Nutritional Toxicology
Winter 2019
NL6, Wednesday, 1:00-4:00 pm

Course description:
The purpose of this course is to introduce students to the basic principles of nutritional toxicology and discuss issues related to the safety of the Canadian food supply. The course will deal with toxicants found in the food supply, including additives and naturally occurring substances, bacterial contaminants, allergens and compounds produced during food processing and storage. Emphasis will be placed on understanding research study design and applying this knowledge to the discussion and evaluation of findings from peer-reviewed nutritional toxicology studies.

Prerequisites:

- Introductory university-level courses in human nutrition and biochemistry or permission of the instructor.

Broad course goals:

- To introduce the basic principles of toxicology and illustrate their application in the context of food and nutrition.
- To examine different types of study designs and to discuss how these methods can be applied to studying the effects of toxicants in the food supply on health.
- To critically evaluate the findings of nutritional toxicology studies and understand why conflicting evidence may exist.

Course objectives:
At the end of the course, students will be able to:

- Define basic scientific terminology and describe core concepts in toxicology as they apply to nutrition and the food supply.
- Distinguish between different types of research study designs and explain some advantages and disadvantages of specific methodological approaches.
- Identify and describe different sources of toxicity in the food supply and discuss their potential effects on health.
- Critically evaluate findings from the scientific literature on a specific, potentially toxic substance found in the food supply.

Course materials:
No textbook is required for this course. Readings will be posted on Quercus.
The following introductory textbooks are available online from the University of Toronto library (OPTIONAL):

- Omaye, S.T. Food and nutritional toxicology. 2004. CRC Press. Boca Raton, FLA.
- Kotsonis, F.N. and M. Mackey, Eds. Nutritional toxicology, second edition. 2001. Taylor & Francis. New York, NY.

In addition, the following print book will be available on short-term loan at the Gerstein Library:

- Shaw, I.C. Food safety: The science of keeping food safe. 2013. Wiley---Blackwell. Ames, IA.

Course communications:

The course website is available through Quercus website.

- Class announcements will be made on the course website.
- Lecture slides will be posted online one the day before the lecture.
- The course website includes a discussion board for students to ask questions related to lecture material and general course content. If you have a question about course material, please post it here for the benefit of everyone. Individual queries to the instructor about marks or personal matters should be immediately after class, or by e-mail.

Classes and information:

Lectures: Wednesday, 1-4 pm in NL6

Course instructor: **Amel Taibi, PhD**
Department of Nutritional Sciences
1 King's College Circle, Medical Sciences Building room 5347
Email: amel.taibi@utoronto.ca
Office hours: immediately after each lecture or by appointment

Teaching Assistants: **Lorena Lopez**
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Accessibility Needs

The University of Toronto is committed to accessibility. If you require accommodations for a disability, or have any accessibility concerns about the course, the classroom or course materials, please contact Accessibility Services as soon as possible at accessibility.services@utoronto.ca or http://www.studentlife.utoronto.ca/as

Course Outline

Week 1: January 9	Introduction to Nutritional Toxicology
Week 2: January 16	Toxicity Tests **Overview of the course assignment**
Week 3: January 23	Scientific Evidence & DRIs
Week 4: January 30	Food Allergies & Intolerances
Week 5: February 6	**Term test #1**
Week 6: February 13	Natural Toxins & Repair Mechanisms **Group project outline due**
Week 7: February 20	Reading week – No class
Week 8: February 27	Food Safety & Regulations
Week 9: March 6	Diet & Health
Week 10: March 13	Food Biotechnology & Nutrition **Written reports due**
Week 11: March 20	**Term test #2**
Week 12: March 27	**All group slides** In-class group presentations (part1)
Week 13: April 3	In-class group presentations (part2)

Course Evaluations

Assessment	**Weight**	**Date**
Term Test 1	35%	February 6
Group Project Outline	4%	February 13
Group Written report	15%	March 13
Term Test 2	35%	March 20
Group Presentation	10%	March 27, April 3 **(*Slides from all groups due March 27*)**
Participation	1%	March 27, April 3

Term tests: (70% of course grade). There will be two term tests, each counting for 35% of the course grade. Each term test will include material covered up to the previous week. Questions will be in multiple choice and short-answer form. The format of the tests will be closed book. **The term tests will take place on February 6 and March 20, during class from 1:10pm-3:10pm.**

Group project: (30% of course grade). There will be one project per group. A detailed description of the entire group assignment will be announced in class on January 16 along with the marking rubrics. Students will be placed into groups of 4-6 and will be assigned a topic of a food-related substance with potentially toxic properties. The objective of the project is for groups to synthesize scientific literature and apply concepts of toxicology to critically evaluate the potential hazards of the substance.

