2019-2020 Graduate Calendar

The information published in this Graduate Calendar outlines the rules, regulations, curricula, programs and fees for the 2019-2020 academic year, including the Summer Semester 2019, Fall Semester 2019 and the Winter Semester 2020.

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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<tr>
<th>Date</th>
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<tr>
<td>May 1, 2019</td>
<td>Initial Publication</td>
</tr>
<tr>
<td>June 28, 2019</td>
<td>Revision 1</td>
</tr>
<tr>
<td>September 2, 2019</td>
<td>Revision 2</td>
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Disclaimer
The Office of Graduate and Postdoctoral 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/DLB/Laws/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, their 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 their 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.
Learning Outcomes

Graduate Degree Learning Outcomes

On May 27, 2013, the University of Guelph Senate approved the following five University-wide Learning Outcomes as the basis from which to guide the development of graduate degree programs, specializations and courses:

1. Critical and Creative Thinking
2. Literacy
3. Global Understanding
4. Communication
5. Professional and Ethical Behaviour

These learning outcomes are also intended to serve as a framework through which our educational expectations are clear to students and the broader public; and to inform the process of outcomes assessment through the quality assurance process (regular reviews) of programs and departments.

An on-line guide to the learning outcomes, links to the associated skills, and detailed rubrics designed to support the development and assessment of additional program and discipline-specific outcomes, are available for reference on the Learning Outcomes website.

Critical and Creative Thinking

Critical and creative thinking is a concept in which one applies logical principles, after much inquiry and analysis, to solve problems with a high degree of innovation, divergent thinking and risk taking. Those mastering this outcome show evidence of integrating knowledge and applying this knowledge across disciplinary boundaries. Depth and breadth of understanding of disciplines is essential to this outcome. At the graduate level, originality in the application of knowledge (master’s) and undertaking of research (doctoral) is expected. In addition, Critical and Creative Thinking includes, but is not limited to, the following outcomes: Independent Inquiry and Analysis; Problem Solving; Creativity; and Depth and Breadth of Understanding.

Literacy

Literacy is the ability to extract information from a variety of resources, assess the quality and validity of the material, and use it to discover new knowledge. The comfort in using quantitative literacy also exists in this definition, as does using technology effectively and developing visual literacy.

In addition, Literacy includes, but is not limited to, the following outcomes: Information Literacy, Quantitative Literacy, Technological Literacy, and Visual Literacy.

Global Understanding

Global understanding encompasses the knowledge of cultural similarities and differences, the context (historical, geographical, political and environmental) from which these arise, and how they are manifest in modern society. Global understanding is exercised as civic engagement, intercultural competence and the ability to understand an academic discipline outside of the domestic context.

In addition, Global Understanding includes, but is not limited to, the following outcomes: Global Understanding, Sense of Historical Development, Civic Knowledge and Engagement, and Intercultural Competence.

Communication

Communication is the ability to interact effectively with a variety of individuals and groups, and convey information successfully in a variety of formats including oral and written communication. Communication also comprises attentiveness and listening, as well as reading comprehension. It includes the ability to communicate and synthesize information, arguments, and analyses accurately and reliably.

In addition, Communication includes, but is not limited to, the following outcomes: Oral Communication, Written Communication, Reading Comprehension, and Integrative Communication.

Professional and Ethical Behaviour

Professional and ethical behaviour requires the ability to accomplish the tasks at hand with proficient skills in teamwork and leadership, while remembering ethical reasoning behind all decisions. The ability for organizational and time management skills is essential in bringing together all aspects of managing self and others. Academic integrity is central to mastery in this outcome. At the graduate level, intellectual independence is needed for professional and academic development and engagement.

In addition, Professional and Ethical Behaviour includes, but is not limited to, the following outcomes: Teamwork, Ethical Reasoning, Leadership, Personal Organization and Time Management, and Intellectual Independence.
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## VII. University Courses

### Courses

University courses are designed for students from different fields and disciplines to engage in course work that is not discipline based.

