

**NFS382H1 S**

**Vitamin & Mineral Metabolism Throughout  
the Life-Cycle**

**Dr. Kozeta Miliku**

**Winter 2024**

**Department of Nutritional Sciences  
University of Toronto**

### 1) Course Description:

Vitamins and minerals are essential for health throughout the life span. This course examines the metabolism of vitamins and minerals in the context of human development from infancy, childhood, adolescence, adulthood, reproduction and through to aging. Some emphasis in the course is placed on understanding the role of vitamins and minerals in disease prevention and pathogenesis.

### 2) Prerequisites:

NFS284 - Basic Human Nutrition

### 3) Learning Objectives:

- To gain knowledge of the metabolism of specific vitamins and minerals, and the role that they play in human health.
- To understand the dietary reference intakes (DRIs) for specific vitamins and minerals, and how these values were derived.
- To understand the current vitamin and mineral status of Canadians.
- To develop critical appraisal skills and attain a basic understanding of the principles of study design, so as to be able to assess research on vitamins and minerals.

### 4) Course Instructor: Dr. Kozeta Miliku

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Department of Nutritional Sciences Medical Sciences Building, Room 5265

Office Hours: Mondays 10.30 to 11.30 am. TA office hours will be made available online.

### 5) Course Delivery, Website, and Notifications:

**Course Delivery:** Mondays (9-10 am ET) and Wednesdays (9-11 am ET)

**Course website:** Available on Quercus

**Notifications:** Announcements are posted on the course website, and it is the student's responsibility to read these regularly and to regularly check the course website for new information. It is strongly recommended that students leave their Quercus notifications on, to automatically be advised of Quercus announcements, posting of new course content, upcoming due dates, the releasing of grades and other important course information.

### 6) Recommended Textbook:

*Advanced nutrition and human metabolism. Seventh edition.* Boston, Massachusetts: Cengage Learning, 2018. Authors: Sareen S. Gropper, Jack L. Smith, and Timothy P. Carr. This textbook is available in hard copy and electronically through the UofT library system. For the electronic version, click the following link:

[https://librarysearch.library.utoronto.ca/permalink/01UTORONTO\\_INST/14bjeso/alma991106968119006196](https://librarysearch.library.utoronto.ca/permalink/01UTORONTO_INST/14bjeso/alma991106968119006196)

You will be prompted to log in with your UTOR ID. Only one person at a time can check out the electronic version. The textbook is also available for purchase through the publisher, Amazon.ca and other retailers. While it is only recommended, this textbook is a great resource. If you plan to continue studies in nutrition, you may want to consider buying your own copy.

Required Readings: Links to required readings are linked in the Syllabus. You may be prompted to log

in with your UTOR ID to access the full text versions of research articles through PubMed. In addition, links to optional readings are also provided.

### 7) Assessments

Assessment	Due Dates	Weight (%)
Discussion Posts	Due on Thursdays of weeks 1-4 and 7-12 (1% each, 10 posts total)	10
Term Test	February 7	20
Article Critique First Draft	February 28	20
Article Critique Peer Reviews	March 13	15
Article Critique Final Draft	March 20	10
Final Assessment Test*	April 3	25
<b>TOTAL</b>		<b>100</b>
<i>*This will be a multiple-choice test on Quercus. More details to follow in class announcements</i>		

### 8) Course Schedule

DATE	TOPICS	Readings
Jan 8-10 <b>Week 1</b>	<ul style="list-style-type: none"> <li>• Course introduction</li> <li>• Dietary reference intakes (DRIs)</li> <li>• Prevalence of vitamin and mineral inadequacies in Canada</li> <li>• Digestion</li> </ul>	R-1
Jan 15-17 <b>Week 2</b>	<ul style="list-style-type: none"> <li>• How to assess scientific literature</li> </ul>	R-2
Jan 22-24 <b>Week 3</b>	<ul style="list-style-type: none"> <li>• Folate</li> </ul>	R-3
Jan 29-31 <b>Week 4</b>	<ul style="list-style-type: none"> <li>• Vitamin B<sub>12</sub></li> <li>• Choline</li> </ul>	R-4
Feb 5-7 <b>Week 5</b>	<ul style="list-style-type: none"> <li>• Iron</li> <li>• <b>Term Test (Feb 7)</b></li> </ul>	R-5
Feb 12-14 <b>Week 6</b>	<ul style="list-style-type: none"> <li>• Zinc</li> <li>• Iodine</li> </ul>	R-6
Feb 19-21 <b>Week 7</b>	<b>Reading Week</b>	

