources required for the diploma program beyond that which was approved by the Provost's Interdisciplinary Fund. If in the future this

program is converted to a standalone Type 3 diploma or any other substantial changes are proposed, the financial viability will need to be revisited.

10. Quality and Other Indicators (QAF 2.1.10)

University of Waterloo is well positioned to support this new GDip in Climate Change with numerous faculty members with teaching, research and graduate student supervision expertise from diverse disciplines related to climate change. The Program Advisory Committee is committed to ensuring consistency and quality across the necessary interdisciplinary core and elective courses, and across the diversity of experiences that will lead to the achievement of the Networking Milestone. Dr. Scott (as Director of MCC since its launch in 2013, Director of the GDip in Climate Risk Management, and former Director of the Waterloo Climate Institute) has the necessary administrative expertise to ensure smooth operation of this program and will be the lead instructor for the mandatory foundation climate change course.. Course instructors come from a variety of disciplinary backgrounds including geography, business, planning and analysis design, engineering, social sciences, mathematics, and arts that are germane to an interdisciplinary exploration of climate change research and practice. Further information about the key people involved in supporting the GDip program is provided below:

Further information about the key people involved in the GDip program is provided below:

Dr. Daniel J. Scott
Position: Professor, Department of Geography and Environmental Management, Faculty of Environment, University Research Chair in Climate and Society
Waterloo Profile link: https://uwaterloo.ca/geography-environmental-management/profiles/daniel-scott
Google Scholar link: https://scholar.google.ca/citations?user=jUz0p_QAAAAJ&hl=en
Email: daniel.scott@uwaterloo.ca

Dr. Daniel Scott is a Professor and Research Chair in the Department of Geography and Environmental Management at the University of Waterloo. He is also an International Research Fellow at the School of Hospitality and Tourism at the University of Surrey (UK). Professor Scott is one of the founding members of the Waterloo Climate Institute (formerly known as the Interdisciplinary Centre for Climate Change IC3), was its former Executive Director, and is currently an Assistant Director. He represents the Faculty of Environment and is Chair of the Program Advisory Committee for the proposed new interdisciplinary Type II Graduate Diploma in Climate Change.

Professor Scott was instrumental in the introduction of the very successful interdisciplinary Masters in Climate Change Program and a Type III Graduate Diploma in Climate Risk Management at the University of Waterloo. He is currently the Director for both programs and would bring this substantive and relevant experience to this new GDip in Climate Change as the proposed Program Director.

Not only does he have extensive experience initiating and leading academic climate change programs, but Professor Scott is also an accomplished climate scientist. He has worked extensively on sustainable tourism for 25 years, with a focus on the transition to a low carbon tourism economy and adaptation to the complex impacts of a changing climate. He has advised and led projects for a wide range of government agencies and tourism organizations around the world, including the United Nations World Tourism Organization, United Nations Environment Programme, World Bank, European Tourism Commission, World Travel and Tourism Council, International Olympic Committee, OECD, the Caribbean Tourism Organization. He has also been a contributor to the UN Intergovernmental Panel on Climate Change Third, Fourth, Fifth, and Sixth Assessments and their 1.5°C special report. In 2021, he was ranked in the world top 250 climate scientists by Reuters. In September 2023, he was named a Fellow of the Royal Society of Canada for his leadership in climate change research. His tourism research publications have been downloaded over a half million times and have been featured in many leading media outlets, including The Economist, New York Times, Washington Post, Wall Street Journal, BBC, Time, Scientific American, and National Geographic.

Professor Scott's key areas of graduate supervision include climate change and tourism /recreation, sustainable tourism, climate change impacts and adaptation, climate change and protected areas management. He teaches two key climate change foundational courses at University of Waterloo: GEMCC620: Climate and Society and GEOG208: Human Dimensions of Climate Change.

Professor Scott's research interests are in the interface of global change (environmental, demographic, economic) and sustainable tourism. A particular focus has been on two-way interactions of climate change and tourism, understanding the implications of a changing climate and climate sensitive environmental systems for tourism at the tourist, operator, destination and tourism region scales, as well as the contribution the global tourism sector makes to climate change through greenhouse gas emissions and land use change. This research also examines government and business climate change mitigation and adaptation policy and planning, as well as consumer responses to reduce greenhouse gas emissions while on holiday. Other research interests include the use of forecasts and scenarios in tourism planning and climate change and protected areas management.

Dr. Daniel Scott's full CV can be found here.

Dr. Monica Emelko
Position: Professor, Associate Director, Department of Civil and Environmental Engineering
Waterloo Profile link: https://uwaterloo.ca/civil-environmental-engineering/profile/mbemelko
Research website: https://www.forwater.ca/news/meet-the-forwater-network-leaders
Google Scholar link: https://scholar.google.ca/citations?user=d7490sQAAAAJ&hl=en
Email: mbemelko@uwaterloo.ca

Dr. Monica B. Emelko is a Professor in the Department of Civil and Environmental Engineering and Canada Research Chair in Water Science, Technology & Policy. She is also

the Director of the Water Science, Technology & Policy Group. She is also cross-appointed in Biology, Geography & Environmental Management, Systems Design Engineering, and the School of Planning. She has been a member of the University of Waterloo Climate Institute since 2021 and is currently an Associate Director. Dr. Emelko represents the Faculty of Engineering on the Program Advisory Committee for the proposed new interdisciplinary Type II Graduate Diploma in Climate Change.

Professor Emelko's research interests focus on drinking water supply and treatment, source water protection, microbial risk assessment, public health policy, and stormwater and advanced wastewater treatment. She focuses on sustainable technology development and deployment, integrated resource management, climate change adaptation, and the protection of public health. Professor Emelko's research is currently funded by many organizations including the Natural Sciences and Engineering Research Council (NSERC) of Canada, the Canadian Foundation for Innovation (CFI), the Water Research Foundation, and Alberta Innovates as well as several industry and government partners.

She co-leads the Southern Rockies Watershed Project team, which evaluates the initial effects of natural disturbance by wildfire on hydrology, water quality, and aquatic ecology; and monitors the recovery of these values in front range headwater streams of the high water yielding eastern slopes of the Rocky Mountains. Professor Emelko's team was among the first cited by the Intergovernmental Panel on Climate Change (IPCC) for identifying climate change-associated threats from wildfire to drinking water security through water quality and treatability. Her ongoing work involves active participation from over 3 dozen utilities and conservation authorities across Canada and the United States. Professor Emelko has served as a technical advisor to the U.S. National Academies of Engineering, Science, and Medicine as well as several federal and provincial/state agencies in Canada, the United States, and Australia regarding regulatory development related to drinking water treatment, source water protection, public health policy, and integrated resource management.

Dr. Monica Emelko's full academic CV can be found here.

Dr. Francis Poulin
Position: Professor, Applied Mathematics
Waterloo Profile link: https://uwaterloo.ca/applied-mathematics/people-profiles/francis-poulin
Research website link: https://francispoulin.github.io/
Google Scholar link: https://scholar.google.ca/citations?user=EFm5gG4AAAAJ&hl=en
Email: fpoulin@uwaterloo.ca

Dr. Francis Poulin has been a member of the Waterloo Climate Institute since before 2012 and is currently an Associate Director. He represents the Faculty of Math on the Program Advisory Committee for the proposed new interdisciplinary Type II Graduate Diploma in Climate Change.

Dr. Poulin's research focuses on both physical and biological oceanography. This includes dynamics of the oceans at large-scales, which includes how the energy added at planetary scales is transferred down to smaller scales. Moreover, he also investigates planktonic ecosystems and how they are affected by the physics of the oceans. Part of the research entails developing state-of-the-art computing software that can be used to answer these research questions.

Dr. Poulin coordinates the Poulin research group where he supervises undergraduate and graduate students. The research group develops analytical models to describe aspects of the world and then using numerical software to simulate the solution to this model which can help make predictions as to what we should expect to observe in reality. The group includes expertise in Physical Oceanography, Biological Oceanography, Solar Physics and Computational Fluid Dynamics.

Dr. Poulin's full academic CV can be found here:

Dr. Kirsten Muller
Position: Professor, Chair, Department of Biology
Waterloo Profile link: https://uwaterloo.ca/biology/profile/kmmuller
Google Scholar link: https://scholar.google.co.uk/citations?hl=en&user=nX8u9G4AAAAJ
CV: kirsten.muller@uwaterloo.ca

Dr. Kirsten Müller is a world expert on the Bangiales, a group of red algae in the class Bangiophyceae. She has been a member of the University of Waterloo Climate Institute since 2020 and represents the Faculty of Science on the Program Advisory Committee for the proposed new interdisciplinary Type II Graduate Diploma in Climate Change.

Kirsten Müller carries out research on red algae, an ancient lineage with considerable economic importance since they contain compounds (agar, carrageenan, etc.) that are used extensively as thickeners in products such as yogurt, ice cream and toothpaste. Dr. Müller's research focuses on speciation, taxonomy and evolution of sexuality within this enigmatic group and uses molecular techniques to discern if sexual reproduction is or is not occurring within populations. This research will provide a foundation for current genome sequencing projects within the red algae. In addition, she is also interested in the impact and genetics of nuisance algae (e.g. Cladophora and Chara in Laurentian Great Lakes), invasive species (e.g. Bangia atropupurea in the Great Lakes) and their biogeography within problem areas. Dr. Müller is also studying Cyanobacteria that release toxins and taste and odour compounds in drinking water (Lake Ontario) from a molecular viewpoint in order to determine if particular genotypes present in the water body are contributing to water fouling events.

Dr. Kirsten Müller's full academic CV can be found here.

Dr. Allison Kelly

Position: Associate Professor, Psychology
Waterloo Profile link: https://uwaterloo.ca/psychology/people-profiles/allison-kelly
Google Scholar link: https://scholar.google.com/citations?hl=en&user=jRRYpn0AAAAJ
Research Website: https://uwaterloo.ca/self-attitudes-lab
Email: allison.kelly@uwaterloo.ca

Dr. Kelly has been a member of the University of Waterloo Climate Institute since 2020 and is a member of the Faculty Association of University of Waterloo's Climate Justice Working Group. She represents the Faculty of Arts on the Program Advisory Committee for the proposed new interdisciplinary Type II Graduate Diploma in Climate Change.

Dr. Kelly's research focuses on the roles of shame, self-criticism, and self-compassion in the development, maintenance, and remission of psychopathology, especially eating disorders; Interventions and therapist behaviours that can reduce shame and self-criticism, and increase self-compassion; Fears of self-compassion and outward compassion, and how best to target these barriers in people with eating disorders; The social contexts that facilitate versus undermine self-compassion, compassion for others, healthy body image, and intuitive eating.

Her research uses diverse methods to study theoretical models that help to explain the variation in well-being and psychopathology we see both across people and within a given person over time. In particular, she studies the ways in which shame and self-criticism contribute to the development and maintenance of psychopathology, and compassion from others, for others, and for self can contribute to its prevention and alleviation. Her research lab is primarily focused on testing the applicability of compassion-focused therapy, and its underlying theoretical model, to people with eating disorders and body image difficulties. She also studies interventions designed help people become more self-compassionate and compassionate with others.

Dr. Kelly's full academic CV can be found here.

Dr. Sharon Kirkpatrick
Position: Associate Professor, School of Public Health Sciences, University Research Chair
Waterloo Profile Link: https://uwaterloo.ca/public-health-sciences/profiles/sharon-kirkpatrick
Google Scholar Link: https://scholar.google.com/citations?hl=en&user=v5aZktUAAAAJ
Website: http://www.sharonkirkpatrick.ca/
Email: sharon.kirkpatrick@uwaterloo.ca

Dr. Kirkpatrick is a Registered Dietitian with training in community and public health nutrition. Her research focuses on the intersections between nutrition, human and planetary health, equity, and policy, using a systems thinking lens. She has been a member of the University of Waterloo Climate Institute since 2019 and is a member of the Faculty Association of University of Waterloo's Climate Justice Working Group. She represents the

Faculty of Health on the Program Advisory Committee for the proposed new interdisciplinary Type II Graduate Diploma in Climate Change.

Much of her work is aimed at improving methodologies for measuring dietary patterns to foster robust evidence on how these patterns influence human and planetary health and how to promote healthy and sustainable eating practices. Her research also examines nutrition and dietary inequities, with longstanding interests in the determinants and implications of household food insecurity.

Her work also explores the utility of systems thinking and methods to better understand the array of factors that shape major nutrition and public health challenges and the potential intended and unintended consequences of policies and other interventions to address these challenges.

