

# 2009-2010 Graduate Calendar

The information published in this Graduate Calendar outlines the rules, regulations, curricula, programs and fees for the 2009-2010 academic years, including the Fall Semester 2009, the Winter Semester 2010 and the Summer Semester 2010.

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:

- The Association of Universities and Colleges of Canada

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## Disclaimer

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The Office of Graduate Program Services 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

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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.

# Introduction

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## Collection, Use and Disclosure of Personal Information

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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](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 Training, Colleges and Universities, 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 <http://www.uoguelph.ca/registrar/registrar/index.cfm?index>.

## Statistics Canada - Notification of Disclosure

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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

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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

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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

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

## Name Changes

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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

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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 <http://www.uoguelph.ca/policies>.



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## Human Health and Nutritional Sciences

The Human Health and Nutritional Sciences Graduate Program offers MSc degrees by thesis, MSc degrees by course work and project, and PhD degrees. The three areas of emphasis and the faculty associated with those areas are:

- **Biomechanics** -- Bent, Jadeski, Lindinger, Murrant, Srbely (CLF), Vallis, Zettel
- **Nutrition, Exercise and Metabolism** -- Bakovic, Bonen, Dyck, Graham, Holloway, Robinson, Spriet
- **Nutritional and Nutraceutical Sciences** -- Bakovic, Bettger, Duncan, Kirkland, Ma, Meckling, Mutch, Robinson, Wright

(CLF) Contractually Limited Faculty

Interdepartmental programs are available for students wishing to specialize in Biophysics, Neuroscience or Toxicology.

### Administrative Staff

#### Chair

Terry E. Graham (354 Animal Science/Nutrition Bldg., Ext. 56168)  
terrygra@uoguelph.ca

#### Graduate Co-ordinator

Corral Murrant (350 Animal Science/Nutrition Bldg., Ext. 56173)  
cmurrant@uoguelph.ca

#### Assistant Graduate Co-ordinator for MSc by Coursework and Project Program

Alison M. Duncan (347 Animal Science/Nutrition Bldg., Ext. 53416)  
amduncan@uoguelph.ca

#### Graduate Secretary

Andra Williams (352 Animal Science/Nutrition Bldg., Ext. 56356)  
amwillia@uoguelph.ca

#### CBS Graduate Admissions Secretary

Karen White (3479 Science Complex, Ext. 52730)  
cbsgrad@uoguelph.ca

### Graduate Faculty

#### Marica Bakovic

BSc, MSc Belgrade, PhD Alberta - Associate Professor

#### Leah R. Bent

BSc, MSc Guelph, PhD British Columbia - Assistant Professor

#### William J. Bettger

BS, PhD Missouri - Associate Professor

#### Arend Bonen

BA Western, MS, PhD Illinois - Professor

#### Alison M. Duncan

BASc Guelph, MSc Toronto, PhD Minnesota - Associate Professor

#### David J. Dyck

BSc, MSc, PhD Guelph - Associate Professor

#### Terry E. Graham

BA & BPHE, MSc, PhD Queen's - Professor and Chair

#### Graham P. Holloway

BA McMaster, MSc Waterloo, PhD Guelph - Assistant Professor

#### Lorraine C. Jadeski

BSc Guelph, MSc Waterloo, PhD Western - Assistant Professor

#### James B. Kirkland

BSc, PhD Guelph - Associate Professor

#### Michael I. Lindinger

BSc Victoria, MSc, PhD McMaster - Associate Professor

#### David W.L. Ma

BSc, PhD Alberta - Assistant Professor

#### Kelly A. Meckling

BSc Calgary, PhD Toronto - Associate Professor

#### David M. Mutch

BSc Queen's, PhD Lausanne - Assistant Professor

#### Coral L. Murrant

BSc, PhD Guelph - Associate Professor

#### Lindsay E. Robinson

BSc Acadia, PhD Alberta - Assistant Professor

#### Jeremy Simpson

BSc, Guelph, PhD Queen's - Assistant Professor

#### Lawrence L. Spriet

BSc Waterloo, MSc York, PhD McMaster - Professor

#### Lori A. Vallis

BSc, MA Ottawa, PhD Waterloo - Assistant Professor

#### Amanda Wright

BSc, PhD Guelph - Assistant Professor

#### John L. Zettel

BS Waterloo, MSc, PhD Toronto - Assistant Professor

### MSc Program

To be considered, applicants must meet the requirements of a four-year honours science degree with a minimum 75% average during the final two years or 4 semesters of undergraduate study. Applicants should have completed a course in statistics. Applicants are urged to identify and contact a faculty member who is willing to serve as their advisor.

