The information published in this Graduate Calendar outlines the rules, regulations, curricula, programs and fees for the 2018-2019 academic year, including the Summer Semester 2018, Fall Semester 2018 and the Winter Semester 2019.

For your convenience the Graduate Calendar is available in PDF format.

If you wish to link to the Graduate Calendar please refer to the Linking Guidelines.

The University is a full member of:

• Universities of Canada

Contact Information:

University of Guelph
Guelph, Ontario, Canada
N1G 2W1
519-824-4120

Revision Information:

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<tr>
<td>May 1, 2018</td>
<td>Initial Publication</td>
</tr>
<tr>
<td>August 10, 2018</td>
<td>Revision 1</td>
</tr>
<tr>
<td>December 13, 2018</td>
<td>Revision 2</td>
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Disclaimer

The Office of Graduate Studies has attempted to ensure the accuracy of this on-line Graduate Calendar. However, the publication of information in this document does not bind the university to the provision of courses, programs, schedules of studies, fees, or facilities as listed herein.

Limitations

The University of Guelph reserves the right to change without notice any information contained in this calendar, including any rule or regulation pertaining to the standards for admission to, the requirements for the continuation of study in, and the requirements for the granting of degrees or diplomas in any or all of its programs.

The university will not be liable for any interruption in, or cancellation of, any academic activities as set forth in this calendar and related information where such interruption is caused by fire, strike, lock-out, inability to procure materials or trades, restrictive laws or governmental regulations, actions taken by the faculty, staff or students of the university or by others, civil unrest or disobedience, Public Health Emergencies, or any other cause of any kind beyond the reasonable control of the university.

The University of Guelph reaf rms section 1 of the Ontario Human Rights Code, 1981, which prohibits discrimination on the grounds of race, ancestry, place of origin, colour, ethnic origin, citizenship, creed, sex, sexual orientation, handicap, age, marital status or family status.

The university encourages applications from women, aboriginal peoples, visible minorities, persons with disabilities, and members of other under-represented groups.
Introduction

Collection, Use and Disclosure of Personal Information

Personal information is collected under the authority of the University of Guelph Act (1964), and in accordance with Ontario's Freedom of Information and Protection of Privacy Act (FIPPA) http://www.e-laws.gov.on.ca/DBLaws/Statutes/English/90f31_e.htm. This information is used by University officials in order to carry out their authorized academic and administrative responsibilities and also to establish a relationship for alumni and development purposes. Certain personal information is disclosed to external agencies, including the Ontario Universities Application Centre, the Ministry of Advanced Education and Skills Development, and Statistics Canada, for statistical and planning purposes, and is disclosed to other individuals or organizations in accordance with the Office of Registrarial Services Departmental Policy on the Release of Student Information. For details on the use and disclosure of this information call the Office of Registrarial Services at the University at (519) 824-4120 or see https://www.uoguelph.ca/registrar/

Statistics Canada - Notification of Disclosure

For further information, please see Statistics Canada's web site at http://www.statcan.gc.ca and Section XIV Statistics Canada.

Address for University Communication

Depending on the nature and timing of the communication, the University may use one of these addresses to communicate with students. Students are, therefore, responsible for checking all of the following on a regular basis:

Email Address

The University issued email address is considered an official means of communication with the student and will be used for correspondence from the University. Students are responsible for monitoring their University-issued email account regularly.

Home Address

Students are responsible for maintaining a current mailing address with the University. Address changes can be made, in writing, through Registrarial Services.

Name Changes

The University of Guelph is committed to the integrity of its student records, therefore, each student is required to provide either on application for admission or on personal data forms required for registration, his/her complete, legal name. Any requests to change a name, by means of alteration, deletion, substitution or addition, must be accompanied by appropriate supporting documentation.

Student Confidentiality and Release of Student Information Policy Excerpt

The University undertakes to protect the privacy of each student and the confidentiality of his or her record. To this end the University shall refuse to disclose personal information to any person other than the individual to whom the information relates where disclosure would constitute an unjustified invasion of the personal privacy of that person or of any other individual. All members of the University community must respect the confidential nature of the student information which they acquire in the course of their work.

Complete policy at https://www.uoguelph.ca/secretariat/office-services/university-secretariat/university-policies.
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The Department of Integrative Biology is comprised of faculty members in three overlapping fields and offers MSc and PhD degrees in:

- Ecology
- Evolutionary Biology
- Comparative Physiology

Research is focused on a wide variety of organisms (from microbes to plants to animals) at multiple levels of organization (from molecules and cells through to entire ecosystems). Basic research is being used as a foundation to address some of the most important regional and global issues.

See the department website for additional information.