Dr. Kirkpatrick's full academic CV can be found here.

Financial Addendum – For Internal Waterloo Use Only

Financial Viability Details

Human Resources
What is the hiring plan for professors, lecturers, technical staff, administrative staff, director(s), teaching assistants, other?
To the Faculty Dean's Office: What is the level of compensation that is expected for each group?

Teaching Resources
How many teaching tasks are required for the program? How many teaching assistance tasks are required for the program?

How many courses need to be developed? How many online courses need to be developed?

Physical Resources
What are the overall space requirements for this program including lecture, studio, lab, office space, other? How much of this space is new space? Will any space be rented, built new or renovated? If so, what are the approximate costs associated with the space requirements? What is the expected source of capital funding?

Other Resource Requirements
What other resources will be required to offer/develop this program? Please include items such as computer/technical equipment, student aid, etc.

Tuition & Fees
What are the expected tuition and incidental fees for domestic students? For international students? Full-time vs. Part-time? Is the tuition based on a program fee structure or course fee structure?
If the expected tuition fee or incidental fees for this program are different from tuition currently charged for an existing University of Waterloo program, please explain and justify the tuition rate based on the costs of offering this program.

Other Revenue
Are there any other sources of revenue associated with this proposed program?

Appendix A - Summary of Learning Outcomes Mapped to Courses and Assessment Methods

Specific GDLEs and Associated Learning Outcomes	Course					Assessment method							
	Climate Change Core Course	Climate Change Electives	Networking Milestone			Forum communication	Multi-part assignments	Quizzes/Tests	Written assignments/ arguments/policy briefs	Data interpretation, synthesis, visualization	Technical reports/plans	Slide decks/presentations	Video production
1. Depth and Breadth of Knowledge													
1) Recognize interdisciplinary knowledge of the concepts, information and techniques relevant to the main dimensions of climate change research and practice	✓						✓		✓	✓	✓	✓	
2) Analyze current climate change problems and solutions from outside of their academic discipline or field of study, providing new insights into research and professional practice in their discipline.	✓	✓				✓			✓		✓	✓	
2. Research & Scholarship													
3) Use terminology that facilitates interdisciplinary research on climate change and draws on multiple fields of inquiry to address complex scientific and social challenges related to climate change.	✓	✓				✓			✓	✓			
4) Describe new interdisciplinary insights into research and/or professional practice related to climate change problems and solutions	✓	✓	✓			✓	✓		✓			✓	
3. Level of Application of Knowledge													

5) Synthesize knowledge, creativity, insight and diverse approaches to inform more impactful climate action.	✓	✓				✓	✓		✓	✓			✓
4. Professional Capacity/Autonomy													
6) Participate in an interdisciplinary network of students and faculty passionate about helping to address the climate crisis			✓			✓			✓	✓		✓	
Specific GDLEs and Associated Learning Outcomes	**Course**					**Assessment method**							
	Climate Change Core Course	Climate Change Electives	Networking Milestone			Forum communication	Multi-part assignments	Quizzes/Tests	Written assignments/ arguments/policy briefs	Data interpretation, synthesis, visualization	Technical reports/plans	Slide decks/presentations	Video production
5. Level of Communications Skills													
7) Produce professional quality written reports summarizing new concepts and insights into climate change as it relates to their discipline.	✓	✓					✓		✓	✓	✓	✓	
8) Communicate and network with other course participants via web forums, networking events and other experiences.			✓			✓						✓	
6. Awareness of Limits of Knowledge													
9) Recognize the complexity of knowledge and of the potential contributions of other interpretations, methods, and disciplines.	✓	✓				✓	✓		✓	✓		✓	

Appendix B – Course activation form for new course: GEMCC 605 Climate Change and Society

Senate Graduate & Research Council
Graduate Studies Course/Milestone Form

Prior to form submission, review the content revision instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs (GSPA).

Faculty: Environment

Effective date: Term: Fall Year: 2024

Milestone
Note: milestone changes also require the completion/submission of the Graduate Studies Program Revision Template.

☐ New: Choose an item.

☐ Inactivate: Choose an item.

☐ Revise: from Choose an item. to Choose an item.

Course
Note: some course changes also require the completion/submission of the Graduate Studies Program Revision Template.

☒ New: Complete all course elements below

☐ Inactivate: Complete the following course elements:
Course subject code, Course number, Course ID, Course title

☐ Revise: Complete all course elements below to reflect the proposed change(s) and identify the course elements being revised (*e.g. Course description, Course title*):

Course elements (complete as indicated above. Review the glossary of terms for details on course elements)

Course subject code: GEMCC

Course number: GEMCC 605

Course ID:

Course title (max. 100 characters including spaces): Climate Change and Society

Course short title (max. 30 characters including spaces): Climate Change and Society

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description: The world is in a climate crisis and urgent action is needed at every level of society to implement equitable and efficient solutions. This interdisciplinary course will cover the foundational aspects of climate science, the impacts of climate change on ecosystems and society and explore society's response including adaptation and mitigation, governance and community engagement. The course will draw upon the broad range of interdisciplinary climate research and practice at the University of Waterloo and invite students to investigate the relevance of climate work to their own areas of interest as well as to explore and integrate insights and strategies from other research disciplines. In person seminars and assignments will provide opportunities for students to network and collaborate across disciplinary boundaries.

Meet type(s): Lecture Seminar Choose an item. Choose an item.

Primary meet type: Seminar

Delivery mode: On-campus

Requisites:

Special topics course: Yes ☐ No ☒

Cross-listed course: Yes ☐ No ☒

Course subject code(s) and number(s) to be cross-listed with and approval status:

Sections combined/held with:

Rationale for request:

This new course is mandatory for graduate students who want to enroll in the new Type 2 interdisciplinary Graduate Diploma in Climate Change

Form completed by: Professor Dan Scott
Department/School approval date (mm/dd/yy):
Reviewed by GSPA (for GSPA use only) ☐ date (mm/dd/yy):
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):

Appendix C – Graduate Studies New Program Template

Prior to form submission, review the new graduate program instructions. For questions about the form submission, contact Trevor Clews, Graduate Studies and Postdoctoral Affairs.

Faculty: Environment

Program: Graduate Diploma (GDip) in Climate Change (Type II)

Program contact name(s): Daniel Scott, Michele Martin, Rebecca Wickens

Form completed by:

Note: new courses and milestones also require the completion/submission of the SGRC Course/Milestone-New/Revision/Inactivation form (PC docx version).

Proposed effective date: Term: Fall Year: 2024

Graduate Studies Academic Calendar (GSAC) section (include the link to the section (web page) where the new program will be located):

https://uwaterloo.ca/graduate-studies-academic-calendar/environment/department-geography-and-environmental-management

Proposed Graduate Studies Academic Calendar content:

GRADUATE DIPLOMA (GDIP) IN CLIMATE CHANGE

Program information.

Delivery mode

- **On-campus**

Program type

- **Diploma**

Study option(s)

- **Coursework**

Admission requirements

- **Minimum requirements**
    - The Graduate Diploma (GDip) in Climate Change is offered in conjunction with a University of Waterloo master's or doctoral degree program.
    - Note: the GDip in Climate Change is not available to students enrolled in the Master of Climate Change (MCC) and GDip in Climate Risk Management programs.
    - Students are encouraged to apply to the GDip as early as possible in their graduate studies. Students may apply by completing an online application form, available from the GDip in Climate Change website. The application must identify the elective course that students would like to take in fulfillment of the GDip requirements. Students will receive an admission notification from the Program Director.
    - Students must be in good standing in their home master's or doctoral program to pursue the GDip and are encouraged to discuss their intention to pursue the GDip with their supervisor/Graduate Officer.

Degree requirements

Students must have completed all GDip in Climate Change requirements, including the courses and milestones, by the time of degree completion from their regular master's or doctoral program.

- **Courses**
    - In order to obtain the GDip in Climate Change, students must successfully complete 2 graduate level courses (0.50 unit weight) in addition to the degree requirements of their home master's or doctoral program. There can be no double counting of courses for different degrees/diplomas.
    - Students must complete GEMCC 605 Climate Change and Society and 1 of the following climate change courses (or an alternate course that fits with the goals of the GDip, as approved by the Program Director):
        - ARCH 672 Energy Effective Design
        - ARCH 673 The Science of the Building Envelope
        - ECE 632 Photovoltaic Energy Conversion
        - ECE 660 Operation and Control of Future Integrated Energy Systems
        - ENBUS 652 Business and Climate Change
        - GEMCC 610 Climate Prediction, Modeling and Scenarios
        - GEMCC 620 Climate Data and Analytics
        - GEMCC 622 Climate Change, Natural Hazards and Disaster Risk Reduction
        - GEMCC 630 Land Use and the Carbon Cycle
        - GEMCC 640 Climate Change Governance: From Global Treaties to Local Innovation
        - GEMCC 644 Climate Resilient Canadians and Health Systems
        - GEMCC 652 Climate Change and Community Planning
        - GEMCC 660 Carbon Accounting and Management
        - GGOV 628 Governing a World in Climate Crisis
        - HIST 624 Environmental & Climate History, Premodern
        - HIST 660 Transnational and Global History: Old Problems and New Directions
        - HLTH 604 Public Health and the Environment
        - STAT 946 Topics in Probability and Statistics: A Quantitative Approach to Sustainable Finance
    - Note: GEMCC 605 should normally be completed prior to taking the climate change elective course.

- **Networking milestone**
    - Students are required to attend and participate in a minimum of four climate change events or experiences that provide opportunities for interdisciplinary interaction and networking, in order to achieve the Networking Milestone. These events could include a range of extracurricular climate change lectures, professional workshops and training on/off campus or online, participation in community or university climate related committee work or volunteer work etc., to be approved by the Program Director. To achieve credit, students will be required to submit reflections for each of these four experiences, in order to demonstrate what they learned, their insights into other disciplinary contributions toward climate solutions, and how they are integrating these experiences and learnings into their chosen discipline or research area. A list of pre-approved networking events and other opportunities would be shared with students at regular intervals, as will guidance on what counts as a networking opportunity.

Departmental approval date (mm/dd/yy):
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 02/21/24
Faculty approval date (mm/dd/yy):
Senate Graduate & Research Council (SGRC) approval date (mm/dd/yy):
Senate approval date (mm/dd/yy) (if applicable):

Two-Year Progress Report
Kinesiology (BSc, MSc, PhD), Minors
February 2022

Background

The last review was completed in November 2019. In summary, External reviewers found that the Kinesiology programs (BSc, MSc, PhD) and Minors delivered by the Department of Kinesiology were in good standing.

> "Overall, the Department of Kinesiology at the University of Waterloo offers a high quality, rigorous undergraduate program with strong enrollment, and a very high quality graduate program supported by excellent research faculty."

A total of 7 recommendations were provided by the reviewers, regarding flexibility in the undergraduate program, professional development opportunities in the graduate programs, and space. In response, the program created a plan outlining the specific actions proposed to address each recommendation as well as a timeline for implementation, which was submitted with the Final Assessment Report in 2021. The next cyclical review for this program is scheduled for 2025-2026.

Enrollment over the past two years

	BSc			MSc		PhD
	General	Honours	Honours Co-op	Research-Based	Course-Based	
2021-22	30	322	685	53	13	47
2020-21	39	349	677	52	25	50

	Medical Physiology Minor	Ergonomics and Injury Prevention Minor	Human Nutrition Minor	Rehabilitation Sciences Minor
2021-22	207	22	27	37
2020-21	206	32	27	64

Based on Active Students Extract in Quest, February 8, 2022.

Progress on Implementation Plan

Recommendations

1. Increase flexibility in the undergraduate program is needed to allow for the introduction of electives that reflect emerging areas of Kinesiology and Health Science research. This is a choice that the University of Waterloo will need to make when allocating faculty positions, especially when it comes to replacements of lost FTEs due to administrative or research chair appointments and retirements. From a strategic point of view, UW would benefit from an investment in new faculty positions in areas that will easily connect with CCCARE and RIA and will also support teachable areas of the kinesiology undergraduate and graduate programs.

