FNH 451 Nutrient Metabolism and Implications for Health

LAND ACKNOWLEDGEMENT

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

INSTRUCTOR: Dr. Yvonne Lamers, Associate Professor in Human Nutrition

CONTACT: Office hours: **Thursdays, 12-2PM**, Dr. Lamers' office (FNH 245, 2205 East Mall)
Questions related to course content or logistics should be posted on the Canvas 'Discussions' board. Teaching assistants will participate as they are available.
E-mail: For confidential questions, you may write Dr. Lamers via **Canvas** Mail.

TEACHING ASSISTANTS: Adrianna Greco; PhD Student, Human Nutrition
Colleen Farrell; PhD Student, Human Nutrition

LECTURE TIME & LOCATION: Tuesdays & Thursdays, 9:30 AM – 11:00 AM
Forest Science (FSC) Floor 1 Room 1001

CANVAS:

- The FNH 451 Canvas site will be used as an important communication resource.
- Presentation outline notes will be posted on Canvas, as applicable.
- Announcements will be posted on Canvas.
- Assignments are to be submitted on Canvas.
- You are strongly encouraged to check Canvas on a regular basis.

PREREQUISITES: FNH 350, BIOC 302, and one of BIOL 153, BIOL 155, CAPS 301.

OVERALL COURSE GOAL:

Regulation of nutrient metabolism is a core concept in nutrition, and a balanced regulation is critical to human health. As a capstone course, the focus is on applying knowledge learned in basic nutrition, physiology, genetics, and biochemistry to develop a comprehensive understanding of the metabolic basis of the interactions of nutrients under various physiological and pathological states.

Guided by this focus, the objectives of this course are to develop and strengthen students' understanding of metabolic regulation and nutrient-nutrient interactions, and to provide students with research experience through addressing nutritional questions using current scientific literature.

To achieve these objectives, this course has adopted project-based learning as the mode of delivery. Students, working in randomly assigned groups of 6-7 students, conduct in-depth research on a given research topic, develop a relevant and timely research question, draft a Letter of Intent on their question, and communicate their findings through a synopsis and an oral presentation.

LEARNING OUTCOMES/COURSE OBJECTIVES:

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

1. Discuss new advances in the area of nutrient metabolism with examples;
2. Engage in scientific discussion on the importance of metabolic regulation in maintaining and promoting health, and the metabolic impact of diseases with examples;
3. Explain nutrient-gene interactions and its impact on nutrient metabolism with examples;
4. Discuss metabolic and health implications of nutrient intakes with examples;
5. Integrate knowledge from nutrition, physiology, and biochemistry to address issues in the area of nutrient metabolism under physiological and pathophysiological states;
6. Critique original research papers published in peer-reviewed scientific journals in the area of nutrient metabolism and related areas with a higher level of confidence; and
7. Strengthen scientific writing and oral presentation skills.

CLASS FORMAT:

Class participation is required for this course. During scheduled class time, the instructor and/or TAs will join group discussions to provide guidance and feedback on your research, preparation of your group's oral presentation and synopsis, and to answer any questions arising from your research.

EVALUATION:

1. Participation	20%
a. Attendance of group meetings	*5%*
b. Attendance of oral presentations	*5%*
c. Participation in Q&A after presentations	*5%*
d. *Clicker questions*	*5%*
2. Letter of Intent	10%
3. Abstract	10%
4. Oral presentation	25%
5. Synopsis	35%

Conversion of group to individual grade:

Your individual grade on the letter of intent, abstract, oral presentation, and synopsis will be calculated by multiplying your group mark by your peer-evaluation-factor (PEF) assigned to you by your group members. PEF will be assessed based on the following criteria: contribution of ideas and preparation of your group's letter of intent, abstract, oral presentation and synopsis, understanding of your group's research topic, cooperation, dependability, communication, and leadership. The Assignment Guideline for the Group Research Project provides detailed information on evaluation criteria, weighting, and format requirements for the letter of intent, abstract, oral presentation and synopsis, further information on the PEF, and due dates, and is posted on Canvas.

COURSE SPECIFIC POLICIES

- **Attendance and Participation of Group Meetings and Oral Presentations:**
  Attendance and participation of group meetings and oral presentations are mandatory for this course, and a total of 20% of the final grade is allocated for attendance and participation throughout the term. Students are expected to attend group meetings on time. Repeated late arrival (> 3 times for >15 min each) for group meetings without a valid reason will result in up to a 10% deduction of your final grade. Repeated absence from group meetings without a valid reason will result in the student failing the course.
  Students are also expected to attend oral presentations on time. Each late arrival (> 5 min) or missed attendance of the oral presentations without a valid reason will result in up to a 10% deduction of your final grade. Attendance for the oral presentations will be taken within the first 5 minutes of the oral presentation.
  If you have a valid reason for missing group meetings and/or oral presentations, please contact the instructor in advance where possible or at the earliest possible time after the class.
  Q&A periods after each presentation are a great learning opportunity. Students are strongly encouraged to participate in the oral presentations through asking questions during the Q&A period. Due to a combination of the large class size and time constraint, not all students will have the opportunity to ask questions at every Q&A period. However, each student is expected to ask at least one question during the span of the ten Q&A periods.
- **Resources and references:**
  Your group's research must be conducted using original papers published in peer-reviewed scientific journals during the last 10 years. An ideal search engine is PubMed: https://pubmed.ncbi.nlm.nih.gov/. Most journals can be accessed through the UBC Library PubMed link and/or login to specific journals. Oral presentations and synopsis prepared using information from textbooks, review articles, and non-peer-reviewed articles published on the Internet (such as Wikipedia) will NOT be accepted.
- **Due Dates:**
  All due dates set for this course are strictly implemented. A deduction of 10% will be imposed for each day of late submission of the LOI, abstract, oral presentation, and synopsis. Late submission of the peer evaluation form will not be accepted.
- **Use of recording devices** (cell phones/cameras/recorders) are **not** permitted in class.

ACADEMIC HONESTY:

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

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Syllabus draft version:
Updated in January 2025, by Dr Yvonne Lamers
Adapted in January 2023, by Dr Yvonne Lamers
Original syllabus version, by Dr Zhaoming Xu

TENTATIVE COURSE AND ASSIGNMENT SCHEDULE

DATE	TOPICS	ASSESSMENT
Jan 07	**Introduction** and Overview	
Jan 09 – Jan 16	**In-class group activity:** meet your team, familiarization with research topic and elaboration of relevant research question	Research Question (submission for feedback only) due by Jan 16
Jan 21 – Jan 23	**In-class group activity:** finalization of research question and drafting of Letter of Intent	Letter of Intent due by Jan 26
Jan 28	**Guest lecture TBC**	Peer evaluation due by Jan 29
Jan 30 – 13	**In-class group activity:** in-depth literature review on approved LOI, drafting of synopsis	
Feb 18 and 20	*Midterm Break – NO CLASS*	
Feb 25 – Mar 25	**In-class group activity:** in-depth literature review on approved LOI, drafting of synopsis, abstract, and oral presentation	Abstract and presentation slide deck due by Mar 25 for all groups
Mar 27	**Presentation of Group 1 and 2**	
Apr 1	**Presentation of Group 3 and 4**	
Apr 3	**Presentation of Group 5 and 6**	
Apr 8	**Presentation of Group 7 and 8**	Research Synopsis and Peer evaluation due by April 15