

## ACKNOWLEDGEMENT

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UBC's Point Grey Campus is located on the traditional, ancestral, and unceded territory of the xwməθkwəyəm (Musqueam) people. The land it is situated on has always been a place of learning for the Musqueam people, who for millennia have passed on in their culture, history, and traditions from one generation to the next on this site.

## COURSE INFORMATION

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Course Title	Course Code Number	Credit Value
Vitamins, Minerals and Health	FNH 351	3

**Lecture time and location:** Tuesdays & Thursdays, 2:00 PM - 3:30 PM  
P. A. Woodward Instructional Resources Centre - Room 6

## PREREQUISITES

FNH 250 and one of BIOL 201 / BIOC 202

## CONTACTS

Course Instructor(s)	Contact Details	Office Location	Office Hours
Bruna Donatti Castro Falci	bruna.donatti@ubc.ca	FNH 324	Wednesdays 11am-1pm Or by appointment

## TEACHING ASSISTANTS:

Agnes (Yik Nam) Yuen, Undergraduate Student, Dietetics  
Dahlia Parolin, Undergraduate Student, Nutritional Sciences  
Oliver Sage, Graduate Student, HUNU

## COURSE STRUCTURE

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Classes will consist of lectures, guest speakers, and review of case studies. Class participation through clickers, asking questions and contributing to discussions is strongly encouraged.

## LEARNING OUTCOMES

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Upon completion of this course, students should be able to:

1. List the metabolic functions of the micronutrients and explain how the micronutrients exert their physiological functions.
2. Explain the processes of digestion and absorption of the micronutrients.
3. Describe the ways in which the micronutrients are transported, stored, metabolized, and excreted by the body.
4. Critically evaluate and discuss various factors, including genetic and dietary factors, that affect micronutrient digestion, absorption, and metabolism.
5. Explain how inadequate and excessive intake of micronutrients can cause adverse effects to health.
6. Critically discuss possible nutrient-nutrient interactions.
7. Discuss the strengths and limitations of available methods for assessing the nutritional status of micronutrients in humans.

### COURSE TOPICS AND TENTATIVE SCHEDULE

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Date	Topic	Assessment
Sep 08	<b>Course Intro and Review</b>	Review Quiz - <i>released Sep 8, due on Sep 15 - 8 am</i>
Sep 13 - Sep 20	<b>Nutrients for Blood Health</b> Vitamin K and iron	Case study 1 - <i>released Sep 13, due on Sep 20 - 8 am</i> Quiz 1 - <i>released Sep 20, due on Sep 27 - 8 am</i>
Sep 22 - Sep 29	<b>Methyl Nutrients</b> Folate, vitamin B12, choline	Case study 2 - <i>released Sep 27, due on Oct 4 - 8 am</i> Quiz 2 - <i>released Oct 4, due on Oct 11 - 8 am</i>
Oct 04 - Oct 6	<b>Vitamins and Energy Metabolism</b> B1, B2, B3, B5, B6, biotin	
11-Oct	<b>MIDTERM</b>	Midterm
Oct 13 - Oct 18	<b>Vitamins and Energy Metabolism</b> (Cont'd)	Quiz 3 - <i>released Oct 13, due on Oct 20 - 8 am</i>
Oct 20 - Nov 08	<b>Antioxidant Nutrients</b> Zinc, copper, selenium, vitamin A, vitamin E, vitamin C	Case study 3 - <i>released Nov 1, due on Nov 8 - 8 am</i> Quiz 4 - <i>released Nov 8, due on Nov 15 - 8 am</i>
10-Nov	<b>READING WEEK</b>	
Nov 15 - Nov 29	<b>Nutrients for Bone Health</b> Vitamin D, calcium, phosphorus, magnesium	Case study 4 - <i>released Nov 22, due on Dec 1 - 8 am</i> Quiz 5 - <i>released Nov 29, due on Dec 6 - 8 am</i>
Dec 01	<b>Iodine and other trace minerals</b>	
Dec 06	<b>Course Review</b>	

## LEARNING ACTIVITIES

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This class involves a variety of learning activities, including self-directed reading, lectures, case studies, and quizzes. Students are required to read assigned chapters of the textbook prior to attending the class.

## LEARNING MATERIALS

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Canvas will be used as the online learning platform for the course. Lecture slides, course notes, course announcements, and assignments will be posted on Canvas. You are strongly encouraged to check Canvas on a regular basis.

### REQUIRED LEARNING MATERIALS:

- **Textbook:**  
Gropper SS, Smith JL, Carr TP (2022). **Advanced Nutrition and Human Metabolism**. 8th Edition. Cengage Learning  
This textbook is available for purchase through the UBC Bookstore. Older versions are also suitable to the course. The ebook can be accessed through the UBC Library, although only 3 users are permitted at a time. A hardcopy has also been placed on reserve in Woodward library.
- **Readings for case studies** may include journal articles. Web-links for access to the journal articles will be posted on Canvas in the case study descriptions.
- **Additional readings:**
  - Dietary reference intake (DRI) publications by the Institute of Medicine. These books are available in the Reference Section for Nutrition, Woodward Library, and include DRIs for: thiamin, riboflavin, niacin, vitamin B6, folate, vitamin B12, pantothenic acid, biotin, and choline (1998); calcium, phosphorus, magnesium, vitamin D, and fluoride (1997); calcium and vitamin D (2011); vitamin C, vitamin E, selenium, and carotenoids (2000); vitamin A, vitamin K, arsenic, boron, chromium, copper, iodine, iron, manganese, molybdenum, nickel, silicon, vanadium and zinc (2001);
  - Journal articles specified in the course slides as additional resources.