   Status: **in progress**

   Details: The Department recently hired a new tenure-track Assistant Professor in Biomechanics and we are actively pursuing other opportunities to increase our faculty complement: (1) The Schlegel-UWaterloo RIA has approved two new Research Chair positions, one of these positions may be recruited to Kinesiology and Health Sciences; (2) The Faculty of Health has approved two new Tier 2 CRC positions, one of these positions may be recruited to Kinesiology and Health Sciences; (3) The Canada Excellence Research Chair (CERC) in the Faculty of Engineering is targeting one of its positions to be in Kinesiology with funding for 7 years; (4) The Department is participating in the Black Excellence and Indigenous Excellence cluster hire initiative to recruit one faculty member; (5) Through advancement, the Faculty of Health is pursuing the establishment of endowments that support faculty recruitment in the scholarship of aging. We will develop a business plan, which will include requests for new staff and faculty positions, to support growth of our coursework master's program. This plan will also result in increased support for undergraduate course offerings for minors and upper year courses.

   The Undergraduate Committee is also reviewing plans to restructure the Rehabilitation Sciences Specialization to provide more flexibility to students. Finally, the Department is proposing a change to our Co-op sequence, which will increase flexibility to students and allow for the introduction of new electives that reflect emerging areas of Kinesiology and Health Science research.

2. Change the degree designation for the 1-year course-based Master's to differentiate it from the 2-year thesis-based MSc. The options are to: change the course-based degree designation to Master of Kinesiology (MKin); or to change the thesis-based MSc to a 1-year transition pathway to PhD.

   Status: **completed**

Details: The Department recently approved a motion to change the coursework study option degree type/designation from Master of Science (MSc) in Kinesiology (Coursework) to Master of Kinesiology (MKin), which was also just approved at Faculty Council (Jan. 27, 2022).

3. Consider putting in place a more structured graduate seminar, in order to advance graduate program cohesion and professional development opportunities.

   Status: **completed**

   Details: We implemented an invigorated, exciting new Departmental Seminar Series, which started fall 2020. While a comprehensive set of guiding principles were established, in brief, some of the primary goals included:

   - Increasing interactions between graduate students, faculty members, and staff.
   - Fostering the development of networks of graduate students, faculty, and staff beyond individual labs, and across research streams/disciplines.
   - Encouraging multi-disciplinary perspectives to emerging health issues from both basic and applied research lenses.
   - Support critical skills and professional development for graduate students (e.g., presentations, critically reading and evaluating research, generating and asking questions, effectively responding to questions, journal clubs, engaging with external speakers, etc.).

   Towards addressing these principles, Department-wide seminars are held several times each term, with more focused stream-specific seminars (i.e., biomechanics, neuroscience, and physiology/nutrition) held 2-3 times per month. Attendance at these seminars has been excellent – ~150 people attend the Departmental Seminars, and 40-50 persons attend each of the Stream-specific seminars.

4. Consider restricting access to Minor programs until more important initiatives described above are put in place.

   Status: **completed**

   Details: This recommendation is presumably linked to the demands that such minors place on our class sizes (a concern raised indirectly in recommendation #1). The purpose of developing Minors was to help our students engage in courses that interest them in a specific area of kinesiology and health science. In addition, the Minors also serve to support students from other units and faculties. So, while we are not eager to restrict

access, we continue to view this matter as important as it relates to our ability to support more course offerings (as noted previously). Managing the enrolment for the Minors is also facilitated if students can properly plan their course selections and the Department can properly plan course offerings so that we are not caught at times where students may have limited access to courses necessary to complete the minor successfully. As a result, we have recently (2020-21 academic year) implemented a Departmental 3-year teaching plan of course offerings that is shared with undergraduate students (https://uwaterloo.ca/kinesiology/current-undergraduates/course-enrollment-and-planning#Syllabuses), thus, allowing them an opportunity to plan their courses for the duration of their degree. We feel that this enhanced level of transparency and forward-looking approach will give students the ability to effectively plan their 3rd and 4th years such that they can successfully attain the course requirements for a Minor or Specialization.

5. Consider allowing PhD students to teach one undergraduate course during their last two years of study. Such initiative will address some of the growth challenges and will enrich the doctoral experience while adding to their career preparation. The students are positive towards such initiative but limiting to one course during their degree is important for their progress. It is important that this not be done at the expense of a reasonable time to completion. Doctoral project scope seems to be the main element to attend to ensure reasonable time to doctoral program time to completion.

   Status: **completed**

   Details: We agree there is value for some doctoral students to gain experience in teaching. In recognition of this, we have allowed specific students to teach a full undergraduate course under very specific circumstances. However, we do not support a wide application of this to all PhD students for the following reasons:

   1) We currently provide numerous opportunities for our PhD students to gain teaching experience during their time at Waterloo. All of our graduate students are provided the opportunity to act as Teaching Assistants (TA) throughout their programs. For students accepted under standard funding conditions (i.e., not supported by scholarships), this involves eight TA positions throughout their four-year program. The specific TA assignments are often determined by the experience-level of the student to support growth opportunities for the graduate students as they progress through their program. This provides a rich opportunity for our doctoral students to gain experience in teaching.

   2) Each year, senior PhD students have been able to facilitate sections of our 4th year seminar course, KIN 470.

3) Where of interest and appropriate, graduate students are also able to provide individual lectures in undergraduate and graduate courses, supported by faculty members.

4) There are specific teaching training opportunities provided by CTE. Many of our students interested in teaching pathways engage in these programs, which are taught by leaders in all aspects of teaching.

5) With a rare exception, we do not permit PhD students to be responsible for full courses (except for the KIN470 seminar course). We believe it is important for full-time faculty to lead the educational experience for our undergraduate and graduate students.

6) Finally, our doctoral program is research intensive. Our doctoral students require the time in their final two years to advance their program of research with few distractions. Their research productivity and translational work will be the key elements defining future success in securing PDFs and academic or industry positions. That said, for students who identify their path as teaching (e.g., lecturers) we have provided expanded opportunities to teach, with mentorship. However, these decisions are rare and evaluated on a case by case basis.

We plan to provide more senior PhD students an opportunity to teach KIN 470. Normally, we offer 4-5 KIN 470 seminar sections per term (fall/winter) and we plan to assign 1-2 sections per term to a senior PhD student. Senior PhD students also serve as stream (Biomechanics, Neuroscience, Physiology and Nutrition) leads for our new graduate seminar series (see response to recommendation #3). Finally, we propose that each term the Kinesiology Teaching Fellow, in coordination with the Associate Chairs Graduate Studies and Undergraduate Studies, query the graduate students to identify those interested in pursuing Teaching Opportunities. If the possibility of guest lecturing or running a full course is available in a term, the graduate student must receive approval from their supervisor and the Associate Chairs Graduate Studies and Undergraduate Studies. They will also have had to complete Centre for Teaching Excellence (CTE) training and workshops, so students are encouraged to register for those workshops as soon as they become available.

6. Attend to the coordination and identification of graduate students and administrative staff space. There seems to be a need to improve visibility of the administrative and student service areas. Similarly, we observed that graduate student office spaces are in need of improvements. Alternatively, it appears that some other spaces could be used more optimally and made available for graduate student use, for instance using a system of

bookable offices. This would further improve the quality of the graduate student experience and social cohesion between students.

Status: **in progress**

Details: This is most certainly a concern for the Department as the space on the 1st and 3rd floor of the BMH building are substandard for both the administrative staff and graduate student needs (from service and visibility, usability, privacy and even health and safety perspectives). The possibility of optimizing space use for graduate students would be possible but would require renovation. There has been discussion with the Dean about renovation of this space, following recent renovations of the 2nd floor of the same building.

We initiated conversations to secure support from the Dean to start planning and follow through with these much-needed renovations in BMH. The Dean agrees with this recommendation and considers this as a priority for the Faculty. BMH has been approved for a complimentary accessibility rating through the Rick Hansen Foundation Accessibility Certification, along with 7 other campus buildings. The Faculty could conduct a review of need for space upgrades for the 1st and 3rd floors of the BMH. In fact, we recently learned that we have funding to renovate the 1st floor of BMH, including graduate student office space. We have met with the designer and renovations are scheduled to begin in spring 2024.

7. Increase awareness of equity, diversity and inclusion issues, such as gender and race balance in the student body, and at all levels of the professoriate, all the way to the level of Full Professor and leadership positions.

Status: **in progress**

Details: Decolonization of the academy and anti-racism are priorities for the University, Faculty and Department. The President's Anti-Racism Task Force actively started its mandate in January 2021 and task force members include members of the Faculty and Department. Representation across the student population and faculty is being addressed. For example, with the current 2021 admissions intake, we have modified our process for notifying Indigenous applicants so that they receive admission notifications sooner. We are monitoring to see if this enhanced opportunity increases the number of students admitted to our undergraduate programs, including Kinesiology and Health Sciences. We are developing initiatives to increase representation of tenure-track faculty members who are Black or Indigenous through the Black Excellence and Indigenous Excellence cluster hire initiative. The Department EDI-R committee was formed in September 2021, following recommendations from a Department retreat in

May 2021. The committee includes one KHS faculty member rep, one KHS staff member rep, one KHS graduate student rep, one KHS undergraduate student rep, and is chaired by the Department Chair. The EDI-R committee works closely with the Kinesiology Executive Committee in developing a department statement regarding EDI-R policy and initiatives and develops/advises on EDI strategy both reflective of the needs of the department and aligned with the Faculty of Health, and centrally led mandates incorporating available UW resources where possible. The committee advises on such things as internal and forward-facing communication (i.e., website) and required training, keeping the department up to date on new developments in policy, resources, and requirements as they occur.

Address any significant developments or initiatives that have arisen since the program review process, or that were not contemplated during the review

Significant developments and initiatives that have arisen since the program review that were not already described above, include: 1) three staff retirements and one staff resignation, which were replaced with new hires; and 2) two Definite-term Lecturer resignations, which we have approval to replace (the job ad for one of the positions closes March 31st and we are currently interviewing for the other position).

Updated Implementation Plan

	Recommendations	Proposed Actions	Responsibility for Leading and Resourcing (if applicable) the Actions	Timeline for addressing Recommendations
1.	Increase flexibility in the undergraduate program is needed to allow for the introduction of electives that reflect emerging areas of Kinesiology and Health Science research.	The Department is actively pursuing opportunities to increase our faculty complement, restructure our Rehabilitation Sciences Specialization and Change our Co-op Sequence.	Department Executive Committee and Undergraduate Committee	We have recently hired 2 new Faculty members with expertise in new and emerging areas in Kinesiology and Health Sciences (Human-centred robotic technologies – Dr. Jordan Cannon) and in Exercise and Health Psychology (Dr. Sheereen Harris), which fills an important gap in our curriculum. We have also revised our co-op sequence (approved by DC in March 2022 and by Senate in April 2023). Finally, we have restructured our rehabilitation Specialization (approved by DC in Nov 2022). Collectively, all of these actions will allow us to introduce

				electives that reflect emerging areas of Kinesiology and Health Science Research. To date we have introduced the following new electives: - KIN 305 Human Anatomy of the Thorax, Abdomen, and Pelvis - KIN 397, Exercise Assessment and Program Development for Athletes - KIN 455 Brain and Behavioural Development
2.	Change the degree designation for the 1-year course-based master's to differentiate it from the 2-year thesis-based MSc.	The Department will be undertaking a review of options that may either distinguish the course-based and thesis-based components of the MSc or unify them. This will be completed as part of a comprehensive program review of the entire graduate program.	Department Graduate Committee and Executive Committee	Completed
3.	Consider putting in place a more structured graduate seminar, in order to advance graduate program cohesion and professional development opportunities.	The Department has already implemented an exciting and invigorated Departmental Seminar Series, which started fall 2020.	Department Chair, Associate Chair Graduate Studies, Graduate Program Committee	Completed

4.	Consider restricting access to Minor programs until more important initiatives described above are put in place.	We are not eager to restrict access to Minor programs for several reasons. However, the Department has developed a 3-year teaching plan so students can properly plan their course selections and the Department can properly plan course offerings, which	Department Executive Committee	Completed

		allows us to better manage the enrolment for the minors.		
5.	Consider allowing PhD students to teach one undergraduate course during their last two years of study.	We do not support a wide application of this to all PhD students because we believe it is important for full-time faculty to lead the educational experience for our undergraduate and graduate students. It is appropriate that we make teaching opportunities for doctoral students clearer. We propose creating a clearly defined "Teaching Opportunities" forum / resource guide for our graduate students. These will include, but are not limited to: seminars/workshops administered by CTE, Fundamentals of University Teaching (CTE), Certificate in University Teaching (CTE), Teaching Assistantships, KIN 470 seminars, guest lecturing and running a full course (when appropriate and supervision is available).	Kinesiology Teaching Fellow, Associate Chair Undergraduate Studies, Associate Chair Graduate Studies	Completed
6.	Attend to the coordination and identification of graduate students and administrative staff space.	This is outside of Department governance, but we will initiate conversations with the Dean immediately to secure support for these much-needed renovations in BMH to improve graduate student and administrative staff office space.	Department Chair and Dean of Health	In-progress
7.	Increase awareness of equity, diversity and inclusion issues, such as gender and race balance in the student body, and at all levels of the professoriate, all the way to the level of Full Professor and leadership positions.	The Department supports all of our faculty/staff/students to participate on the AHS Strategic Plan Implementation Advisory Committee (Dec. 2020 – July 2021) to develop objectives for the strategic priority to create an environment of equity, diversity and inclusion, along with implementation steps, identify who will be responsible, list partnerships and resources required, time lines, and evaluation process, including milestones and metrics.	All Department members	In-progress

The Department Chair/Director, in consultation with the Dean of the Faculty shall be responsible for monitoring the Implementation Plan

Date of next program review: **2025-2026**

Date

Signatures of Approval:

Feb. 7, 2022

Chair/Director Date

AFIW Administrative Dean/Head (For AFIW programs only) Date

Aug. 15, 2023

Faculty Dean Date

Note: AFIW programs fall under the Faculty of ARTS; however, the Dean does not have fiscal control nor authority over staffing and administration of the program.