Feb 26-28 <b>Week 8</b>	<ul style="list-style-type: none"> <li>• Fluoride</li> <li>• Vitamin D</li> <li>• <b>Article Critique First Draft Due (Feb 28)</b></li> </ul>	R-7
Mar 4-6 <b>Week 9</b>	<ul style="list-style-type: none"> <li>• Calcium</li> <li>• Phosphorus</li> <li>• Magnesium</li> </ul>	R-8
Mar 11-13 <b>Week 10</b>	<ul style="list-style-type: none"> <li>• Vitamin C</li> <li>• Vitamin A</li> <li>• Vitamin E</li> <li>• <b>Article Critique Peer Reviews Due (Mar 13)</b></li> </ul>	R-9
Mar 18-20 <b>Week 11</b>	<ul style="list-style-type: none"> <li>• Vitamin E (cont'd)</li> <li>• Selenium</li> <li>• Vitamin K</li> <li>• <b>Article Critique Final Draft Due (Mar 20)</b></li> </ul>	R-10
Mar 25-27 <b>Week 12</b>	<ul style="list-style-type: none"> <li>• Sodium</li> <li>• Potassium</li> <li>• Chloride</li> </ul>	R-11
Apr 1-3 <b>Week 13</b>	<ul style="list-style-type: none"> <li>• Vitamin and mineral supplements – What's the evidence?</li> <li>• <b>Term Test (Apr 3)</b></li> </ul>	R-12

## 9) Readings

Number	
R-1	<p><b>Required:</b></p> <p>Barr, S. I. Introduction to Dietary Reference Intakes. Applied Physiology, Nutrition, and Metabolism;31(1):61–65 (2006).  <a href="https://cdnsiencepub.com/doi/pdf/10.1139/h05-019">https://cdnsiencepub.com/doi/pdf/10.1139/h05-019</a></p> <p>Shakur, Y., et al. A comparison of micronutrient inadequacy and risk of high micronutrient intakes among vitamin and mineral supplement users and nonusers in Canada. Journal of Nutrition 2012;142(3):534-40.  <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/22298574/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/22298574/</a></p> <p><b>Optional:</b></p> <p>Barr, S.I. Is the 2019 Canada's Food Guide Snapshot nutritionally adequate? Applied Physiology, Nutrition, and Metabolism;44(12):1387-90 (2019).  <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/31657222/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/31657222/</a></p> <p>Murphy, S et al. History of Nutrition: The Long Road Leading to the Dietary Reference Intakes for the United States and Canada. Advances in Nutrition;7(1):157–168 (2016).  <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/27180379/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/27180379/</a></p> <p>Textbook Chapter 2: The Digestive System: Mechanism for Nourishing the Body.</p>