## LEARNING RESOURCES

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1. UBC library, including both print and online collections (<http://www.library.ubc.ca/>)
2. PubMed (<https://www.ncbi.nlm.nih.gov/pubmed>)

## ASSESSMENTS OF LEARNING

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| 1. Online review quiz                                    | 2%  |
| 2. Class participation (assessed by iClicker)            | 3%  |
| 3. Online quizzes (5 - 5% each. Lowest score is dropped) | 20% |
| 4. Case studies (4 - 5% each)                            | 20% |
| 5. Midterm exam (in class; on Oct 11, 2022)              | 20% |
| 6. Final exam (during formal exam period)                | 35% |

**Online review quiz:** The review quiz will test your understanding of basic concepts in nutrition that will serve as a foundation for the material covered in this course. The format will be multiple-choice and you will have 45 minutes to complete the quiz. More information about the material tested will be discussed on the first day of class.

**Online quizzes:** The quizzes will test your understanding of the course material and identify areas that require further review. The quizzes will be available on Canvas on the dates outlined on the syllabus. Only the marks of the **best four** out of five quizzes will count towards your final mark.

**Case studies:** The case studies will give you an opportunity to apply what you have learned to real-life scenarios. Case studies will be posted on Canvas and must be submitted on Canvas by **8:00AM** on the dates provided in the course schedule. Case studies will not be accepted by email.

**Class participation (Clicker):** We will be using iClicker Cloud for active learning and participation marks during lectures. You will need to sign up for a clicker account and have a device (phone, tablet or computer) available to answer clicker questions during class time. For more information on how to set up your device for iClicker please see: <https://lthub.ubc.ca/guides/iclicker-cloud-student-guide/>. Students will receive 3 marks for participation of >80%, 2 of 3 marks for participation of 65-80%, 1 of 3 marks for participation of 50-65% and 0 of 3 marks for participation of <50%.  
NOTE: The instructor may choose to change to a different system for in class participation, such as zoom polls or Poll Everywhere. Students will be notified in advance if this change will be made.

**Midterm and final examinations:** The examinations will test all lecture material posted on Canvas and presented and discussed in class. Both the midterm and final examinations will be held **in person** unless health orders recommend moving to online instruction. In the event where a student must miss the midterm, the student is required to inform the instructor at the earliest possible time. If a student must miss the midterm with a valid excuse, the marks will be allocated to the final.

## UNIVERSITY POLICIES

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UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the policies and how to access support are available on [the UBC Senate website](#).

## OTHER COURSE POLICIES

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**Policy on late and missed assessments:** Quizzes and case studies must be completed by the deadlines indicated in the course schedule. There will be no late or make-up quizzes or case studies. Quiz and case study answers will be revealed on the day they are due, and, therefore, late submissions will not be accepted. In the event where a student must miss a quiz or case study with a valid excuse, the corresponding mark will be allocated to the final exam.

**Final grades policies:** Final grades will be rounded to the nearest whole number. Only grades within 0.5 of the next whole number will be rounded up (eg. 75.5 becomes 76, 75.4 is 75%). Grade changes will only be permitted if there is a calculation error.

### INFORMATION FOR STUDENTS IN THE DIETETICS MAJOR:

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This course, like all required courses in the Dietetics Major, contributes to coverage of the Integrated Competencies for Dietetic Education and Practice (ICDEP). All students in the Dietetics Major should refer to the Mapping of Curriculum to ICDEP page (<http://dietetics.landfood.ubc.ca/about/mapping-of-curriculum-to-icdep/>) on the dietetics website to familiarize themselves with the requirements.

### STUDENT RESPONSIBILITIES:

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1. Attend class. You are expected to come prepared to listen, take notes and participate in class.
2. Review the course material and related course chapters of the textbook. Test yourself. Looking at the material multiple times and trying to recall (not just read) will help solidify your understanding. Use the quizzes and case studies as study tools. The quizzes and case studies are the best way for you to apply your knowledge and prepare for the exams.
3. Use the resources available to you (instructor, textbook, Canvas site) to enhance your learning experience. Take advantage of the discussion board. There are almost 100 students in this course. If you have a question, chances are that someone else will have the same question, and you will both benefit from a discussion. One of the TAs will be monitoring the discussion board, but students are expected and encouraged to answer each other's questions too.
4. Do your own work and acknowledge other's ideas. Academic honesty is a core value of scholarship and is taken extremely seriously in this course. Failure to follow the appropriate policies, principles, rules, and guidelines of the University with respect to academic honesty may result in disciplinary action. All potential cases of academic misconduct will be investigated using the protocol established by the Faculty of Land and Food Systems.
5. Find ways to apply the concepts to your own lives and connect them with concepts learned in other courses. Being invested in the course will help you learn and increase motivation for studying

ASSISTANCE AVAILABLE TO STUDENTS: You are strongly encouraged to meet with the instructor during office hours if you have questions, comments, or suggestions for the course. You can also post questions about course material on the discussion board for your fellow students and TAs.

### COPY RIGHT

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All materials of this course (course handouts, lecture slides, assessments, course readings, etc.) are the intellectual property of the Course Instructor or licensed to be used in this course by the copyright owner. Redistribution of these materials by any means without permission of the copyright holder(s) constitutes a breach of copyright and may lead to academic discipline. No audio and video recording are permitted in this course.

*Version: 23 September 2022*