UNIVERSITY OF WATERLOO
SENATE GRADUATE & RESEARCH COUNCIL
NOTICE OF MEETING

DATE:	Monday 8 May 2023	Chair – C. Dean
TIME:	10:30 a.m. – 12:00 noon	
PLACE:	NH 3318/3308	

AGENDA

Item	Action
Declarations of Conflict of Interest	
a. Excerpt from Bylaw 1, section 8*	Information

CONSENT AGENDA
Motion: To approve or receive for information by consent, items 1-3 below

1. Minutes of 10 April 2023*	Decision (SGRC)
2. Graduate Awards*	
a. Environment Student-Athlete Award (trust)	Decision (SGRC)
b. Clinician Scientist Graduate Award (trust)	Decision (SGRC)
c. Faculty of Arts Graduate Student Conference Award (endowment – Faculty funds)	Decision (SGRC)
d. RBC Graduate Scholarship (trust)	Decision (SGRC)
e. Pella Awards (trust)	Information
f. Dr. Daldeep Singh Memoria Award (trust)	Information
3. Curricular Submissions	
a. Health* (Brian Laird)	Decision (SGRC)
b. Science* (Martin Ross)	Decision (SGRC)
c. Graduate Studies* (Marianne Simm)	Decision (SGRC)

REGULAR AGENDA

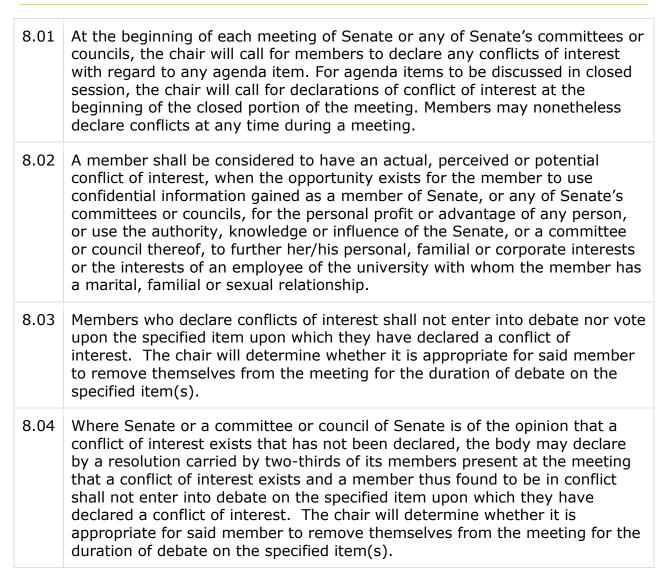|	
3. Business Arising from the Minutes	Information
4. Co-chairs' Remarks	Information
7. CREATEs (Bernie Dunker and Leslie Copp)	Information
8. Other Business	Information
9. Next Meeting: 12 June 2023 from 10:30 a.m. - 12 noon; NH 3318	Information

*material attached
** to be distributed separately
"SGRC" to be approved on behalf of Senate
"SEN" to be recommended to Senate for approval

3 May 2023	Tim Weber-Kraljevski
	Governance Officer

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).

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University of Waterloo
SENATE GRADUATE & RESEARCH COUNCIL
Minutes of the 10 April 2023 Meeting
[in agenda order]
Needles Hall 3318

</div>

Present: Ramona Bobocel, Jeff Casello, Charmaine Dean, Rob de Loe, Peter Deadman, Maureen Drysdale, Bernie Duncker, Anna Esselment, Bertrand Guenin, Alison Hitchens, Brian Laird, William McIlroy, Ian Milligan, Liz Nilsen, Jennifer Reid, Martin Ross, Marianne Simm, Siva Sivoththaman, Mike Szarka, Shirley Tang, Tim Weber-Krajlevski (Secretary), Richard Wikkerink

Resources: Angela Christelis, Carrie MacKinnon-Molson

Regrets: Aiden Huffman, Julie Joza*, Ryan Johnson, Manoj Sachdev, Aiman Fatima, Zerihun Kinate, Anita Layton, Julian Surdi, Shawn Wettig

Organization of Meeting: Jeff Casello, co-chair of the council, took the chair, and Tim Weber-Kraljevski acted as secretary. The secretary advised that due notice of the meeting had been given, a quorum was present, and the meeting was properly constituted.

