



Food, Nutrition and Health (FNH) Program

Faculty of Land and Food Systems

FNH 351: VITAMINS, MINERALS, AND HEALTH (Jan – April 2022)

ACKNOWLEDGMENT:

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.

INSTRUCTOR:

Elizabeth Novak, PhD
Lecturer, Food Nutrition and Health Program

CONTACT:

Office hours: **Tuesdays, 11-12:30 PM FNH 160H**, 2205 East Mall OR via **Zoom**
For questions related to course content, please post on **the Canvas online discussion board**.
For confidential questions, the instructor can be reached at enovak@mail.ubc.ca

TEACHING ASSISTANTS:

Kamila Gabitova, Undergraduate Student, Dietetics
Aidan Loong, Undergraduate Student, Integrated Science
Aiman Atif, Undergraduate Student, FNH

LECTURE TIME & LOCATION:

Tuesdays & Thursdays, 8:00 AM - 9:30 AM
Irving K Barber Learning Center **182**

PREREQUISITES:

FNH 250 and one of BIOL 201 / BIOC 202

COURSE CONTENT:

This course will cover the micronutrients (vitamins, minerals, and trace elements) required by humans. We will discuss sources of micronutrients; the digestion, absorption, transport, and metabolism of micronutrients; biochemical and physiologic functions of micronutrients; metabolic and health implications of micronutrient deficiencies; potential health implications of excessive intake; methods of status assessment; nutrient-nutrient interactions and examples of genetic variants associated with impaired micronutrient status and/or function.

INFORMATION FOR STUDENTS IN THE DIETETICS MAJOR:

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.

LEARNING OUTCOMES/COURSE OBJECTIVES:

At the conclusion 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 MATERIALS:

- **Canvas:** The FNH 351 Canvas site will be used as an important learning and communication resource. Lecture slides and course announcements will be posted on Canvas. You are strongly encouraged to check Canvas on a regular basis.
- **Outline course notes** will be posted on Canvas. You are responsible for all materials covered both in the class and in the course notes.
- **Strongly recommended textbook:** Gropper SS, Smith JL, Carr TP (2022). Advanced Nutrition and Human Metabolism. 8th Edition. Cengage.

This textbook is available for purchase through the UBC Bookstore. Older versions are fine. 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.

Additional readings: Dietary reference intake (DRI) publications by the Institute of Medicine. These books are available online or in the Reference Section for Nutrition, Woodward Library

CLASS FORMAT:

Classes will be delivered on zoom and move to **in-person** when it is safe to do so. 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. Canvas will be used as a platform for posting course notes and additional readings, announcements, assignments, quizzes, and informal discussions. *Lecture recordings will be available for those unable to attend class due to illness or COVID-19 restrictions.*

EVALUATION:

1. Online review quiz	2%
2. Online quizzes (4 @ 5% each)	20%
3. Case studies (4 @ 5% each)	20%
4. Class participation (assessed by Clicker)	3%
5. Midterm exam (in class; on Mar 1, 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 quiz will be available on Canvas **from Tuesday January 11, 9:30 am to Thursday, January 18 8 am**. The format will be multiple-choice and you will have 30 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 last page of this 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.

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.

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.

FINAL GRADE 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.

STUDENT RESPONSIBILITIES:

1. **Attend class.** Whether we are in-person or on zoom, 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 150 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.

COVID SAFETY:

Provincial Health Orders and UBC policy now mandate masks in all indoor public spaces on campus. These spaces include classrooms, residence halls, libraries, and common areas. Students who wish to request an exemption to the indoor mask mandate must do so based on one of the grounds for exemption detailed in [the PHO Order on Face Coverings \(COVID-19\)](#). Such requests must be made through the Center for Accessibility (Vancouver campus). After review, students that are approved for this accommodation will be provided with a letter of accommodation to share with faculty members teaching courses in which they are registered. In the intervening time, these students are welcome in the class.

Mask wearing protects you as well as others in your environment. Let's do everything we can as a community to stop the spread of this virus.

If you are sick, it is important that you stay home. Complete a self-assessment for Covid-19 symptoms here: <https://bc.thrive.health/covid19/en>.

COPYRIGHT:

All materials of this course (notes, quizzes, case studies and exams) are the intellectual property of the Course Instructors or used in this course with permission. Redistribution of these materials by any means without permission constitutes a breach of copyright and may lead to academic discipline.

UNIVERSITY POLICIES:

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](https://senate.ubc.ca/policies-resources-support-student-success) (<https://senate.ubc.ca/policies-resources-support-student-success>).

Academic honesty is a core value of scholarship. Cheating and plagiarism (including both presenting the work of others as your own and self-plagiarism), are serious academic offences that are taken very seriously in the Faculty of Land and Food Systems. By registering for courses at UBC, students have initiated a contract with the University that they will abide by the rules of the institution. It is the student's responsibility to inform themselves of the University regulations.

Definitions of Academic Misconduct can be found on the following website:

<http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,54,111,959#10894>

Studying with others or discussing issues with them is completely legitimate and is encouraged; however, collaborating with others while completing case studies or quizzes is not, nor is informing others of what the questions were. Both providing this information to someone else, or using that information, are considered cheating and would constitute academic misconduct. Please be aware that plagiarism or cheating of any kind will be cause for "no credit" on the assignments and possible failure in the course.

COURSE TOPICS AND TENTATIVE SCHEDULE

DATE	TOPICS	ASSESSMENT
<i>Jan 11</i>	Introduction – Course Overview; Review: Digestion/absorption and Dietary Reference Intakes	Review Quiz <i>released Jan 11, due on Jan 18 8 am</i>
<i>Jan 13 - 20</i>	Nutrients for Blood Health – Vitamin K & Iron	Case Study 1 <i>released Jan 18, due Jan 25 8 am</i> Quiz 1 <i>released Jan 25, due Feb 1 8 am</i>
<i>Jan 25 – Feb 3</i>	Methyl Nutrients – Folate, Vitamin B12, and Choline	Case Study 2 <i>released Feb 1, due on Feb 8 8 am</i> Quiz 2 <i>released Feb 8, due on Feb 15 8 am</i>
<i>Feb 8 -17</i>	Vitamins and Energy Metabolism – Vitamin B6, Thiamin, Riboflavin, Niacin, Pantothenic acid, and Biotin	Quiz 3 <i>released Feb 15, due on Mar 1 8 am</i>
<i>Feb 22-24</i>	READING WEEK	
<i>Mar 1</i>	Midterm Exam – IN CLASS	
<i>Mar 3 – Mar 22</i>	Antioxidant Nutrients – Zinc, Copper, Vitamin C, Vitamin E, Selenium and Vitamin A	Case Study 3 <i>released Mar 15, due on Mar 22 8 am</i> Quiz 4 <i>released Mar 22, due on Mar 29 8 am</i>
<i>Mar 24- April 5</i>	Nutrients for Bone Health – Vitamin D, Calcium, Phosphorus and Magnesium	Case Study 4 <i>released Mar 29, Due April 5</i> Quiz 5 <i>released Mar 31, Due April 7</i>
<i>April 7</i>	Last but not least – Iodine and other select minerals and trace elements	