



# **HHNS\*6710 Advanced Topics in Nutrition and Exercise - DRAFT**

Fall 2019  
Section(s): C01

Department of Human Health and Nutritional Sciences  
Credit Weight: 0.50  
Version 1.00 - July 02, 2019

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## **1 Course Details**

### **1.1 Calendar Description**

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.

### **1.2 Course Description**

Owing to its central role in locomotion, and the fact that it accounts for the majority of whole body glucose disposal and fatty acid oxidation most exercise physiology/metabolism/biochemistry studies have focused on the adaptations of skeletal muscle to exercise. However, there is a growing appreciation that adipose tissue and liver are also important contributors to the regulation of systemic fuel metabolism through the secretion of both metabolites and hormones. This class will examine the role that adipose tissue and liver play in the control of whole body carbohydrate and lipid metabolism.

### **1.3 Timetable**

This course is held Monday mornings from 09:30-12:10 in MCKN 034A. The class will be a combination of lectures, interactive class discussions and group work.

### **1.4 Final Exam**

Exam time and location is subject to change. Please see WebAdvisor for the latest information.

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## 2 Instructional Support

### 2.1 Instructional Support Team

<b>Instructor:</b>	David Wright
<b>Email:</b>	dcwright@uoguelph.ca
<b>Telephone:</b>	+1-519-824-4120 x56751
<b>Office:</b>	ANNU 334/316
<b>Office Hours:</b>	By appointment

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## 3 Learning Resources

There is no required text book for this course. Readings will be assigned by the instructor

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## 4 Learning Outcomes

### 4.1 Course Learning Outcomes

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

1. Demonstrate an understanding of the role of white adipose in regulation of whole body metabolism
  2. Be able to discuss various methodological approaches used to measure adipose tissue and whole-body metabolism
  3. Be able to explain the mechanisms through which exercise modulates the function and metabolism of white adipose tissue
  4. Be able to explain the mechanisms through which exercise modifies the function of liver metabolism
  5. Be able to critically evaluate the published research and highlight the strengths and weaknesses of the work
  6. Gain experience in grant writing and the evaluation of scientific proposals
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## 5 Teaching and Learning Activities

### 5.1 Lecture

Mon, Sep 9

<b>Topics:</b>	Introduction and basic assessment of whole body and adipose tissue metabolism
<b>Mon, Sep 16</b>	
<b>Topics:</b>	Methodological approaches in the study of adipose tissue metabolism
<b>Mon, Sep 23</b>	
<b>Topics:</b>	No class, assignment on own. Class will be rescheduled
<b>Mon, Sep 30</b>	
<b>Topics:</b>	Exercise and adipose tissue mitochondrial biogenesis and beiging
<b>Mon, Oct 7</b>	
<b>Topics:</b>	Signals mediating adaptations in adipose tissue with exercise (Grant topics due)
<b>Mon, Oct 14</b>	
<b>Topics:</b>	Thanksgiving holiday. Class rescheduled to Friday November 29
<b>Mon, Oct 21</b>	
<b>Topics:</b>	Brown adipose tissue (Grant budget due)
<b>Mon, Oct 28</b>	
<b>Topics:</b>	Anti-inflammatory effects of exercise (Grant due)
<b>Mon, Nov 4</b>	
<b>Topics:</b>	Exercise and NAFLD
<b>Mon, Nov 11</b>	

**Topics:** Exercise and liver inflammation

**Mon, Nov 18**

**Topics:** Exercise and liver insulin action

**Mon, Nov 25**

**Topics:** Exercise and hepatokines

**Fri, Nov 29**

**Topics:** Grant reviews

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## 6 Assessments

### 6.1 Marking Schemes & Distributions

Quizzes and assignments: %15

Grant topics: %15 (due October 7), learning objectives 1-4

Grant budget: %15 (due October 21), learning objectives 5,6

Grant: 25% (due October 28), learning objectives 5,6

Grant reviews: 30% (due November 29), learning objectives 5,6

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## 7 Department of Human Health and Nutritional Sciences Statements

### 7.1 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>

## 7.2 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](#)

## 7.3 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.uoguelph.ca/~ksomers/>

# 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**

Courses that are one semester long must be dropped by the end of the fortieth class day; two-semester courses must be dropped by the last day of the add period in the second semester. The regulations and procedures for course registration are available in the Undergraduate and Graduate 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>