University of Pittsburgh

Human Physiology
BioSc 1250 (330629), NeuroSci 1250 (30630)
Fall 2021 (2221)

Instructor: Laurel Roberts, Ph.D.
247 Crawford Hall
624-4291, laurelb@pitt.edu

Prerequisites: BIOSC 0160 and CHEM 0120.

LMS: Canvas

Meeting: Tuesdays and Thursdays, 8:00 – 9:15 a.m.
L9 Clapp Hall

Office Hours: Tuesdays and Thursdays, 9:15-10:0 a.m. 102 Clapp Hall
Appointments can also be made through Calendly:
https://calendly.com/laurelb-1/individual-app

Course Materials: Human Physiology 2nd ed., Derrickson, Wylie Publishing
(hardback, rental or eText are all acceptable)

Learning System: **Cerego (**Cerego.com) learning system registration ($20) is required for this course.
If you have a financial hardship that affects your ability to pay the Cerego registration fee, contact Sergio Hernandez (shernandez@cerego.com) directly to discuss your options.

Content: Presentation slide decks will be posted into weekly Canvas modules.

UTAs: **Head UTAs:** Bharath Alladi, bka18@pitt.edu , Vinny Vozzella, vjv13@pitt.edu
Makenna Romanelli, MER147@pitt.edu
Garrett Sieber, GLS61@pitt.edu
Paul Mlodgenski, pjm117@pitt.edu
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Darini Rajesh, DAR186@pitt.edu
Hannah Kunsak, HTK8@pitt.edu
Jessie Weng, JBW43@pitt.edu
Reva Prabhune, rup15@pitt.edu
Matt Francis Casey, mfc33@pitt.edu

Lecture: Two 75-minute sessions each week. The classroom is large enough that all students may attend each class meeting. Under high and elevated risk, this course will be 100% online with Zoom meetings during class time that will be recorded. Changes to modes of instruction and course adjustments will be announced on Canvas as needed.

Grading Policy: Online work through the Cerego app will be scored as follows: At the end of the course, students with a PROGRESS level of 70% earn FULL credit, those with progress 50-69% earn HALF credit, those 25-49% earn QUARTER credit, and those 1-24% earn MINIMAL credit.

Missed Exams: There will be NO MAKE-UP QUIZZES OR ASSIGNMENTS. If you miss an exam or assignment, that will be the grade that you drop. If circumstances beyond your control cause you to miss more than one exam or assignment, you should acquire documentation as soon as possible and inform Dr. Roberts.

Assessment:	**Number:**	**Value:**
Exams (5)	Top 4 scores	75%
Cerego Homework	Progress	10%
PATH Story Booth Essays	2	5%
Thursday TA Time (13)	Top 10	10%
TOTAL:		100%

Scores will not be curved.

Total Points:	Final Percentage:	Grade:	Total Points:	Final Percentage:	Grade:
244+	97.5%	A^+	194	77.5	C^+
231	92.5	A	181	72.5	C
224	89.5	A^-	174	69.5	C^-
219	87.5	B^+	169	67.5	D^+
206	82.5	B	156	62.5	D
199	79.5	B^-	149	59.5	D^-
			148	59.4 and	F

Extra credit: There are no scheduled opportunities for extra-credit work. Extra points *may* be offered at random for in-class activities or on exams.

G Grades: Students who wish to petition for a G grade must submit, in writing, a specific request for this grade change and you must document your reason(s). You are required to make the necessary arrangements with the instructor to remove the G grade. Remember that G grades, per DSAS guidelines, are to be given only when students who have been attending a course and have been making regular progress are prevented by circumstances beyond their control from completing the course after it is too late to withdraw (University of Pittsburgh Undergraduate Bulletin, 1999-2002, p. 29). If you miss the final and have a valid excuse, you may receive a G grade, but only after the excuse is documented and arrangements to complete the course work are finalized with the instructor.

Rationale: Physiology is the study of the mechanics of life. Although the organ systems within the human body are diverse in their structures and functions, there are certain core principles that apply to each system and the maintenance of the body. After a general introduction to cell biology, intercellular communication, and the physiology of nerves and muscle, this course will survey the functions of the body systems. Each system will be integrated into the broader concept of homeostasis and the adaptations for pathology and challenges (e.g., exercise).

