SYSTEMS PHYSIOLOGY (01:146:356)

Fall 2023 COURSE SYLLABUS
3 credits

Instructor

Cassie Nelson, Ph.D.
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Course Meeting Times & Location: Monday 10:20-11:40am
Thursday 10:20-11:40am
LSH AUD

Office Hours: Zoom Office Hours Wednesdays 2:00-3:00pm
Fridays 10:00-11:00am
Zoom link available on Canvas
In Person Office Hours Mondays 9:00-10:00am, LSH A143
Thursdays 9:00-10:00am, LSH A143

Individual appointments: Available by appointment (please email to inquire)

Course Meeting Times

The course is offered with IN PERSON, synchronous instruction and runs from Thursday September 7th through Wednesday December 21st.

There are three exams that will be administered during class time and a cumulative final on the university-assigned day.
Exam 1 – Thursday October 5th
Exam 2 – Monday November 6th
Exam 3 – Thursday December 7th
Cumulative Final Exam – Thursday December 21st, 9:00-11:00AM

Learning Assistants

Weekly LA study sessions will be available. More information available on Canvas.

Course Materials

Textbook- **Vander's Human Physiology, 16th edition + Connect access**
By Eric Widmaier, Hershel Raff, Kevin Strang
Publisher: McGraw Hill

Our course is enrolled in McGraw Hill's FIRST DAY program, which means that you have access to the textbook and Connect within Canvas on the "first day course materials" tab. The $82.34 discounted price is charged to your student fee account. Since Connect assignments are part of the course, the textbook + Connect access is required. If you would like an optional looseleaf copy of the textbook, a discounted price is available through connect.

Learning Goals

By ***actively participating in and interacting with*** this course i.e keeping up with scheduled assignments, undertaking the recommended reading, using additional resources when required such as the learning assistant-organized reviews, my office hours, supplementary study videos and more, you will:

1. Master factual and conceptual knowledge in Systems Physiology that will provide a solid foundation for success in advanced training and professional careers.
2. Develop an ability to summarize, integrate and organize information.
3. Develop your ability to use scientific reasoning to evaluate the potential for current research and new discoveries to improve our understanding of Systems Physiology and its relevance to human health and to our society

Course Description

This course is an upper-level course and assumes a basic level of familiarity with several key physiological systems. The focus of this course will be to develop the depth of your understanding of key aspects of the following physiological systems: nervous, endocrine, muscular, cardiovascular, respiratory, renal, digestive and reproductive, with a special emphasis on cardiovascular and renal physiology.

Current Academic Integrity Policy

Please use this link to check your understanding of Rutgers University's academic integrity policy: http://academicintegrity.rutgers.edu/
Violations of this policy include but are not necessarily limited to cheating, fabrication, plagiarism, denying others access to information or material, and facilitating violations of academic integrity. At the start of each exam, you will be asked to sign the Honor Pledge: *"On my honor, I pledge that I have neither given nor received any unauthorized aid on this exam."*

Learning Support

Rutgers University provides various resources to help you be successful in your studies. These include Rutgers RIOT, Searchpath, RefWorks (http://www.libraries.rutgers.edu/tutorials), Academic Support Programs: http://newbrunswick.rutgers.edu/academics/academic-support

Exam absences

For unforeseen absences such as the sudden onset of a significant illness on the morning of an exam, you must:

a) Contact me directly (by my email) ASAP, at the latest within 24 hours after the missed examination.
b) Provide me official documentation to support the reason for your absence.
c) Do a make-up exam on a designated make-up day.

If you know you will not be able to attend any of the examinations in this course due to religious holidays, significant family events, etc, you must let me know AS SOON AS POSSIBLE so an appropriate makeup can be scheduled. If you do not follow the above procedure, the instructor reserves the right to assign your grade for that exam as a zero.

Assessments/Grading

Your grade in this class will be based off the following assessments. Each is explained in further detail below.

Exams (3):	**51% (17% each)**
Cumulative Final Exam (1):	**20%**
Weekly Quizzes (10):	**8%**
Pre-Lecture Connect Assignments (21):	**8%**
Concept Checks (21):	**8%**
Interview Essays (2):	**5%**

Exams: There will be three, 40 question, 80 min exams. Exam questions are multiple choice. Grades are posted to Canvas once the scores are received. A cumulative final exam will be administered on 12/21 beginning at 9am and will be 80 multiple-choice questions in a 2-hour time period.

