



HHNS*6700 Nutrition, Exercise and Metabolism

Fall 2022

Section(s): C01

Department of Human Health and Nutritional Sciences

Credit Weight: 0.50

Version 1.00 - September 02, 2022

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 meet face-to-face. SSC 1304.

Please note the proposed course format, schedule or location for the Fall 2022 semester may change up to the first day of classes due to personnel, resource, and public health circumstances and if conditions cannot be met to ensure the safety of our students and instructors. Continue to watch the Student Planning website as format information could be updated until the first day of classes.

1.4 Final Exam

There is no final exam in this course.

2 Instructional Support

Faculty Instructor: Dr. Lindsay Robinson

Email: lrobinso@uoguelph.ca

Phone: n/a

Office: ANNU 336-B (please check ahead as I may continue to work remotely at times)

Office hours: Please email to set up either a virtual (e.g. using MS Teams, Zoom, etc) or in-person appointment (if possible)

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 the class time each week.

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 discussion focused on key course concepts.

5.1 Course Format and Schedule

“Please note that course delivery format (face-to-face vs online) is subject to change up to the first-class day depending on requirements placed on the University and its employees by public health bodies, and local, provincial and federal governments. Any changes to course format prior to the first class will be posted on WebAdvisor/Student Planning as they become available.”

Course Format/Delivery of Course Content:

- There will be 1 class of 2-3 hours each week. This class will meet face-to-face.
- 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 and preparing to participate in class discussion with the topic instructor.

- 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 and format may vary as final student numbers are confirmed in September and I can form/finalize student groups for seminars.

Week	Topic	Instructor
12 Sept	Course introduction & overview of content, assessment methods	Dr. L. Robinson
19 Sept	Topic 1 - overview lecture	Dr. L. Robinson
26 Sept	Topic 2 – overview lecture	Dr. L. Robinson
3 Oct	Group work, discussions, preparation for group seminars	Students and Dr. L. Robinson
10 Oct	<i>Thanksgiving holiday</i>	<i>No class today</i>
17 Oct	Topic 1 – group seminars	Students
24 Oct	Topic 2 – group seminars	Students
31 Oct	Topic 3 - overview lecture	Dr. L. Robinson
7 Nov	Topic 4 - overview lecture	Dr. L. Robinson
14 Nov	Topic 3 - group seminars	<i>Students</i>
21 Nov	Topic 4 - group seminars	<i>Students</i>

28 Nov	In-class work/discussions (*may have some final oral presentations today if needed)	Students and Dr. L. Robinson
*FRI Dec 2	Final oral presentations and Course wrap-up	Dr. L. Robinson

**Class rescheduled from Thanksgiving Monday Oct 10th*

6 Assessments

6.1 Marking Schemes & Distributions

Assessment				
Form of Assessment	Weight of Assessment	Due Date	Course Content /Activity	Learning Outcome Addressed
Student-led group seminar 1	20%	Varies	Group work ¹	1-5
Student-led group seminar 2	20%	Varies	Group work ¹	1-5
Literature critique	20%	Varies	Individual work	1-5
Plain Language Assignment	20%	Varies	Individual work	1-5

Short oral presentation and infographic	20% (10% for oral presentation, 10% for infographic)	Varies	Individual, partners or small groups 1	1-5
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6.2 Assessment Details

Student-Led Group Seminars (TWO in total) (40%)

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

Student-Led 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, coming up with novel research/next steps, and much more! More detail on the group seminars will be provided in class. Each oral student-led group presentation¹ will be worth 20% of the course grade. *All group members will receive the same grade.* ¹*Length of group seminar and format to be confirmed once student numbers and groups are finalized in September.*

Literature Critique (one in total) (20%)

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

Literature Critique: In conjunction with the student-led group seminars, each student (**individually**) must do the following **writing assignment following ONE of their group seminars/presentations:** Write a **4 page (double-spaced) literature critique** outlining the background, rationale, key results, strengths and limitations of a research article (please choose ANY 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 will be worth 20% of the course grade and will be due one week after the student-led group seminar/presentation on this topic. Papers

not submitted on the due date will lose 2% per day for each day that the paper is late.

Plain Language Writing Assignment (one in total) (20%)

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

Plain Language Writing Assignment: In conjunction with the student-led group seminars, each student (**individually**) must do the following **writing assignment following ONE of their group seminars/presentations:** Write a **4 page (double-spaced) plain language abstract (1 page maximum for the abstract) and summary (3 pages maximum for the summary)** that explains one of the research articles (please choose ANY 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.

- The plain language writing assignment will be worth 20% of the course grade and will be due one week after the 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.

Short Oral Presentation and Infographic Summary (20%)

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 once the course starts.

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 your infographic and orally present your topic at the end of the semester. Prepare a ~8 minute presentation with ~2 minutes for questions and discussion (i.e. ~10 min total time maximum, will confirm in class).

This assignment will be worth 20% of the course grade. We will discuss this assignment further in class.

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>)

7.5 Course Offering Information Disclaimer

Please note that course delivery format (face-to-face vs online) is subject to change up to the first-class day depending on requirements placed on the University and its employees by public health bodies, and local, provincial and federal governments. Any changes to course format prior to the first class will be posted on WebAdvisor/Student Planning as they become available.

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 make a booking at least 14 days in advance, and no later than November 1 (fall), March 1 (winter) or July 1 (summer). Similarly, new or changed accommodations for online quizzes, tests and exams must be approved at least a week ahead of time.

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, changes in classroom protocols, and academic schedules. Any such changes will be announced via CourseLink and/or class email.

This includes on-campus scheduling during the semester, mid-terms and final examination

schedules. 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

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g.. final exam or major assignment).

8.11 Covid-19 Safety Protocols

For information on current safety protocols, follow these links:

- <https://news.uoguelph.ca/return-to-campusess/how-u-of-g-is-preparing-for-your-safe-return/>
- <https://news.uoguelph.ca/return-to-campusess/spaces/#ClassroomSpaces>

Please note, these guidelines may be updated as required in response to evolving University, Public Health or government directives.
