



# HHNS\*6700 Nutrition, Exercise and Metabolism

Fall 2020

Section(s): C01

Department of Human Health and Nutritional Sciences

Credit Weight: 0.50

Version 2.00 - September 10, 2020

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## 1 Course Details

### 1.1 Calendar 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 and exercise in the human. Emphasis is placed on the development and testing of experimental hypotheses in these areas of research.

### 1.2 Course Description

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.

### 1.3 Timetable

Day: Monday

Time: 2:30 pm - 5:20 pm

Location: This class will be conducted remotely in F20 using primarily Zoom and CourseLink (e.g. Discussion Board, links to pre-recorded lectures and presentations). Most of the course will be in an asynchronous format. Some synchronous teaching/learning may occur; this will be discussed with students early in the semester. Please note there is NO required face-to-face component to be successful in this course in F20.

## 1.4 Final Exam

There is no final exam in this course.

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## 2 Instructional Support

Faculty Instructor: Dr. Lindsay Robinson

Email: lrobinso@uoguelph.ca

Phone: n/a

Office: I am working remotely for F20.

Office hours: Please email to set up virtual appointment (e.g. using MS Teams, Zoom, etc)

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## 3 Learning 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 viewing the pre-recorded lecture and/or presentation (as applicable). The assigned papers will form the foundation for discussion or online interaction regarding key course concepts.

*In fall 2020, class discussions will occur remotely and may include both online oral (e.g. using Zoom) and written (e.g. Discussion Board in CourseLink) participation.*

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## 4 Learning Outcomes

### 4.1 Course Learning Outcomes

By the end of this course, you should be able to:

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

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## 5 Teaching and Learning Activities

**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.

*In fall 2020, class discussions will occur remotely and may include both online oral (e.g. using Zoom) and written (e.g. Discussion Board in CourseLink) participation.*

## 5.1 Course Format and Schedule

**Please note there is no face-to-face component that is required to be successful in the course in fall 2020.**

- There will be “class time” of 2-3 hours each week. In fall 2020, this will occur remotely and will include watching pre-recorded (i.e. asynchronous learning) lectures, as well as presentations by classmates. Regularly scheduled class time (i.e. synchronous learning) may be used for discussion and other course activities; this will be further discussed early in the semester.
- 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 prepare for the *Overview lecture* by reading the papers. Regularly scheduled class time (i.e. synchronous learning) may be used for a drop-in Q&A session as needed.

*In fall 2020, class discussions will occur remotely and may include both online oral (e.g. using Zoom) and written (e.g. Discussion Board in CourseLink) participation.*

- Subsequent week(s) of each topic will be for student-led presentations (*either group or individual seminars, to be determined once final class numbers are available in September*).

*\*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 below is tentative and will likely vary as final student numbers are confirmed in September and I can form/finalize student groups for seminars**

<b>Week</b>	<b>Topic</b>	<b>Instructor</b>
14 Sept	Course introduction & overview of content, assessment methods	Dr. L. Robinson
21 Sept	Topic 1 - overview lecture	Dr. L. Robinson
28 Sept	Topic 2 – overview lecture	Dr. L. Robinson
5 Oct	Topic 1 - group seminars	<i>Students</i>
12 Oct	<i>Thanksgiving holiday</i>	<i>No class today</i>
19 Oct	Topic 2 – group seminars	<i>Students</i>
26 Oct	Topic 3– overview lecture	Dr. L. Robinson
2 Nov	Topic 3 – group seminars	<i>Students</i>
9 Nov	Topic 4 - overview lecture	Dr. L. Robinson
16 Nov	Topic 4 - group seminars	<i>Students</i>
23 Nov	<b>Oral presentations</b>	<i>Students</i>
30 Nov	<b>Oral presentations</b>	<i>Students</i>

*FRI Dec 4	<b>Course wrap-up</b>	Dr. L. Robinson
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*\*Class rescheduled from Thanksgiving Monday Oct 12th*

## 6 Assessments

### 6.1 Marking Schemes & Distributions

<b>Assessment</b>				
<b>Form of Assessment</b>	<b>Weight of Assessment</b>	<b>Due Date</b>	<b>Course Content /Activity</b>	<b>Learning Outcome Addressed</b>
Group seminar 1	20%	Varies	Group work <sup>1</sup>	1-5
Group seminar 2	20%	Varies	Group work <sup>1</sup>	1-5
Literature critique	10%	Varies	Individual work	1-5
Plain language writing assignment	10%	Varies	Individual work	1-5
Oral presentation and short written assignment	25% (15% for oral presentation, 10% for written)	Varies	Individual, partners or small groups <sup>1</sup>	1-5

	part)			
Discussion Board Engagement	15%	Varies	Individual work	1-5

## 6.2 Assessment Details

### Student-Led Group Seminars (40%)

Learning Outcome: 1, 2, 3, 4, 5

**Student Group Seminars:** Each student will participate in **TWO group presentations (group size will depend on final class numbers)** during the course. The presentations will 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 **class questions for discussion**, etc to facilitate group interaction **and/or respond to questions from other students** in the class. More detail on the group seminars and use of the Discussion Board will be provided in September.