The project consists of 3 components: an outline, an oral presentation, and a written report.

Outline: (4% of course grade). The outline will briefly describe the proposed hazards of the substance, the toxicology concepts that will be applied, and the types of scientific studies to be evaluated. **The outline will be submitted at the beginning of class on February 13 (ONLY ONE COPY per group is required). Outlines submitted by e-mail will not be accepted.**

Oral Presentation: (10% of course grade). Groups will discuss the evidence they have evaluated along with their application of toxicology concepts, and present their conclusions about their assigned substance. All group members will be expected to speak. A maximum of 15 minutes will be allotted, with an additional 3 minutes for questions from the audience (18 minutes total). **Presentations will take place on March 27 and April 3, but all slides must be submitted to the instructor at the beginning of class on March 27.** The instructor will assign presentation dates.

Written Report: (15% of course grade). A hard copy written report that accompanies the oral presentation is **due from all groups on March 13.** The report may be up to 12 pages in length (double-spaced, size 12 font, 1-inch margins) excluding Tables, Figures and References.

For writing assistance, students may wish to use the resources at the University of Toronto Academic Writing Centre (Woodsworth College, Room 214):
http://www.wdw.utoronto.ca/index.php/current_students/academic_writing_centre/.

Participation: (1% of course grade). Participation during the March 27 and April 3 group presentations will be evaluated.

Course assignments must represent original work. Plagiarism is a serious academic offense.

"Normally, students will be required to submit their course assignments to Turnitin.com for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their assignments to be included as source documents in the Turnitin.com reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin.com web site".

Submission of the outline and the written report through Turnitin is voluntary, but students who choose not to use Turnitin will be required to meet with the instructor for an oral test where they will be asked questions about their preparation of the assignment and their knowledge of its subject matter. More information on how to submit work through Turnitin will be provided in class and on Quercus, along with the detailed description of the overall course assignment, on January 16.

Students are encouraged to contact the instructor with questions or concerns early in the process of preparing their assignments. More information on what is considered plagiarism at the University of Toronto, and how to avoid it, is available from the following websites:
http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize
http://www.utoronto.ca/academicintegrity/Academic_integrity.pdf

Attendance, missed term tests and late work

Attendance is not mandatory. However, most students will find attendance of lectures to be helpful, as in-depth discussions of the lecture slides and assignments will occur in class. Students who do not attend the group presentations at the end of the course will not receive marks toward the participation grade.

Missed term tests: There are no make-up tests for missed tests. If a student misses a term test they will receive a grade of 0 unless an acceptable explanation that is backed up with documentation is presented. In this case, the overall grade will be redistributed among the remaining assessments.

Late submission of either the group project outline or the written report will result in a deduction from the total course grade for each day it is late, up to the assignment's total worth. A 10% deduction per day will be applied to late outlines and written reports.

Missed presentation: If a group member misses their group's presentation, they will receive a grade of 0 for the presentation, unless an acceptable reason exists (that is backed up with documentation), in which case their overall grade will be redistributed among the remaining assessments.

Required documentation for missed work:

- A justified medical excuse, with University of Toronto Verification of Student Illness or Injury form completed by a health care provider. These forms are available from the following website: http://www.illnessverification.utoronto.ca/
- Personal distress. A written or verbal explanation to the instructor is required. All discussions with the instructor will be confidential. Students dealing with intense or ongoing personal distress or chronic illness, who may need special and continuing accommodation, may be asked for additional documentation and are advised to discuss their situation with their college registrar.

Please note that poor time management, having several assignments due at the same time, having to study for term tests, etc are **NOT** compelling reasons for an extension. Students are expected to complete their assignments as best they can, hand them in on time, even if incomplete, and accept that they may not get as high a grade as they would like.

The instructor is dedicated to working with you to help you achieve the best learning experience during this course, however, last-minute (i.e. the night before tests or deadlines for assignments) response to requests cannot be promised. Work and study ahead of deadlines so the instructor can be of most assistance to you.

Re-grading of assignments: In the event that you would like to contest a mark on an assignment, you must submit a written proposal to the instructor (i.e. via e-mail or as a written submission handed in in class) explaining why a re-grade is warranted. Dr. Taibi may or may not choose to re-grade - it will depend on how well each student presents their case. She reserves the right to re-read and re-grade your entire work, not just the answer that you have challenged. Be aware that your mark may go up, down, or stay the same.

NOTE: You have up to two weeks from the date of return of your work to inquire in writing and start the re-grading process.