Anyone involved in activities before or during an exam that suggest to the Professor that you are using unfair practices and/or outside information to increase your exam grade will be reported to the Office of Academic Integrity. The instructor reserves the right to assign a student a ZERO if they are caught engaging in unfair practices during exams.
Exams will be held during our regular class period on the following days: October 5th, November 6th, and December 7th. The cumulative final is on 12/21 from 9:00-11:00AM.

Weekly Quizzes: Most Sunday nights at 11:59pm, a weekly Canvas quiz is due. These will cover lecture material from the previous week. They will consist of 10 multiple choice questions designed by the professor and will look more like exam questions (more difficult than concept checks). Students will have 15 minutes to answer the questions and 1 attempt per quiz. The questions are shuffled from a pool of 15 or more questions. The lowest quiz grade will be dropped when calculating the final grade.

Pre-Lecture Connect Assignments (PL): Prior to each lecture, a short pre-reading assignment administered in McGraw Hill Connect is due by 10:20AM on Mondays and Thursdays. The purpose of these assignments is to familiarize students with the vocabulary and content that will be discussed that day. The assignments are intended to help students purposefully read the textbook. Assignments are graded on completion, not accuracy, and the lowest 2 will be dropped when calculating the final grade.

Concept Checks (CC): Following each lecture, students will need to complete a short, multiple-choice 10 question "concept check," administered through Canvas quizzes. These are due on Mondays and Thursdays at 11:59pm each week of the course, unless otherwise indicated. There is a 30 min time limit and students may take these up to 3 times. I will grade the highest score for each quiz. When calculating the final grade, the lowest two concept check quiz scores will be dropped.

Interview Essays: Posted to Canvas are several interviews that Dr. Nelson has done with professionals in the field of physiology and healthcare. It is highly recommended that students listen to many of these interviews to hear the different paths that individuals have taken to a fulfilling career. Two essays will be due throughout the semester with deadlines of September 18th and October 23rd at 11:59pm. In each essay, students should discuss why one interview was impactful to them. In the second essay, students will add a paragraph to reflect where they are in terms of their school/career plans. A more detailed prompt and rubric are available on Canvas.

Attendance: TO BE SUCCESSFUL IN THIS CLASS YOU NEED TO SHOW UP. LECTURE RECORDINGS WILL NOT BE AVAILABLE.

Late Work

All assignment deadlines are available to you well ahead of time; therefore, late work is not accepted. Be proactive and do assignments early.

Tentative Grading Scale

This is a TENTATIVE grading scale. The instructor reserves the right to adjust as needed.

A	90.00-100%
B+	85.00-89.99%
B	80.00-84.99%
C+	75.00-79.99%
C	67.00-74.99%
D	60.00-66.99%
F	<60.00%

Student-Wellness Services & Scarlet Listeners

Just In Case Web App: http://codu.co/cee05e
Access helpful mental health information and resources for yourself or a friend in a mental health crisis on your smartphone or tablet and easily contact CAPS or RUPD.

(732) 247-5555 / http://www.scarletlisteners.com/
Free and confidential peer counseling and referral hotline, providing a comforting and supportive safe space.

Counseling, ADAP & Psychiatric Services (CAPS)

(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901
www.rhscaps.rutgers.edu/
CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

Violence Prevention & Victim Assistance (VPVA)

(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901
www.vpva.rutgers.edu/
The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

Disability Services

(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 https://ods.rutgers.edu/
Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: https://ods.rutgers.edu/students/documentation-guidelines. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. ***Please share this letter with your instructor and discuss the accommodations with them as early in your courses as possible.*** To begin this process, please complete the Registration form on the ODS web site at: https://ods.rutgers.edu/students/registration-form.

Weekly Schedule

Monday	Tuesday	Wednesday	Thursday	Friday	Sat	Sunday
In person office hours 9-10am		Zoom office hours 2-3pm	In person office hours 12-1pm	Zoom office hours 10-11am		Print out PPTs & check out assigned readings for upcoming week
Attendance required from 10:20-11:40am **Pre-lecture reading due** **Concept Check Due**			**Attendance required from 10:20-11:40am** **Pre-lecture reading due** **Concept Check Due**			**Weekly Quiz Due**

**I recommend doing pre-reading material 1-2 days before class, concept checks directly after class, and weekly quizzes on Fridays!*

Tentative Topical & Assignment Course Schedule

The next two pages highlight topics covered in each class period, required readings, and assignments due. Except for exams, all assignments are due at 11:59pm on the day indicated.