DECLARATIONS OF CONFLICT 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. Guenin and Deadman. Carried.

1. MINUTES OF 6 March 2023
Council approved the minutes of the meeting as distributed.

2. GRADUATE AWARDS
Council approved items a, b, and c as presented.

3. CURRICULAR SUBMISSIONS
Council approved items a to f as presented.

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

5. CO-CHAIRS' REMARKS
On behalf of Council, Casello thanked Huffman, Drysdale, and Reid for their service on the Council as their terms were ending, and congratulated Reid on completing her PhD. Dean spoke on the following: (a) the Creating Inclusive Excellence in Research through Inclusive Leadership event, scheduled for Thursday, April 13, 2023, which is part of the Office of Research moving beyond helping individual researchers with the EDI section of grant applications to working on also embedding inclusive research in labs; and (b) an upcoming brainstorming session on disseminating research and knowledge mobilization, which members were asked to provide names of researcher to participate. Casello provided a brief update on: (a) the need for consistent message on Post-Doctoral Fellows (PDFs) hiring as a transitional appointment that need to be within 5 years of completing a PhD and be no longer than 6 years; and (b) that higher funding packages are needing to be worked on collectively at the Faculty and University level for the Ukrainian students who came through the Academic Internship and are now looking to become graduate students. Discussion included: PDFs versus research associate hiring; Bill 124's effect on PDF; the Scholar's at Risk program; increased living costs for all graduate students; the need for an institutional approach going forward with a permanent emergency fund to support students in similar situations; how the

university determines when there is a need to support students involved in humanitarian crises; and the ending of Tri-agency support for the Ukrainian students.

6. CURRICULAR SUBMISSIONS

Faculty of Engineering
Council heard a motion to recommend to Senate two major program revisions to Mechanical and Mechatronics Engineering: (a) Addition of direct entry Co-operative program to the Meng MME program; and (b) discontinuation of the Type 2 Graduate Diploma in Design Engineering and Graduate Diploma in Design Engineering – Co-operative Program. Siva and Guenin. Carried.

Faculty of Mathematics
Council heard a motion to recommend to Senate one major revision to the Master of Mathematics in Statistics and Actuarial Science: (a) discontinue the coursework study option from the MMath in Statistics program. Guenin and Siva. Carried.

7. GRAUATE STUDIES AND POSTDOCTORAL AFFAIRS VISIONING EXERCISE-CONTINUED
Casello continued his presentation, *Towards a proposed vision: Graduate studies at Waterloo*, as circulated, highlighting the following: (a) the creation of the dashboard for tracking trends in the graduate research activity data; (b) notable gaps in student experience, including a perception of resource competition between undergraduate and graduate students at Waterloo, a lack of understanding of resolution pathways when student challenges arise, a need to better understand the various roles of graduate students and to ensure the University is well-prepared to support them in these capacities, and the need of improving intercultural dynamics among the graduate student community; (c) concern that only 51% of graduate students feel their student life experience is excellent or very good; and (d) a pathway to move ahead on graduate student experience. Discussion included: the need to more visible pathways of resolutions for graduate students, as well as sideways pathways within units; having more training and resources available for those in leadership roles; and an appetite for consequences for supervisors that fail to meet expectations. Members endorsed the principles of the Vision for Graduate Studies at Waterloo.

8. OTHER BUSINESS
There was no other business.

9. NEXT MEETING
The next meeting will be held Monday 8 May 2023 from 10:30 a.m. to 12 noon in NH 3318.

1 May 2023   Tim Weber-Kraljevski
                                                                           Governance Officer

UNIVERSITY OF WATERLOO | **Graduate Studies and Postdoctoral Affairs**

April 24, 2023

TO: Mike Grivicic, Associate University, Senate Graduate and Research Council

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

RE: Agenda items for Senate Graduate & Research Council – May 2023

<u>Items for Approval</u>

a) **Environment Student-Athlete Award – trust**
An award, valued at $1,500, will be provided annually to a full-time undergraduate or graduate student whose primary academic plan is in the Faculty of Environment and who is a member of a Warriors varsity team. Selection is based on academic excellence, demonstrated interest in environment and sustainability leadership, as well as athletic talent and contribution to Warrior Athletics. To be considered, first-year students must have a minimum admission average of 80% while returning students must have a minimum cumulative average of 75%. Interested students should submit an application by November 1st. Candidates will be identified by Student Awards and Financial Aid (SAFA), vetted for P71 violations and academic progress in their plans by the relevant Associate Dean (Grad or Undergrad), Faculty of Environment, with final selection from this pool by Athletics and Recreation, normally by the end of the Fall term.

