



# **NUTR\*3330 Micronutrients, Phytochemicals and Health**

Fall 2019  
Section(s): C01

Department of Human Health and Nutritional Sciences  
Credit Weight: 0.50  
Version 2.00 - August 08, 2019

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## **1 Course Details**

### **1.1 Calendar Description**

The course emphasizes the biochemical basis for the dietary essentiality of vitamins and minerals. The course extends the fundamentals of nutrition to include conditional essentiality of micronutrients, biochemical individuality and the use of micronutrient supplementation to promote human and animal health. Both plant and animal sources of nutrients are discussed.

**Pre-Requisites:** NUTR\*3210

### **1.2 Course Description**

This course will explore the nutritional and biochemical roles/aspects of micronutrients and phytochemicals. The study of micronutrients will extend beyond the fundamentals of nutrition and will include relevance to human health and disease. The study of phytochemicals will encompass an overview to understand the concepts and processes involved, followed by the study of specific phytochemicals and their relation to human health and disease. The relevant Canadian regulatory arena surrounding micronutrients and phytochemicals will also be discussed.

### **1.3 Timetable**

Tuesdays & Thursdays 1:00-2:20pm

ALEX 200

### **1.4 Final Exam**

Date and Time and Location TBD

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## 2 Instructional Support

### 2.1 Instructional Support Team

<b>Instructor:</b>	Alison Duncan
<b>Email:</b>	amduncan@uoguelph.ca
<b>Telephone:</b>	+1-519-824-4120 x53416
<b>Office:</b>	ANNU 347
<b>Office Hours:</b>	Anytime by appointment - See Course Website for scheduled office hours for time periods before midterm and final exams

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## 3 Learning Resources

### 3.1 Required Resources

#### Course Resources (Website)

This class will use the online Courselink system where notes and lectures will be posted each week.

There is no required text for this class. However, if you are looking for a detailed nutrition textbook as a potential resource (primarily for micronutrients, less on phytochemicals), I would recommend: Shils et al. Modern Nutrition in Health and Disease, 10th edition.

You may choose to purchase this book as part of your personal library. There are no copies available in the bookstore, however you are free to order this book at any time. If you would like to take a look at the book, there is 1 hard copy on 2 hour reserve at the library under this class and 1 e-copy is available through ARES or Primo (library catalogue).

When you log into ARES for any of your reserve material the e-item will be listed or you can

search it in Primo

([https://www.lib.uoguelph.ca/resources/course\\_reserves\\_&\\_e\\_learning/](https://www.lib.uoguelph.ca/resources/course_reserves_&_e_learning/)).

### 3.2 Campus Resources

**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.

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## 4 Learning Outcomes

### 4.1 Course Learning Outcomes

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

1. Have an extensive understanding of the nutritional and biochemical aspects of vitamins and minerals, as well as their relevance to human health and disease.
2. Have an understanding of what constitutes a phytochemical.

3. Have an extensive understanding of selected phytochemicals covered in class; how they work and their relevance to human health and disease.
  4. Be aware of the Canadian regulatory environment as it pertains to micronutrients and phytochemicals.
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## 5 Teaching and Learning Activities

### 5.1 Lecture

**Topics:** Course Content  
**References:** Tentative Class Schedule

<b>Week</b>	<b>Class Dates</b>	<b>Topics Covered</b>
1	Thurs. September 5	Course introduction
2	Tues. September 10 Thurs. September 11	Micronutrients introduction, thiamin, riboflavin, niacin
3	Tues. September 17 Thurs. September 19	Biotin, pantothenic acid, vitamin B <sub>6</sub> , vitamin B <sub>12</sub>
4	Tues. September 24 Thurs. September 26	Folate, choline, bariatric surgery and micronutrients
5	Tues. October 1 Thurs. October 3	Canadian micronutrient-related regulations, antioxidant micronutrients, vitamin C
6	Tues. October 8; NO CLASSES	Tues October 8: no classes Vitamin D, calcium

	Thurs. October 10	
7	Tues. October 15	Vitamin A, vitamin K, sodium, iron
	Thurs. October 17	<b>Midterm Thurs. Oct 17 (in class)</b>
8	Tues. October 22	Phytochemicals introduction,
	Thurs. October 24	Flavonoids
9	Tues. October 29	Phytosterols,
	Thurs. October 31	Chocolate flavonoids
10	Tues. November 5	Canadian phytochemical-related regulations,
	Thurs. November 7	Phytoestrogens
11	Tues. November 12	Glucosinolates, Sulfur-containing phytochemicals
	Thurs. November 14	
12	Tues. November 19	Anthocyanins,
	Thurs November 21	Resveratrol
13	Tues. November 26	Ginseng and other selected herbals, course wrap-up
	Thurs. November 28	

## 6 Assessments

### 6.1 Marking Schemes & Distributions

Name	Scheme A (%)
Midterm Exam	45
Comprehensive Final Exam (weighted 75% post-midterm)	55
Total	100

### 6.2 Assessment Details

#### Midterm Exam (45%)

**Date:** Thu, Oct 17, In Class 1:00-2:20pm

**Learning Outcome:** 1, 4

Covering lectures up until end of class before midterm (This will assess Learning Outcomes 1 and 4).

#### Comprehensive Final Exam (weighted 75% post-midterm) (55%)

**Date:** Time and Date and Location TBD

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

Covering all lectures with 75% post-midterm (This will assess Learning Outcomes 1, 2, 3 and 4).

## 7 Course Statements

### 7.1 Grading

If you are absent for a class, you are expected to make up missed material on your own. Please seek input from fellow classmates on any material you have missed. You can use the class discussion board to interact with your classmates.

## 8 Department of Human Health and Nutritional Sciences Statements

### 8.1 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](#)

## 8.2 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>

## 8.3 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/>

# 9 University Statements

## 9.1 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.

## 9.2 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>

### 9.3 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>

### 9.4 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.

### 9.5 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.

More information can be found on the SAS website

<https://www.uoguelph.ca/sas>



## 9.6 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>

## 9.7 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.

## 9.8 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>

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