

**University of Guelph  
College of Biological Science**

Human Health and Nutritional Sciences

**COURSE OUTLINE**

**Nutrition, Exercise and Energy Metabolism, NUTR 4210**

Fall 2016

**Course description**

In this course energy metabolism will be considered in relation to energy deposition and hormonal control of metabolism; nutrition, exercise and environmental influences on energy balance and enzyme adaptation; nutrition and exercise in the control of body composition.

**Prerequisite(s):** [NUTR\\*3210](#), (1 of [BIOM\\*3110](#), [BIOM\\*3200](#), [HK\\*3940](#))

**Teaching team:**

Faculty Instructor: Dr. Lindsay Robinson

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Phone: 519-824-4120 ext. 52297

Office: ANNU 336B

Office hours: Email for appointment

Course TAs:

(1) Barbora Hucik; Email: [bhucik@mail.uoguelph.ca](mailto:bhucik@mail.uoguelph.ca)

(2) Amber Hutchinson; Email: [hutchina@uoguelph.ca](mailto:hutchina@uoguelph.ca)

**Course schedule (lectures)**

Days: Tuesday and Thursday

Time: 2:30 pm to 3:50 pm

Location: ROZH 101

## Learning goals and rationale

The overall course objective is to show how metabolism is integrated among tissues and to illustrate how lifestyle (nutrition and exercise) can alter the responses and subsequent impact on human health.

Upon completion of this course, students should:

1. Understand fundamental concepts in exercise physiology, including endocrine responses to exercise
2. Understand the processes by which macronutrient metabolism is integrated among tissues in the human body and the adaptations that occur in response to acute and chronic exercise
3. Understand various nutritional strategies that can be used to alter the body's response to exercise
4. Understand how nutrition and exercise affect metabolic responses in the body and how this in turn impacts on human health and chronic disease
5. Have gained experience in interpreting and discussing scientific data and evidence-based information in the field of nutrition, exercise and energy metabolism

## Course Resources

Course Readings: There are NO required textbooks for this course. "Sports and Exercise Nutrition" by McArdle, Katch and Katch is a recommended textbook. This text is useful for those with no, or limited exercise physiology background. Its value to the more specialized topics covered (especially in the second half of the course) is limited.

**Outlines of lecture notes will be available on the CourseLink website.** I will do my best to post outlines of lecture notes in a timely manner; however, please understand that I cannot guarantee lecture notes ahead of time for every class. The intention of the lecture notes is NOT to provide the student with a complete set of notes, but to provide a guide or outline of the lecture to provide students with a better opportunity to understand the lecture content as it is presented.

**Course Content** (*actual content and order of lectures may differ slightly*):

Date	Topic Covered in Lecture
Sept 8	Introductory class: overview and outline
Sept 13	Basics & Background of Exercise Physiology
Sept 15	Basics Cont'd: Endocrine Responses to Exercise
Sept 20	Hydration, Sport Drinks
Sept 22	Integrative Metabolism (IM): <u>CHO</u> , Lipids, Protein
Sept 27	IM Cont'd: <u>CHO</u> , Lipids, Protein

Sept 29	IM Cont'd: CHO, <u>Lipids</u> , Protein
Oct 4	IM Cont'd: CHO, <u>Lipids</u> , Protein
Oct 6	IM Cont'd: CHO, Lipids, <u>Protein</u>
<u>Oct 11</u>	<i>Fall study break (no classes today)</i>
Oct 13	Adaptations to Exercise
Oct 18	Adaptations to Exercise Cont'd
Oct 20	<i>Q and A class</i>
<b><u>Tues Oct 25</u></b>	<b><u>MIDTERM EXAM IN CLASS TIME</u></b>
Oct 27	Nutrition Strategies for Performance
Nov 1	Nutrition Strategies for Performance Cont'd
Nov 3	Exercise as Medicine in Chronic Diseases
Nov 8	Obesity
Nov 10	Metabolically Healthy Obese
Nov 15	Cancer – metabolic changes
Nov 17	Cancer – nutrition
Nov 22	Cancer –exercise
Nov 24	Older Adults/Aging
Nov 29	Sarcopenia & Sarcopenic Obesity
Dec 1	<i>Q and A wrap-up class!</i>