This fund is made possible by donations from Faculty of Environment community members, including Alumni and former Environment student-athletes, and lead alumni donor champion, Derek Coleman (Ages Foundation), PhD '74.

b) **Clinician Scientist Graduate Award – trust**
An award, valued at $2,000, will be provided annually to a full-time graduate student enrolled in the Master's program in the School of Optometry & Vision Science in the Faculty of Science. Selection is based on academic excellence in their current program. Preference will be given to Doctors of Optometry, followed by students with international optometric education.
The School of Optometry & Vision Science will identify candidates and select recipients normally each Winter.

This fund is made possible by a donation from Kristine Dalton to encourage trained optometrists to pursue research, leading to clinical discoveries in the field of Vision Science.

c) **Faculty of Arts Graduate Student Conference Award – endowment (Faculty funds)**
Through a commitment of financial support from the Faculty of Arts, awards are available to encourage full-time and part-time graduate students to present their own research (oral, poster, paper) at an academic conference and engage in academic dialogue within their field of study and research. Recipients will receive an award valued up to $100 for virtual conferences or up to $200 for in-person conferences.
Interested students must submit an application that is available on the Faculty of Arts website prior to the conference as soon as they have confirmed that they will be presenting at a conference.

Applicants will be notified of the decision within 2 weeks of submitting their application. Upon approval, the award will applied to the term in which the conference occurs. The award will be coded to the student's Quest account and first applied to any outstanding tuition and incidental fees. Any credit balance will be released as a refund via direct deposit.

d) **RBC Graduate Scholarship - trust**
Scholarships valued at up to $20,000 each will be provided annually to graduate students registered full time in a Master's or Doctoral program at the School of Accounting and Finance in the Faculty of Arts, and the School of Environment, Enterprise and Development in the Faculty of Environment, at the University of Waterloo. Selection will be made automatically by the respective Schools, without the need of an application, based on academic excellence, extracurricular achievements and/or volunteer involvement with the Hub for Sustainability Integration and demonstrated research in the fields of financial management or sustainability, as appropriate.
Annually $20k is allocated to the School of Accounting and Finance, and $20k to the School of Environment, Enterprise and Development. Each School will nominate students based on their allocation of funds.

The period of this defined term award will be from 2023 to 2027. The first selection will be made in May 2023 and the last in May 2027.

<u>Items for Information</u>
e) **Pella Awards - trust**
Originally established in September 2020 as the following:

Several awards will be presented annually to full-time undergraduate students in Year Two, Three or Four and/or Master's students in the School of Architecture. Selection is based on submission and review of a project that demonstrates excellence in sustainable design, and that exemplifies careful consideration of materials, details, placement, and orientation of fenestration. First place will be awarded $3,000, second place $2,000 and third place $1,000. Interested students may apply by submitting their project to the Director of the School of Architecture by May 1. This fund is made possible by a donation from Pella to support student success and innovation in fenestration. The total original gift was $18k to support awards between 2020 and 2022.

The donors are renewing their gift with an additional $18k to continue supporting this award under the same criteria until 2026.

f) **Dr. Daldeep Singh Memorial Award – trust**
Originally established in 2016, the donor has decided to renew the pledge period and increase the award value.
The additional pledge totals $5,000 and will be paid from December 2023 to December 2027.

The value of the award will increase from $750 to $1,000 as of the 2024-25 fiscal year. The rest of the award criteria remains the same.

From: Admin Council (April 12, 2023)

To: Senate Graduate Research Council (April 24, 2023)

Graduate calendar changes for Faculty of Health

1. PROGRAM CHANGES
1.1 Health* effective Fall 2023

1.1.1 **Motion:** Updating the course title from AHS 782 to HEALTH 782.

