

FOOD4202 MICRONUTRIENTS AND HEALTH

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SYNOPSIS

Animal and plant-based sources of micronutrients. Metabolism of vitamins and minerals in the human body and associated diseases throughout the life cycle. Micronutrient supplementation to promote human health. Pre-requisite: BIOC 2200 or BIOL 2200 and 3rd or 4th year standing.

SCHEDULE

Asynchronous activities (readings, videos, worksheets, etc..) should be completed on your own time, ideally, in the week preceding the optional synchronous sessions. Optional synchronous sessions will be held using Big Blue Button (integrated in cuLearn) on Mondays from 1:30 to 2:25 and will be recorded for those who cannot attend.

TEXTBOOK

Optional text: Gropper SS & Smith JL. (2013) Advanced Nutrition and Human Metabolism, 6th Edition. Belmont, CA: Wadsworth CENGAGE Learning.

LEARNING OUTCOMES

- 1. Demonstrate nutrition information literacy (from AACU VALUE rubric)**
 - a. Identify credible sources of information appropriate to the scope of the research question
 - b. Apply systematic approach to searching and selecting scientific literature to minimize bias
 - c. Evaluate information and its sources critically (relevance, currency, authority, biases)
 - d. Use information effectively and ethically

- 2. Interpret and describe traditional roles of nutrients in health and disease**
 - a. Interpret micronutrient metabolic pathways
 - b. Describe mechanisms of action of specific nutrients
 - c. Synthesize interactions between nutrients

- 3. Assess novel roles of nutrients in health and disease**
 - a. Critically analyze strength of evidence of systematic reviews
 - b. Describe fundamental ideas and mechanisms of actions
 - c. Perform and write systematic review to establish current state of knowledge

CLASS COMMUNICATION

All information related to FOOD 4202 will be on the cuLearn course page including announcements, lecture slides, videos, assignments and marks. We encourage you to use the 'Ask Your Teaching Team' forum to ask questions to Véronic and Heather. Please also use the 'Ask Your Classmates' forum to connect with your peers and build a learning community in this course.

EXPECTATIONS

There are many different pieces to this course so you need to be organized to succeed. Follow the class schedule at the end of this document and the calendar in cuLearn to help you organize your time. Don't be shy to ask questions. We are in this together.

COURSE ASSIGNMENTS AND GRADING

Learning activities	Micronutrients - Q&A	10% as 4 x 2.5%
	SR – Worksheets, Perusall Reading Annotations	10% as 4 x 2.5%
Assignments	Micronutrients – Summary Assignments	45% as 3 x 15%
	SR – Update of Systematic Review	35%

Micronutrients Q&A (1 – 4) –

This learning activity contributes to learning objectives 1 (*Demonstrate nutrition information literacy*) and 2 (*Interpret and describe traditional roles of nutrients in health and disease*). A series of questions related to traditional functions of micronutrients are integrated in the micronutrient lecture slides of each module. To be actively engaged in the review of lectures slides and accompanying videos, draft answers to the Q&A. Please do so in the week leading up to the optional synchronous session on that particular topic. You will have the opportunity to discuss your questions and answers in the synchronous session, prior to submitting your answers on cuLearn by 10 pm on the evening of the synchronous session. Q&A will be assessed for completion.

Micronutrients Summary Assignments (1 – 3) –

This learning activity contributes to learning objectives 1 (*Demonstrate nutrition information literacy*) and 2 (*Interpret and describe traditional roles of nutrients in health and disease*). For each module, you will complete a micronutrient summary assignment. The assignment will require integration of information from several micronutrients and pathways. You will submit your assignment on cuLearn on the Friday, after the synchronous session. Summary assignments will be assessed for quality.

Systematic Review Perusall Annotations and Worksheets –

This learning activity contributes to learning objectives 1 (*Demonstrate nutrition information literacy*) and 3 (*Assess novel roles of nutrients in health and disease*). For each theme you will read a systematic review related to a novel nutrient role. Readings will be made available on cuLearn via ARES. As part of your learning, you will use the social annotation tool *Perusall* to discuss the reading

with your peers. This is to be completed prior to the optional synchronous sessions. There will also be worksheets to practice the steps of conducting a systematic review. In modules 1-3, these worksheets are to be submitted prior to the synchronous sessions. In module 4, the worksheets will be due on the Friday after the synchronous sessions.

Updating a Systematic Review –

This learning activity will be led by Librarian Heather MacDonald. It will contribute to learning objectives 1 (*Demonstrate nutrition information literacy*) and 3 (*Assess novel roles of nutrients in health and disease*). As a class, we will apply the necessary steps to update an existing systematic review on a specific topic. You will write the systematic review and submit an individual copy of the updated review. You will submit your assignment on cuLearn on the date indicated in the class schedule and be assessed for quality.