	<p><a href="https://ebookcentral-proquest-com.myaccess.library.utoronto.ca/lib/utoronto/search.action?query=+ADVANCED+NUTRITION+AND+HUMAN+METABOLISM">https://ebookcentral-proquest-com.myaccess.library.utoronto.ca/lib/utoronto/search.action?query=+ADVANCED+NUTRITION+AND+HUMAN+METABOLISM</a></p> <p>Yetley, EA. Et al. Options for basing Dietary Reference Intakes (DRIs) on chronic disease endpoints: report from a joint US-/Canadian-sponsored working group. Am J Clin Nutr. 2017 Jan;105(1):249S-285S. <a href="https://pubmed.ncbi.nlm.nih.gov/27927637/">https://pubmed.ncbi.nlm.nih.gov/27927637/</a></p>
<b>R-2</b>	<p><b>Required</b></p> <p>Young YM and Solomon MJ. How to Critically Appraise an Article. Nature Clinical Practice Gastroenterology and Hepatology;6(2):82-91, 2009. <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/19153565/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/19153565/</a></p> <p><b>Recommended</b></p> <p>Lappe, J et al. Effect of Vitamin D and Calcium Supplementation on Cancer Incidence in Older Women. Journal of the American Medical Association 317(12) 2017. <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/28350929/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/28350929/</a></p>
<b>R-3</b>	<p><b>Required</b></p> <p>Colapinto C et al. Folate status of the population in the Canadian Health Measures. Canadian Medical Association Journal 183(2):E100-6, 2011. <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/21149516/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/21149516/</a></p> <p>Cornelia Ulrich. The relationship between micronutrients and nutrigenomics/epigenetics. American Society of Nutrition Meeting 2017 <a href="http://ondemand.nutrition.org/console/player/36138?mediaType=slideVideo&amp;">http://ondemand.nutrition.org/console/player/36138?mediaType=slideVideo&amp;</a></p> <p>Naderi N and House J. Recent developments in folate nutrition. Adv Food Nutr Res 2018;83:195-213. doi: 10.1016/bs.afnr.2017.12.006. <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/29477222/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/29477222/</a></p> <p><b>Optional</b></p> <p>Textbook Chapter 9: Water-Soluble Vitamins (ONLY Folate section and Chapter 9 Perspective). <a href="https://ebookcentral-proquest-com.myaccess.library.utoronto.ca/lib/utoronto/search.action?query=+ADVANCED+NUTRITION+AND+HUMAN+METABOLISM">https://ebookcentral-proquest-com.myaccess.library.utoronto.ca/lib/utoronto/search.action?query=+ADVANCED+NUTRITION+AND+HUMAN+METABOLISM</a></p>
<b>R-4</b>	<p><b>Required</b></p> <p>MacFarlane AJ et al. Vitamin B12 and homocysteine status in a folate-replete population: results from the Canadian Health Measures Survey. American Journal of Clinical Nutrition 94(4):1079-1087, 2011. <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/21900461/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/21900461/</a></p>

	<p>Torsvik I et al. Cobalamin supplementation improves motor development and regurgitations in infants: results from a randomized intervention study. <i>American Journal of Clinical Nutrition</i> 98(5):1233-40, 2013.  <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/24025626/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/24025626/</a></p> <p>Leermakers ET et al. Effects of choline on health across the life course: a systematic review. <i>Nutrition Reviews</i> 73(8): 500-522.  <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/26108618/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/26108618/</a></p> <p><b>Optional</b></p> <p>Wiedeman A, et al. Women in Canada are consuming above the upper intake level of folic acid but few are meeting dietary choline recommendations in the second trimester of pregnancy: data from the CHILD Cohort Study. <i>Applied Physiology, Nutrition, and Metabolism</i> 2024 (<i>in press</i> – article on Quercus)</p> <p>Masih S et al. Pregnant Canadian women achieve recommended intakes of one- carbon nutrients through prenatal supplementation but the supplement composition, including choline, requires reconsideration. <i>Journal of Nutrition</i> 145:1824-1834, 2015.  <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/26063067/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/26063067/</a></p> <p>Textbook Chapter 9: Water-Soluble Vitamins (ONLY Vitamin B<sub>12</sub> section).</p>
<p><b>R-5</b></p>	<p><b>Required:</b></p> <p>Cooper M et al. Iron sufficiency of Canadians. <i>Health Reports</i> 23(4): 3-10, 2012.  <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/23356044/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/23356044/</a></p> <p>Health Canada Prenatal Nutrition Guidelines for Health Professionals - Iron Contributes to a Healthy Pregnancy.  <a href="https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/fn- an/alt_formats/hpfb-dgpsa/pdf/pubs/iron-fer-eng.pdf">https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/fn- an/alt_formats/hpfb-dgpsa/pdf/pubs/iron-fer-eng.pdf</a></p> <p>Baker RD et al. Diagnosis and Prevention of Iron Deficiency and Iron-Deficiency Anemia in Infants and Young Children (0–3 Years of Age). <i>Pediatrics</i> 126(5): 1040 - 1050, 2010.  <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/20923825/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/20923825/</a></p> <p><b>Optional:</b></p> <p>Textbook Chapter 13: Essential Trace and Ultratrace Minerals (ONLY Iron section and Chapter 13 Perspective).</p>
<p><b>R-6</b></p>	<p><b>Required:</b></p> <p>Lowe, N. Assessing zinc in humans. <i>Current Opinion in Clinical Nutrition and Metabolic Care</i>, 19(5), 321–327. 2016.  <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/27348152/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/27348152/</a></p>