Unit	Date	Topic	Readings	Lecture	Assessments
MODULE ONE	Thu Sept 7	Homeostasis Local/Action Potentials	1.3-1.5 6.6, 6.7	1	PL 1.1 CC 1.1
	Mon Sept 11	Chemical Synapses Drugs & Synapses	6.8-6.13	2	PL 1.2 CC 1.2
	Thu Sept 14	Phototransduction Neuromuscular Junction	7.6 9.1	3	PL 1.3 CC1.3
	Sun Sept 17				Quiz 1 - Neuro
	Mon Sept 18	Muscle Contraction Muscle Mechanics	9.2 9.3-9.4	4	PL 1.4 CC 1.4
	Thu Sept 21	Fatigue & Fiber Types Smooth & Cardiac Muscle	9.5-9.6 9.8-9.10	5	PL 1.5 CC 1.5
	Sun Sept 24				Quiz 2 -Muscle Interview Essay #1 Due
	Mon Sept 25	Intro to Endocrine Pituitary, Thyroid Hormones	11.1-11.7 11.8-11.12	6	PL 1.6 CC 1.6
	Thu Sept 28	Adrenal Hormones Pancreatic Hormones	11.13-11.15 16.2	7	PL 1.7 CC 1.7
	Sun Oct 1				Quiz 3 - Endocrine
	Mon Oct 2	Calcium Homeostasis Exam 1 Review	11.16-11.22	8	
	Thu Oct 5	**EXAM 1 Covering Ch 1,6,7,9,11,16**			**Exam 1**
MODULE TWO	Mon Oct 9	Blood & Blood Flow Hemodynamics	12.1 12.2-12.3	9	PL 2.1 CC 2.1
	Thu Oct 12	Cardiac Electrophysiology The EKG	12.4 12.4	10	PL 2.2 CC 2.2
	Sun Oct 15				Quiz 4 – Cardio I
	Mon Oct 16	The Cardiac Cycle Cardiac Output	12.5 12.6	11	PL 2.3 CC 2.3
	Thu Oct 19	Vessels, Blood Pressure Exercise & Heart	12.8-12.12 12.13,12.18	12	PL 2.4 CC 2.4
	Sun Oct 22				Quiz 5 – Cardio II Interview Essay #2 Due
	Mon Oct 23	Cardiac Pathologies The Breath Cycle	12.20-12.22 13.1-13.2	13	PL 2.5 CC 2.5
	Thu Oct 26	Lung Compliance & Volumes Exchange of O2 and CO2	13.3, 13.4 13.5-13.8	14	PL 2.6 CC 2.6
	Sun Oct 29				Quiz 6 – Resp
	Mon Oct 30	Control of Respiration Exercise & Respiration	13.9 13.9, 13.10	15	PL 2.7 CC 2.7
	Thu Nov 2	Clinical Respiration Exam 2 Review		16	
	Mon Nov 6	**Exam 2 Covering Ch 12 and 13**			**Exam 2**

MODULE THREE	Thu Nov 9	Intro to Renal System Glomerular Filtration	14.1-14.2 14.3	17	PL 3.1 CC 3.1
	Mon Nov 13	Na and Water Balance Concentrating Urine	14.6-14.7 14.7	18	PL 3.2 CC 3.2
	Thu Nov 16	Renin Angiotensin System Renal Control of K^+, H^+	14.8 14.9-14.20	19	PL 3.3 CC 3.3
	Sun Nov 21				Quiz 7 - Renal
	Mon Nov 20	Digestive Overview Stomach & Accessory Organs	15.1-15.4 15.5	20	PL 3.4 CC 3.4
	Tue Nov 21 **	Small Intestine Physiology Other Organs/ Pathologies	15.6 15.7-15.8	21	PL 3.5 CC 3.5
	Thursday 11/23-Sunday 11/26 – Thanksgiving Break				
	Sun Nov 26				Quiz 8 - Digest
	Mon Nov 27	Reproductive Principles Male Reproduction	17.1-17.4 17.5-17.8	22	PL 3.6 CC 3.6
	Thu Nov 30	Female Reproduction Pregnancy/Development	17.12-17.15 17.20-17.23	23	PL 3.7 CC 3.7
	Sun Dec 3				Quiz 9 - Repro
	Mon Dec 4	Misc Topics Reproduction Exam 3 Review		24	
	Thu Dec 7	**Exam 3 Covering Ch 14,15,17**			**Exam 3**
FINAL	Mon Dec 11	Final Exam Review Day		25	
	Final Exams begin on Friday December 15th ***Ours is scheduled for Thursday 12/21 from 9-11AM***				