Rationale: References to Applied Health Sciences (AHS) within the course details are being revised to "Health" to align with the Faculty name change.

2. PROGRAM CHANGES
2.1 Recreation and Leisure Studies* effective Fall 2023

2.2.1 **Motion:** Add "Department consent required" as a requisite for REC 695.

Rationale: Currently students are enrolling themselves in the 1 space provided for each before completing the enrollment forms with the required details that we then add to the Schedule of Classes in a separate section for each student that enrolls (unless it is a group course with an instructor on the same topic).

2.2.2 **Motion:** Add "Department consent required" as a requisite for REC 798.

Rationale: Currently students are enrolling themselves in the 1 space provided for each before completing the enrollment forms with the required details that we then add to the Schedule of Classes in a separate section for each student that enrolls (unless it is a group course with an instructor on the same topic).

*attachment

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: 2023

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 subject code, Course title, and Course description. References to Applied Health Sciences (AHS) are being revised to "Health" to align with the Faculty name change.*

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

Course subject code: HEALTH

Course number: 782

Course ID: 013715

Course title (max. 100 characters including spaces): Selected Topics in Health

Course short title (max. 30 characters including spaces): Selected Topics in Health

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Not required

Course description: Doctoral students will complete an analysis of specific topics of interest in Health under the (co)-supervison of faculty member(s) with the appropriate expertise from another department, school or faculty. The form of study may involve a review of literature or the planning and execution of an independent study

resulting in a paper for possible publications.

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

Primary meet type: Reading

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:

References to Applied Health Sciences (AHS) within the course details are being revised to "Health" to align with the Faculty name change.

Form completed by:
Department/School approval date (mm/dd/yy):
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 03/09/23
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: Health

Effective date: Term: Fall Year: 2023

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*):

                       Adding department consent and removing the REC Grad students requisite

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

Course subject code: REC

Course number: 695

Course ID: 002908

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

Course short title (max. 30 characters including spaces): REC 695

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Department

Course description: Topic(s) to be negotiated on an individual or small group basis with members of the faculty.

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

Primary meet type: RDG Choose an item.

Delivery mode: On-campus and also 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:
Add "Department consent required" as a requisite for REC 695. Currently students are enrolling themselves in the 1 space provided for each before completing the enrollment forms with the required details that we then add to the Schedule of Classes in a separate section for each student that enrolls (unless it is a group course with an instructor on the same topic).

Form completed by: Emily Watson
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):

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

Faculty: Health

Effective date: Term: Fall   Year: 2023

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

☐ 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 <u>Graduate Studies Program Revision Template</u>.

☐ 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*):

                        Adding department consent

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

Course subject code: REC

Course number: 798

Course ID: 009479

Course title (max. 100 characters including spaces): Advanced Topics in Leisure Studies

Course short title (max. 30 characters including spaces): REC 798

Grading basis: Numerical

Course credit weight: 0.50

Course consent required: Department

Course description: An in-depth analysis of specific topics of interest. The particular topics for a given term will be determined by the interests of the faculty and participating students. The form of the study may include a literature review or the planning and execution of an independent research study leading to a major paper.

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

Primary meet type: Seminar

Delivery mode: On-campus and also 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:
Add "Department consent required" as a requisite for REC 695 and REC 798. Currently students are enrolling themselves in the 1 space provided for each before completing the enrollment forms with the required details that we then add to the Schedule of Classes in a separate section for each student that enrolls (unless it is a group course with an instructor on the same topic).

Form completed by: Emily Watson
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):

Faculty of Science
SGRC Submission

MEMORANDUM

To : Tim Weber-Kraljevski
From : Martin Ross, Associate Dean Graduate Studies -Faculty of Science
Date : May 1st, 2023
Re : Senate 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 approved by Science Faculty Council (date indicated on the forms).

Biology

Motion: To add a new course BIOL 633 (Advanced Community Ecology).

Rationale:

Rationale for request: The Biology Department has many faculty active in the area of Community Ecology and yet graduate students lack a suitable course to help prepare them for their thesis work and to ensure it is suitably grounded in up to date theory. Community Ecology as a discipline has recently undergone a fundamental conceptual shift to recategorize its catalogue of theory into four key processes that parallel evolutionary biology and population genetics: selection, drift, speciation and dispersal. Most Community Ecology courses at the undergraduate level continue to teach the material in the former conceptual framework, so this course is necessary to bring our grads up to speed with the latest state of the science.