	<p>Iodine status of Canadians, 2009 to 2011  <a href="http://www.statcan.gc.ca/pub/82-625-x/2012001/article/11733-eng.htm">http://www.statcan.gc.ca/pub/82-625-x/2012001/article/11733-eng.htm</a></p> <p><b>Optional:</b></p> <p>Textbook Chapter 13: Essential Trace and Ultratrace Minerals (ONLY Zinc and Iodine sections).</p>
<b>R-7</b>	<p><b>Required:</b></p> <p>Health Canada: Fluoride in Drinking Water  <a href="https://www.canada.ca/en/health-canada/services/healthy-living/your-health/environment/fluorides-human-health.html">https://www.canada.ca/en/health-canada/services/healthy-living/your-health/environment/fluorides-human-health.html</a></p> <p>Whiting SJ et al The vitamin D status of Canadians relative to the 2011 Dietary Reference Intakes: an examination in children and adults with and without supplement use. American Journal of Clinical Nutrition 94: 128-135, 2011.  <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/21593503/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/21593503/</a></p> <p><b>Optional:</b></p> <p>Manson J et al. Vitamin D deficiency – Is there really a pandemic? New England Journal of Medicine. 2016;375(19):1817-1820.  Hollis BW, Wagner CL, Howard CR, Ebeling M, Shary JR, Smith PG, et al. Maternal Versus Infant Vitamin D Supplementation During Lactation: A Randomized Controlled Trial. Pediatrics. 2015;136:625-34.  <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/26416936/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/26416936/</a></p> <p>Textbook Chapter 14: Nonessential Trace and Ultratrace Minerals (ONLY Fluoride section) and Chapter 10: Fat-Soluble Vitamins (ONLY Vitamin D section).</p>
<b>R-8</b>	<p><b>Required:</b></p> <p>Weaver CM et al. Calcium, dairy products and energy balance in overweight adolescents: a controlled trial. American Journal of Clinical Nutrition 94 (5): 1163- 1170, 2011.  <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/21918216/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/21918216/</a></p> <p><b>Optional:</b></p> <p>Calvo M and Lamberg-Alardt C. Phosphorus. Advances in Nutrition. 6: 860-862, 2015.  <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/26567206/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/26567206/</a></p> <p>Magnesium – Fact Sheet for Health Professionals  <a href="https://ods.od.nih.gov/factsheets/Magnesium-HealthProfessional/">https://ods.od.nih.gov/factsheets/Magnesium-HealthProfessional/</a></p> <p>Textbook Chapter 11: Major Minerals (entire chapter, including Perspective section).</p>
<b>R-9</b>	<p><b>Required:</b></p> <p>Langlois K et al. Vitamin C status of Canadian adults: Findings from the 2012/2013</p>

