Food, Nutrition and Health (FNH) Program
Faculty of Land and Food Systems

FNH 160: INTEGRATED PHYSIOLOGY FOR HUMAN NUTRITION I (3 credits)

ACKNOWLEDGMENT:

UBC's Point Grey Campus is located on the ancestral and unceded territory of the xwməθkwəy̓əm (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: **Thursdays 11-12 PM FNH 160H,** 2205 East Mall OR via **Zoom**
For questions related to course content, please post on **Piazza (discussion board available on Canvas)**.
For confidential questions, the instructor can also be reached at via the **Canvas email tool**

TEACHING ASSISTANTS:

Kailee Wark – Graduate Student, Nutrition & Dietetics
Catherine Wong – Graduate Student, Food Science
Tony Yang – Graduate Student, Human Nutrition

LECTURE TIME & LOCATION:

Tuesdays & Thursdays, 12:30 - 2:00 PM
Aquatic Ecosystems Research Laboratory 120

PREREQUISITES: One of CHEM 11, CHEM 12, CHEM 100, CHEM 110, CHEM 111 and one of BIOL 11, ATPH 12, BIOL 12, BIOL 111.

COURSE DESCRIPTION:

Basic principles in human physiology, including function of the nervous, endocrine, musculoskeletal and digestive systems, integration across systems, maintenance of homeostasis, and application to human nutrition.

COURSE OBJECTIVES:

1. **Describe** the levels of organization in the human body from chemical to cellular, tissues, organs, and organ systems
2. **Understand** the basic anatomy and physiology of the nervous, endocrine, musculoskeletal, and digestive systems
3. **Describe** the relevance of homeostasis and examples of homeostatic mechanisms in the body
4. **Explain** how integration across the nervous, endocrine, musculoskeletal, and digestive systems is necessary for normal body processes and maintenance of health
5. **Apply** knowledge to real-life cases relevant to human nutrition

COURSE FORMAT:

This course will be delivered through **3 hours of in-person class time each week**. Classes will include a combination of lectures, demonstrations, and interactive questions and discussions. Online materials, including course notes, practice questions, and discussion boards will be available on Canvas to support your learning.

COURSE MATERIALS:

- **Canvas:** The FNH 160 Canvas site will be used as an important learning and communication resource providing lecture slides, quizzes and assignments, discussion boards, and course announcements.
- **iClicker Cloud:** Students are required to have an iClicker device (eg. phone, tablet, or laptop) and account registered to their name and student number
- **Required textbook:** Sherwood L, Ward C. Human Physiology from Cells to Systems. 5th Canadian Ed. 2018. Cengage. Older and US versions are acceptable.

EVALUATION:

1. Online quizzes (4 @ 5% each)	20%
2. Assignments (3 @ 5% each)	15%
3. Participation	5%
4. Midterm exam	25%
5. Final exam	35%

Online quizzes: Quizzes are designed to test your understanding of concepts and identify areas that need additional review. All quizzes will be held on Canvas and will include multiple-choice questions only. The dates for the quizzes can be found on the last page of the syllabus.

Assignments: Assignments will be in the form of case studies designed to apply course content to scenarios relevant to nutrition and anticipate how the body responds to disruptions of homeostasis. Assignments will be posted on Canvas and must be submitted before class on the dates provided in the course schedule.

Policy on late and missed assessments: Quizzes and assignments must be completed independently and submitted by the deadlines indicated in the course schedule. Late submissions will not be accepted, as these will be reviewed in class on the day they are due. 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 will be assessed through iClicker questions and in-class problem sets. One participation mark will be given for each class. Students will receive 5 marks for participation in in at least 80% of classes, 4/5 for participation in 70-79%, 3/5 for participation in 60-69%, 2/5 for participation in 50-59%, 1/5 for participation in 40-49%.

Midterm and final examinations: The examinations will test your understanding of all material covered in class. Both the midterm and final examinations will include multiple choice and short-answer questions. In the event where a student must miss the midterm due to illness, the student is required to inform the instructor at the earliest possible time to arrange for a makeup exam, if possible. If a makeup exam is not possible, the marks will be allocated to the final exam.

STUDENT RESPONSIBILITIES:

1. **Attend and engage in class.** Come prepared to listen, take notes, and participate in class.
2. **Review** the course material and related course chapters of the textbook. Looking at the material multiple times, and trying to recall (testing your self, not just reading) will help solidify your understanding.
3. Use the **resources** available to you (instructor, textbook, Canvas site, discussion board, quizzes, and assignments) to enhance your learning.
4. **Ask questions** both in and out of class. You can post your questions about course content on the Canvas discussion board or bring your questions to the instructor's office hours.
5. **Connect** concepts from this course to knowledge gained in other courses and your own experiences. Try to **apply** what you learn in this course to your own life.

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 may also post questions about course material on the course discussion board for your fellow students and teaching assistants.

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).

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 SCHEDULE*

WEEK	TOPICS	ASSESSMENT	TEXTBOOK READINGS
Introduction & Levels of Organization			
Sept 8 -13	**Introduction** – Course overview. Basic terminology, levels of organization, homeostasis		Chapter 1
Sept 15	**Cell Physiology:** Membrane transport, cell signaling		Ch 2
Regulation & Integration			
Sept 20 - Oct 13	**Nervous system:** Action potentials and synaptic transmission. Function and maintenance of the central nervous system. Functions of the peripheral nervous system: somatic, special senses, and autonomic nervous system.	**Quiz 1:** Open from Sept 20- 27 **Quiz 2:** Open from Oct 4- 11 **Assignment 1:** Released Oct 13. **Due Oct 20**	Ch 3-5
Oct 18	**MIDTERM EXAM** - in class		
Oct 20 – Nov 8	**Endocrine system:** Basic principles of endocrinology. Functions and regulation of the major hormones of the pituitary, pineal, thyroid, adrenal, and pancreatic glands. Endocrine response to stress, regulation of fuel metabolism, regulation of calcium balance and bone growth. **Integration:** Neuroendocrinology – interactions between nervous and endocrine system	**Quiz 3:** Open from Nov 1 - 8 **Assignment 2:** Released Nov 3. **Due Nov 15.**	Ch 6-7
Nov 10	**NO CLASS – Midterm Break**		
Movement			
Nov 15 - 22	**Musculoskeletal system:** Muscle fibres, mechanics of muscle contraction, movement, smooth muscle. **Integration:** Somatic nervous system and movement	**Quiz 4:** Open from Nov 17-24 **Assignment 3:** Released Nov 22. **Due Nov 29.**	Ch 8
Digestion & Absorption			
Nov 24 – Dec 6	**Digestive system:** Major and accessory organs of the digestive tract, physiology of digestion and absorption. **Integration**: Motility and muscle fibres of the digestive system. Endocrine and nervous regulation of digestion.		Ch 16

*Schedule subject to change. Instructor will notify students of any changes by Canvas announcements