July 11, 2023

Associate Vice-President, Graduate Studies and Postdoctoral Affairs Date
(For graduate and augmented programs)
On behalf of the Associate Vice-President, Academic

Two-Year Progress Report

Peace and Conflict Studies (BA, Minor, Diploma, MPACS)

April 2022

Background

The Peace and Conflict Studies (PACS) program at UWaterloo is an interdisciplinary program focused on a holistic understanding of peace and justice with content that engages many in the broader university community at the undergraduate level, and develops professional competencies at the graduate level. In recent years, PACS undergraduate and graduate enrollments have remained strong (see chart below). PACS continues to work at nurturing relationships with faculties and programs on campus, and at increasing the program's visibility.

This progress report provides an update on PACS program activities undertaken in response to the cyclical self-study, the external reviewers' recommendations and the program's implementation plan, summarized in the Final Assessment Report (Feb. 21, 2021).

To review, the PACS self-study (Volumes I, II, and III) was completed November 13, 2019. Two arm's-length external reviewers, supported by an internal University of Waterloo appointee, conducted a site visit to the University on March 2-3, 2020. Following the site visit, the external reviewers submitted a report on their findings with recommendations. The program then responded to each recommendation and outlined a plan for implementation that was reviewed and endorsed by the Dean of Arts and the Academic Dean at Conrad Grebel. The Final Assessment Report summarized the findings, responses and implementation plan.

Enrollment over the past two years

	BA			Minor	Diploma	MPACS
	General	Honours	Honours Co-op			
2021-2022	6	33	29	35	0	44
2020-2021	9	44	27	42	2	39

Progress on Implementation Plan

The External Reviewer's Report contained a high degree of affirmation for PACS programs and offered twelve recommendations to "keep the already excellent PACS programs operating at optimal levels" (2020). At this point, PACS has completed three recommendations, and responses are substantially underway for the six further actionable recommendations. Three of the recommendations (5, 11 and 12) are not uniquely actionable at this time, and we therefore list them either as "if opportunity arises" or as "ongoing." Our responses to date are detailed below.

Recommendations

1. The department should undertake a retreat to map [review] the existing curriculum to help determine gaps and overlaps, and define future emphases of the program.

   Status: **In progress**
   Details:

   A series of retreats to review and revitalize the curriculum began in 2021. The initial focus is on reviewing the MPACS curriculum (2021-23), followed by a review of the undergraduate PACS curricula (to begin in 2023). The first MPACS curricular retreat was held August 26, 2021, and a follow-on faculty curriculum meeting occurred in spring 2022. The meeting discussed the MPACS curriculum in relation to decolonization and anti-racism, and led faculty to review and update MPACS core course content. A follow-on curriculum retreat was scheduled for 2023. The curriculum review process is being supported by CTE.

2. Increased attention must be paid to issues of difference and diversity throughout the curriculum, which means that the department needs to stretch beyond its existing stable of scholars and practitioners that are normally hired to fill sessional positions, to search for qualified sessional instructors who could fill other gaps. It also means that any new hires at the full-time, tenure-track, or tenured level need to be able to contribute to issues of difference and diversity in the curriculum.

   Status: **In progress**
   Details:

   In 2020-2021, PACS undertook a faculty search with additional attention given to inviting diverse candidates. PACS hired it first faculty person of colour whose research, among other areas, centers the contributions of Black women to restorative and transformative justice. Chairs have also begun advertising new opportunities for teaching more broadly.

3. The PACS programs should incorporate more “local” concerns, particularly as they relate to structural inequality and violence against Indigenous people living in Canada.

   Status: **In progress**
   Details:

   An ability to address “local” concerns was included as a criteria in the 2020-2021 faculty search. In August 2022, PACS faculty initiated a review of MPACS core courses for content related to coverage of Indigenous and racial justice issues, as well as engagement with critical local and decolonizing perspectives. Faculty added additional content related to structural inequality and other critical local issues in the graduate core courses. Further work is ongoing. An inventory of current PACS course content began in spring 2022 and will set a foundation for a more careful review of undergraduate curricular content that will begin in 2023.

4. Prerequisites should be established for PACS 401. These should include the successful completion of two of PACS 201, 202, or 203.

   Status: **In progress**
   Details:

   This recommendation misunderstood the PACS program structure, however PACS interprets it to mean examining how research and analytical skills are built through courses in our undergraduate curriculum, and this will be examined as part of recommendation 1.

5. MPACS should become a research-based Master of Arts in Peace Studies.

   Status: **If opportunity arises**
   Details:

   Follow-up on this item is pending Spring 2023 or later, when post-pandemic funding opportunities become clearer. We note there is currently a moratorium on new graduate program development, which the Faculty of Arts Dean noted in the Final Assessment Report in responding to this item. MPACS is a course-based Master’s program and the current funding model does not provide guaranteed funds for students, which a research-based program would require. In order to pursue this research-based option PACS would need to propose a new research graduate program and funding agreement.

6. The department should establish a committee structure to manage the PACS programs more effectively. These should include the establishment of committees for graduate admissions, the undergraduate program, and the graduate program.

Status: **Completed**
Details:

Action on this item began with discussions of a faculty curriculum committee in PACS Administrative Group (PACS AG) in winter 2021. The first meeting of the curriculum committee occurred in August 26, 2021. PACS notes that since the graduate program's inception it establishes an annual graduate admissions committee that reports to PACS AG.

7. The department must take steps to ensure that there is increased diversity in the faculty members teaching in the PACS programs. This relates to equity, diversity, and inclusion of the people who teach in the program, but also to content and methodological diversity

Status: **In progress**
Details:

In 2020-2021, PACS hired a new full-time, tenure line faculty member in July 2021. Dr. Johonna McCants-Turner is PACS' first faculty person of colour. Her research, among other areas, centers the contributions of Black women to restorative and transformative justice. The program is also offering courses and hiring sessional instructors who bring important content and methodological diversity to the program annually, such as PACS 301 Settler Colonial Violence (Spring 2021) being taught by Rowland Keshena Robinson.

8. PACS should cultivate an active Alumni Network that could be harnessed to help with recruitment and could build a suite of activities in which existing students could participate.

Status: **Completed**
Details:

To respond to this recommendation, PACS proposed two steps in its implementation plan: 1) to engage with other PACS-related programs to gather ideas; and 2) to develop a plan for energizing our alumni network. In winter 2021, two MPACS students researched two similar graduate program's alumni models and presented a report on their findings to PACS administrators and the Grebel Office of Advancement. PACS and communications staff then developed a plan to increase outreach to MPACS alumni. Implementation of the plan began in 2021, and includes a bi-annual MPACS alumni newsletter (fall and winter respectively), and hosting two alumni-focused events (one each term in fall and winter).

9. Staff working in the PACS program need to be given professional development opportunities. Such opportunities already exist for UW staff, but staff at the Affiliates are prevented from accessing this training. An institutional agreement should be reached to allow Affiliates staff to participate.

   Status: **Completed**
   Details:

   Grebel staff are able to access University professional development opportunities; many are free although some require fees. Grebel is committed to staff professional development per Grebel's policies. PACS further augments these funds as possible in a given budget year. As the Dean of Arts noted in the Final Assessment Report (Feb. 2021), fees for participating in UW professional development events are established in the equity agreements and any revisions would need to be negotiated mutually by all parties.

10. Sessional instructors should be given a space where they can meet with students to hold office hours. Every effort should be made to maintain their email accounts so that students may contact them easily even after having completed their coursework.

    Status: **In progress**
    Details:

    Discussions with senior administrators regarding space concerns for adjunct instructors are ongoing in planning for a full return to campus in Fall 2022. Consistent access to emails for instructors completed.

11. Conrad Grebel and UW should explore the possibility of hiring joint appointments with Environmental Studies or Computer Science. We understand that there are constraints imposed by the "across the creek" relationship between UW and the Affiliates, but this could be overcome by institutional-level collaboration.

    Status: **Ongoing**
    Details:

    PACS and the Faculty of Arts pursue creative approaches to collaboration in Grebel-UWaterloo and AFIW-UWaterloo meetings as opportunities arise. Joint hiring initiatives are difficult and not being pursued at this time.

12. Cross-institutional funding problems need to be worked out at the institutional level.

    Status: **Ongoing**
    Details:

As above, PACS is alert to creative approaches to collaboration and support in suitable Grebel-UWaterloo and AFIW-UWaterloo forums and meetings. The program's funding model is not open for review at this time.

Three additional points to note. First, the pandemic affected how we address some of the recommendations, in particular delaying aspects of our curricular review. Second, PACS anticipates hiring a new tenure-line faculty member beginning in July 2023, who will further help the program implement these recommendations. Finally, PACS looks forward to continuing to be a vibrant contributor to innovative, interdisciplinary programming at the University of Waterloo.

Updated Implementation Plan update table below to reflect timelines etc.

Implementation Plan

	Recommendations	Proposed Actions	Responsibility for Leading and Resourcing (if applicable) the Actions	Timeline for addressing Recommendations
1.	The department should undertake a retreat to map the existing curriculum to help determine gaps and overlaps, and define future emphases of the program.	Convene a retreat or a series of shorter meetings. The first meeting was held in August 2021. The UW Centre for Teaching Excellence is being consulted and supporting the process.	The PACS Chair and the PACS Administrative Group (PACS AG) The PACS Chair will request funds FY2022-3	MPACS review began in 2021, will continue in 2022-3 PACS undergraduate review will begin in 2023
2.	Increased attention must be paid to issues of difference and diversity throughout the curriculum, which means that the department needs to stretch beyond its existing stable of scholars and practitioners that are normally hired to fill sessional positions, to search for qualified sessional instructors who could fill other gaps. It also means that any new hires at the full-time, tenure-track, or tenured level need to be able to contribute to issues of difference and diversity in the curriculum.	Actively spread the word about tenure-track opportunity during Fall 2020-Winter 2021 faculty search. Invite applications from diverse candidates. Re-evaluate existing practices for hiring adjuncts, in conjunction with larger conversations about adjunct hiring at Grebel and at the University of Waterloo. Define a set of principles to guide adjunct hiring.	PACS Chair PACS Search Committee PACS AG Grebel Dean	First PACS faculty of colour hired in 2021 Practices for hiring new sessional instructors revised (2021) See timeline for “curriculum review” above

3.	The PACS programs should incorporate more "local" concerns, particularly as they relate to structural inequality and violence against Indigenous people living in Canada.	Assess "local" content during curriculum review. Review and update "PACS Approved" course list to optimize "local" content. Make the ability to address "local" concerns a criterion for the Fall 2020-Winter 2021 faculty search.	PACS Chair PACS AG PACS Search Committee	See timeline for "curriculum review" above Faculty hire process completed with criterion included
4.	Prerequisites should be established for PACS 401. These should include the successful completion of two of PACS 201, 202, or 203.	Examine overall coherence of approach to teaching analytical and research skills during the "curriculum review" described above (Recommendation 1). Determine appropriate steps to prepare students for PACS 401 .	PACS Chair PACS AG	See timeline for "curriculum review above
5.	MPACS should become a research-based Master of Arts in Peace Studies.	Explore feasibility of a Master of Arts in PACS with Arts Dean and Associate Vice President, Graduate and Postdoctoral Affairs.	Grebel Dean Grebel President PACS Chair	If opportunity arises
6.	The department should establish a committee structure to manage the PACS programs more effectively. These should include the establishment of committees for graduate admissions, the undergraduate program, and the graduate program.	Collect information about committee structures used by other comparably sized departments in the Faculty of Arts. Deliberate within PACS AG on possible committee structures and their advantages or disadvantages.	PACS AG PACS Chair PACS Administrative Staff Grebel Dean	Completed. Curriculum committee discussed at PACS AG in winter 2021, and began meeting August 2021.