	<p>Canadian Health Measures Survey. Health Reports 2016 27(5):3-10.  <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/27192205/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/27192205/</a></p> <p><b>Optional:</b></p> <p>Bjelakovic G et al. Antioxidant supplements for prevention of mortality in health participants and patients with various diseases. Cochrane Database of Systematic Reviews 2012, Issue 3. Art. No.: CD007176.  <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/22419320/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/22419320/</a></p> <p>Lykkesfeldt J et al. Vitamin C. Advances in Nutrition 5:16-18, 2014.  <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/24425716/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/24425716/</a></p> <p>Debelo, H., Novotny, J. A., &amp; Ferruzzi, M. G. Vitamin A. Advances in Nutrition, 8(6), 992–994, 2017.  <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/29141980/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/29141980/</a></p> <p>Traber MG and Manor M. Vitamin E. Advances in Nutrition, 2012;3(3):330-1.  <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/22585906/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/22585906/</a></p> <p>Iddir M et al. Strengthening the Immune System and Reducing Inflammation and Oxidative Stress through Diet and Nutrition: Considerations during the COVID-19 Crisis. Nutrients 2020;12(6):1562. doi: 10.3390/nu12061562.  <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/32471251/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/32471251/</a></p> <p>Textbook Chapter 9: Water-Soluble Vitamins (ONLY Vitamin C section) and Chapter 10: Fat- Soluble Vitamins (Vitamin A and Vitamin E section and Chapter Perspective).</p>
<b>R-10</b>	<p><b>Required:</b></p> <p>Shearer MJ et al. Vitamin K nutrition, metabolism, and requirements: current concepts and future research. Adv Nutr . 2012 Mar 1;3(2):182-95.  <a href="https://pubmed.ncbi.nlm.nih.gov/22516726/">https://pubmed.ncbi.nlm.nih.gov/22516726/</a></p> <p><b>Optional:</b></p> <p>Akbari S, Rasouli-Ghahroudi AA. Vitamin K and Bone Metabolism: A Review of the Latest Evidence in Preclinical Studies. Biomed Res Int. 2018;2018:4629383.  <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/30050932/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/30050932/</a></p> <p>Textbook Chapter 10: Fat-Soluble Vitamins (ONLY Vitamin E and Vitamin K sections) and Chapter 13: Essential Trace and Ultratrace Minerals (ONLY Selenium section).</p>
<b>R-11</b>	<p><b>Required Reading &amp; Media:</b></p> <p>Hendriksen MAH et al. Potential effect of salt reduction in processed foods on health. American Journal of Clinical Nutrition 99:446-453, 2014.  <a href="https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/24335058/">https://pubmed-ncbi-nlm-nih-gov.myaccess.library.utoronto.ca/24335058/</a></p>



	<p>CBC Market Place (March 2013): The Great Salt Shakedown  <a href="http://www.cbc.ca/marketplace/episodes/2012-2013/the-great-salt-shakedown">http://www.cbc.ca/marketplace/episodes/2012-2013/the-great-salt-shakedown</a></p> <p><b>Optional:</b></p> <p>Overwyk KJ et al. Dietary Sodium Intake and Health Indicators: A Systematic Review of Published Literature between January 2015 and December 2019. <i>Advances in Nutrition</i> 2020;11(5):1174-1200.  <a href="https://pubmed-ncbi-nlm-nih.gov.myaccess.library.utoronto.ca/32449929/">https://pubmed-ncbi-nlm-nih.gov.myaccess.library.utoronto.ca/32449929/</a></p> <p>Textbook Chapter 12: Water and Electrolytes (ONLY Sodium, Potassium, and Chloride sections and Chapter Perspective).</p>
<b>R-12</b>	<p><b>Required Reading &amp; Media:</b></p> <p>Vitamins and Supplements: Magic Pills (Fifth Estate Broadcast Date: November 20, 2015).  <a href="http://www.cbc.ca/fifth/episodes/2015-2016/vitamins-and-supplements-magic-pills">http://www.cbc.ca/fifth/episodes/2015-2016/vitamins-and-supplements-magic-pills</a></p> <p>Sesso H. Evidence on positive and null outcomes from RCTs of multivitamin interventions. American Society of Nutrition Meeting 2017  <a href="http://ondemand.nutrition.org/console/player/36139?mediaType=audio&amp;">http://ondemand.nutrition.org/console/player/36139?mediaType=audio&amp;</a></p> <p>Marra and Bailey. Position of the Academy of Nutrition and Dietetics: Micronutrient Supplementation. <i>Journal of the Academy of Nutrition and Dietetics</i> 2018; 118: 2162-2173.  <a href="https://pubmed-ncbi-nlm-nih.gov.myaccess.library.utoronto.ca/30366569/">https://pubmed-ncbi-nlm-nih.gov.myaccess.library.utoronto.ca/30366569/</a></p>

**10) Discussion Posts** - Due by 11:59 pm ET on Thursdays of **weeks 1-4 and 7-12**, via Quercus  
Each discussion post is worth 1%, for a total of 10% of the final grade. The first discussion post will entail introducing yourself to the rest of the class. You can tell us your name, your major(s), foods you love/hate, fun facts about you, etc. What are you hoping to get out of this class? What have been some of your favourite assignments and topics throughout your time at UofT? Are you part of any clubs or student groups at the university that you would like to let us know about?  
For every post after that, you will be required to write one multiple-choice or true/false question focusing on the content covered in the lectures or required readings from specific weeks. You will be evaluated on the complexity of the question that you write and the accuracy of the answer. You are NOT required to answer the questions submitted by your peers, and you will not be evaluated on any answers that you give to others' questions, but feel free to try! Writing these "peer quiz" questions is meant as a tool for you to review each week's material, and seeing the questions that others write on the discussion board can also help you assess your own knowledge in preparation for tests.