Chemistry

Motion: To include CHEM 784 (Foundations of Literature Review) as a required course for students entering the PhD in Chemistry - Quantum Information program from a Bachelor's, or transferring from a Master's program.

Rationale: The goal is for all graduate students to have this course as a requirement. With this change, all the PhD Chemistry course requirements will be consistent with the MSc in Chemistry programs.

ATTACHMENTS:

Appendix A - SGRC-grad_studies_course_milestone_form-Biol 633-Rooney - Reviewed by GSPA

Appendix B - PhD in Chemistry - Quantum Information - graduate_studies_program_revision_template - Reviewed by GSPA revised by chemistry

Thank you,

_____

Martin Ross, PhD, Associate Dean of Science, Graduate Studies

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: **2023**

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: **633**

Course ID:

Course title (max. 100 characters including spaces): **Advanced Community Ecology**

Course short title (max. 30 characters including spaces): **Advanced Community Ecology**

Grading basis: **Numerical**

Course credit weight: **0.50**

Course consent required: **Instructor**

Course description: Community ecology seeks to understand the processes by which communities assemble and the key biotic and abiotic factors that influence their structure and function. This seminar covers diverse ecological theories relevant to communities, applying concepts of selection, drift, speciation, and dispersal through readings, discussion, and a term paper that tests a community ecology hypothesis.

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: The Biology Department has many faculty active in the area of Community Ecology and yet our graduate students lack a suitable course to help prepare them for their thesis work and to ensure it is suitably grounded in up to date theory. Community Ecology as a discipline has recently undergone a fundamental conceptual shift to recategorize its catalogue of theory into four key processes that parallel evolutionary biology and population genetics: selection, drift, speciation and dispersal. Most Community Ecology courses at the undergraduate level continue to teach the material in the former conceptual framework, so this course is necessary to bring our grads up to speed with the latest state of the science.

Form completed by: April Wettig
Department/School approval date (mm/dd/yy): 01/25/22
Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 01/27/22
Faculty approval date (mm/dd/yy): 04/28/2023
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

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

Program contact name(s): Thorsten Dieckmann, Catherine Van Esch, Kim Rawson

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.

Updating the course requirements for the PhD in Chemistry - Quantum Information program to include CHEM 784 as a required course for students entering the PhD program from a Bachelor's, or transferring from a Master's program, so the Chemistry specific course requirements are consistent with the MSc in Chemistry programs.

Is this a major modification to the program? No

Rationale for change(s):

After updating the PhD in Chemistry - Nanotechnology program requirements, we also discussed applying the same principles to the PhD in Chemistry - Quantum Information program in order to incorporate the CHEM 784 course and have all Chemistry sub-programs consistent.

Proposed effective date: Term: Fall   Year: 2023

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

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

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

Degree requirements
 	
• **Courses**
    ○ Students must complete ~~2 one-term~~ courses (0.50 unit weight) ~~and the following 2 Quantum Information core courses:~~
        ▪ QIC 710 Quantum Information Processing
	Degree requirements
	
	• **Courses**
	    ○ Students must complete the following graduate level courses (0.50 unit weight):
	        ▪ QIC 710 Quantum Information Processing
	        ▪ QIC 750 Implementation of Quantum Information Processing

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

▪ QIC 750 Implementation of Quantum Information Processing
o ~~Students entering the PhD program following completion of a Master's degree equivalent to that offered by one of the participating academic units at the University of Waterloo must either previously have successfully completed the 2 Quantum Information core courses (QIC 710 and QIC 750), or their equivalents at another institution.~~
o ~~Completion of 2 graduate courses in Quantum Information (other than QIC 710 and QIC 750) is required as part of the requirement for the PhD in Chemistry - Quantum Information at the University of Waterloo. Note in this context that any QIC course offered by the Department of Chemistry satisfies 1 of the Chemistry course requirements.~~
o ~~Chemistry requires the equivalent of 2 half credit Chemistry Graduate courses (0.50 unit weight), which may be satisfied by QIC courses offered by the Department of Chemistry. Where a student does not take a QIC course offered by the Department of Chemistry, another Graduate Chemistry course(s) must be taken to meet the Chemistry course requirement.~~
 	