				Graduate admissions committee already established.
7.	The department must take steps to ensure that there is increased diversity in the faculty members teaching in the PACS programs. This relates to equity, diversity, and inclusion of the people who teach in the program, but also to content and methodological diversity	See response to Recommendation 2 above.	PACS Chair PACS Search Committee PACS AG Grebel Dean	See timeline for Recommendation 2 above.
8.	PACS should cultivate an active Alumni Network that could be harnessed to help with recruitment and could build a suite of activities in which existing students could participate.	Engage other PACS-related programs to collect ideas. Develop a plan for energizing our alumni network and connecting current students with alumni.	PACS Staff PACS AG Grebel Office of Advancement	A report on two similar program's alumni models was produced in 2021. Plan to increase outreach to alumni was developed in August 2021 and implementation is underway.
9.	Staff working in the PACS program need to be given professional development opportunities. Such	Consult internally and with University counterparts on ways to enhance staff access to PD opportunities.	PACS Chair Grebel Dean	Consultations completed in spring and fall 2021.

	opportunities already exist for UW staff, but staff at the Affiliates are prevented from accessing this training. An institutional agreement should be reached to allow Affiliates staff to participate.		Grebel HR and Administration	
10.	Sessional instructors should be given a space where they can meet with students to hold office hours. Every effort should be made to maintain their email accounts so that students may contact them easily even after having completed their coursework.	Pursue conversations within Conrad Grebel University College concerning the provision of spaces for adjunct instructors. Examine ways of providing more consistent access to UWaterloo email accounts.	PACS Chair PACS Staff Grebel Dean	Discussions with senior administrators regarding space concerns are ongoing. Consistent access to emails for instructors completed 2021.
11.	Conrad Grebel and UW should explore the possibility of hiring joint appointments with Environmental Studies or Computer Science. We understand that there are constraints imposed by the “across the creek” relationship between UW and the Affiliates, but this could be	Invite creative approaches to collaboration in suitable Grebel-UWaterloo and AFIW-Uwaterloo forums and meetings. Affirm value of existing initiatives and programs to the University system.	Grebel Dean Grebel President PACS Chair PACS Faculty Committee	Ongoing program collaboration.

	overcome by institutional-level collaboration.			
12.	Cross-institutional funding problems need to be worked out at the institutional level.	As #11 above: Invite creative approaches to collaboration in suitable Grebel-UWaterloo and AFIW-UWaterloo forums and meetings. Affirm value of existing initiatives and programs to the University system.	Grebel Dean Grebel President PACS Chair PACS Faculty Committee	Ongoing program collaboration.

The Department Chair/Director, in consultation with the Dean of the Faculty shall be responsible for monitoring the Implementation Plan.

Date of next program review: **2026-2027**
Date

Signatures of Approval:

July 24, 2023

Chair/Director Date

July 25, 2023

AFIW Administrative Dean/Head (For AFIW programs only) Date

Sheila Ager September 13, 2023

Faculty Dean Date

Note: AFIW programs fall under the Faculty of ARTS; however, the Dean does not have fiscal control nor authority over staffing and administration of the program.

July 11, 2023

Associate Vice-President, Graduate Studies and Postdoctoral Affairs Date
(For graduate and augmented programs)
On behalf of Associate Vice-President, Academic

Final Assessment Report
Tri-University History (MA, PhD)
June 2023

Executive Summary

External reviewers found that the MA and PhD delivered by the Department of History as part of the Tri-University History Program were in good standing.

This collaborative program has dedicated faculty, a healthy number of high-quality students, and funding for all domestic students. It offers an impressive range of courses, fields, and supports. We deem the Tri-University Program to be excellent. It brings significant prestige to all three universities. The standout quality of the Program, in the words of the Self Study, is that it has the strengths of a large department (roughly 80 faculty members from across three universities) with 'personal attention and intimate community of a close-knit 'small' department' … The courses and fields offered by the program are a strong representation of the discipline of History, and the faculty members are excellent scholars and teachers… The brilliance of the Program is the combining of the strengths of three universities, which allows each university's History Department to have a much more significant impact than if it was acting alone."

A total of 5 recommendations were provided by the reviewers, regarding increasing administrative support, providing faculty renewal, ensuring student experience is more cohesive, improving faculty experience and compensation, and increasing professional development opportunities for students. In response, the program created a plan outlining the specific actions proposed to address each recommendation as well as a timeline for implementation. The next cyclical review for this program is scheduled for 2028-2029.

Enrollment over the past three years

	University of Waterloo[1]		University of Guelph[2]		Wilfrid Laurier University	
	MA	**PhD**	**MA**	**PhD**	**MA**	**PhD**
2022-2023 (CURRENT YR)	17	28	28	10	23	14
2021-2022 (LAST YR)	22	26	31	11	16	12
2020-2021 (THREE YRS)	27	24	27	10	18	12

[1] Based on Active Student Extract in Quest from June 26, 2023. *These numbers currently reflect only UW enrollment.*

[2] Based on November 1 Count Date.

Background

In accordance with the University of Waterloo's Institutional Quality Assurance Process (IQAP), this final assessment report provides a synthesis of the external evaluation and the internal response of the MA and PhD delivered by the Departments of History at University of Waterloo, Wilfrid Laurier University and University of Guelph as part of the Tri-University History Program. A self-study (Volume I, II, III) was submitted to the Associate Vice-President, Graduate Studies and Postdoctoral Affairs on March 28, 2022. The self-study (Volume I) presented the program descriptions and learning outcomes, an analytical assessment of the programs, including the data collected from a student survey, along with the standard data package prepared by the Office of Institutional Analysis & Planning (IAP). The CVs for each faculty member with a key role in the delivery of the program(s) were included in Volume II of the self-study.

From Volume III, two arm's-length external reviewers were selected by the Associate Vice-President, Academic and Associate Vice-President, Graduate Studies and Postdoctoral Affairs: Dr. Bonny Ibhawoh, Professor of History, McMaster University, and Dr. Carolyn Podruchny, Professor of History, York University. Each institution also selected their own internal reviewer that would participate in relevant meetings.

Reviewers appraised the self-study documentation and conducted a virtual site visit for the Tri-U History Program on June 21-28, 2022. An internal reviewer from the University of Waterloo, Dr. Barbara Csima, Professor of Pure Mathematics, was selected to accompany the external reviewers. Internal reviewers from the other universities were: Dr. Margot Irvine, Professor of Languages and Literatures from the University of Guelph, Dr. Lisa Duizer, Professor of Food Science from the University of Guelph, and Dr. Derek Hall, Professor of Political Science from Wilfrid Laurier University. The visit included interviews with: Vice-President, Academic and

Provost (UWaterloo, WLU); Associate Vice-President, Graduate Studies and Postdoctoral Affairs, (UWaterloo); Interim Assistant Vice-President and Dean, Faculty of Graduate and Postdoctoral Studies (WLU); Assistant Vice-President, Graduate Studies (Guelph); Dean of Arts (UWaterloo); Dean, College of Arts (Guelph); Vice-Dean of Arts (Laurier); Associate Deans of Graduate Studies (UWaterloo; Guelph); Chairs of the Departments at the Tri-Universities, as well as faculty members, staff, current graduate students from each institution and alumni. The Review Team also had an opportunity to meet with representatives from the libraries.

Following the site visit, the external reviewers submitted a report on their findings, with recommendations for continuous program improvement. Subsequently, the program responded to each recommendation and outlined a plan for implementation of the recommendations. Finally, the relevant Deans at the University of Waterloo, University of Guelph, and Wilfrid Laurier University, as well as the Dean of Faculty of Graduate and Postdoctoral Studies from Wilfrid Laurier University, responded to the external reviewers' recommendations, and endorsed the plans outlined by the program.

This final assessment report is based on information extracted, in many cases verbatim, from the self-study, the external reviewers' report, the program response and the Dean's response.

Program Characteristics

Master's Program:

The chief goal of the Tri-University MA Program in History is to provide MA students with the opportunity to explore and deepen their knowledge of diverse fields of history while simultaneously developing skill sets with broad application. The Tri-University MA in History is ideally suited for those who seek a program of study that will enable them to explore a wide range of historical subjects and to meet the intellectual challenges of higher education. Students gain a depth of specialization in areas of their choice, yet all students are required to become familiar with historical methodologies and to develop an awareness of some of the current debates in the profession.

PhD Program:

The main goal of the Tri-University PhD Program in History is to provide the opportunity to establish and articulate expert knowledge in one major and two minor fields of history, while simultaneously refining skill sets (research, writing, presenting, and project management) with universal applications. The purpose of the Tri-University Doctoral Program is to encourage the pursuit of outstanding graduate teaching and research, nurture intellectual curiosity among doctoral candidates, and facilitate the learning process through small seminar experiences. The

program is designed to be completed in four years and has a streamlined structure to meet this timeline. The program has a series of regulations and milestones (which will be discussed in detail elsewhere) that aim toward consistent and timely progress through the program. The program includes a mandatory Professional Development Seminar (PD) for all first-year doctoral students as well as an optional teaching practicum. These additional elements provide a strong grounding in professional history writ large and offer opportunities for further engagement.

Summary of Strengths, Challenges and Weaknesses based on Self-Study

Strengths

MA Program

- Faculty Expertise: The Tri-U has a tremendous breadth of faculty expertise across the three programs, and related course offerings. The depth of our faculty expertise in various geographic, temporal, and methodological areas opens a broader array of viable committees for thesis and MRP topics. Students report how they appreciate the level of faculty engagement – both with their projects and with help in seeing these projects to the end.
- Student Learning Experience: The range of available courses is excellent and offers students the chance to put together course offerings that reflect their studies as well as ensure breadth of subjects and methodologies. Our courses and program milestones ensure rigour in reading, discussion, research, and writing. The annual Tri-University conference provides an opportunity for all students to hone knowledge mobilization skills early in their graduate careers. The combined resources of the three libraries for research material offer excellent access to books, journals, databases and the like for students and faculty within the Tri-U.

PhD Program

- Faculty Expertise: In many ways the previous analysis of the MA program could apply to the PhD program with a few heightened additional issues. The diverse expertise of our faculty and their dedication to the program remains a core strength as students have real depth and breadth of knowledge to draw upon in close, professional, supervisory relationships.
- Student Support and a Personalized Program: Our small seminar experience with tailored fields to the students' interests allows us considerable flexibility to develop a personalized program. Our schedule of formal progress meetings and feedback from the first year onward helps keep students on track. Our post-comps stages (proposal,

colloquium, etc.) are important for the way they keep students and committees engaged. Our accelerated first year offers a direct and timely path to comprehensive/qualifying exams, allowing students to complete them in just over a year. Our students also can gain supervised training in classroom instruction through mentored teaching practice.

Challenges

MA Program

- Declining Enrolment: The Tri-U MA program faces challenges related to the current state of the Humanities across North America. It is not "new news" that the Humanities are in crisis across North America. Declining enrollments in History undergraduate and graduate programs nation-wide have been reported. These are widespread issues related, in part, to the changing perceived value of historical study. Faculty report sensing that History is perceived to be irrelevant to currently popular areas of study like business, media, and high tech. These concerns are exacerbated by the rising costs of higher education that are shouldered by the students due to declining provincial funding of the university sector. Some faculty also report feeling a sense of negativity from some students, other faculty, university administration, and the general public that a graduate history degree is not a worthwhile endeavor. As the success of our graduates reveals, this is simply not the case. Historians' skills are valuable, translate quickly to employment, and create multiple pathways to success. Our MA students report that the skills gained from courses, teaching assistantships, and independent research are all valuable. Nonetheless, we can improve our communication so that we can help students 'translate' their learning into 'employer' language.

