

NFS488H1S – Nutritional Toxicology 2022 Winter Term

Course Instructor: Dr. Amel Taibi | Email: amel.taibi@utoronto.ca

Course Description

The course introduces the basic concepts of toxicology and illustrates their application in the context of food and nutrition. Emphasis will be placed on understanding the occurrence, mechanism of action, safety and health implications of chemicals naturally present in or added to foods. This course will also provide the fundamentals of toxicogenomic and discuss the interaction between toxic substances, nutrients, human genetics, and the gut microbiota; in the context of health and diseases. Food safety evaluation and regulatory control will be presented.

Prerequisites

BCH210H1, NFS284H1

Learning Objectives

- By the end of this course, the students will be able to:
- Define basic scientific terminology and describe core concepts in toxicology as they apply to nutrition and the food supply.
- 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.
- Understand regulatory issues related to food and nutritional toxicology

Teaching Assistant

Sabrina Ayoub-Charette | Email: sabrina.ayoubcharette@mail.utoronto.ca

Course materials

No textbook is required for this course.

Class activities

- The classes will be held on Wednesdays from 1:00 pm to 4:00 pm, beginning January 12, 2022
- The first lectures (January 12 to January 26) will be offered through live-stream virtual on Microsoft Teams
- Starting from February 1, 2022, the lectures will be held in-person- Room ESB142, Earth Science Building. The return to the in-person classes is subject to changes, the students need to remain up to date with the university's instructions and the course announcements posted on the announcement rubric on Quercus.
- The instructor, teaching assistant, and students will be expected to follow the University's policy and the provincial guidelines for in-person attendance, and interaction during class hours.

Office Hours

Offered virtually (online) over Microsoft Teams OR in-person; available by appointment. Consultations are welcomed and highly encouraged. Please contact your instructor by email to arrange a meeting. Any emails addressed to Dr. Taibi must have a brief, relevant subject line, must come from a @utoronto.ca email account.

The students will be expected to follow the guidelines for in-person interactions during the meetings held in-person

Course communication

All the announcements will be made on the course website, it is the students' responsibility to remain updated with the course messages and to activate the announcement notifications

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 there for the benefit of everyone. Individual queries to the instructor about marks or personal matters should be sent by email.

Course Overview and Assessment

Course Schedule (subject to change)

Date	Lecture Topic
Week 1 (Jan. 12)	Lecture 1: Basic Concepts of Nutritional Toxicology
Week 2 (Jan. 19)	Lecture 2: Chemicals in foods: Natural Toxins and Toxicants
Week 3 (Jan. 26)	Lecture 3: Next Generation of Toxicological Studies in Nutrition
Week 4 (Feb. 2)	Lecture 4: Approaches to setting Dietary Reference Intakes for Toxicity Food Safety and regulations
Week 5 (Feb. 9)	TERM TEST #1: Open-book
Week 6 (Feb. 16)	Reading week – No class
Week 7 (Feb. 23)	Lecture 5: Host Genetic Variability and Toxicogenomics Gene-food toxicant interactions Role of microRNAs in xenobiotic toxicity
Week 8 (Mar. 2)	Lecture 6: Toxicomicrobiomics The gut Microbiota, Dietary, and Xenobiotics interactions
Week 9 (Mar. 9)	Lecture 7: Emerging topics in nutritional toxicology: Artificial Sweeteners and Toxicity Guest Speaker: Sabrina Ayoub-Charette, PhD (c)
Week 10 (Mar. 16)	Lecture 8: Emerging topics: TBD Guest Speaker: Dr. Jacqueline Beaudry
Week 11 (Mar. 23)	TERM TEST #2: Open-book
Week 12 (Mar. 30)	All group slides In-class group presentations (part1)
Week 13 (Apr. 6)	In-class group presentations (part2)

Assessment breakdown (subject to change)

Assessment	Weight	Date
Research question	2%	February 02
Term Test 1: (Open Book)	28%	February 9
Group Project Outline	3%	February 23
Group Research Paper	20%	March 16
Term Test 2: (Open Book)	28%	March 23
Group Oral Presentation	15%	March 30, April 6
Participation	4%	March 30, April 6

Term tests: (56% of course grade). There will be two-term tests, each counting for 28% of the course grade. Each term test will include material covered up to the week before the test.

Group project: (40% of course grade). There will be one project per group. A detailed description of the entire group assignment will be announced online along with the marking rubrics. Students will be placed into groups of 3 and will be assigned a topic of a food-related substance with potentially toxic properties. The objective of the project is for the groups to synthesize scientific literature and apply concepts of toxicology to critically evaluate the potential hazards of the substance.

Participation: (4% of course grade). Participation during the March 30 (2%) and April 6 (2%) group presentations will be evaluated. To encourage participation, each student will be required to evaluate each group presentation, indicating strengths and areas for improvement. Attendance at the time of the oral presentations is mandatory

Plagiarism detection tool (PDT)

“Normally, students will be required to submit their course essays to the University’s plagiarism detection tool for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the tool’s reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University’s use of this tool are described on the Centre for Teaching Support & Innovation website (<https://uoft.me/pdt-faq>)”

A link for submission of assignments, to PDT, will be available on Quercus. If you have problems that prevent you from submitting to PDT, please contact Dr. Taibi to discuss alternatives. All students are expected to either submit to PDT, which is voluntary or provide an alternative. Failure to do so could result in a grade of ZERO for the assignment. For those who do not submit to PDT, as an alternative you will be expected to meet with Dr. Taibi for a short oral test during which you will be asked questions about the writing of the assignment and its content. Your assignment grade may be changed based on how well you answer these questions. Dr. Taibi and/or the teaching assistants review the PDT submissions and will e-mail students if there are any concerns about their writing.

Missed term tests and late work

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 the 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) responses to requests cannot be promised. Work and study ahead of deadlines so the instructor can be of most assistance to you.

Regrade Policy

The students will have one week from the date that the grade is posted to appeal their marks. If the students would like to contest a mark, they must submit a written proposal by email to Dr. Taibi explaining why a re-grade is warranted. The instructor may or may not choose to re-grade, it will depend on how well each student presents their case. The instructor reserves the right to re-read and re-grade the entire work. Be aware that the mark may go up, down, or stay the same.

Copyright and sharing permissions

Lecture videos, tutorials, and any other course material belong to the instructor, the University, and/or other source depending on the specific facts of each situation, and are protected by copyright. In this course, the students are permitted to download session videos and materials for their academic use, but they should not copy, share, or use them for any other purpose without the explicit permission of the instructor.

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>