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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
<th>Department(s)</th>
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<tbody>
<tr>
<td>UNIV*6000</td>
<td>The Structure and Function of Muscle U</td>
<td>0.50</td>
<td>Department of Human Health and Nutritional Sciences</td>
</tr>
<tr>
<td>UNIV*6010</td>
<td>Regulation in Muscle Metabolism U</td>
<td>0.50</td>
<td>Department of Human Health and Nutritional Sciences</td>
</tr>
<tr>
<td>UNIV*6030</td>
<td>Seminars and Analysis in Animal Behaviour and Welfare F-W</td>
<td>0.50</td>
<td>Department of Animal Biosciences</td>
</tr>
<tr>
<td>UNIV*6050</td>
<td>Innovation and Entrepreneurship in Agri-Food Systems F-W</td>
<td>1.00</td>
<td>Department of Animal Biosciences</td>
</tr>
<tr>
<td>UNIV*6060</td>
<td>Mechanisms of Tissue and Cellular Mechanotransduction in Health and Disease F</td>
<td>0.50</td>
<td>Department of Animal Sciences</td>
</tr>
<tr>
<td>UNIV*6080</td>
<td>Computational Thinking for Artificial Intelligence U</td>
<td>0.25</td>
<td>Department of Food Science</td>
</tr>
<tr>
<td>UNIV*6090</td>
<td>Artificial Intelligence Applications and Society U</td>
<td>0.50</td>
<td>Department of Computer Science and Engineering</td>
</tr>
<tr>
<td>UNIV*6500</td>
<td>International Study Option U</td>
<td>0.00</td>
<td>Office of Graduate Studies</td>
</tr>
<tr>
<td>UNIV*6600</td>
<td>Animal Care Short Course S,F,W</td>
<td>0.00</td>
<td>Office of Graduate Studies</td>
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<tr>
<td>UNIV*6710</td>
<td>Commercialization of Innovation F</td>
<td>0.50</td>
<td>Department of Food Science</td>
</tr>
<tr>
<td>UNIV*6800</td>
<td>University Teaching: Theory and Practice F</td>
<td>0.50</td>
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<tr>
<td>UNIV*7100</td>
<td>Academic Integrity for Graduate Students S,F,W</td>
<td>0.00</td>
<td>Office of Graduate Studies</td>
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</tbody>
</table>

### UNIV*6000 The Structure and Function of Muscle U [0.50]

An interdisciplinatory course covering basic aspects of muscle from a range of viewpoints: structure, metabolism, protein content, energetics, mechanics, biological adaptations, growth, and development. The course is designed for graduate students from a wide range of specific disciplines and will provide a broad background to muscle biology as well as more detailed insights into specific aspects of each area covered.

**Department(s):** Department of Human Health and Nutritional Sciences

### UNIV*6010 Regulation in Muscle Metabolism U [0.50]

An interdisciplinatory course emphasizing the regulation of muscle metabolism in vivo. The course focuses on the integration of metabolic fuel utilization to meet cellular energy demands under a variety of conditions in the whole animal. Topics include: sources of energy demand, integration of energy supply to meet energy demands, and regulation of cell growth, maintenance and adaptation.

**Department(s):** Department of Human Health and Nutritional Sciences

### UNIV*6030 Seminars and Analysis in Animal Behaviour and Welfare F-W [0.50]

This seminar-based course offers an interdisciplinatory forum for the discussion of broad topics in animal welfare and human-animal relationships. Students analyze topics presented by visiting guest lecturers using perspectives from various disciplines such as animal science, philosophy, history, psychology, ethics, and biology.

**Department(s):** Department of Animal Biosciences

### UNIV*6050 Innovation and Entrepreneurship in Agri-Food Systems F-W [1.00]

This course is designed for students in the OMAFRA/UoG HQP Scholarship program, scholars from the Arrell Food Institute, and scholars from Food from Thought. Students work in groups to collaborate with NGOs, government agencies, or businesses on agri-food projects. Through these projects and a series of modules, students build knowledge and competencies in business development, communication, social innovation, project management, and entrepreneurship.

**Restriction(s):** Limited to 36 students. Priority to HQP Scholarship Program students, Arrell Scholars, and Food from Thought funded graduate students.

**Department(s):** School of Hospitality, Food and Tourism Management

### UNIV*6060 Mechanisms of Tissue and Cellular Mechanotransduction in Health and Disease F [0.50]

This course explores fundamental mechanisms and signalling pathways that dynamically regulate cell and tissues responses to physical forces in health and disease. It is relevant to a wide range of areas of study, from biomechanics and tissue engineering to gastro-intestinal health, food and nutrition.

**Restriction(s):** Instructor consent required.

**Department(s):** Department of Food Science

### UNIV*6080 Computational Thinking for Artificial Intelligence U [0.25]

This course will provide students with an overview of the mathematical and computational foundation that is required to undertake artificial intelligence and machine learning research. Students will also gain an understanding of the historical context, breadth, and current state of the field. Students are expected to have already taken undergraduate courses in probability & statistics, calculus, linear algebra, and data structures & algorithms (STAT*2120, MATH*1210, ENGO*1500, and CIS*2520, or equivalents).

**Offering(s):** Also offered through Distance Education format.

**Department(s):** Dean's Office, College of Engineering and Physical Sciences

### UNIV*6090 Artificial Intelligence Applications and Society U [0.50]

This multidisciplinary, team-taught course provides an in-depth study of how artificial intelligence methodologies can be applied to solve real-world problems in different fields. Students will work in groups to propose solutions whilst considering social and ethical implications of artificial intelligence technologies.

**Prerequisite(s):** UNIV*6080

**Restriction(s):** Restricted to students in the collaborative specialization in Artificial Intelligence

**Department(s):** Dean's Office, College of Engineering and Physical Sciences

### UNIV*6500 International Study Option U [0.00]

A period of study in another country as part of a graduate program at the University of Guelph. Details may be obtained from the Office of Graduate and Postdoctoral Studies.

**Department(s):** Office of Graduate Studies

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September 2, 2019 | 2019-2020 Graduate Calendar