



NUTR*3330 Micronutrients, Phytochemicals and Health - DRAFT

Fall 2018
Section(s): C01

Department of Human Health and Nutritional Sciences

Credit Weight: 0.50
Version 1.00 - May 28, 2018

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-Requisite(s): 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. Students have the option of gaining an in-depth understanding of a specific micronutrient or phytochemical of their choice through a research review paper. 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

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

2 Instructional Support

2.1 Instructor(s)

Alison Duncan

Email: amduncan@uoguelph.ca

Telephone: +1-519-824-4120 x53416

Office: ANNU 347

Office Hours: Anytime by appointment - See Course Website for scheduled office hours for time periods before midterm and final exams

3 Learning Resources

3.1 Required Resource(s)

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/).

3.2 Research Review Paper Notes

- This is an optional component of the course.
- This is your opportunity to expand your knowledge in a specific area of micronutrients or phytochemicals through a topic of your choice within micronutrients or phytochemicals.
- You can do this individually or in a group of up to 3 people (yourself and 1-2 others).
- For groups, all group members will receive the same grade for the paper.
- You must have your topic approved by the instructor and you are encouraged to consult with the instructor as you decide on a topic.
- Your research review paper should be an enjoyable and informative process, so this means you should work on it throughout the semester. You may need time to gather information so give yourself plenty of time to learn and enjoy the process.
- Your research review paper is due by **Thursday November 29, 2018**. Please email me a copy in WORD with the file name NUTR333paper-LastNames. Late papers will receive a penalty of 5% per day (including weekend days).
- Please comply with the following format requirements:
 - 8-10 pages plus references and cover page.

- Double spaced, 12-point font.
- Reference style is your choice but must be consistent.
- Include a minimum of 5 primary research articles from peer-reviewed journals.
- Avoid internet references (use scientific articles).

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.

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.

5. Have experienced the process of critically and thoroughly investigating, discussing and reporting on a specific area of micronutrient or phytochemical nutrition through an individual or group research paper (if optional research review paper is completed).
6. Have improved scientific writing skills (if optional research review paper is completed).

4.2 UOG - Undergraduate Degree

Successfully completing this course will contribute to the following:

#	Outcome Set Name	Course Learning Outcome
1	Critical and Creative Thinking	1, 2, 3, 4, 5, 6
2	Literacy	1, 2, 3, 4, 5, 6
3	Global Understanding	1, 2, 3, 4, 5, 6
4	Communicating	1, 3, 4, 5, 6
5	Professional and Ethical Behaviour	4, 5, 6

5 Teaching and Learning Activities

5.1 Lecture

Topic(s): Course Content
Reference(s): Tentative Class Schedule

Week	Class Dates	Topics Covered
1	Thurs. September 6	Course introduction
2	Tues. September 11	Micronutrients introduction, thiamin, riboflavin, niacin
	Thurs. September 13	
3	Tues. September 18	Biotin, pantothenic acid, vitamin B ₆ , vitamin B ₁₂
	Thurs. September 20	
4	Tues. September 25	Folate, choline, bariatric surgery and micronutrients
	Thurs. September 27	
5	Tues. October 2	Canadian micronutrient-

	Thurs. October 4	related regulations, antioxidant micronutrients, vitamin C
6	Tues. October 9; NO CLASSES	Tues October 9: no classes
	Thurs. October 11	Vitamin D, calcium
7	Tues. October 16	Vitamin A, vitamin K, sodium, iron Midterm
	Thurs. October 18	Thurs. Oct 18 (in class)
8	Tues. October 23	Phytochemicals introduction,
	Thurs. October 25	Flavonoids
9	Tues. October 30	Phytosterols,
	Thurs. November 1	Chocolate flavonoids
10	Tues. November 6	Canadian phytochemical- related regulations,
	Thurs. November 8	Phytoestrogens
11	Tues. November 13	Glucosinolates, Sulfur- containing phytochemicals
	Thurs. November 15	
12	Tues. November 20	Anthocyanins,
	Thurs November 22	Resveratrol
	Tues. November 27	Ginseng and other selected herbals, course wrap-up
13	Thurs. November 29	<u>Optional Research</u> <u>Review Paper DUE Thurs.</u> <u>November 29</u>

6 Assessments

6.1 Marking Schemes & Distributions

Name	Scheme A (%)	Scheme B (%)
Midterm Exam	45.00	30.00
Comprehensive Final Exam (weighted 75% post-midterm)	55.00	40.00
Optional Research Review Paper	0.00	30.00
Total	100.00	100.00

6.2 Assessment Details

Midterm Exam (45.00%)

Date: Wed, Oct 18, In Class 1:00-2:20pm

Covering lectures up until end of class before midterm - Option 2 for Weight: 30%

Comprehensive Final Exam (weighted 75% post-midterm) (55.00%)

Date: Date: TBD

Covering all lectures - Option 2 for weight: 40%

Optional Research Review Paper (30.00%)

Date: Wed, Nov 29

Independent research

7 Course Statements

7.1 Grading

If you choose to do the optional research review paper, please submit electronically to the course instructor. Late penalties of 5% per day will apply.

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](#)

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.uoguelph.ca/~ksomers/>

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 regulations and procedures for [Academic Consideration](#) are detailed in the Undergraduate Calendar.

9.3 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 [Dropping Courses](#) are available in the Undergraduate Calendar.

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: www.uoguelph.ca/sas

9.6 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.

9.7 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.

9.8 Resources

The [Academic Calendars](#) are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.

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