***In fall 2020, students will work remotely (not face-to-face) on their group seminars. Class discussions will also occur remotely and will be done in a written dialogue (e.g. Discussion Board in CourseLink). More detail will be provided in September.***

- Each oral group presentation<sup>1</sup> will be worth 20% of the course grade. A portion (5%) of this grade will be assessed based on Discussion Board interactions/engagement by the presenting group. *All group members will receive the same grade. <sup>1</sup>Length of group seminar to be confirmed once student numbers and groups are finalized in September.*

### Literature Critique and Plain Language Writing Assignment (20%)

Learning Outcome: 1, 2, 3, 4, 5

Each student (**individually**) must do the following TWO **writing assignment associated with their group seminar/presentations:**

**1) Write a 4 page (double-spaced) literature critique** outlining the background, rationale, key results, strengths and limitations of a research article (please choose one article from one of the group seminars you participated in) they 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 4 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 10% 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) summary** that explains ONE topic of your group presentations (you can choose which one you want to use for this assignment) in **plain (lay) language**, similar to a newspaper or website article).

- The plain language summary will be worth 10% 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.

### **Final Oral Presentation and Short Written Assignment (25%)**

**Learning Outcome:** 1, 2, 3, 4, 5

**This assignment will be done individually, partners or small groups - depends on final class size. This will be confirmed as early as possible in the semester.**

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 orally present your topic (remotely, pre-recorded - exact format to be determined) at the end of the semester. Prepare a ~6-8 (tentative) minute presentation with ~2 minutes for questions and discussion (i.e. ~10 min total time maximum, will confirm in class).

The oral presentation will be worth 15% of the course grade. We will discuss this assignment further in class.



The short (~ 4 pages double-spaced) written assignment (i.e. a summary of your topic) will be worth 10% of the course grade. This assignment may also be in the form of an infographic (to be discussed further in class).

### **Discussion Board Engagement (15%)**

This assessment piece includes participation via the CourseLink Discussion Board. Students are asked to contribute in a meaningful way to discussions based on the Student Led Group Seminars. Discussion leaders (in conjunction with their student-led group presentation) will be asked to pose questions to initiate discussion and/or other students in the class are encouraged to ask questions (via the Discussion Board) following their viewing of the Student Led Group Seminars. In grading this Discussion Board Engagement I will be looking for meaningful and insightful questions and dialogue that arises from the Student Led Group Seminars. More detail will be provided at the start of the semester.

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## **7 Department of Human Health and Nutritional Sciences Statements**

### **7.1 Academic Advisors**

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

- Make an appointment with a program counsellor in your degree program. [B.Sc. Academic Advising](#) or [Program Counsellors](#)

### **7.2 Academic Support**

If you are struggling to succeed academically:

- Learning Commons: 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.  
<http://www.learningcommons.uoguelph.ca/>
- Science Commons: Located in the library, the Science Commons provides support for physics, mathematic/statistics, and chemistry. Details on their hours of operations can be found at: <http://www.lib.uoguelph.ca/get-assistance/studying/chemistry-physics-help> and <http://www.lib.uoguelph.ca/get-assistance/studying/math-stats-help>

### **7.3 Wellness**

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.  
<https://www.uoguelph.ca/counselling/>
- Student Health Services is located on campus and is available to provide medical attention. <https://www.uoguelph.ca/studenthealthservices/clinic>
- 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.  
<http://www.selfregulationskills.ca/>

## 7.4 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/index.html>. 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.

For more information regarding the Collection, Use and Disclosure of Personal Information policies please see the Undergraduate Calendar.  
(<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/intro/index.shtml>)

## 8 University Statements

### 8.1 Email Communication

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

### 8.2 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. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals  
<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

Graduate Calendar - Grounds for Academic Consideration  
<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

Associate Diploma Calendar - Academic Consideration, Appeals and Petitions  
<https://www.uoguelph.ca/registrar/calendars/diploma/current/index.shtml>

### 8.3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

Graduate Calendar - Registration Changes

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml>

Associate Diploma Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml>

### 8.4 Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

### 8.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance and not later than the 40th Class Day.

For Guelph students, information can be found on the SAS website

<https://www.uoguelph.ca/sas>

For Ridgetown students, information can be found on the Ridgetown SAS website

<https://www.ridgetownc.com/services/accessibilityservices.cfm>

### 8.6 Academic Integrity

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 encourages academic integrity. 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.

Undergraduate Calendar - Academic Misconduct

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

Graduate Calendar - Academic Misconduct

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

## **8.7 Recording of Materials**

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

## **8.8 Resources**

The Academic Calendars are the source of information about the University of Guelph's procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

Academic Calendars

<https://www.uoguelph.ca/academics/calendars>

## **8.9 Disclaimer**

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings and academic schedules. Any such changes will be announced via CourseLink and/or class email. All University-wide decisions will be posted on the COVID-19 website (<https://news.uoguelph.ca/2019-novel-coronavirus-information/>) and circulated by email.

## **8.10 Illness**

The University will not normally require verification of illness (doctor's notes) for fall 2020 or

winter 2021 semester courses. However, requests for Academic Consideration may still require medical documentation as appropriate.

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