### Admission Requirements

Admission to all graduate programs in the Department of Human Health and Nutritional Sciences will normally be granted in September. Completed applications should arrive in the department by April 1 of the year in which the student wishes to begin study. Applications from international students, especially those applying for financial support, should arrive by December 1 of the year before the expected date of admission.

### 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, you are strongly encouraged to view the "Before you Apply" webpage on the ADR Future Student's site.

On-line applications, required documents and instructions can be found on the Graduate Program Services webpage or in the Graduate Calendar.

Completed applications should be submitted to the CBS Graduate Admissions Secretary

### Degree Requirements

#### MSc by Thesis

Students must complete and defend an acceptable thesis which 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 5 semesters. Paramount to the notion of acceptability of the thesis is its quality with respect to problem identification, the approach used to address the problem, and the evaluation of the results.

In addition they must successfully complete courses totalling not fewer than 1.5 graduate credits. The graduate credits of course work will consist of:

a) at least one of:

HHNS*6200	[1.00]	Research Methods in Biomechanics
HHNS*6700	[0.50]	Nutrition, Exercise and Metabolism
HHNS*6040	[0.50]	Research Fronts in Nutritional and Nutraceutical Sciences

b) at least 1.0 credits of electives as determined with the Advisory Committee

#### MSc by Course Work and Project

Students must complete at least 4.0 graduate credits as follows:

HHNS*6010	[0.50]	Seminar in Human Health and Nutritional Sciences
HHNS*6320	[0.50]	Advances in Human Health and Nutritional Sciences Research

at least one of:

HHNS*6910	[0.50]	Basic Research Techniques and Processes
HHNS*6920	[0.50]	Applied Research Techniques and Processes
HHNS*6930	[0.50]	Research Project

at least one of:

HHNS*6200	[1.00]	Research Methods in Biomechanics
HHNS*6700	[0.50]	Nutrition, Exercise and Metabolism
HHNS*6040	[0.50]	Research Fronts in Nutritional and Nutraceutical Sciences

at least 1.0 to 2.0 graduate credits of electives.

### PhD Program

Applicants must have a recognized master's degree in a related field obtained with a minimum academic standing of 80% in their postgraduate studies, and the endorsement of a potential thesis advisor. Applicants should have completed a course in statistics. 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.

### Admission Requirements

Admission to all graduate programs in the Department of Human Health and Nutritional Sciences will normally be granted in September. Completed applications should arrive in the department by April 1 of the year in which the student wishes to begin study. Applications from international students, especially those applying for financial support, should arrive by December 1 of the year before the expected date of admission.

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Completed applications should be submitted to the CBS Graduate Admissions Secretary.

## Degree Requirements

The major part of a student's time will be devoted to research in fulfilment of the dissertation requirement. Course work would be established through discussion with the student's Advisory Committee.

PhD students will become candidates for the PhD degree upon completion of a qualifying examination, which must be conducted not later than the fifth semester of the PhD program. The examination will be primarily research focused.

## Thesis Requirements

Submission and defence of an acceptable dissertation complete the requirements for a PhD. An acceptable dissertation comprises a report of the candidate's research on a particular and well-defined research problem or hypothesis. It should represent a significant contribution to knowledge in that field. Emphasis is placed on the quality of the work judged by the expression of mature scholarship and critical judgment in the dissertation. Dissertation approval implies that it could be published in reputable, refereed journals in its field.

## Courses

### HHNS\*6000 Students Promoting Awareness of Research Knowledge S,F,W [0.25]

This course will explore research communication through practical experience. The course will be part of the SPARK program in which students write, edit and coordinate a variety of news publications that highlight University of Guelph research activities for a wide range of audiences.

*Restriction(s):* Limited to HHNS MSc course work and project students only.  
Instructor's signature required.

### HHNS\*6010 Seminar in Human Health and Nutritional Sciences S [0.50]

Students will develop their scientific communication skills by translating a specific body of knowledge on a chosen topic into a seminar. The class will also explore scientific process-oriented concepts and issues such as effective scientific communication and dissemination of results.