### Administrative Staff

**Chair**
Ryan Gregory (2480 Science Complex, Ext. 53598)
ibcchair@uoguelph.ca

**Graduate Program Coordinator**
Karl Cottenie (2470 Science Complex, Ext. 52554)
cottenie@uoguelph.ca

**Graduate Program Coordinator**
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cgriswol@uoguelph.ca

**Graduate Program Assistant**
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cbsgrad@uoguelph.ca

**CBS Graduate Admissions Secretary**
Karen White (3479 Science Complex, Ext. 52730)
cbsibgrad@uoguelph.ca

### Graduate Faculty

**Johanna D. Ackerman**
BSc Toronto, MA SUNY, PhD Cornell - Professor

**Sarah J. Adamecz**
BSc Dalhousie, MSc Guelph, PhD Imperial College - Associate Professor

**James S. Ballantyne**
BSc, MSc Guelph, PhD British Columbia - Professor

**Nicholas J. Bernier**
BSc McGill, Diploma in Aquaculture Malaspina College, MSc British Columbia, PhD Ottawa - Professor

**Elizabeth G. Boulding**
BSc British Columbia, MSc Alberta, PhD Washington - Professor

**Christina M. Caruso**
BA Oberlin College, PhD Illinois - Associate Professor

**Karl A. Cottenie**
MSc, MS, PhD K.U. Leuven - Associate Professor and Graduate Program Coordinator

**Stephen S. Crawford**
BSc Guelph, MSc Queen's, PhD Guelph - Associate Professor

**Teresa J.D. Crease**
BSc, MSc Windsor, PhD Washington - Professor and Dean, Graduate Studies

**Roy G. Danzmann**
BSc, MSc Guelph, PhD Montana - Professor

**Moira M. Ferguson**
BSc, MSc Guelph, PhD Montana - Professor

**John M. Fryxell**
BSc, PhD British Columbia - Professor and Chair of Integrative Biology

**Jinzhong Fu**
BSc Nankai, MSc Chinese Academy of Sciences, PhD Toronto - Associate Professor

**Todd E. Gillis**
BSc, MSc Guelph, PhD Simon Fraser - Associate Professor

**Ryan Gregory**
BSc McMaster, PhD Guelph - Associate Professor

**Cortland K. Griswold**
BSc Wisconsin, MSc Toronto, PhD British Columbia - Associate Professor

**Mehrdad Hajibabaei**
BSc Tehran Azad, PhD Ottawa - Associate Professor

**Robert Hanner**
BSc Eastern Michigan, PhD Oregon - Associate Professor

**Paul D.N. Hebert**
BSc Queen's, PhD Cambridge, FRSC - Professor

**Andreas Heyland**
BSc, MSc Zurich, PhD Florida - Associate Professor

**Brian C. Husband**
BSc, MSc Alberta, PhD Toronto - Professor and Associate Dean Academic, College of Biological Science

**Frederic Laberge**
BSc, MSc Laval, PhD Manitoba - Associate Professor

**Andrew MacDougall**
BA Dalhousie, MSc York, PhD British Columbia - Associate Professor

**Hafiz Maherali**
BSc McGill, MSc, PhD Illinois - Associate Professor

**Andrew G. McAdam**
BSc McGill, MSc Western, PhD Alberta - Associate Professor

**Kevin S. McCann**
BA Dartmouth, MSc, PhD Guelph - Professor

**Robert L. McLaughlin**
BSc Windsor, MSc Queen's, PhD McGill - Associate Professor

**Amy Newman**
BSc Queen's; PhD British Columbia - Assistant Professor

**Jonathan A. Newman**
BA, PhD State Univ. of New York - Professor and Dean, College of Biological Sciences

**Steven G. Newmaster**
BSc Guelph, PhD Alberta - Professor

**Ryan Norris**
BSc Waterloo, MSc York, PhD Queen's - Associate Professor

**Beren W. Robinson**
BSc, MSc Dalhousie, PhD Binghamton - Associate Professor

**M. Alexander Smith**
BSc Trent, MSc Trent, PhD McGill - Associate Professor

**Merritt R. Turetsky**
BSc Villanova, PhD Alberta - Associate Professor

**Glen J. Van Der Kraak**
BSc, MSc Manitoba, PhD British Columbia - Professor and Associate Dean of Research, College of Biological Science

**Patricia A. Wright**
BSc McMaster, PhD British Columbia - Professor

### Associated Graduate Faculty

**James Bogart**
BSc Toronto, MSc PhD Texas - Professor Emeritus, University of Guelph

**Eldon Eveleigh**
BSc, MSc Newfoundland, PhD Toronto - Entomologist, Natural Resources Canada, Fredericton

**Douglas S. Fudge**
BA, MAT Cornell, MSc Guelph, PhD British Columbia - Associate Professor

**Shoshanah Jacobs**
BSc MSc New Brunswick, PhD Ottawa - Contractually Limited Faculty, Integrative Biology, University of Guelph

**Tom Nudds**
BSc MSc Windsor; PhD Western Ontario - Professor Emeritus, Integrative Biology, University of Guelph

**Astrid Schwab**
BSc Konstanz, MSc Potsdam, PhD Guelph - Assistant Professor. Texas State University

**Dirk Steinke**
BSc, MSc University of Konstanz, PhD Goethe University Frankfurt - Associate Director Centre for Biodiversity and Adjunct Professor, University of Guelph

### MSc Program

The Integrative Biology Graduate Program offers MSc degrees in each of three major fields of emphasis: 1) ecology; 2) evolutionary biology; and 3) comparative physiology. The three areas of interest focus on (but are not restricted to) experimental approaches in field and laboratory settings and a strong linkage between theoretical and applied investigations. The department encourages students to pursue interdisciplinary research and, where appropriate, utilize faculty expertise from across campus on their advisory committees.

