

**University of Guelph
College of Biological Science**

Human Health and Nutritional Sciences

COURSE OUTLINE

Nutrition, Exercise and Metabolism, HHNS 6700

Fall 2018

Course description

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, exercise and metabolic processes.

Faculty Instructor: Dr. Lindsay Robinson

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Phone: 519-824-4120 ext. 52297

Office: ANNU 336B

Office hours: Email for appointment

Course schedule

Day: Monday

Time: 2:30 pm to 5:20 pm

Location: MCKN 311

Learning goals and rationale

The primary objective of this course is to discuss issues essential to understanding the interface between nutrition, exercise, and metabolism as they apply to obesity and obesity-associated pathologies, such as insulin resistance and type 2 diabetes. Information from the molecular, cellular and tissue levels to the whole animal/human will be presented with a common focus being to understand the interaction of nutrition and exercise in human health.

This course will address the University's learning objectives for graduate courses by addressing the role of metabolism in considerable depth, as well as by integrating the disciplines of nutrition, exercise and physiology in relation to human health. Furthermore, the course requires a detailed appreciation of the integration between the body's key metabolic tissues, predominantly active and resting skeletal muscle, the blood, liver, adipose tissue and the gastrointestinal tract.

Upon completion of this course, students should:

1. Understand the integration of metabolic processes that occurs in the body's key organs/tissues, predominantly adipose tissue, skeletal muscle, the blood, liver, brain and the gastrointestinal tract
2. Understand the above integration of metabolic processes at various levels, e.g. molecular, cellular, tissue, whole body/systemic
3. Understand how nutrition and exercise affect metabolic processes and how this in turn impacts on human health and chronic disease with a focus on obesity-associated pathologies
4. Have gained experience in interpreting and discussing scientific data and evidence-based information in the field of nutrition, exercise and metabolism
5. Have improved scientific writing skills and oral presentation skills through the completion of various written and oral assignments throughout the semester

Course Resources

The reading list will be emailed to you prior to each overview lecture/topic. Review papers will provide background reading. Students are expected to have read the papers PRIOR TO class. The assigned papers will form the foundation for class discussion of key course concepts and all students will be expected to participate in these discussions.

Course Content: Formal lectures will be a minimal part of this course. Student participation and interaction are expected. Classes will involve students critically reviewing and integrating research papers that will be used to generate class discussion focused on key course concepts.

Course Format:

- There will be one class time of 2-3 hours each week.
- The course will be presented in topics according to the schedule below.
- Typically, one week of each topic will be focused on lecture material (*Overview Lecture*) by the instructor. For each topic, you will be assigned a reading list in advance of the *Overview Lecture*. Students should come prepared to the *Overview lecture* having read the papers and prepared to participate in class discussion with the topic instructor.
- Subsequent week(s) of each topic will be for student-led presentations (*Group seminars*).

Note: within each topic below, the role of nutrition, exercise and metabolism is a key focus

Topic 1: Adipose Tissue

Topic 2: Muscle and Liver

Topic 3: Gut

Topic 4: Brain

*Schedule will likely vary as final student numbers are confirmed and I can form/finalize student groups for seminars

10 Sept	Course introduction & overview of content, assessment methods	Dr. L. Robinson
17 Sept	Topic 1 - overview lecture and discuss Literature Critique	Dr. L. Robinson
24 Sept	-----	Lindsay away
1 Oct	Topic 2 - overview lecture and discuss Plain Language	Dr. L. Robinson
8 Oct	Thanksgiving holiday	No class today
15 Oct	Topic 1 - group seminars	Students
22 Oct	Topic 2 - group seminars	Students
29 Oct	-----	Lindsay away
5 Nov	Topic 3- overview lecture	Dr. L. Robinson
12 Nov	Topic 3 - group seminars	Students
19 Nov	Topic 4 - overview lecture	Dr. L. Robinson
26 Nov	Topic 4 - group seminars	Students
*FRI Nov 30	Display of infographics, oral presentations and course wrap-up	Students

*Class rescheduled from Thanksgiving Monday Oct 8th

Student Group Seminars: Each student will participate in **two group presentations (group size will depend on final class numbers)** during the course. The presentations must be based on 3-4 journal articles in specified topic areas. Students will be responsible for preparing and presenting the appropriate material, and will also be **discussion leaders**. It is expected that, as discussion leaders, you will come up with a **class activity/questions for discussion**, etc to facilitate group interaction. Examples of this include breakout groups to discuss a particular question, debating a controversial topic, communicating key findings in layperson language, coming up with novel research/next steps, and much more! More detail on the group seminars will be provided in class.

- The first oral group presentation¹ will be worth 20% of the course grade and the second oral group presentation¹ will be worth 20% of the course grade. *All group members will receive the same grade.* ¹*Length of group seminar to be confirmed once student numbers and groups are finalized in September.*

In conjunction with being the discussion leaders, each student (individually) must do the following **two writing assignments:**

1. Write a **5 page (double-spaced) literature critique** outlining the background, rationale, key results, strengths and limitations of **one** of the research articles (please choose one article from one of the group seminars you participated in) he/she presented during the semester and compare it with key articles in the literature. It is expected that the critique will include *at least* five additional primary articles as references (references not included in the 5 page limit) that will help to place the chosen research article in the larger field of research. The literature critique/written report will be worth 20% of the course grade and will be due one week after his/her group presentation on this topic. Papers not submitted on the due date will lose 2% per day for each day that the paper is late.
2. Write a **4 page (double-spaced) plain language abstract** (1 page maximum) **and summary** (3 pages maximum) (similar to a newspaper/website article) that explains **one** of the research articles (please choose one article from one of the group seminars you participated in) he/she presented during the semester. The plain language abstract and summary will be worth 20% of the course grade and will be due one week after his/her group presentation on this topic. Papers not submitted on the due date will lose 2% per day for each day that the paper is late.

Infographic and Oral Presentation (to be done in partners or small groups - depends on class size)

You/your group will be assigned one of the following topics:

Obesity-Inflammation-Chronic Disease with a focus on:

1. Adipose Tissue (nutrition OR exercise focus)
2. Muscle (nutrition OR exercise focus)
3. Liver (nutrition OR exercise focus)
4. Gut (nutrition OR exercise focus)
5. Brain (nutrition OR exercise focus)

- You will display and orally present your infographic on Friday, Nov 30th as well as submit your infographic on this date (in our last class).
- Infographic Presentation: Prepare a ~7-8 minute presentation with ~2-3 minutes for questions and discussion (i.e. 10 min total time maximum, *time may change based on class numbers, will confirm in class).
- We will discuss the infographic assignment further in class.

Summary of Methods of Assessment

Assessment				
Form of Assessment	Weight of Assessment	Due Date of Assessment	Course Content /Activity	Learning Outcome Addressed
Group seminar 1	20%	Varies	Group work ¹	1-5
Group seminar 2	20%	Varies	Group work ¹	1-5
Literature critique	20%	Varies	Individual work	1-5
Plain language abstract and article summary	20%	Varies	Individual work	1-5
Infographic and oral presentation of infographic	20% (10% for infographic, 10% for oral presentation)	Friday Nov 30 th (last class)	Partners or small groups	1-5

¹Numbers will depend on final class numbers

Important Dates

1. Deadline for dropping courses without penalty (40th class day): Friday November 2, 2018.
2. Infographic due: **Friday** November 30th in the last class (this is a rescheduled class from the cancelled Thanksgiving Day class). Please submit a hard-copy and also by email.

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 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 40th 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.

Campus Resources

If you are concerned about any aspect of your academic program:

Make an appointment with a [Program Counsellor](#) 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.