## Methods of Assessment

Assessment				
Form of Assessment	Weight of Assessment	Due Date of Assessment	Course Content /Activity	Learning Outcome Addressed
Midterm Exam	40% or 60%*  *The better exam will be weighted at 60%, and the poorer one at 40% of the total value of the exams.	Tuesday, October 25, 2016 <b><u>in class time</u></b>	Lecture content	1-5
Final Exam	60% or 40%*  *The better exam will be weighted at 60%, and the poorer one at 40% of the total value of the exams.	<b>Thursday, December 15, 2016</b>  <b>2:30 – 4:30 pm</b>	Lecture content  The final exam is <u>not</u> cumulative.	1-5

Exam questions will include some multiple choice and some short answer questions.

**Midterms/assignments in other classes on the same day or week are NOT acceptable reasons for seeking a deferred/alternate exam;** an effort has been made to avoid conflicts with other 4th year NUTR/HK midterms in our department. Medical reasons are accepted, and unusual/extreme compassionate circumstances will be considered.

### Important Dates

1. Midterm exam: Tuesday October 25, 2016, in class time
2. Final exam: December 15, 2016, 2:30 – 4:30 pm, location TBA
3. Deadline for dropping courses without penalty (40<sup>th</sup> class day): Friday Nov 4, 2016

## **Course and University Policies**

### When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact, and be prepared to provide supporting documentation. See the undergraduate calendar for information on regulations and procedures for Academic Consideration:

<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

### Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Centre for Students with Disabilities as soon as possible.

For more information, contact CSD at 519-824-4120 ext. 56208 or email [csd@uoguelph.ca](mailto:csd@uoguelph.ca) or see the website: <http://www.csd.uoguelph.ca/csd/>

### Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:

<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

### E-mail Communication

As per university regulations, all students are required to check their <uoguelph.ca> e-mail account regularly: e-mail is the official route of communication between the University and its students.

### Drop Date

The last date to drop one-semester courses, without academic penalty, is the 40<sup>th</sup> class day. To confirm the actual date please see the schedule of dates in the Undergraduate Calendar. For

regulations and procedures for Dropping Courses, see the Undergraduate Calendar:  
<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

### Recording of Materials

Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

### Grading

Midterms/assignments in other classes on the same day or week are NOT acceptable reasons for seeking a deferred/alternate exam. Medical reasons are accepted, and unusual/extreme compassionate circumstances will be considered. If the midterm exam is missed (for reasons deemed to be acceptable by the faculty instructor) an alternate midterm exam must be written as the final exam is not cumulative and thus a final exam worth 100% of the final course grade is not possible.

## • Campus Resources

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- **If you are concerned about any aspect of your academic program:**
- Make an appointment with a [Program Counsellor](http://www.bsc.uoguelph.ca/index.shtml) in your degree program.  
<http://www.bsc.uoguelph.ca/index.shtml>
- **If you are struggling to succeed academically:**
- There are numerous academic resources offered by the [Learning Commons](#) including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills. You can also set up individualized appointments with a learning specialist.
- **If you are struggling with personal or health issues:**
- [Counselling services](#) offers individualized appointments to help students work through personal struggles that may be impacting their academic performance.
- [Student Health Services](#) is located on campus and is available to provide medical attention.
- For support related to stress and anxiety, besides Health Services and Counselling Services, [Kathy Somers](#) runs training workshops and one-on-one sessions related to stress management and high performance situations.
- **If you have a documented disability or think you may have a disability:**
- [Student Accessibility Services](#) (SAS) formerly Centre for Students with Disabilities can provide services and support for students with a documented learning or physical disability. They can also provide information about how to be tested for a learning disability.
- re please see: <https://www.uoguelph.ca/csd/>