*Restriction(s):* Limited to HHNS MSc course work and project students only

### HHNS\*6040 Research Fronts in Nutritional and Nutraceutical Sciences F [0.50]

Building on an information base in nutrition, biochemistry and physiology, the course comprises selected research topics pertaining to the importance of nutrition as a determinant of health throughout the life span. Distinction will be drawn between the metabolic basis of nutrient essentiality and the health protectant effects of nutraceuticals.

### HHNS\*6130 Advanced Skeletal Muscle Metabolism in Humans W [0.50]

This course examines how the energy provision pathways in human skeletal muscle and associated organs meet the energy demands of the muscle cell during a variety of metabolically demanding situations.

### HHNS\*6200 Research Methods in Biomechanics F [1.00]

This course covers the basic elements of biomechanics experimental data collection including instrumentation, analog-to-digital conversion, signal processing and analysis. Particular emphasis is placed on the areas of kinematics, electromyography and tissue mechanics.

### HHNS\*6210 Exploring Research Techniques in Biomechanics F [0.50]

This course will review basic elements of biomechanics experimental data collection including instrumentation, analog-to-digital conversion, signal processing and analysis including kinematics, electromyography and tissue mechanics. Students will also be responsible for conducting bi-weekly seminars which will analyze and critique original research investigations in the area of biomechanics instrumentation/processing techniques.

### HHNS\*6320 Advances in Human Health and Nutritional Sciences Research S,F,W [0.50]

This course provides the student with an opportunity to study a topic of choice and involves literature research on a chosen topic. The course may stand alone (MSc thesis and PhD students) or provide the background information for an experimental approach to the topic (MSc course work and project students).

### HHNS\*6400 Functional Foods and Nutraceuticals F [0.50]

This course considers the relation of nutraceuticals, functional foods, designer foods, medical foods and food additives to foods and drugs. The course emphasizes the development and commercialization of nutraceuticals.

### HHNS\*6410 Applied Functional Foods and Nutraceuticals W [1.00]

This course prepares students to develop an innovative product or service from conceptualization to market entry considering regulatory, product development, safety/efficacy and market readiness issues. The course applies and integrates the concepts defined in HHNS\*6400

### HHNS\*6440 Nutrition, Gene Expression and Cell Signalling W [0.50]

This course emphasizes the role nutrients play as modulators of gene expression at the molecular level. The mechanisms by which nutrients modulate gene expression through specific cell signalling cascades are examined. (offered annually)

### HHNS\*6700 Nutrition, Exercise and Metabolism F [0.50]

A discussion of recent concepts in the relationships among nutrition, exercise and metabolism. Information from the molecular to the whole-body level will be presented with a focus on understanding nutrition and exercise in the human. Emphasis is placed on the development and testing of experimental hypotheses in these areas of research.

### HHNS\*6710 Advanced Topics in Nutrition and Exercise W [0.50]

Advanced topics will be presented to establish an in-depth understanding of current investigations in nutrition and exercise. Based on the integrated understanding of nutrition and exercise developed in HHNS\*6700, the focus of this course will be to develop the student's ability to independently analyze original research investigations.

### HHNS\*6910 Basic Research Techniques and Processes S,F,W [0.50]

Working with a faculty advisor, students will gain experience in basic aspects of scientific research. This will be accomplished through experience of one or more components of the scientific method in a laboratory setting. Objective outcomes will be evaluated and will include documentation of the experience in a written report. (Instructor's signature required.)

### HHNS\*6920 Applied Research Techniques and Processes S,F,W [0.50]

Under the supervision of a faculty advisor, students will gain practical experience in discipline-specific aspects of research. This will be accomplished through experience in a pre-arranged practicum in an applied setting. Objective outcomes will be evaluated and will include documentation of the experience in a written report. (Instructor's signature required.)

### HHNS\*6930 Research Project S,F,W [0.50]

Under the supervision of a faculty advisor and building on knowledge gained from Basic or Applied Research Techniques and Processes, students will carry out a specific research project to its completion. Results will be documented in a written report and communicated through a scientific poster.

*Prerequisite(s):* HHNS\*6910 or HHNS\*6920

*Restriction(s):* Instructor's signature required