Goals and Objectives:

Students will be able to…

Communicate their understanding of physiological principles while serving as resources for their peers.
Describe the general organization of the human body in terms of cells, tissues and organ systems.
Explain how the directed movement of solutes controls the movement of water.
Explain the significance of receptor-ligand interactions in a variety of organ systems.
Identify how the mechanisms used by the nervous and endocrine systems coordinate and control the function of the human body.
Apply their understanding of physiology to processes involved in the common pathologies of each system studied.
Make predictions about the probable homeostatic responses of the body to changes in the external and internal environment.
Describe the interactions of organ systems during the maintenance of homeostasis

Make better-informed decisions about issues related to their personal health

"In an ideal world, science would be objective. However, much of science is subjective and is historically built on a small subset of privileged voices."
(Dr. Monica Linden)

DWEMs (Dead, White, European, Males) have been credited with elucidating many of the foundational principles of biology. While this course offers limited opportunities to explore the contributions of a wide array of non-DWEM scientists, please know that those contributions exist. However, there are still many (many!) facts about the natural world yet to be revealed. Since you are reading this, I will assume that you are not a DWEM, and I ask that you consider using your unique talents and scholarship to contribute to our shared knowledge. The fate of the planet, and our species, will require the best efforts of *every* individual; never assume that all the important stuff has already been done.

COVID-19 Statement:

In the midst of this pandemic, it is extremely important that you abide by public health regulations and University of Pittsburgh health standards and guidelines. While in class, at a minimum, this means you must wear a face covering and comply with physical distancing requirements; other requirements may be added by the University during the semester. These rules have been developed to protect the health and safety of all community members. Failure to comply with these requirements could result in you not being permitted to attend class in person and could result in a Student Conduct violation. For the most up-to-date information and guidance, please visit coronavirus.pitt.edu and check your Pitt email for updates before each class.

Academic Integrity: Students in this course will be expected to comply with the University of Pittsburgh's Policy on Academic Integrity: Student Obligations. Any student suspected of violating this obligation, for any reason, during the semester will be required to participate in the program set forth in the University Guidelines on Academic Integrity. This may include, but is not limited to, the confiscation of the examination of any individual suspected of violating University policy. Furthermore, no student may bring unauthorized materials to an examination, such as dictionaries or a programmable calculator with stored information specific to the material covered in this course.

E-mail Communication: The University uses your university e-mail address (username@pitt.edu) for official communication with students. Students are expected to read e-mail sent to this account on a

regular basis. Failure to read and react to University communications in a timely manner does not absolve the student from knowing and complying with the content of the communications. The University provides an e-mail forwarding service that allows students to read their e-mail via other service providers. Students that choose to forward their e-mail from their pitt.edu address to another address do so at their own risk. If e-mail is lost because of forwarding, it does not absolve the student from responding to official communications sent to their University e-mail address. To forward e-mail sent to your University account, go to http://accounts.pitt.edu, log into your account, click on Edit Forwarding Addresses, and follow the instructions on the page.

Disability: If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and the Office of Disability Resources and Services, 216 William Pitt Union, 412-648-7890/412-383-7355 (TTY), as early as possible in the term. Disability Resources and Services will verify your disability and determine reasonable accommodations for this course.

2221 Human Physiology (BioSc/NeuroSc 1250) Dr. Roberts

Week	**Date:**	**Tuesday:**	**Date:**	**Thursday:**	TTAT:
1	Aug 31	Intro (Ch. 1)	Sep 2	Tonicity/Membranes (Ch. 5)	1. Tonicity Worksheet
2	Sep 7	Cell Signaling (Ch. 6) *Rosh Hashanah*	Sep 9	Endocrine (Ch. 13) Add/Drop Ends	2. Claire/Cortisol
3	Sep 14	BOSC HHMI	Sep 16	REVIEW *Yom Kippur*	3. Review
4	Sep 21	EXAM 1	Sep 23	Neurons (Ch. 7)	4. Action Potentials
5	Sep 28	Synapses (Ch. 7.4)/ Pain (Ch. 9.2)	Sep 30	ANS (Ch. 10)	5. Bado/ Kem the Cat
6	Oct 5	Muscles (Ch. 11)	Oct 7	Reflexes (Ch. 12.2)/ Review	6. Review
7	Oct 12	EXAM 2	Oct 14	Heart (Ch. 14) *Eid*	7. Pressure volume loops
8	Oct 19	Heart (Ch. 14) *Mawlid*	Oct 21	Blood Vessels (Ch. 15)	8. Blood Pressure
9	Oct 26	Blood (Ch. 16)	Oct 28	Respiratory (Ch. 18)	9. CBC
10	Nov 2	Respiratory (Ch. 18) *Election Day*	Nov 4	Review	10. Review
11	Nov 9	EXAM 3	Nov 11	Kidneys (Ch. 19)	11. PATH Story Booth
12	Nov 16	Fluid and Electrolyte Homeostasis (Ch. 20)	Nov 18	Immune (Ch. 17)	12. PATH Story Booth
13	Nov 23	OFF	Nov 25	THANKSGIVING	
14	Nov 30	Immune (Ch. 17)	Dec 2	Digestion (Ch. 21)	13. Immune
15	Dec 7	Metabolism (Ch. 22.1, 22.2)/Review	Dec 9th	EXAM 4	
16	FINAL/ Exam 5	TBD			