• ~~**Other requirements**~~
o ~~Direct admission from a BSc or direct transfer to the PhD program after one year of MSc study: students who are either admitted to a Master's degree program at the University of Waterloo with an appropriate honours Bachelor's degree and who thereafter transfer directly into the PhD program, or are directly admitted from a Bachelor's degree, must complete the following:~~
  ▪ QIC 710 Quantum Information Processing
  ▪ QIC 750 Implementation of Quantum Information Processing
  • ~~1 of CHEM 745 Statistical Mechanics, CHEM 746 Quantum Chemistry, CHEM 756 Spectroscopy, CHEM 769 Physical Organic Chemistry,~~
	▪ <u>1 QIC elective course</u>
	▪ <u>1 QIC elective course</u>
	▪ <u>1 CHEM elective course (note: not required if a QIC course is taught by an instructor from the Department of Chemistry)</u>
	▪ <u>1 CHEM elective course (note: not required if a QIC course is taught by an instructor from the Department of Chemistry)</u>
	o <u>Students who have completed their Bachelor's or Master's degree in Quantum Information at the University of Waterloo (or an equivalent degree at another institution) cannot take QIC 710 or QIC 750; rather, they are required to complete 2 other QIC graduate level courses (0.50 unit weight).</u>
	o <u>Students admitted with an appropriate Honours Bachelor's degree who enter directly into the PhD program or students who transfer directly from a Master's program to the PhD program (after one year of Masters study) must complete the following graduate level courses (0.50 unit weight):</u>
	  ▪ QIC 710 Quantum Information Processing
	  ▪ QIC 750 Implementation of Quantum Information Processing
	  ▪ <u>CHEM 784 Foundations of Literature Review</u>
	  ▪ CHEM 794 Master's Seminar
	  ▪ 1 QIC elective course
	  ▪ 1 QIC elective course
	  ▪ <u>1 CHEM elective course (note: not required if a QIC course is taught by an instructor from the Department of Chemistry)</u>
	  ▪ <u>1 CHEM elective course (note: not required if a QIC course is taught by an instructor from the Department of Chemistry)</u>

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
~~CHEM 713 Chemistry of Inorganic Solid Materials~~ ▪ 2 additional QIC courses ▪ CHEM 794 Master's Seminar ▪ ~~PhD Seminar milestone~~ ▪ ~~PhD Quantum Computing Seminar milestone~~ ▪ ~~PhD Comprehensive Examination milestone~~ ▪ ~~An original research dissertation in Quantum Information~~ ○ ~~The Department of Chemistry requires the equivalent of 2 Chemistry graduate courses (0.50 unit weight), which may be satisfied by QIC courses offered by the Department of Chemistry. Where a student does not take a QIC course offered by the Department of Chemistry, another graduate Chemistry course(s) must be taken to meet the Chemistry course requirement. Any QIC course offered by the Department of Chemistry satisfies 1 of the Chemistry course requirements.~~	

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

This should not affect any students currently in the program as they started Fall 2022 and were informed of what the new requirements may be.

Department/School approval date (mm/dd/yy):

Reviewed by GSPA (for GSPA use only) ☒ date (mm/dd/yy): 10/14/22
Faculty approval date (mm/dd/yy): 04/28/2023
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: Graduate Studies

Effective date: Term: Fall   Year: 2023

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: GS

Course number: 999

Course ID:

Course title (max. 100 characters including spaces): Continuing Degree Requirement

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

Grading basis: NGD

Course credit weight: 0.00

Course consent required: Not required

Course description:

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

Primary meet type: Project

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 course is only for use for students in programs that charge fees by the course. In these programs, the only way that fees can be added to a student's account is by enrolling in a course but, occasionally, a student in these programs wishes not to take a regular academic course in a term and, instead, complete only a milestone or work for a course where they currently have a grade of incomplete. Since students must be registered in any term in which they are completing a degree requirement, this will allow them to do so without enrolling in a regular academic course. Students will not be able to self-enroll in this course, but will be enrolled by GSPA, at the request of the Department/School.

Form completed by: GSPA
Department/School approval date (mm/dd/yy):
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):