NFS 484F/1484F: Advanced Nutrition
Course Syllabus
September 4 to November 27, 2025

Classes: Thursdays, 09:00 to 12:00, in MSB 2172

Format: In-person; 9:10-10:10 Lecture, 10:20-11:20 Group Activity, 11:20-12:00 Activity Debrief and/or Grad Presentations.
Times are approximate.

Instructor: Adam Metherel, PhD adam.metherel@utoronto.ca
Office Hours: By Appointment

TA: Aidan Tyrrell aidan.tyrrell@mail.utoronto.ca

Course Description:

This is an advanced course in nutrition which covers the analysis of the effect of food and its constituents on living organisms, with particular emphasis on humans. The objectives of the course are threefold:

1. To integrate nutrition with biochemistry and physiology. The emphasis of the course will be on metabolism, examining its regulation from a cellular to whole body perspective.
2. To develop a basis for appreciation of research and its application. This will be accomplished through a combination of lecture material and assigned readings for students.
3. To develop an ability to interpret research data. This will be accomplished through in-class group activities.

Prerequisites: BCH210H1, CSB349H1/PSL350H1/BCH311H1, NFS284H1, PSL302Y1/(PSL300H1, PSL301H1), (STA220H1, STA221H1)/JBS229H1

As this is not intended to be an introductory course, students will be expected to have a sound knowledge of biochemistry, physiology and introductory statistics.

Course Materials:

e-textbooks: Links will be provided on Quercus; students will need to access these for weekly assigned readings.

Frayn KN. 2010. Metabolic Regulation: A human perspective. 3rd edition. Wiley-Blackwell. UK.

Bender BA. 2014. Introduction to Nutrition and Metabolism. 5th edition. CRC Press. Boca Raton, Florida.

Class materials: Lecture slides, required readings and other materials can be obtained through Quercus. This site will continue to be updated throughout the term.

Evaluation Scheme*:		**484 Students (%)**	**1484 Students (%)**
First term test	October 2	40	30
Second term test	November 20	40	30
In-class group activities	September 18 – November 27	15	15
In-class mini quizzes	October 16 - November 27	5	5
Grad assignment**	Scheduled early in semester	___	20

*For students with religious observances on assignment due dates or scheduled tests, please speak with Dr. Metherel in advance to arrange an alternate date.
**NFS 1484F students are required by the School of Graduate Studies to complete a piece of work in addition to that required by NFS 484F students. This will be a group presentation on public health applications of a selected course topic. Details provided in the 'Graduate Assignment' document.

Course Expectations:

In-class group activities: Students will choose their groups of ~ 4 – 5 students. During class time, students will work in their assigned groups on structured activities designed to develop their knowledge and skills in interpreting research data, applying principles of metabolic regulation, and collaborating with their peers. There will be a group activity in every class, which will be submitted for grading (see course schedule). The overall grade for group activities will be based on the best seven out of eight activities.

Group work is a very important part of this course, and students are expected to attend all group work sessions. If course conflicts necessitate repeated absences from class, students are urged to seriously consider whether this course is suitable for them, as no accommodations will be made for students in this situation. In order to accommodate class absences that may occur on occasion (i.e., COVID, other illness or injury, family situation) the lowest group activity marks will be dropped for each student; there will be no make-up activities for those missed classes.

Term tests: There are two short answer tests, that will be similar in format to the group activities.

In-class mini quizzes: There will be five (depending on # of grad students) class presentations given by groups of students in the 1484 section of the course, as part of the School of Graduate Studies requirements. All students will be required to complete a mini quiz in class, based on the group presentation.

Turnitin: For any assignments, tests, etc. submitted to Quercus, students may be required to submit their term tests to the University's plagiarism detection tool, Turnitin, for a review of textual similarity and detection of possible plagiarism. In so doing, students will allow their documents to be included as source documents in the Turnitin reference database, where they will be used solely for the purpose of detecting plagiarism. For more information about this plagiarism detection tool, see the Student Guide.

If you have problems that prevent you from submitting to Turnitin, please contact the instructor. All

students are expected to submit to Turnitin, which is voluntary, or provide an alternative. Failure to do so could result in a grade of **ZERO** for the submitted tests/assignments. For those who do not submit to Turnitin, as an alternative you will be expected to meet with the instructor for a short **oral test** during which you will be asked questions about the process of writing test/assignment and your knowledge of the test content. Your test mark may be modified based on how well you answer those questions.

Final Drop Date: The last date for students to withdraw from the course without academic penalty is Tuesday, November 11, 2025.

Communication:

Discussion boards: Questions about course content, such as lecture material, group activities and tests can be posted to Quercus discussion boards at any time.

Office hours: There will be no set office hours, however, Dr. Metherel will be available to meet virtually, or in-person as requested.

