

SYSTEMS PHYSIOLOGY (01:146:356 Section 02)

Spring 2022 COURSE SYLLABUS

3 credits

Instructor

Cassie Nelson, Ph.D.

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Course Meeting Times: Mondays and Thursdays 12:10-1:30PM on Busch (ARC 103)

Office Hours: Mondays and Thursdays 10:30-11:30 AM on Busch Campus (Room TBA)
Tuesdays and Fridays 1:00-2:00PM on Zoom (See Canvas for link)

Individual appointments: Wednesdays on Zoom, Book to schedule on Canvas

Course Meeting Times

The course is in-person with synchronous instruction and runs from Thursday January 20th through Wednesday May 11th.

There are three exams that will be administered during class time and a cumulative final on the university-assigned day.

Exam 1 – Thurs February 17th

Exam 2 – Mon March 28th

Exam 3 – Thurs April 28th

Cumulative Final Exam – TBA

Learning Assistants

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

Course Materials

Textbook- **Vander's Human Physiology, 15th ed.**

By Eric Widmaier, Hershel Raff, Kevin Strang

Publisher: McGraw Hill

McGraw-Hill Connect Access is **NOT REQUIRED**. However, for additional practice and studying, Connect has some excellent resources.

Purchase options: McGraw Hill E-Book, Textbook Rental, Loose-leaf purchase

ISBN-13: 9781259903885

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) 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 (usually administered in an oral format) on the 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):	54% (18% each)
Cumulative Final Exam (1):	20%
Weekly Quizzes (10):	15%
Concept Checks (22):	6%
Interview Essays (2):	5%

Exams: There will be three, 40 question, 60-70 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 the University-assigned final examination day and time 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 for the first hour of our regular class period (12:10-1:10PM) on the following days: February 17, March 28, and April 28. The cumulative final day/time will be announced when the final exam schedule is announced.

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.

Concept Checks: Following each class period, 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 take 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 all 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 TBA. 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: While attendance is not an official part of the overall grade, it is HIGHLY ENCOURAGED. Periodically, questions that will be on the exams will be shown during class and only the students present in class will have access to these questions.

Tentative Grading Scale

This is a TENTATIVE grading scale and the instructor reserves the right to make adjustments to this scale.

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>.

University Mask Requirement

In order to protect the health and well-being of all members of the University community, masks must be worn by all persons on campus when in the presence of others (within six feet) and in buildings in non-private enclosed settings (e.g., common workspaces, workstations, meeting rooms, classrooms, etc.). Masks must be worn during class meetings; any student not wearing a mask will be asked to leave.

Masks should conform to CDC guidelines and should completely cover the nose and mouth: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/about-face-coverings.html>

Each day before you arrive on campus or leave your residence hall, you must complete the brief survey on the My Campus Pass symptom checker self-screening app.

Recommended Weekly Schedule

Monday	Tuesday	Wednesday	Thursday	Friday	Sat	Sunday
Attend office hours at 10:30am Attend Class at 12:10pm	Online office hours offered from 1-2pm	Review/organize material as needed Individual office hours offered	Attend office hours at 10:30am Attend Class at 12:10pm	Review material from the week Take weekly quiz that's due on Sunday Online office hours offered from 1-2pm	Off Day	Print out PPTs & do assigned readings for upcoming week
Concept Check Due			Concept Check Due			Weekly Quiz Due

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	
M O D U L E O N E	Thu Jan 20	Homeostasis Local & Action Potentials	1.3-1.5 6.6, 6.7	1	Concept Check 1.1	
	Mon Jan 24	Chemical Synapses General Senses & Vision	6.8-6.13 7.1, 7.6	2	Concept Check 1.2	
	Thu Jan 27	Other Sensory Systems Neuromuscular Junction	7.7-7.9 9.1	3	Concept Check 1.3	
	Sun Jan 30				Quiz 1	
	Mon Jan 31	Muscle Contraction Muscle Mechanics	9.2 9.3-9.4	4	Concept Check 1.4	
	Thu Feb 3	Fatigue & Fiber Types Smooth & Cardiac Muscle	9.5-9.6 9.8-9.10	5	Concept Check 1.5	
	Sun Feb 6				Quiz 2	
	Mon Feb 7	Intro to Endocrine Pituitary, Thyroid Hormones	11.1-11.7 11.8-11.12	6	Concept Check 1.6	
	Thu Feb 10	Adrenal Hormones Other Hormones	11.13-11.15 11.16-11.22	7	Concept Check 1.7	
	Sun Feb 13				Quiz 3	
	Mon Feb 14	Exam 1 Review Session				
	Thu Feb 17	EXAM 1	Ch 1,6,7,9, 11		Exam 1	
	M O D U L E T W O	Mon Feb 21	Blood & Blood Flow Hemodynamics	12.1 12.2-12.3	8	Concept Check 2.1
Thu Feb 24		Cardiac Electrophysiology The EKG	12.4	9	Concept Check 2.2	
Sun Feb 27					Quiz 4	
Mon Feb 28		The Cardiac Cycle Cardiac Output	12.5 12.6	10	Concept Check 2.3	
Thu Mar 3		Vessels, Blood Pressure Exercise Effects on Heart	12.8-12.12 12.13,12.18	11	Concept Check 2.4	
Sun Mar 6					Quiz 5	
Mon Mar 7		Cardiac Pathologies The Breath Cycle	12.20-12.22 13.1-13.2	12	Concept Check 2.5	
Thu Mar 10		Lung Compliance & Volumes Exchange of O ₂ and CO ₂	13.3, 13.4 13.5-13.8	13	Concept Check 2.6	
<i>Saturday March 12-Sunday March 20: Spring Break</i>						
Mon Mar 21		Control of Respiration Exercise & Respiration	13.9 13.9, 13.10	14	Concept Check 2.7	
Thu Mar 24		Exam 2 Review Session			Quiz 6	
Mon Mar 28		Exam 2	Ch 12, 13		Exam 2	

MODULE THREE	Thu Mar 31	Intro to Renal System Glomerular Filtration	14.1-14.2 14.3	15	Concept Check 3.1
	Mon Apr 4	Na and Water Balance Concentrating Urine	14.4-14.7 14.7	16	Concept Check 3.2
	Thu Apr 7	Renin Angiotensin System Renal Control of Other Ions	14.8 14.9-14.20	17	Concept Check 3.3
	Sun Apr 10				Quiz 7
	Mon Apr 11	Digestive Overview Stomach	15.1-15.4 15.5	18	Concept Check 3.4
	Thu Apr 14	Small Intestine Physiology Other Organs/ Pathologies	15.6 15.7-15.8	19	Concept Check 3.5
	Sun Apr 17				Quiz 8
	Mon Apr 18	Reproductive Principles Male Reproduction	17.1-17.4 17.5-17.8	20	Concept Check 3.6
	Thu Apr 21	Female Reproduction Pregnancy/Development	17.12-17.15 17.20-17.23	21	Concept Check 3.7
	Sun Apr 24				Quiz 9
	Mon Apr 25	Diabetes, Ex 3 Review	16.2, 16.5		
	Thu Apr 28	Exam 3	Ch 14-17		Exam 3
	Sun May 1				Quiz 10
Mon May 2	Final Exam Review				
Final Exam – TBA					