

**University of Guelph**  
**College of Biological Science**  
**Human Health and Nutritional Sciences**  
**COURSE OUTLINE**

**Advanced Topics in Nutrition and Exercise, HHNS 6710,**

Course 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.

**Teaching team**

Instructor: Dr. David Wright, PhD, [dcwright@uoguelph.ca](mailto:dcwright@uoguelph.ca), 519 824 4120 ext. 56751, ANNU Room 334, office hours Monday 2-4

**Course schedule**

Monday 9:30-12:20, MACN 09:30-12:20

**Learning goals and rationale**

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. At the end of successfully completing this course students will:

1. Have an appreciation for the role of white adipose in regulation of whole body metabolism
2. Have an understanding of the various methodological approaches that can be used to measure adipose tissue metabolism
3. Have an understanding of the mechanisms through which exercise modulates the function and metabolism of white adipose tissue
4. Understand 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. Have gained experience in grant writing and the evaluation of scientific proposals

## Course Resources

Current literature will be used throughout this course and a reading list provided to the students the week prior to the discussion.

## Course Content

Students are expected to be on time and prepared for class. Readings will be assigned for each class and a quiz given on this material at the beginning of class each week. There will be no computers permitted for use in class unless it is for presentations. All cell phones must be turned off prior to class. The first 60-90 minutes of class will be an informal lecture providing basic background information and theoretical knowledge of the material to be discussed in the paper reviews. The second portion of the class will entail student run discussions of research papers in a “journal club” type format.

	Topics	Readings
09/10	Introduction and basic metabolism of adipose tissue	n/a
09/17	Methodological approaches in the study of adipose tissue metabolism	n/a
09/24	No-class, assignment on won	To be assigned
10/1	Exercise and adipose tissue mitochondrial biogenesis/beiging	To be assigned
10/8	Thanksgiving	n/a
10/15	Signals mediating adaptations in adipose tissue with exercise	To be assigned
10/22	Brown adipose tissue	To be assigned
10/29	Exercise and brown adipose tissue	To be assigned
11/5	Adipose tissue and inflammation	To be assigned
11/12	Anti-inflammatory effects of exercise	To be assigned
11/19	Exercise and liver insulin action	To be assigned
11/26	Exercise and hepatokines	To be assigned
11/30	Grant reviews	n/a

## Methods of Assessment

Assessment				
Form of Assessment	Weight of Assessment	Due Date of Assessment	Course Content /Activity	Learning Outcome Addressed
Quizzes	15%	Beginning of each class	Based on the readings	1-4
Grant Topics	15%	October 8, 2018	Readings and lecture material	5,6
Grant Budget	15%	October 22, 2018	Readings and lecture material	5,6
Grant	25%	October 29, 2018	Readings and lecture material	5,6
Grant reviews	30%	November 30, 2018	Readings and lecture material	5,6

### Important Dates

The last day to drop classes is Friday, **November 2, 2018**. The grant proposal is due **October 29, 2018** and the grant reviews **November 30, 2018**.

## 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. See the undergraduate calendar for information on regulations and procedures for [Academic Consideration](#).

### 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 Student Accessibility Services (formerly the Centre for Students with Disabilities) as soon as possible.

For more information, contact [Student Accessibility Services](#) at 519-824-4120 ext. 56208 or email [csd@uoguelph.ca](mailto:csd@uoguelph.ca).

## 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.

## 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](#).

## **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.

## **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**

All quizzes will be at the beginning of class. It is the students responsibility to be on time as the quizzes will start promptly at 9:30. No makeup quizzes will be given. Assignments are due by

the end of the day (November 2 for the grant, November 30 for the reviews). Late assignments will be penalized 10%/day.

## Campus Resources

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

Make an appointment with a [Program Counsellor](#) in your degree program.

### **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.