### Admissions Requirements

To be considered, applicants must meet the requirements of a four-year honours science degree with a minimum B’ (75%) average during the final two years (4 semesters) of undergraduate study. Each applicant must obtain the support of a faculty member willing to serve as his/her thesis advisor. Admission may be granted in September, January or May. Completed applications should be uploaded at least one full semester (four months) before the expected date of admission. Applications from international students should be uploaded at least eight months prior to the expected date of admission.
Admissions Requirements

The admission and degree requirements of the PhD program are essentially those of the university. Most applicants will have a recognized Master's degree in a related field obtained with minimum academic standing of 'A-' (80%) in their postgraduate studies, and the endorsement of a potential thesis advisor. Under exceptional circumstances admission directly to a PhD program with an appropriate honours degree alone, or transfer from MSc to PhD program without completing the MSc thesis requirements, is also possible. Applications should be uploaded at least one full semester (four months) prior to the expected date of admission. Applications from international students should be uploaded at least eight months prior to the expected date of admission.

Each applicant must obtain the support of a faculty member willing to serve as his/her thesis advisor. All components of the application, including transcript(s), graduate certificate(s), grading scale(s), language test results, assessment forms, a statement of interest and the name of the faculty advisor must be uploaded no later than two months after an application is submitted through the OUAC portal. Applications that are incomplete after this time period will be closed.

Admission Process

Graduate student applications to programs in the College of Biological Science are handled by the Office of the Associate Dean, Research (ADR). Before submitting an application, applicants are strongly encouraged to view the "Before you Apply" and "Admission Process" webpage on the ADR Future Student's site. Complete application submission instructions may also be found on the Office of Graduate Studies webpage or in the Graduate Calendar.

Degree Requirements

Students must complete and defend an acceptable thesis. In addition, they must successfully complete courses totaling no fewer than 1.5 credits. These credits must include the mandatory course IBIO*6630, Scientific Communication (0.50 credit)

An acceptable MSc thesis comprises a scientifically defensible account of the student's research on a particular, well-defined research problem or hypothesis. Such research should begin with the practical expectation that it could be completed and the thesis defended in not more than six semesters. Paramount to the notion of acceptability of the thesis is its quality with respect to the underlying rationale (problem identification), the approach used to address the problem, and the evaluation of the results. Final acceptance of the MSc thesis need not imply that the work is sufficiently meritorious to warrant publication in scholarly media, though the majority of MSc research in the department is published.

The Department endorses the idea that graduate students in the Integrative Biology program should benefit from exposure to recent developments both within and between the major areas of emphasis. To that end, students may enroll in any of the regularly offered courses entitled "Special Topics in ..." Details of course content, format and evaluation will be available in the Office of the Chair of the Department one semester prior to the semester in which the course is offered.

In addition, the Department offers two "Advances in Integrative Biology" courses to provide students with the opportunity to study with individual faculty on specific topics in the faculty member's area of expertise. These courses may be taken by groups as either reading/seminar courses, or on an individual research-project basis. Students should approach individual faculty members to request supervision on individual research project courses. In addition, a student can register in an "Advances in Integrative Biology" course to combine a senior-level undergraduate course in ecology, evolutionary biology, or comparative physiology with an additional component - typically a major paper or research project. Students should approach individual faculty members that teach the senior-level undergraduate course, and in consultation with their thesis advisor.

PhD Program

The Integrative Biology Graduate Program offers PhD degrees for studies in each of the three major fields of emphasis: 1) ecology; 2) evolutionary biology; and 3) comparative physiology. The three areas of emphasis focus on (but are not restricted to), experimental approaches in field and laboratory settings and a strong link between theoretical and applied investigations. The Department encourages students to pursue interdisciplinary research and, where appropriate, utilize faculty expertise from across campus on their advisory committees.

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<th>Course Code</th>
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<tr>
<td>IBIO*6080</td>
<td>Advances in Integrative Biology II</td>
<td>0.50</td>
<td>This course provides graduate students, either individually or in groups, with the opportunity to pursue topics in specialized fields of integrative biology under the guidance of graduate faculty. Courses may be offered in any of lecture, reading/seminar, or individual project formats. A minimum enrolment may be required for some course offerings. Restrictions: Instructor consent required. Department(s): Department of Integrative Biology</td>
</tr>
<tr>
<td>IBIO*6630</td>
<td>Scientific Communication</td>
<td>0.50</td>
<td>This course involves development and refinement of the skills of scientific communication, with emphasis on writing skills, in the context of developing a thesis proposal. This course is mandatory for MSc AND DIRECT ENTRY PhD students in the Department of Integrative Biology. Department(s): Department of Integrative Biology</td>
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