PhD Program

- Creating a Sense of Community: Small cohorts of students, especially at the PhD level, make the ability to create a sense of community for the students across the three campuses a challenge and can lead to isolating experiences. More planning and engagement may be necessary to overcome the barriers of building a cohesive Tri-U community. Again, Zoom and other virtual platforms may provide one means of doing so as students need not worry about transportation. An undergirding issue, however, remains the competing demands within institutions for faculty time that then limit the ability of faculty to focus on graduate students.

- Faculty Renewal: While the Tri-U continues to build on its existing strengths in Indigenous history and looks forward to welcoming a new colleague through Laurier's upcoming CRC, military history has also long been a draw to the program. Recent retirements and departures have left few historians working in this popular field. Faculty renewal will be important to maintain this long-standing strength of our program.
- Decline in Academic Job Market: The academic job market has not recovered from the lows of the 2008 financial crisis and the current global pandemic has likely only deepened the crisis. Job market reports from Canada and the United States, including ones by the American Historical Association paint a challenging, if not depressing picture. Additionally, because of the COVID-19 crises, we expect at least some longer-term impacts and consequences confronting current PhD students when trying to engage in primary research. This issue is likely to extend programs for many students and may cause some structural issues as students continue to enroll, while those at later stages of the program need to stay longer. We will need to find ways to best support both students and faculty through this period.
- Financial Concerns: The cost of tuition and completing degrees generally for PhDs is significant. While we guarantee four years of funding, we expect students to run out of funding before they can complete the degree due to the current challenge of conducting research. Like all History graduate programs in Ontario we face a provincial government that is seeking to tie funding to vocational outcomes in ways that are concerning. The success of our graduates is unlikely to be picked up by the proposed metrics. As noted above, this feeds the pernicious narrative that pursuing especially a PhD in History is not worthwhile. As noted above with the MA, this is simply not the case. Our students' employment one year after graduating shows that there is demand for high-level research and communication skills a History PhD provides. Alumni report that research, communication, and presentation skills are all very useful in securing employment. Further, in spite of the serious decline in the traditional academic job market, our program has remained successful and competitive in this regard.

Weaknesses

MA Program and PhD Program

- Transportation Between Campuses: While Laurier and Waterloo are relatively close, the distance between the two schools and Guelph can be a barrier. Poor public

transportation and increased traffic between the two cities can make commuting a frustrating experience. The unfortunate COVID-19 pandemic has forced us to explore using various forms of remote and online learning, which might help us solve our geography problem and make our diverse course offerings more fully accessible to all our students. Certainly, the use of Zoom can continue with PhD progress meetings and potentially with other milestones, as committees see fit.

Summary of Key Findings from the External Reviewers

The standout quality of the Program, in the words of the Self Study, is that it has the strengths of a large department (roughly 80 faculty members from across three universities) with "personal attention and intimate community of a close-knit 'small' department" (pg. 5). Students have access to a large faculty, many courses and fields, and extensive library resources. They receive careful guidance from their individual supervisor, the university-specific graduate director, and the overall director of the Tri-University Program. The courses and fields offered by the program are a strong representation of the discipline of History, and the faculty members are excellent scholars and teachers. In addition, the Program should be commended for the three streams of MA training and the mandatory professional development training for PhD students. The brilliance of the Program is the combining of the strengths of three universities, which allows each university's History Department to have a much more significant impact than if it was acting alone. It is an excellent model that could be replicated in other disciplines and other places, especially in the context of declining enrollments in the Humanities.

Areas that could be improved are a more stable position for the administrative assistant of the program, more coordination across the three universities, university commitment to lobbying for or providing better transit among the universities, and providing adequate and equitable compensation for faculty labour in the graduate program.

Opportunities for enhancement include a dedication by senior administration at all institutions to faculty complement renewal, increased branding to better serve the students on the job market, and the incorporation of an optional co-op program for both MA and PhD students to help them transition to the job market after their degrees.

Recommendations concern increasing and stabilizing administrative support for the Program, maintaining a commitment to faculty complement renewal, improving both the faculty and student experience in the program, and professional development for students enrolled in the program.

Program Response to External Reviewers' Recommendations

1. **Increase administrative support.** The position of administrative support to the director of the Tri-University program should be made full-time and rooted in one institution. There is enough work to support a full-time position, and this will ease the burden of the director of the program and the workloads of the directors and administrative support at the local graduate programs at each university. It is structurally important for the program because it will attract and retain high-caliber employees: they will be able to accrue seniority, pension, and benefits at a single university instead of having to change employers every three years.

Response

Program Response

The Tri-University Program recognizes the importance of the support staff to the functioning of the program function, and we realize that our current apparent practice of three-year rotation of our one part-time employee between the three campuses disrupts staff career advancement and increases the transaction costs to the Program itself. We will work to establish the support position in one of the three campuses and think that we should be able to offer this to prospective staff. The pandemic has demonstrated that most, if not all, of the functions of this position can be performed remotely, and so the geographic location of this position in the physical department of one of the three partner universities is no longer necessary. Converting this position to a permanent position at one of the three campuses will increase its attractiveness to prospective applicants. As for converting the present position into a full-time position, the Tri-University Program will supply job details to the respective Deans and Administrators who determine job classification and Tri-University program will argue in support of this change, though the current Tri-University Budget may be limiting in this respect.

Dean's Response – University of Waterloo

The logic of having a full time staff position to support this program is sound, particularly if the person was able to largely work from a remote location, and we are open to discussions with the other two universities involved in the program about how to make this happen. We will consider the job details provided to us by the program and determine whether there is room in the Tri-University budget to convert the position to full time; all three institutions are facing budget constraints.

Dean's Response – University of Guelph

We agree that the staff position will be more attractive to applicants and will better support the program if it is full-time, located at one of the partner universities, and supports all three campuses equally through remote work. We are happy to enter

discussion about this, though the need to prioritize calls on a limited budget will be a factor.

Vice Dean of the Faculty of Arts – Wilfrid Laurier University

A staff position that is anchored at one of the three universities makes complete sense. Thanks to the changes brought about by the pandemic, this person should be able to function very well in support of all three campuses. At a time of fiscal restraint it may be challenging to allocate budget to a full-time role, although with three universities sharing the cost it may be easier.

Dean of the Faculty of Graduate and Postdoctoral Studies – Wilfrid Laurier University

While acknowledging budgetary constraints and challenges, the rationale for a full-time staff position to support the administration of this program at the three participating universities is strong. Clearly, this approach will benefit both the program and serve to attract a strong candidate.

2. **Continue to provide faculty renewal.** The Tri-University Program is high profile and high impact and needs to be maintained with faculty renewal. In addition, the leadership of the three partners university should explore the possibilities of coordinating faculty hires in their respective programs. At the very least, the Tri-U Program Director should be informed of faculty recruitment plans in the partner programs.

Response

Program Response

The Tri-University program accepts this recommendation and intends to fulfil it by making sure that Graduate Program needs, including our PhD's nine major fields, including the rotating Canadian Field, are considered in the requests-to-hire put forward by any of the three Departments. The Tri-University Director will ask Department Chairs to share insight into hiring plans annually; Chairs of the three Departments should have good intelligence about requests- to-hire and other hiring initiatives in their fellow Departments.

Dean's Response – University of Waterloo

In order to maximize the contributions that new hires in any of the three departments can make to the Tri-University History program, we are supportive of this recommendation.

Dean's Response – University of Guelph

We are also supportive of this recommendation, especially the proposal to coordinate hiring across the three departments to best support the graduate programs.

Dean's Response – Wilfrid Laurier University

Coordinating new hires across the three departments would be very valuable although quite unusual. If the departments can reach this level of consensus and demonstrate such a degree of cohesion then it will speak powerfully to the strengths of the Tri U program.

Dean of the Faculty of Graduate and Postdoctoral Studies – Wilfrid Laurier University

A good communication plan is in place, among the Tri-University Director and chairs of the respective departments, to ensure to the degree possible that this recommendation can be addressed.

3. **Ensure the student experience is more cohesive.** Increase the level of coordination throughout a student's degree in the Tri-University program. The coordination is good at the beginning of a student's career but disappears at the close. Find ways to communicate, advertise, and celebrate graduations. Ensure that the Tri-University Program appears on student transcripts. The Program should issue its own certificate of graduation at the completion of a degree. In addition, the Program should create more opportunities for intellectual and social interactions among students in the Program. The Program should support existing student initiatives in building a cohesive community within the program.

Response

Program Response

The Tri-University Program accepts the Recommendation to make Tri-University student experience more cohesive. The External Reviewers propose two avenues to achieve this: one, to introduce a Tri-University "certificate" to mark completion of MA or PhD, and to ensure that the Tri-University achievement appears on the students' transcripts. The Tri-University Director will work with Graduate Studies at Guelph and will ask Department Chairs at UW and WLU to do same in order to arrive at a common recognition of graduation from the Tri-University program (MA and PhD) and we hope to have a plan in place by end of 2023.

We will also work to ensure that the Tri-University Director be informed of PhD and MA defenses and be given opportunity to be present and to "wave the flag", and to offer

opportunities for students and faculty to attend defenses, and learn of their successful outcomes, something which is not routine at present. The second avenue promises more: building sense of community among the members of the Tri-University community, by more fully involving the Tri-University Graduate Students Association (TUGSA) in cross- campus activities and to promote these activities as well as our other chief joint showcase, the annual Tri-University Graduate History Program Conference (Winter each year; last few years virtually, with great effect), using social media and other outreach techniques. Our students are our best advocates: action is underway to engage the Tri-University Community at higher level, with effects apparent from Fall 2022 onwards.

Dean's Response – University of Waterloo

We are supportive of the recommendations that have been put forward. The UW History department is encouraged to explore mechanisms with the GSPA to see whether further formal recognition of the program is possible, keeping in mind that the definitions of what constitutes a "certificate" can vary from one institution to another. With hybrid defences now routine (and since almost all defences are public) the program should be able to find ways to encourage students to watch the oral examinations of their peers by providing online access to students at the other universities (as well as in person access for those students who are in the program at the same institution). Encouraging a deeper sense of student community among those in the Tri-University program is particularly important and we are very supportive of the initiatives outlined above.

Dean's Response – University of Guelph

We are also very supportive of this proposal, even if the completion certificate needs in the end to be internal to the program in the event it cannot be recognized formally by all three institutions. Treating oral examinations as conducted by, and open to, the program members across all three campuses also seems to us a good idea. The annual Tri-University Graduate History Program Conference is an excellent event, and we wonder if there is appetite for additional occasions that bring together all three departments in the year (such as the Fall Social mentioned below); perhaps these could sometimes be student-led.

Dean's Response – Wilfrid Laurier University

We support very much all efforts to overcome barriers and to bring cohesion to the Tri U program. It may be that staff and students can apply what has been learned through the pandemic to our benefit and find creative ways to meet virtually which will, in turn, lead to more reasons for in-person interactions. While there are institutional definitions of "certificate" if there is the will to find a way to develop a formal recognition of graduates of the program then no doubt it can be found.

Dean of the Faculty of Graduate and Postdoctoral Studies – Wilfrid Laurier University

The program has offered several excellent suggestions to raise the 'cohesion' of the graduate student experience with respect to the Tri-University program. I was pleased to see the return of an 'in-person' annual Tri-University Graduate History Program Conference (25 March 2023) and suspect that will continue to be key for promoting program cohesion among the graduate students from the participating universities, while offering an important training and networking opportunity. I agree that student-led initiatives may have best opportunity for success, and perhaps organization of additional activities could be supported by the increased administrative support provided to the Director.

4. **Improve the faculty experience and compensation.** Increase the level of coordination of the Program for faculty members. We recommend creating a faculty handbook, which will serve as a place to record Program priorities and regulations. Hold at least one faculty meeting annually to review the program and discuss challenges. These meetings and discussions will increase the sense of community for faculty members, especially across the three institutions.

Response

Program Response

The Tri-University Program does not determine "faculty compensation" as this is a matter for the Departments, Deans and Administrators at the three Universities. We understand though that the recommendation also deals with "faculty experience" which we understand as communication within the Program. As such the Tri-U Director accepts that we have work to do. Specifically, the Tri-University Director and the Program administrator will produce a "Faculty Handbook" which will explain the various processes of the Tri-U Program including: course development; MA and PhD cycles; and, how each Department applies and interprets Tri-U practice in their local contexts and according to their calendar regulations. And we will seek to resurrect annual meetings of faculty from the three institutions, by convening faculty at the Tri-University annual conference, and, if free of pandemic-era restrictions in Fall 2023, resuming the practice of holding a Fall Social.

