

University of Guelph
College of Biological Science
Department of Human Health and Nutritional Science

COURSE OUTLINE
Human Physiology I – Principles of Communication, HK*2810
Winter 2017

I) COURSE INFORMATION:

Professor:

Dr. Laelie Snook

Office: ANNU 371A

email: lsnook@uoguelph.ca

Office hours: Wednesdays 9:30am-12:00pm

Course description: Physiology has a foundation of concepts and ideas that are used repeatedly to explain a variety of observations. Lectures will focus on these fundamental concepts and principles and use them to explain the **communication** (the physiology of transport phenomena, ion movement, nerve and synapse, muscle). Once the bases for communication are built lectures will focus on communication systems such as the nervous system (**central nervous system**) and the hormonal system (**endocrine system**). Once the primary communication system are understood lectures will focus on integrating the principles of communication, the endocrine and the nervous system in order to get a larger system to work, the **gastrointestinal tract**. The course presents the factual material and theories used to explain the function of the organs or systems so that you are able to utilize this information in explaining life situations. The majority of the material is presented in the context of feedback control systems with emphasis on the function of the normative cell, tissue and body.

Credit value: 0.5

Pre-requisites: Biological Concepts of Health BIOL*1080 & Introduction to Biochemistry BIOC*2580

Course Schedule: Tuesday and Thursdays 1:00-2:20pm, WMEM

II) LEARNING GOALS AND RATIONALE:

Course philosophy: The philosophy of this course will be to show students that physiology is built on fundamental principles that are used to build the foundations of communication, which are in turn used and integrated to build systems within the body with higher order functions, such as digestion. This course will take an integrated approach to building physiological systems. The course will also take a problem-solving, critical thinking approach to understanding the material and building physiological systems. Following this pedagogical style, the testing style will be short and long answer where students must work through problems and show their work. Practice questions and posted answers will be available to help students with the short and long answer testing style.

Learning Outcomes:

- 1) Students will learn the principle of communication in physiology and apply them to describe physiological phenomena.
- 2) Students will be able to demonstrate knowledge of the mechanistic explanations for physiological events at the cellular and tissue level.
- 3) Students will be able to integrate the principles of communication into problems related to human physiology.
- 4) Students will have further developed problem solving and critical thinking skills.
- 5) Students will be able to effectively communicate ideas and arguments in graphic and written form.
- 6) Students will be able to interpret data.
- 7) Students will be able to apply core concepts of physics and chemistry to the field of physiology.
- 8) Students will be able to identify gaps in knowledge in the area of physiology.

III) TENTATIVE COURSE STRUCTURE AND CONTENT:

Date – 2016	Section	Lecture topic	11 th edition readings (pages)	12 th edition readings (pages)	13 th edition readings (pages)
Jan-10	1. Communication: Principles	Intro & Transport	19-20,45-56	18-19,45-56	19-20, 47-58
Jan-12		Membrane potential	57-61	57-60	61-64
		Action potential	61-70	60-69	65-73
Jan-17		Synapse	85-89, 559-564	83-86, 546-557	89-92, 580-592
Jan-19		Regulation	910-915	887-891	931-935
Jan-24		Contractile cells	72-78, 89-91	71-89	75-95
Jan-26		Contractile cells	80-83, 92-99, 572-576	91-104, 560-563	97-112, 596-599
Jan-31		Monosynaptic reflex			
Feb-02	2. Communication: CNS	Nervous system concepts	577-584	559, 564-570	595, 600-606
Feb-07		MIDTERM 1			
Feb-09		Vision	626-645	609-627	647-665
Feb-14		Motor	673-697	655-665	695-706
Feb-16		Motor	698-713	667-678	707-719
Feb-28	3. Communication: Hormonal	Concepts	905-916	881-892	925-935
Mar-02		Ca ⁺⁺ and PO ₄ ³⁻	978-990	955-967	1001-1014
Mar-07		Pancreas	961-972	939-950	983-994
Mar-09		Hypothalamus	918-926,931-939	895-902, 907-915	939-946, 951-959
Mar-14		MIDTERM 2			
Mar-16		Stimuli and function	944-957	921-934	965-978
Mar-21		Male Female	996-999,1003-1008 1011-1022,1031-1033,1036-1041	973-976, 978-984 987-999,1003-1009, 1011-1015	1021-1024, 1026-1033, 1037-1050, 1055-1061, 1064-1068
Mar-23	4. Integration: GIT	Structure, motility	771-790	753-772	797-816
Mar-28		Secretion	791-806	773-787	817-832
Mar-30		Digestion/absorption	808-817	789-798	833-842
Apr-04		Regulation	785-786	767-768	811-812
Apr-06		Regulation	795-799,800-801,804-805	777-780,782-783, 785-786	821-824, 826-827, 829-831

IV) RESOURCES:

Course textbook:

The recommended textbook for the course is **Textbook of Medical Physiology, 13th** edition by Hall and is available at the University bookstore. The 11th and 12th edition are also an acceptable textbook for the course. Copies of the textbook are on reserve at the library.

Course resources:

The course outline, a tentative lecture schedule, readings and handouts for specific lectures can be found at the Courselink D2L site for the course. In D2L you can submit questions on the course discussion board where TAs will be monitoring daily. The discussion board will be monitored from Jan. 10th to April. 6th, and will not be monitored after April 6th.

