



NUTR*3210 Fundamentals of Nutrition

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

This is the foundation course for the study of nutrition. The occurrence, uptake and metabolic role of nutrients will be discussed in relation to growth, reproduction and longevity in human subjects, domestic animals and other species.

Pre-Requisites: BIOC*2580

1.2 Timetable

All course activities will occur online.

1.3 Final Exam

Currently scheduled for: Wednesday, December 14, 2022, 8:30-10:30 AM

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

2 Instructional Support

2.1 Instructional Support Team

Instructor: Clara E. Cho, PhD
Email: claracho@uoguelph.ca
Office Hours: Virtual office hours will occur every Thursday 1:00pm-2:00pm (on Zoom). Only emails sent from an official University of Guelph email account will be answered.

2.2 Teaching Assistants

Teaching Assistant (GTA): Julia Hatherell
Email: jhathere@uoguelph.ca
Office Hours: Contact by email to set up an appointment.

3 Learning Resources

3.1 Required Resources

Courselink (Website)

All course material will be made available to students on the Courselink website. This includes links to Zoom lectures. All materials covered in Zoom lectures will be tested on the quizzes and exams (midterm and final).

3.2 Additional Resources

Advanced Nutrition and Human Metabolism (Textbook)

Title: Advanced Nutrition and Human Metabolism (5th and 6th Editions)

Authors: Sareen S. Gropper and Jack L. Smith

These textbooks are not required. All the material required for the course will be presented in lecture and in the lecture notes.

4 Learning Outcomes

4.1 Course Learning Outcomes

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

1. Define the compounds and elements of nutritional importance to human beings and animals and to show how they are digested and absorbed
2. Document the metabolic fate of absorbed nutrients and describe the metabolic basis of their essentiality
3. Illustrate the role of nutrients in integrated physiological and metabolic processes of intact humans and animals

4. Describe the abnormalities exhibited by humans or animals ingesting diets containing either deficient or excessive quantities of specific nutrients or energy
 5. Develop an understanding of the complexities and limitations of collecting food records and the dietary analysis of nutrients in a person's diet.
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5 Teaching and Learning Activities

How will the course be delivered? This course will be taught remotely. Zoom links to online lectures will be posted on our Courselink Website. Online lectures will be recorded via Zoom.

Is there a face-to-face component that is required to be successful in this course? No.

5.1 Lecture

Topics:

WEEK	DATE	TOPIC
1	Thurs, Sep 8	UNIT 1: Welcome and introduction to nutrition <ul style="list-style-type: none"> • Discussion of course objectives, organization and method of assessment • Classes of nutrients and concept of dietary essentiality • The importance of water
2	Tues, Sep 13	UNIT 2: Food/feeds composition analysis <ul style="list-style-type: none"> • Proximate analysis: modern techniques applied to a longstanding scheme
	Thurs, Sep 15	UNIT 3: Major types of digestive tracts in animals

		<ul style="list-style-type: none"> • Overview of digestive systems • Digestibility
3	Tues, Sep 20	UNIT 4: Energy <ul style="list-style-type: none"> • Partitioning of feed energy for maintenance and production: gross energy (heat of combustion), digestible energy, metabolizable energy • Physiological fuel values and the chemical basis for the differences among macronutrients in terms of energy density • Calorimetry: energy expenditure
	Thurs, Sep 22	UNIT 5: Carbohydrates, including fibre <ul style="list-style-type: none"> • Classification and structure • Digestion and absorption in monogastric and ruminant animals • Metabolism and function, importance of carbohydrates in metabolism
4	Tues, Sep 27	<ul style="list-style-type: none"> • Classification and structure • Digestion and absorption in monogastric and ruminant animals • Metabolism and function, importance of carbohydrates in metabolism
	Thurs, Sep 29	
5	Tues, Oct 4	UNIT 6: Lipids <ul style="list-style-type: none"> • Chemical structure of dietary lipids • Essential fatty acids • Digestion and intestinal absorption
	Thurs, Oct 6	
6	Tues, Oct 11	No class - Fall Study Break
	Thurs, Oct 13	UNIT 6: Lipids (continued)

		<ul style="list-style-type: none"> • Metabolism, including the problem of transporting lipids in an aqueous medium
7	Tues, Oct 18	MIDTERM EXAM REVIEW
	Thurs, Oct 20	MIDTERM EXAMINATION
8	Tues, Oct 25	UNIT 7: Proteins
	Thurs, Oct 27	<ul style="list-style-type: none"> • Classification and properties • Dietary essential amino acids • Protein quality
9	Tues, Nov 1	<ul style="list-style-type: none"> • Evaluation methods • Examples of some common feedstuffs • Nitrogen metabolism in ruminants • Digestion and absorption • Metabolism and function • Transamination and nitrogen excretion; utilization of carbon skeletons for energy
	Thurs, Nov 3	UNIT 8: Integrative metabolism of macronutrients <ul style="list-style-type: none"> • Integrative metabolism of dietary carbohydrates, fats and proteins in relation to nutritional status
10	Tues, Nov 8	UNIT 9: Vitamins and minerals