MINIMUM TECHNOLOGY REQUIREMENTS

- Latest version of Google Chrome, Mozilla Firefox, Apple Safari, or Microsoft Edge
- Pop-ups: enabled
- Cookies: enabled (with prompt or without)
- Java: ensure you have an up-to-date version of Java by visiting <http://www.java.com>
- Headphones Google Chrome are recommended for BigBlueButton sessions

GETTING HELP

Technical –

cuLearn support: <https://carleton.ca/culearnsupport/students/>

ITS Helpdesk: its.service.desk@carleton.ca

Academic –

Carleton Student Support: <https://students.carleton.ca/>

Centre for Student Academic Support: <https://carleton.ca/csas/>

Academics Support: <https://students.carleton.ca/academics/>

Wellness -

Student Support Services - Wellness: <https://students.carleton.ca/wellness/>

Resource Finder: <https://carleton.ca/wellness/living-well/resource-finder/>

Coronavirus (COVID-19): <https://newsroom.carleton.ca/coronavirus-covid-19/>

ACADEMIC MISCONDUCT

The consequences of copying, plagiarism and other forms of cheating are substantial. Students are referred to the 2020/2021 Undergraduate Calendar for information on this topic. The Carleton University Academic Integrity Policy can be found online at

<https://carleton.ca/registrar/academic-integrity/>. It is **your responsibility** to know the contents of these policies so it is highly recommended that you read them.

ACADEMIC ACCOMODATIONS

You may need special arrangements to meet your academic obligations during the term. For an accommodation request, the processes are as follows:

Pregnancy obligation

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

Religious obligation

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

Academic Accommodations for Students with Disabilities

If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. carleton.ca/pmc

Accommodation for Student Activities

Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. <https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf>

Survivors of Sexual Violence

As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and its survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: carleton.ca/sexual-violence-support

For more information on academic accommodation, please contact the departmental administrator or visit: students.carleton.ca/course-outline

DATE	THEME	RESOURCES	LEARNING ACTIVITIES & ASSIGNMENTS	LO
SEP 14	Blood health	Micronutrients - lecture slides & videos Search engines & reference manager	Synchronous session (Mon SEP 14 @ 1:30-2:30 PM) Q&A 1 (Mon SEP 14 @ 10 PM) Micronutrient Summary Assignment 1 (Fri SEP 18 @ 10 PM)	1, 2
SEP 21		SR - Overview SR1 reading	SR1 Reading annotation (SUN SEP 20 @ 10 PM) SR1 Worksheet (Mon SEP 21 @ 1:30 PM) Synchronous session (Mon SEP 21 @ 1:30-2:30 PM)	1, 3
SEP 28	Energy metabolism	Micronutrients - lecture slides & videos	Synchronous session (Mon SEP 28 @ 1:30-2:30 PM) Q&A 2 (Mon SEP 28 @ 10 PM) Micronutrient Summary Assignment 2 (Fri OCT 02 @ 10 PM)	1, 2
OCT 05		SR - Question, search terms, inclusion criteria SR2 reading	SR2 Reading annotation (SUN OCT 04 @ 10 PM) SR2 Worksheet (Mon OCT 05 @ 1:30) Synchronous session (Mon OCT 05 @ 1:30-2:30 PM)	1, 3
OCT 12	Statutory Holiday			
OCT 19	Bone Health	Micronutrients - lecture slides & videos	Synchronous session (Mon OCT 19 @ 1:30-2:30 PM) Q&A 3 (Mon OCT 19 @ 10 PM) Micronutrient Summary Assignment 3 (Fri OCT 23 @ 10 PM)	1, 2
OCT 26	Fall Break			
NOV 02	Bone Health	SR – Study design, study appraisal SR3 reading	SR3 Reading annotation (SUN NOV 01 @ 10 PM) SR3 Worksheet (Mon NOV 02 @ 1:30 PM) Synchronous session (Mon NOV 02 @ 1:30-2:30 PM)	1, 3
NOV 09	Antioxidants Systematic Review	Micronutrients - lecture slides & videos SR4 reading SR - Title & abstract screening	SR4 Reading annotation (SUN NOV 08 @ 10 PM) Synchronous session (Mon NOV 09 @ 1:30-2:30 PM) Title & abstract screening, Q&A 4 (Fri NOV 13 @ 10 PM)	1, 2, 3
NOV 16		SR - Full-text screening	Synchronous session (Mon NOV 16 @ 1:30-2:30 PM) Full-text screening (Fri NOV 20 @ 10 PM)	1
NOV 23		SR - Data abstraction	Synchronous session (Mon NOV 23 @ 1:30-2:30 PM) Data abstraction (Fri NOV 27 @ 10 PM)	1
NOV 30		SR - Synthesis	Synchronous session (Mon NOV 30 @ 1:30-2:30 PM) Synthesis, PRISMA checklist (Fri DEC 04 @ 10 PM)	1
DEC 07		SR - Final touches, review	Synchronous session (Mon DEC 07 @ 1:30-2:30 PM) Final systematic review (FRI DEC 11 @ 10 PM)	1

DEC 011		Extra time		
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