IV) RESOURCES (CONT):

Teaching assistants:

There are 4 teaching assistants (TAs) as resources for this course. TA's will be monitoring the D2L bulletin board, be available to e-mail directly with questions, or to set up one on one meetings (~15 minutes). There will be extra question and answer sessions run by the professor prior to the final exam.

TA	E-mail	Areas of expertise
MacKenzie Charter James Haskins	charterm@uoguelph.ca jhaski01@uoguelph.ca	1. Communication – Principles 2. Communication - CNS
Hala Ayoub Andrew Foster	hayoub@uoguelph.ca afosster89@gmail.com	3. Communication – Hormones 4. Gastrointestinal Tract

V) ASSESSMENT:

Form of assessment	Weighting of assessment	Date of assessment	Course content	Learning outcome addressed
Practice Questions 1	5%	Feb 1 – submit Feb 2/3 – review	1. Communication - Principles	1-8
Midterm 1	25%	Feb 7	1. Communication - Principles	1-8
Practice Questions 2	5%	Mar 8 – submit Mar 9/10 – review	2. Communication – CNS 3. Communication – Hormones (half)	1-8
Midterm 2	25%	Mar 14	2. Communication – CNS 3. Communication – Hormones (half)	1-8
Final Exam	40%	Apr 18 7-9PM	1. Communication – Principles 2. Communication – CNS 3. Communication – Hormones* 4. Integration – GIT* *emphasis on material not yet tested	1-8

MIDTERMS: All midterms will use a short and long answer format. As midterms will be written in class time, there will be no alternate times to write a midterm. If you are unable to write a midterm due to illness or compassionate reasons, your other midterm/exam will be reweighted to 35%/55% (midterm/final).

PRACTICE QUESTIONS: In order to prepare students for the written format that we will use for the midterms and exam, a practice question will be posted prior to each midterm for students to complete on the day specified (see table above). You are expected to answer your question individually (although you can use your notes), and submit your answer electronically using the PEAR system (**more information will be given during lecture**). The day after the practice questions are completed, an answer key will be posted by the instructor, and students will use it to review 2 of their peers' answers as well as their own. You will have 2 days to complete the reviews. Your grade on the practice question (worth 5%) will be equally divided as 2.5% based on your performance on the question and 2.5% for completing the reviews. No late submissions will be accepted. Failure to complete the practice question by the deadline will result in your midterm being re-weighted to 30%.

VI) COURSE AND UNIVERSITY POLICIES

a. University Policies:

When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. See the undergraduate calendar for information on regulations and procedures for Academic Consideration:

<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Centre for Students with Disabilities as soon as possible.

For more information, contact CSD at 519-824-4120 ext. 56208 or email csd@uoguelph.ca or see the website: <http://www.csd.uoguelph.ca/csd/>

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:

<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

E-mail Communication

As per university regulations, all students are required to check their <uoguelph.ca> e-mail account regularly. E-mail is the official route of communication between the University and its students.

Drop Date

The last date to drop one-semester courses, without academic penalty, is the 40th class day. To confirm the actual date, please see the schedule of dates in the Undergraduate Calendar. For

regulations and procedures for Dropping Courses, see the Undergraduate Calendar:
<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

Copies of out-of-class assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

Recording of Materials

Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs:
<http://www.uoguelph.ca/registrar/calendars/index.cfm?index>

b. Instructor Policies:

Grading

As midterms will be written in class time, there will be no alternate times to write a midterm. If you are unable to write a midterm due to illness or compassionate reasons, your other midterm and final exam will be re-weighted to 35%/55% (midterm/final).

Practice Questions: No late submissions will be accepted. Failure to complete the practice question by the deadline will result in the corresponding midterm being re-weighted to 30%.

Technology in the classroom

Feel free to bring your laptop to lectures, but only use it in a manner that will not disturb those around you. Please do not use your laptop for anything other than activities related to this physiology course. Turn your cell phones off, or put them on silent, and do not text-message during class.

VII) CAMPUS RESOURCES:

If you are concerned about any aspect of your academic program:

- make an appointment with a program counsellor in your degree program.
<http://www.bsc.uoguelph.ca/index.shtml> or <https://www.uoguelph.ca/uaic/programcounsellors>

If you are struggling to succeed academically:

- There are numerous academic resources offered by the Learning Commons including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills. You can also set up individualized appointments with a learning specialist. <http://www.learningcommons.uoguelph.ca/>

If you are struggling with personal or health issues:

- Counselling services offers individualized appointments to help students work through personal struggles that may be impacting their academic performance. <https://www.uoguelph.ca/counselling/>
- Student Health Services is located on campus and is available to provide medical attention. <https://www.uoguelph.ca/studenthealthservices/clinic>
- For support related to stress and anxiety, besides Health Services and Counselling Services, Kathy Somers runs training workshops and one-on-one sessions related to stress management and high performance situations. <http://www.uoguelph.ca/~ksomers/>

If you have a documented disability or think you may have a disability:

- The Centre for Students with Disabilities (CSD) can provide services and support for students with a documented learning or physical disability. They can also provide information about how to be tested for a learning disability. For more information, including how to register with the centre please see: <https://www.uoguelph.ca/csd/>