Teaching Assistant: The contact information for the course TA will be provided. The TA will be your first point of contact for questions related to course content.

Quercus announcements: Announcements are posted on the course website and it is the student's responsibility to read these regularly. **It is strongly recommended that students leave their Quercus notifications on**, to be automatically advised of Quercus announcements, posting of new course content, upcoming due dates, the releasing of grades and other course website changes and additions.

Policies:

Missed tests: Students who are absent for a term test for any reason (e.g., COVID, other illness or injury, family situation) should report their absence through the online absence declaration. The declaration is available on ACORN under the Profile and Settings menu. Students should also advise their instructor of their absence as soon as possible, ideally prior to the test date, but NO LATER than one week after the date.

Students will have to write a supplemental test. Failure to write a supplemental test within a reasonable time frame will result in a mark of zero for that component. It is the student's responsibility to contact the course instructor to schedule a make-up test or class activity.

Re-read policy: If you have substantial concerns about the grades on your tests, you may request a re-read. A link will be made available on Quercus for you to upload your request and any supporting files. Describe as specifically as possible your concerns. This can be in the form of comments, or alternatively, or in addition, an uploaded copy of your test with annotations and/or highlighting that indicate the specific areas of concern. If comments about your test are not included with your request, a re-read with not be done. As a result of the re-read, **your mark can**

go up, down, or stay the same. Please note that the higher your original mark (especially marks >80%) the less likely an upward adjustment in your mark will occur. Dr. Metherel's decision is final.

Deadlines for rereads: One week after the test is returned, unless otherwise indicated.

Copyright, intellectual property and privacy considerations: A lecture is considered the intellectual property of the instructor, and copyright guidelines and regulations apply to the recording of lectures. Furthermore, recording a lecture also requires the observation of privacy guidelines and regulations for students in the class whose presence or statements might also be recorded.

The unauthorised use of any form of device to audiotape, photograph, video-record or otherwise reproduce lectures, course notes or teaching materials provided by instructors is covered by the Canadian Copyright Act and is prohibited. Course videos and recordings may not be reproduced or posted or shared anywhere other than the official course Quercus site and should only be used by students currently registered in the course. Recordings may be saved to students' laptop for personal use.

Academic Integrity: The University of Toronto is deeply committed to the free and open exchange of ideas, and to the values of independent inquiry. Academic integrity is fundamental to the University's intellectual life. What does it mean to act with academic integrity? It means acting in all academic matters with **honesty, trust, fairness, respect, responsibility**, and **courage**.

The University of Toronto's Code of Behaviour on Academic Matters outlines the behaviours that constitute academic misconduct. Plagiarism (the presentation or paraphrasing of another person's work as if it was one's own) is a form of academic fraud with potentially serious consequences. All university policies regarding plagiarism will be upheld in this course. Refer to http://academicintegrity.utoronto.ca/

Accessibility: The University provides support and accommodations for students with disabilities to ensure equitable access to opportunities and achievement of students' full potential. If you require accommodations for a disability, or have any accessibility concerns about the course, please contact Accessibility Services as soon as possible. Refer to http://www.studentlife.utoronto.ca/as

Resources and supports: If you or someone you know is in distress and there is an immediate risk, call 911. The following includes supports available to students on all three campuses:

- U of T St. George (Downtown Toronto)
- U of T Scarborough
- U of T Mississauga

Additionally, students have access to U of T My Student Support Program (My SSP) | 1-844-451-9700 24/7. Outside of North America, call 001-416-380-6578. Culturally competent mental health and counselling services are available in 146 languages for all U of T students.

Course Schedule:

This course includes a combination of lectures and group work, as follows:

Date	Content**	Graded Group Activities, Mini-Quizzes, Grad Assignments
Sept. 4	Intro, key concepts, statistical analyses	**Undergrads ONLY**
11 (1st half)	Intro, key concepts, statistical analyses	**Grads Only**
11 (2nd half)	Glucose transporters	**Undergrads + Grad** Sample Activity
18	Carbohydrate quality and absorption	Activity #1
25	Dietary fibre and colonic fermentation	Activity #2
Oct. 2	**First Term Test**	
9	Dietary fats, cholesterol and/or lipoproteins	Activity #3
16	Polyunsaturated fatty acids	Activity #4, Mini-Quiz, Grad Presentations
23	Fructose	Activity #5, Mini-Quiz, Grad Presentations
30	**Reading Week – no class**	
Nov. 6	Metabolic adaptation to fasting/starvation	Activity #6, Mini-Quiz, Grad Presentations
13	Energy expenditure + substrate utilization	Activity #7, Mini-Quiz, Grad Presentations
20	**Second Term Test**	
27	Incretin hormones and energy metabolism	Activity #8, Mini-Quiz, Grad Presentations

****Course content and schedule subject to change.**