Dean's Response – University of Waterloo

Aside from the matter of compensation that is beyond the purview of the program, we are supportive of the faculty experience measures set out above.

Dean's Response – University of Guelph

We are also supportive of the proposal to create a Tri-U faculty handbook, and to increase the opportunities for faculty across the three departments to meet.

Dean's Response – Wilfrid Laurier University

Again, lessons from the pandemic should be applicable in such a way as to help bring faculty members into more frequent conversation.

Dean of the Faculty of Graduate and Postdoctoral Studies – Wilfrid Laurier University

In principle, producing a 'faculty handbook' is likely useful, but perhaps feedback on the idea could be presented to faculty at the next annual meeting to guide investment in the project and to ensure it will meet needs of faculty.

5. **Increase professional development opportunities for students.** The professional development activities should be strengthened, expanded and made more relevant. Some students felt the professional development activities were not entirely relevant to their needs and aspirations. The program should engage with its alumni more and involve them in their professional development initiatives. The program should explore the possibilities of establishing an optional graduate co-op program for students that builds on the University of Waterloo's strong tradition and institutional frameworks for student co-op.

Response

Program Response

The Tri-University Program recognizes the significant expansion of Co-op and Experiential Learning options at all three campuses, with significant interest in expanding MA and PhD options in these areas. The Tri-University program encourages these initiatives and will endeavour to engage them through discussions of the Graduate History Coop with Experiential Learning and Coop leaders at the three Universities. We hope to have a sense of a way forward by end of 2023.

The External Reviewers suggest the additional initiative to involve Tri-U Program alumni to a greater degree as mentors, and we plan to do this. We will use the Professional Development Course – a Fall/Winter course aimed at first year PhD students, for whom it is a requirement. A broader audience from the program can be invited for session events such as those featuring returning alumni, and other sessions such as about publishing or careers, which might be more applicable at later stages of the program, in 2023-24.

Dean's Response – University of Waterloo

The GSPA at UW is initiating several pilot projects that introduce and/or enhance Graduate Work Integrated Learning as part of the implementation of the university's Strategic Plan. We are strongly supportive of paths that increase the work experience and, as a corollary, the career prospects of our graduate students. Engaging the network of alumni that the program has produced is also a welcome recommendation.

Dean's Response – University of Guelph

We are strongly supportive of integrating additional, appropriate experiential and work-integrated learning opportunities into the Tri-University graduate programs. Continuing to enable and improve successful outcomes for graduates of the programs, into either academic or non-academic opportunities, is a key goal, and we are delighted at the Tri-U's intentional approach to this.

Dean's Response – Wilfrid Laurier University

We support very much the introduction of suitable experiential and work-integrated learning opportunities into the Tri-U program. Our graduates must be encouraged to think about professional careers that extend beyond tenure-track faculty positions, and we would do well to emphasize the value of the wide range of skills that they develop as doctoral students.

Dean of the Faculty of Graduate and Postdoctoral Studies – Wilfrid Laurier University

Strengthening professional development activities is a common priority of graduate programs, and their faculty and graduate students at Laurier. Certainly, we support advancing the Tri-University program in this direction. Regarding the professional development course, I encourage leveraging Laurier's ASPIRE program to the delivery of the course.

Recommendations Not Selected for Implementation

The Tri-University Program will carry out recommendations from the External Reviewers that fall within the power of the three Departments, their respective Deans, and the Tri-University Directorate.

We thank the External Reviewers as well as the Deans and Library and other staff at the three Universities for their thoughtful comments and recommendations.

Implementation Plan

	Recommendations	Proposed Actions	Responsibility for Leading and Resourcing (if applicable) the Actions	Timeline for addressing Recommendations
1.	**Increase administrative support.**	Work to locate the Tri-U admin position in one of the three campuses on permanent basis. Ask Deans to cost the proposal to make the admin position full time.	Deans of Arts UG, WLU and UW	July 2023
2.	**Continue to provide faculty renewal.**	Department Chairs will confer and involve Tri-University Director in discussion of hiring opportunities	WLU, UG and UW Department Chairs; Tri-University Director	January 2023
3.	**Ensure the student experience is more cohesive.**	Department Chairs will work with Tri-University Director to ensure that the Tri-U mechanisms to build community are working.	Same as above	September 2023
4.	**Improve the faculty experience and compensation.**	Tri-U Director and the Program Administrator will produce a Faculty Handbook which explains program process and Departmental variation.	Tri-University Director	July 2023
5.	**Increase professional development opportunities for students.**	Department Chairs will communicate co-op and other Experiential Learning opportunities to Tri-University Director, who will investigate OVGS options when said Co-op programs arise. PhD Professional Development Seminar to be enhanced with the addition of alumni sessions and broadening the invitation pool for sessions relevant to other students in the program.	Department Chairs and local University Experiential Learning/Co-Op programs. Tri- University Director.	December 2023

The Department Chair/Director, in consultation with the Dean of the Faculty shall be responsible for the Implementation Plan.

Date of next program review 2028-2029

Date

Signatures of Approval

17 August 2023

Chair/Director — Date

Sheila Ager — December 8, 2023

Faculty Dean - UWaterloo — Date

August 11, 2023

Faculty Dean – University of Guelph — Date

Gavin Brockett — August 23, 2023

Faculty Dean – Wilfrid Laurier University — Date

August 23, 2023

Associate Vice-President and Dean of the Faculty of Graduate and Postdoctoral Studies – Wilfrid Laurier University — Date

August 8, 2023

Associate Vice-President, Graduate Studies and Postdoctoral Affairs – UWaterloo — Date

Final Assessment Report
Collaborative Water Program (MASc, MArch, MA, MES, MMath, MSc, PhD)
August 2023

Executive Summary

External reviewers found that the Collaborative Water Program (MASc, MArch, MA, MES, MMath, MSc, PhD) delivered by the Faculties of Engineering, Environment and Science was in good standing.

"The program provides an excellent additional graduate student experience for cohorts of students interested in 'water' from a range of faculties and departments, offered in a manner that emphasizes and reinforces a broadly interdisciplinary approach, and graduates earn an extra designation on their diploma. The program has had very high enrollment for such a collaborative program with broad indications of student and faculty satisfaction and belief in the program's value."

A total of 4 recommendations were provided by the reviewers, regarding increasing the program's funding, creating formal tracking of its graduate students, adding a statement of interest to admission requirements, and enhancing the program's advertising efforts. In response, the program created a plan outlining the specific actions proposed to address each recommendation as well as a timeline for implementation. The next cyclical review for this program is scheduled for 2027-2028.

Enrollment over the past three years

	Masters	PhD
2022-2023 (CURRENT YR)	46	55
2021-2022 (LAST YR)	71	62
2020-2021 (THREE YRS)	89	59

This data is based on Active Student Extracts in Quest on September 8, 2023.

Background

In accordance with the University of Waterloo's Institutional Quality Assurance Process (IQAP), this final assessment report provides a synthesis of the external evaluation and the internal response of the Collaborative Water Program (MASc, MArch, MA, MES, MMath, MSc, PhD) delivered by the Faculties of Engineering, Environment and Science. A self-study (Volume I, II, III)

was submitted to the Associate Vice-President, Graduate Studies and Postdoctoral Affairs on May 28, 2021. The self-study (Volume I) presented the program descriptions and learning outcomes, an analytical assessment of the programs, including the data collected from student and faculty surveys, along with the standard data package prepared by the Office of Institutional Analysis & Planning (IAP). The CVs for each faculty member with a key role in the delivery of the program(s) were included in Volume II of the self-study.

From Volume III, two arm's-length external reviewers were selected by the Associate Vice-President, Graduate Studies and Postdoctoral Affairs: Dr. Julia Baum, Professor of Biology, University of Victoria, and Dr. William Gough, Professor of Physical and Environmental Sciences and Vice-Principal Academic and Dean of the University of Toronto Scarborough.

Reviewers appraised the self-study documentation and conducted a remote visit to the University on October 3-6, 2022. An internal reviewer from the University of Waterloo, Dr. Lois Anderson, Professor of Fine Arts, was selected to accompany the external reviewers. The visit included interviews with the Associate Vice-President, Graduate Studies and Postdoctoral Affairs; Deans of the Faculties of Engineering, Environment and Science; Faculties Associate Deans of Graduate Studies – Engineering, Environment, and Science; Director of The Water Institute, Director (and former Directors) of the Program, as well as faculty members, staff and graduate students. The Review Team also had an opportunity to meet with representatives from the library.

Following the site visit, the external reviewers submitted a report on their findings, with recommendations. Subsequently, the program responded to each recommendation and outlined a plan for implementation of the recommendations. Finally, the Deans of each Faculty responded to the external reviewers' recommendations, and endorsed the plans outlined by the program.

This final assessment report is based on information extracted, in many cases verbatim, from the self-study, the external reviewers' report, the program response and the Deans' responses.

Program Characteristics

A total of 13 Master's degrees and 9 PhD degrees are currently offered through the CWP:

Master's Degrees	Doctoral Degrees
MASc in Chemical Engineering - Water	PhD in Applied Math - Water
MASc in Civil Engineering - Water	PhD in Biology – Water
MArch - Water	PhD in Chemical Engineering - Water
MA in Economics - Water	PhD in Civil Engineering - Water
MA in Geography – Water	PhD in Earth Sciences – Water
MES in Geography - Water	PhD in Applied Economics - Water
MSc in Geography – Water	PhD in Geography – Water

Master's Degrees	Doctoral Degrees
MES in Social and Ecological Sustainability - Water	PhD in Public Health and Health Systems - Water
MES in Sustainability Management - Water	PhD in Social and Ecological Sustainability - Water
MMath in Applied Math - Water	
MSc in Public Health and Health Systems - Water	
MSc in Biology - Water	
MSc in Earth Sciences - Water	

Collaborative Water Program students apply to, and are admitted through, participating academic units. Students must be enrolled in thesis or major-paper based programs and intend to study water. Collaborative program requirements are in addition to home unit requirements, and include the following core courses and milestone:

- WATER 601 establishes an interdisciplinary[1] foundation for understanding contemporary water challenges and opportunities. In addition to exposing students to the perspectives of a diverse range of disciplines on water, the course trains students to recognize the importance of an interdisciplinary perspective. Peer-to-peer learning is a key pedagogical tool in the course. Through engaging with their peers from other disciplines, students build connections and learn the value of different ways of understanding problems and solutions.
- WATER 602 is designed to extend the interdisciplinary learning in WATER 601 from the classroom to the world of practice. Through exposure to practitioners who are addressing actual water problems, and through collaboration on water projects, students gain a grounded understanding of the importance of interdisciplinarity for understanding and then solving water problems. This course has a strong field-based learning component.
- The Research Seminar milestone provides an opportunity for students to discuss how learnings from CWP courses were applied in, or influenced, research proposals or research work in the student's home department or school. This milestone is normally met in March, following completion of WATER 602, during the Water Institute's World Water Day program.

Summary of Strengths, Challenges and Weaknesses based on Self-Study

Strengths

- Program Concept and Design: There is an increasing need for specialists with broad interdisciplinary knowledge and the ability to constructively collaborate. With increasingly complex issues in the water sector, contributions from multiple disciplines are often required.

[1] The term "interdisciplinary" is used generally to refer to the integration of knowledge and methods from different disciplines, using a synthesis of approaches, The term "multidisciplinary" is used to refer to people from different disciplines working together, each drawing on their disciplinary knowledge.

Explicitly recognizing this need, the CWP was conceived as a collaborative program jointly designed, delivered and governed by academic units from across every faculty at the University of Waterloo. The CWP's unique and innovative design allows students to be trained as a disciplinary expert in their home department, while in parallel exposing them to potential contributions from other water-related disciplines through the power of collaboration. In completing the CWP, students also begin to recognize, importantly, the limits of their disciplinary knowledge.

- Course Pedagogy: Core CWP courses were designed and are delivered as a complementary offering. WATER 601 uses a lecture format to expose students to interdisciplinary theory and practice and its application in the water domain. Students are exposed to a variety of disciplinary experts and are challenged to consider various perspectives in addressing water challenges. WATER 602 immerses students in field-based experiential learning, meeting a broad array of stakeholders in various locations in the Grand River watershed, from its headwaters, to Kitchener-Waterloo, to the Six Nations of the Grand River, to its mouth at Lake Erie. Student surveys have indicated that the program is overwhelmingly meeting learning objectives.