**11) Term Test – February 7**, during class time  
The format will be true/false and short answer questions in which students are required to integrate their knowledge from lectures and readings with findings taken from the scientific literature. *This will be an open-book test. You can use your own notes, lecture presentations and required readings to help*

*you answer the questions. However, you must take the test individually, without help from anybody else. Please note the test will be written in Room 2170 of the Medical Sciences Building.*

It is each student's responsibility to ensure that they are available to take the test at the scheduled time. If you foresee a scheduling conflict, you must contact the instructor at least one week before the test to discuss potential accommodations.

## **12) Article Critique Assignment – Due February 28, March 13, and March 20 – via Quercus**

Students will be required to complete a critique of an assigned research article using the strategies and knowledge reviewed in class. You can discuss your assignment with other students, but you are required to write your own essay alone, using your own words.

The goal of this assignment is to exercise your critical thinking and written communication skills by evaluating research on a specific micronutrient. These skills are essential, no matter what path you follow in your academic and professional life. To further enhance your learning experience, an educational tool called PeerScholar will be part of the article critique assignment. PeerScholar allows students to assess each other's work as well as their own, to reflect on the usefulness of the peer reviews they receive, and to incorporate the feedback they receive into the final draft of their project so they can improve their mark. We will discuss the specifics of PeerScholar and the article critique assignment on Week 2 of the course. The assignment will consist of three components:

- Article critique first draft (20%) – due February 28, via Quercus
- Article critique peer reviews (15%) – due March 13, via Quercus
- Article critique final draft (10%) – due March 20, via Quercus

Note that your mark will not be based on the peer reviews that you receive from other students. However, you will be evaluated on the quality of the peer reviews that you provide for others. Your mark for each component of the assignment will be determined by the teaching assistant.

### **Ouriginal Plagiarism Detection**

(<https://teaching.utoronto.ca/tool-guides/plagiarism-review-ouriginal/>)

*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 web site (<https://uoft.me/pdt-faq>)”*

All students are expected to either submit to Ouriginal, which is voluntary, or provide an alternative. On Quercus, online submissions will automatically be submitted to Ouriginal. If you have issues with Ouriginal, please contact the instructor to discuss an alternate method. The instructor reviews the Ouriginal submissions and will e-mail students if there are any concerns about their writing. Often, this is no more than a discussion of how to properly paraphrase and/or cite references, but the deduction of marks may also result. Failure to respond to such an e-mail will result in deducting assignment marks. If a serious case of plagiarism is suspected, the student's assignment will be forwarded to the Office of Academic Integrity for review and possible sanction.

### 13) Final Assessment Test Term Test – April 3

The final assessment test (25% of final mark) will occur on April 3<sup>rd</sup>. It will be taken on Quercus and it will last two hours. The test will include all the material covered from February 12 to the last day of class, including lectures and required readings. This will be an open-book test. You can use your own notes, lecture presentations and required readings to help you answer the questions. However, you must take the test individually, without help from anybody else.

It is each student's responsibility to ensure that they are available to take the test at the scheduled time. If you foresee a scheduling conflict, you must contact the instructor at least one week before the test to discuss potential accommodations.

### 14) Policy on Missed Tests and Late Submissions

Missing the discussion posts, term test or final assessment test without a compelling reason will result in a grade of zero. Compelling reasons might include illness, personal distress, family emergency, or other unforeseen circumstances. Compelling reasons must be supported by documentation or verbal explanation (all discussions are confidential).

There are no make-ups for the discussion posts.

If you miss the term test (worth 20%) for a compelling reason, you can choose one of the following options:

- Take an oral test given by the instructor at a different time,
- Write a 500-word essay on a topic assigned by the instructor, OR
- Re-weigh the final assessment to be worth 45% of your final grade.