	Thurs, Nov 10	<ul style="list-style-type: none"> • Characteristics of compounds classified as vitamins • Classification of essential mineral elements
11	Tues, Nov 15	<ul style="list-style-type: none"> • 7 macrominerals, 10 trace minerals
	Thurs, Nov 17	<ul style="list-style-type: none"> • Dietary sources, known biochemical and physiological functions, deficiency and toxicity signs/symptoms: • Vitamin A and provitamin A • Vitamin K
12	Tues, Nov 22	<ul style="list-style-type: none"> • Vitamin D and the macrominerals calcium and phosphorus
	Thurs, Nov 24	<ul style="list-style-type: none"> • Vitamin E and the trace mineral selenium • Water-soluble vitamins:
13	Tues, Nov 29	<ul style="list-style-type: none"> • Vitamin C, vitamin B6, folate, vitamin B12, pantothenic acid, biotin, niacin, riboflavin, thiamin • Other tracer minerals: • Iron, copper, cobalt, zinc, iodine, fluoride, magnesium, manganese • Metabolic integration
	Thurs, Dec 1	FINAL EXAM REVIEW
14	Wed, Dec 14	FINAL EXAM

		Scheduled for 8:30-10:30 AM
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5.2 Important Dates

Thurs, Sep 8	Classes commence
Fri, Sep 16	Quiz 1 opens
Fri, Sep 30	Quiz 2 opens
Tues, Oct 11	No class - Fall Study Break
Fri, Oct 14	Quiz 3 opens
Thurs, Oct 20	Midterm exam
Fri, Nov 4	Quiz 4 opens
Fri, Nov 11	Dietary analysis assignment due
Fri, Nov 18	Quiz 5 opens
Thurs, Dec 1	Classes conclude
Wed, Dec 14	Final exam

6 Assessments

NOTE: *This course currently plans to use Respondus Lockdown software for some assessments. Your instructors are aware that some students have expressed concerns about the use of this exam invigilation software. The University Administration is currently evaluating the matter of Respondus Lockdown software and other online monitoring platforms that use artificial intelligence for remote invigilation. Your instructors are committed to an equitable and accessible assessment experience and will adapt, based on guidance provided.*

Online midterm and final exams in this course will be administered using Respondus LockDown Browser with the microphone and web cam enabled. Respondus LockDown Browser is a locked browser for taking closed-book exams in CourseLink. Respondus Monitor is a companion application for LockDown Browser that uses webcam and video technology to ensure academic integrity during online exams. The software captures video during the exam and allows the instructor to review the video once the exam is completed. It prevents you from printing and copying; using other operating software; using search engines (e.g., going to another URL); communicating via instant messaging; and it blocks non-web-related software (e.g., Adobe PDF, Microsoft Word).

6.1 Assessment Details

Midterm Exam (30%)

Date: , Midterm Exam written using Respondus Lockdown Software

MIDTERM EXAMINATION DATE: Thursday, October 20, 2022 (24-h access: opens at 8:00 AM on Thursday, October 20, 2022 and closes at 8:00 AM on Friday, October 21, 2022)

The midterm examination must be written using the Respondus Lockdown Software accessed via the Quiz tab on Courselink and will be timed (1 h). The midterm examination will specifically address course content from weeks 1 to 6 inclusive with questions consisting of multiple-choice, true-false and fill-in-the-blank type.

Learning Outcomes associated with this assessment: 1, 2, 3, 4

ONLINE QUIZZES (10%)

Date: , Courselink access

ONLINE QUIZZES (2% each x 5 = 10% of final grade)

- The online quizzes will be made available on Courselink and will be opened on the **Friday** at 8:00 AM of the scheduled week and will remain open through **Monday** of the following week and will close at 11:59 PM. The quiz will be timed (20 minutes) and will evaluate knowledge covered in the lectures that occur in the previous weeks leading up to the quiz. The dates in which the online quizzes will open are as follows: **September 16, September 30, October 14, November 4, and November 18.**
- **IMPORTANT NOTE: All the quizzes are to be completed during the allocated time of availability in Courselink. Missed quizzes CANNOT be made up and under no circumstances will the percent value of a missed quiz be shifted to any other quiz, assignment, or exam. It is the student's responsibility to ensure that they have adequate computer/internet resources in place at the time they intend on completing the quiz.**

Learning Outcomes associated with this assessment: 1, 2, 3, 4

DIETARY ANALYSIS ASSIGNMENT (20%)

Date: Courselink submission

The assignment must be submitted on Courselink (Dropbox tab) by **11:59 PM on or before Friday November 11, 2021**. A late fee of 10% will be assessed every 24 hours after the due date and time. (see Assignment guidelines on Courselink for details).

Learning Outcomes associated with this assessment: 1, 2, 3, 4, 5

FINAL EXAMINATION (40%)

Date: , Final Exam written using Respondus Lockdown Software

FINAL EXAM DATE: Scheduled for Wednesday, December 14, 2022, 8:30-10:30 AM (the final exam opens at 8:00 AM on Wednesday, December 14, 2022 and closes at 11:00 AM on Wednesday, December 14, 2022)

Final Exam written using Respondus Lockdown Software accessed via the Quiz tab on CourseLink and will be timed (2 h). The questions on the final exam will be derived from entire course content, but emphasis will be placed on topics covered during weeks 8 to 13 inclusive with questions consisting of multiple-choice, true-false and fill-in-the-blank type.

Learning Outcomes associated with this assessment: 1, 2, 3, 4

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

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