- Academic Unit Participation: The CWP is the University of Waterloo's most interdisciplinary graduate program with 11 departments and schools participating from each of Waterloo's six academic faculties. Academic units have actively participated in program governance by supplying CWP Program Directors, Program Committee representatives and course instructors. In addition, units have provided academic and non-academic support to CWP students.

- Student Participation: The CWP has been successful in attracting a large number of students from a variety of backgrounds. Student surveys have indicated that the CWP has strongly influenced students' decision to enroll at Waterloo and would help them excel in their careers. CWP student cohorts have been diverse, with an average of about 60 percent female and 30 percent international students. Total enrollment over the seven-year review period was an impressive 293 students.

- Water Institute Support: The CWP is fortunate to be centrally supported by the Water Institute. The Institute provides a central "point of focus" for faculty and students, central record keeping and logistical support, and complementary programming that expands learning and professional opportunities for students.

Challenges

- Resources: As a collaborative program, the CWP is jointly delivered and resourced by 11 participating academic units. These units not only provide administrative and governance support to the program, but also provide teaching and financial resources. Although not currently a challenge, if participating units withdraw support, including teaching, due to competing resource demands, this could present a challenge to the program.

- Course Delivery: The CWP has been fortunate to have core courses delivered by a relatively small, experienced team of instructors. Increasing the pool of instructors has many benefits, including increasing building program resiliency, and exposing students to greater diversity of experience and thought in teaching. Challenges to realizing a greater pool of teaching have included the lack of a systematic teaching schedule, and differences in how participating units recognize teaching credit.

Weaknesses

- Skewed Student Participation: CWP enrollment has been primarily comprised of students from the faculties of Engineering, Science and Environment. While the total number of water students in Arts, Mathematics and Applied Health Sciences is significantly smaller than the aforementioned faculties, more emphasis on the benefits of CWP participation needs to be communicated to prospective students from underrepresented faculties from supervisors, academic units, and the Water Institute.

- Instructor Diversity: The gender of WATER 601 and 602 instructors has not been adequately balanced over the review period. The CWP Program Committee recognizes this weakness and is actively encouraging participating units to consider gender when assigning teaching resources to the program.

Summary of Key Findings from the External Reviewers

The program, which consists of two graduate level courses (601 and 602), has been successful in providing an excellent additional student experience (and credential) for a large body of students (20 to 66 students per year for over a decade) that has added value to their degree by exposing students to the value of understanding and problem-solving water issues through an interdisciplinary lens. The dual aspect of 601 delivering the theoretical frameworks and 602 providing a local experiential learning opportunity appear well calibrated and valued by instructors and students. SWIGS (the Student Water Institute Group) has provided a mechanism for students within and among cohorts to connect and develop a greater sense of being part of a“water” cohort, although it is limited in what it can do compared to dedicated cohort building program components (e.g. retreat, orientation, field trips).

1. The program needs to be placed on a **firmer fiscal foundation**. While admirable efforts have been made with existing funds from three participating faculties, the current funding is exceptionally parsimonious, and is currently limiting what the program can offer in terms of experiential learning components, visiting fellows, and student scholarships, relative to what it was able to offer during the period when it was funded by the RBC Foundation. With relatively modest increases in funding a number of additional high impact elements could be reinstated, as identified consistently by instructors, administrators and students. These include more **field components, outside speakers, and cohort building events** that would bring considerable value to the program. We do not recommend restoration of the full scholarship program that was

funded by RBC, but the university could consider developing **'EDI-enhancing scholarships'** as a mechanism to diversify the student cohort such as the intentional inclusion of indigenous, Black, and students living with disabilities, and other identified areas of underrepresentation.

2. We believe the program would also benefit from **better advertising and packaging**, as it is excellent and could be used as a stronger **recruiting tool** for U. Waterloo graduate students. At present, as reported to us, students often learn about the program only in an ad-hoc manner after applying to U. Waterloo. Further, while it appears that some professional skills development elements are available to students, including the Milestone event and via the Water Institute, these are not core or structured components of the Collaborative Water Program, but could be showcased as such to help recruit students.

3. We also recommend that the program participating faculties and departments contemplate an **admissions process** that allows prospective students to articulate their interest in water issues and treating such from an interdisciplinary approach. This process can also be designed to encourage the inclusion of underrepresented groups.

4. Finally, we recommend that the program undertake **better tracking of the success of its graduates**, including their employment in water-related fields, and an **alumni database**, as these are currently lacking. Collection and analysis of these data could help to pinpoint further areas of improvement, including specific skills that employers are seeking.

Program Response to External Reviewers' Recommendations

1. Our **highest priority recommendation is a modest increase in CWP's annual base funding to reinstate high impact educational elements**. These include the field components (at the scale they were done previously), the orientation / retreat for students, and the interdisciplinary international visiting fellows program.

   Response

   Program Response
   The CWP program, while gratefully acknowledging the significant financial support currently offered by the Faculties of Engineering, Environment and Science, agrees that a modest increase in annual base funding would enhance the student experience. Of particular importance is support for experiential learning components embedded in the WATER 602 course, including an annual overnight "cohort building" retreat in the Grand River watershed and a visiting fellows program. While current funding supports several WATER 602 day trips, overnight retreats have not taken place the last several years due to financial and COVID-19 related constraints. In response to student, CWP committee

and external review recommendations, the Water Institute has agreed to financially support an overnight retreat during 2023 and 2024 WATER 602 offerings. An increase to the CWP's annual base funding would, however, sustain this valuable experience for students past the short-term.

Dean's Response – Engineering
Current CWP annual funding was agreed to for the period 2020 to 2025. In 2024, the CWP Director and the Water Institute can initiate discussions related to the funding for this program including the cost and benefit of adding educational activities such as the overnight retreat.

Dean's Response – Environment
Environment takes over the management of the program from mid-2023. Therefore, it is expected that a range of programmatic considerations will emerge of the next two years and that these will include financial matters. This recommendation will be considered in the context of ENV's future management of the program, including the funding agreement.

Dean's Response – Science
Science is supportive of increasing the number and diversity of field, laboratory, and cohort-building activities. We will support an increase in funding recommended by ENV in their 2024 negotiations with CWP.

Current CWP annual funding was agreed to by the Deans of Engineering, Environment and Science for the period 2020 to 2025. In 2024, the CWP Director and the Water Institute will initiate discussions with Deans on a funding renewal agreement. During those discussions, benefits of the overnight, cohort-building retreat will be articulated by the program and considered by the Deans.

In addition to annual base funding kindly provided by the Deans of Engineering, Environment and Science, the Water Institute and the CWP Director will work with central and faculty Advancement officers to identify potential donors who might support CWP experiential learning activities, a visiting fellows program or student scholarships.

2. Our second highest recommendation is that the program would benefit from a formal process and database for tracking its graduates. This would include the elements noted above (e.g. their employment in water related fields), and could be used both to help quantitatively assess the success of the program, as well as a resource (e.g. for guest lectures, professional network) and for other alumni engagement.

Response

Program Response
While not related to academic content, the CWP agrees that the development of an alumni network would be useful. While usually the purview of Alumni Relations at central or departmental levels, developing a network for an interdisciplinary collaborative program is not straightforward institutionally or technically.

Notwithstanding the above, the Water Institute is currently establishing a network of CWP alumni using a Linkedin platform. The purpose of the platform will be to facilitate interactions among CWP alumni, to create a database of potential contributors to the CWP and to allow the program to track the career trajectories of graduates. In addition, the emerging CWP network will be used to promote a CWP 10-year anniversary event planned for the Fall 2023 term.

Dean's Response – Engineering
I am supportive of this approach.

Dean's Response – Environment
I am supportive.

Dean's Response – Science
Science is supportive of the approach taken by CWP to build an alumni network.

3. We further recommend that the admissions process for CWP include a statement of interest by prospective students, and that the program explicitly encourage students from underrepresented groups.

Response

Program Response
While the CWP acknowledges that the intent of the recommendation is to create a more engaged cohort of students, the program does not support the addition of a statement of interest by prospective students during the admissions process as it is unclear how this would increase the fit or quality of incoming students. Incoming students must meet the entrance requirements of their home department or school and then choose to "opt in" and meet the additional program requirements of the CWP. By opting in students are implicitly expressing an interest in interdisciplinary learning and perspectives. If the purpose of the admissions statement is to "screen out" students who are not a good fit, then it would be addressing a problem that does not exist as the

vast majority of CWP students have embraced the program and the extra work that it entails. The addition of a statement of interest, therefore, would be an administrative requirement with no real benefit or purpose and it is hard to see how a prospective student admitted to a home department or school would be turned down by the CWP based on such a statement. Furthermore, such statements also create inherent equity concerns given students from diverse backgrounds often do not have adequate training and mentorship available to learn how to write such statements.

In principle, the CWP agrees that the program should encourage students from underrepresented groups to enroll and thinks that a targeted scholarship program would be the best means to achieve this. The CWP draws from the larger student population that is primarily recruited by participating faculties, departments, schools and supervisors. Broader equity, diversity and inclusion enrollment initiatives have and will continue to be implemented at various levels by these units. The CWP does not think generic statements encouraging students from underrepresented groups to join the program in marketing materials for example would be useful or appropriate. Overtime, the overall university student population needs to change which will then influence the makeup of the CWP population.

In the short term, however, the Water Institute and the CWP Director will work with central and faculty Advancement officers to identify potential donors who may support targeted student scholarships to incent participation from students from underrepresented groups.

Dean's Response – Engineering
I am supportive of this approach.

Dean's Response – Environment
I am supportive.

Dean's Response – Science
Science is supportive of this approach.

4. Finally, we recommend that the program could be better advertised and packaged in order to be an effective recruiting tool for graduate students to the University of Waterloo.

Response

Program Response

While not related to academic content, the CWP agrees that the university, participating departments and schools and the program could benefit from improved marketing and promotions. In response, the Water Institute is currently developing a renewed CWP marketing plan in consultation with central units (eg, Graduate Studies and Post-Doctoral Affairs, University Relations) and participating faculty, departments and schools. The plan will include the development/renewal of program collateral appropriate to various target groups and the deployment of program content across various (sub)university channels. In addition, faculty members from participating academic units will be systematically supplied with program information and appropriate marketing collateral.

Dean's Response – Engineering
I am supportive of this approach.

Dean's Response – Environment
I am supportive and note that recruitment will be a major consideration under ENV's management.

Dean's Response – Science
Science is supportive of this approach.

Recommendations Not Selected for Implementation

The CWP does not intend to implement recommendation 3 that suggests the admissions process for the CWP include a statement of interest by prospective students. The rationale for this decision is described above.

Dean's Response - Engineering
I support not asking for a statement of interest by prospective students.

Dean's Response - Environment
I support not asking for a statement of interest by prospective students.

Dean's Response - Science
Science supports not asking for a statement of interest by prospective students.

Implementation Plan

	Recommendations	Proposed Actions	Responsibility for Leading and Resourcing (if applicable) the Actions	Timeline for addressing Recommendations
1.	Modest increase in CWP's annual base funding.	The Water Institute to support WATER 602 cohort building overnight retreat for 2023 and 2024. The CWP Director and Water Institute to discuss potential increase in core annual funding with Deans of Engineering, Environments and Science during program funding renewal discussions in 2024.	Water Institute CWP Director, Water Institute	2023-24 2024
2.	Formal process and database for tracking its graduates.	The Water Institute to establish and maintain alumni database.	Water Institute	2023, ongoing
3.	Admissions process for CWP include a statement of interest by prospective students, and that the program explicitly encourage students from underrepresented groups.	Statement of interest not implemented. Work with Advancement Officers to identify potential donors that would support targeted scholarships for underrepresented groups.	Na CWP Committee, Water Institute	Na 2023-24, ongoing
4.	Program could be better advertised and packaged in order to be an effective recruiting tool.	The Water Institute, in consultation with central units, participating faculty, departments and schools and other stakeholders, to develop and implemented renewed CWP marketing and promotions plan.	Water Institute, CWP Committee	2023-24

The Department Chair/Director, in consultation with the Dean of the Faculty shall be responsible for the Implementation Plan.

Date of next program review **2027-2028**

Date

Signatures of Approval

Nandita Basu 30/10/2023

Chair/Director Date

Mary Wells Digitally signed by Mary Wells Date: 2023.10.30 10:21:17 -04'00'

Faculty Dean - Engineering Date

November 1, 2023

Faculty Dean - Environment Date

Oct 30/23

Faculty Dean - Science Date

Sep. 6, 2023

Associate Vice-President, Graduate Studies and Postdoctoral Affairs Date
(For graduate and augmented programs)