If you miss the final assessment (worth 25%) for a compelling reason, you can choose one of the following options:

- Take an oral test given by the instructor at a different time, OR
- Write a 500-word essay on a topic assigned by the instructor.

Late submission of the article critique first draft (20%), peer reviews (15%), or final draft (10%) will result in a 10% reduction of the grade per overdue day, unless there is a compelling reason for the lateness. If you anticipate that you will be unable to meet the deadline for any of the assignments, please contact the instructor at least one week before the due date to request an extension.

Re-read requests must be made in writing by emailing the instructor, detailing where the marks were wrongfully deducted and explaining why you should have received more marks. Be aware that your mark may go up, down, or stay the same.

### 15) Lecture Material, Audio Recordings, and Intellectual Property:

Students may not create audio recordings of classes with the exception of those students requiring accommodation for a disability, who should speak to the instructor prior to beginning to record lectures. Students creating an unauthorized audio recording of lectures violate an instructor's intellectual property rights and the Canadian Copyright Act. Students violating this agreement will be subject to disciplinary actions under the Code of Student Conduct.

Please note that the lecture presentations and other course documents are the intellectual property of the instructor. The distribution, transmission, reproduction or re-posting of the NFS382 course materials, including audio and video recordings, in whole or part, is NOT permitted without the consent of the instructor. All students enrolled in NFS382 are permitted to use the material only for personal use and study.

#### **16) Academic Integrity:**

Students are expected to conduct themselves with academic integrity. The Code of Behaviour clearly describes activities that are considered academic misconduct: <http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>

For more information, also see:

<http://www.artsci.utoronto.ca/osai> and <http://academicintegrity.utoronto.ca>.

All students, faculty and staff are expected to follow the University's guidelines and policies on academic integrity. For students, this means following the standards of academic honesty when writing assignments, collaborating with fellow students and writing tests and exams. Ensure that the work you submit for grading represents your own honest efforts. Plagiarism—representing someone else's work as your own or submitting work that you have previously submitted for marks in another class or program—is a serious offence that can result in sanctions. Speak to the instructor for advice on anything that you find unclear. To learn more about how to cite and use source material appropriately and for other writing support, see the U of T writing support website at <http://www.writing.utoronto.ca>. Consult the Code of Behaviour on Academic Matters for a complete outline of the University's policy and expectations.

#### **17) Accessibility Needs:**

Students with diverse learning styles and needs are welcome in this course. If you have an acute or ongoing disability issue or accommodation need, you should register with Accessibility Services (AS) at the beginning of the academic year by visiting <http://www.studentlife.utoronto.ca/as/new-registration>. Without registration, you will not be able to verify your situation with your instructors, and instructors will not be advised about your accommodation needs. AS will assess your situation, develop an accommodation plan with you, and support you in requesting accommodation for your course work. Remember that the process of accommodation is private: AS will not share details of your needs or condition with any instructor, and your instructor will not reveal that you are registered with AS.

#### **18) Specific Medical Circumstances**

**What should I do if I cannot attend class (in-person or remote) and it is affecting my academic work?**

Students who are absent from class for any reason (e.g., COVID, other illness or injury, family situation) and who require consideration for missed academic work should report their absence through the online absence declaration. The declaration is available on [ACORN](#) under the Profile and Settings menu. Students should also advise their instructor of their absence.

## **Resources & Supports**

If you or someone you know is in distress and there is an immediate risk, call 911. The following includes supports available to students on all three campuses:

- [U of T St. George \(Downtown Toronto\)](#)
- [U of T Scarborough](#)
- [U of T Mississauga](#)

Additionally, students have access to [U of T My Student Support Program](#) (My SSP) | 1-844-451- 9700 24/7. Outside of North America, call 001-416-380-6578. This program provides culturally- competent mental health and counseling services in 146 languages for all U of T students.

## **Accommodation for Non-Medical Reasons**

There may be times when you are unable to complete course work on time due to non-medical reasons. If you have concerns, speak to the instructor or to an advisor in your College Registrar's office; they can help you to decide if you want to request an extension or accommodation. They may be able to provide you with a College Registrar's letter of support to give to your instructor, and importantly, connect you with other resources on campus for help with your situation.