2018-2019 Graduate Calendar

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
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519-824-4120

Revision Information:

<table>
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<th>Date</th>
<th>Description</th>
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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>
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<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 reaffirms 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.
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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**Biotechnology**

The interdepartmental program focuses on molecular approaches and provides both scientific and business discipline-specific training. The Master of Biotechnology program provides graduates with advanced education, knowledge, technical and business expertise in the broad field of biotechnology. Courses promote effective communication of knowledge of the scientific discipline, as well as place it in a business context. It fosters academic and intellectual growth, as well as interactions between graduate students, faculty, the university, and the wider research community and the private sector. Students will be trained as highly competent, independent, and creative researchers/managers who are familiar with and able to integrate both the science and business environments. Furthermore, the program encourages the development of entrepreneurial activities in this area, which is crucial for the formation of new private sector companies. The ultimate goal of the program is to advance and encourage biotechnology research on campus, both amongst the graduate students enrolled in the program, as well as amongst and between faculty.

**Administrative Staff**

**Director**
Steven Rothstein (4469 Summerlee Science Complex, Ext. 58524)
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**Graduate Program Coordinator**
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Carol Hannam (4451 Summerlee Science Complex, Ext. 56474)
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**From the Department of Integrative Biology**

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Steven G. Newmaster
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**From the Department of Molecular and Cellular Biology**

Tariq Ahtkar
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Emma Allen-Vercoe
BSc London UK, PhD Open UK - Professor

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Joseph L. Colasanti
BSc, PhD Western Ontario - Associate Professor

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BSc Waterloo, MSc, PhD Toronto - Associate Professor

Georgina Cox
BSc, PhD Leeds - Assistant Professor

John Dawson
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Michael J. Emes
BSc, PhD Sheffield - Professor

Steffen P. Graether
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George Harauz
BASc, MSc, PhD Toronto - Professor

Nina Jones
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David Josephy
BSc Toronto, PhD British Columbia - Professor

Azad Kaushik
BVSc, MVSc Haryana, DSc Inst. Pasteur - Associate Professor

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Peter J. Krell

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Joseph S.L. Lam
BSc, PhD Calgary - Professor

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Jaideep Mathur
BSc, MSc Lucknow (India), PhD Gorakhpur (India) - Associate Professor

Baozhong Meng
BSc, MSc Hebei Agricultural Univ. (China) - Associate Professor

Rod Merrill
BSc Lethbridge, PhD Ottawa - Professor

Richard D. Mosser
BSc, PhD Waterloo - Associate Professor

Robert T. Mullen
BSc, PhD Alberta - Professor

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BSc McGill, PhD Toronto - Assistant Professor

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BSc Newcastle (UK), PhD North Wales - Associate Professor

James Uniacke
BSc, PhD Concordia University - Assistant Professor

George van der Merwe
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Terry Van Raay
BSc Windsor, MSc Guelph, PhD Utah - Assistant Professor

John Vessey
BSc, MSc Dalhousie, PhD Eberhard Karls University of Tübingen - Assistant Professor

Christopher Whitfield
BSc Newcastle, PhD Edinburgh - Professor

Krassimir (Joseph) Yankulov
BSc Sophia, PhD ICRF London - Associate Professor

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BA, MBA McMaster, CMA - Associate Professor

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MSc Utrecht, MBA Derby, PhD Ramon LLULL, CMA - Associate Professor and Chair

Trent Tucker
BSc Alberta, MBA Toronto, PhD Waterloo - Assistant Professor

**From the Department of Pathobiology**

K. Sarah Wootton
BSc, MSc Carleton, PhD Dalhousie - Professor
MBIOT Program

Admission Requirements
Students entering the program will normally have completed an Honours Bachelor’s degree with a minimum admission average of B (75% and higher) in one of the following fields: biology, molecular biology and genetics, biotechnology, microbiology, biochemistry, biophysics, food science, agriculture, food production systems, commerce with a strong science background. Anyone lacking the required background will be encouraged to complete them prior to commencing their studies in the new program (typically in the immediately preceding summer semester) or, if approved by the program counsellor, during their studies. Students whose first language is not English require a minimum TOEFL score of 93 with a minimum score of 22 in each of the four categories, or a minimum IELTS score of 7.0, with a minimum of at least 6.5 in each component. Applicants who have completed an undergraduate degree from institutions where the language of instruction was English may be exempt from ESL requirements, pending departmental approval. All components of the application, including transcript(s), graduate certificate(s), grading scale(s), language test results and assessment forms 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.

Admissions 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” webpages on the ADR Future Student’s site. Space in this program will be limited and students are advised to apply as early as possible to be accepted for the following Fall. Application details are posted on the program web-site.

Degree Requirements
A total of 4.0 course credits are required to graduate, which must include BIOT*6500, BIOT*6600, BIOT*6550, BIOT*6610 and BIOT*6700 (each 0.50). In addition, the research project course BIOT*6800 (1.00) must be taken in Semester 3. Additional courses can be selected from electives. An optional Semester 4 may be added, as a research project extension.

Duration of the Program
Students will normally take three courses per semester for two semesters (3.0 credits) and complete the Biotechnology Masters project (1.0) credit in semester 3. Therefore, the program normally takes 12 months of full-time study. There is, however, the option to continue the Biotechnology Masters project into a second fall semester, in which case the program will take 16 months of full-time study.

Courses

Core Courses

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<tr>
<th>Course Code</th>
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<tr>
<td>BIOT*6500</td>
<td>Molecular Biotechnology F</td>
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<tr>
<td>BIOT*6550</td>
<td>Biodiversity and Biotechnology W</td>
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<td>BIOT*6600</td>
<td>Innovation Management F</td>
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<tr>
<td>BIOT*6610</td>
<td>Cases in Biotechnology Management W</td>
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Electives

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<tr>
<td>BIOT*6700</td>
<td>Communication in Science and Business W</td>
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<tr>
<td>BIOT*6800</td>
<td>Research Project S</td>
<td>1.00</td>
<td>Department of Molecular and Cellular Biology</td>
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Electives

College of Biological Sciences

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<tr>
<td>MCB*6310</td>
<td>Advanced Topics in Molecular and Cellular Biology</td>
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<tr>
<td>MCB*6370</td>
<td>Protein Structural Biology and Bioinformatics</td>
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<tr>
<td>HNNS*6440</td>
<td>Nutrition, Gene Expression and Cell Signalling</td>
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Bioinformatics

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<tr>
<td>BINF*6110</td>
<td>Genomic Methods for Bioinformatics</td>
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<tr>
<td>BINF*6210</td>
<td>Software Tools for Biological Data Analysis and Organization</td>
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College of Business and Economics

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<tr>
<td>UNIV*6050</td>
<td>The Integration of Science and Business in Agrifood Systems</td>
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<tr>
<td>MGMT*6200</td>
<td>Leadership Assessment and Development</td>
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<td>MGMT*6400</td>
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Ontario Agricultural College

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<tr>
<td>ANSC*6450</td>
<td>Topics in Animal Biotechnology</td>
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<tr>
<td>ENV*6040</td>
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<tr>
<td>PLNT*6500</td>
<td>Applied Bioinformatics</td>
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December 13, 2018