

BSC3096 Human Physiology Syllabus- Summer 2021

Syllabus Policy

You are solely responsible for reading and following the instructions, guidelines and schedules in this syllabus, and for checking the e-Learning site at least weekly for announcements regarding any changes. Not having read the information will not constitute an excuse for missing an assignment or deadline.

Course Description

The course involves the study of the functioning of human cells, tissues, organs, and organ systems, emphasizing the physical, chemical and mechanistic basis of normal physiology and the integrated and coordinated function of the human body. Emphasis will be placed on the use of model organisms, mathematical models, and the physical sciences to understand the mechanistic basis of normal physiology and dysfunction. **3 credits.**

Prerequisites

One semester of general biology (BSC 2010/2011) or Applied Human Physiology (APK2105C), and two semesters of general chemistry (CHM 2046 or CHM 2047 or CHM 2051 or CHM 2096) and **recommended** two semesters of general physics (PHY 2049 or PHY 2061), all with a minimum grade of C or permission from instructor.

Instructors

Course Instructor

Connie Rich, PhD,

Department of Biology

Office hours: Thursdays 10-11:30am EST on Zoom. If you need to meet outside of office hours, just email me.

The best way to contact your instructor is through the Canvas mail system. However, you may also use the following email: c.rich@ufl.edu

Course TAs

Ella Nicklin (e.nicklin@ufl.edu), Mitch Walters (mjw246@ufl.edu)

Ph.D. candidates, Department of Biological Sciences

Course Objectives

At the end of the course, students should be able to:

- Explain physiological mechanisms of humans by applying basic principles of biology and chemistry
- Describe the fundamental mechanisms underlying normal function of cells, tissues, organs, and organ systems in humans.
- Explain the basic mechanisms of homeostasis by integrating the functions of cells, tissues, organs, and organ systems.
- Effectively solve basic problems in physiology, working independently and in groups.
- Apply knowledge of functional mechanisms and their regulation to explain the pathophysiology underlying common diseases.
- Generate hypotheses about physiological processes, design experiments to test these hypotheses, and then analyze, interpret and report experimental results.

Required Course Materials, Software and Hardware

Primary Course Textbook

There is no course fee, but you will need to purchase subscriptions for **Peerceptiv** (\$12.50) and **JustPhysiology** (\$15). Additionally, you will need to gain access to **MasteringA&P** (where homework assignments are located), which includes the etext.

Mastering A&P: with etext for Human Physiology: An Integrated Approach. 8th Edition, by Dee Unglaub Silverthorn. Pearson, 2019. ISBN-13: 978-0-13-460519-7

Please note that this course will be participating in the UF All Access program. Students have two options to gain access to the **REQUIRED** MasteringA&P with materials when classes begin.

- Students will have the choice to "opt-in" to MasteringA&P access through Canvas once classes begin for a reduced price and pay for these materials through their student account. The price for UF All Access is **\$116.00**.
- Students who do not choose to "opt-in" will be able to purchase a standalone MasteringA&P access code through the UF Bookstore. The price for the standalone MasteringA&P access code is **\$156.00**. Both options provide access to the same materials. Note that the UF All Access is less expensive.
- There will also be a loose-leaf print version of the textbook available at the UF Bookstore for students who wish to have a physical copy of the text. The price for the loose-leaf print version is about **\$38.00**.

Peerceptiv: You will need to create an account in Peerceptiv. This license cost for the 2020-2021 academic year is \$14. This software is a peer assessment tool which improves writing and critical thinking skill by engaging students in the role of the teacher. The website is <https://go.peerceptiv.com/>. You will enroll yourself into the account by Signing Up using your first name, last name, **UF EMAIL**, and password. Select "Student" as your Role, and join the class with the code **page80**. You will be asked

to create a **pseudonym**, which is the name that other students will see. You should pick something that does not identify who you are so that your reviews are anonymous.

JustPhysiology: This simulation software is \$15. The TAs or I will send a list of student UF email addresses in the first 1-2 weeks of the course; JustPhysiology will then create an account for you with your UF email address as your username. You will be sent an email with instructions for how to complete your sign up.

You will write one scientific report based on the data you gather using simulations in JustPhysiology. You are welcome to work with one or more other members of the class in figuring out how to perform calculations in Excel and how to make the scientific figures, and you may discuss how the figures should be interpreted. However, the data gathered, figures, and text of each scientific report that your turn in through Peerceptiv **must be your own work**.

Computer Requirement

The course instructor will not provide any computer support. You may be able to get assistance from the UF Computing Help Desk and other resources listed below, but in the past, most students have gotten the best support from other students in the course via discussion posts.

Grading

Assessments

Assessment Type	Quantity	Percent of Total
Mastering A&P	18	15%
Simulations (JustPhysiology)	10-12	15%
Simulation Research Report (Peerceptiv)	1	10%
Midterm Exams	2	40%
Final Exam	1	20%
<i>Total</i>		100%

Grade Distribution

Point Range (%)	Letter Grade	Point Range (%)	Letter Grade
93.33 or higher	A	70-76.65	C
90-93.32	A-	66.66-69.99	D+
86.66-89.99	B+	63.33-66.65	D
83.33-86.65	B	60-63.32	D-
80-83.32	B-	< 60	E
76.66-79.99	C+		

The letter grades will be assigned based on the point ranges given in the table above. There is a chance that the final grades will be curved, so if you get an 80 you are guaranteed at least a B-. In order to graduate, students must have an overall GPA and an upper-division GPA of 2.0 or better (C or better). More information on grades and grading policies is here:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Assignments

Exams

There will be **three exams**: two midterms and a final. These will consist mostly of problem-based, multiple choice, fill-in-the-blank, ordering and numeric (calculation) questions. Each midterm will consist of 30 to 40 questions. All exams will be closed-book and you will not be allowed to use notes. You will be allowed to use scratch paper and a calculator. The final exam will focus primarily on the last portion of the course but assumes that you have retained the general principles and information that you learned earlier in the course.

All exams will be held online using Honorlock. Student guidance is located [here](#). DRC accommodations regarding time will be upheld, and I will do my best to accommodate any other way I can.

Research Report and Peer Review

You will **individually complete one research reports during the term**. For the report, you will be provided with a research problem about a physiological phenomenon. You will be expected to do the following:

1. Test hypotheses by designing experiments to be performed using the physiology simulation software.
2. Conduct your experiment, collect and analyze the data, and draw conclusions from the results.
3. Craft a clear, well-supported first-draft report.
4. Submit your first-draft report. This will be scored through peer review and by the graduate teaching assistant.
5. Participate in peer reviews of other student first-draft reports.
6. Back-evaluate your reviewer feedback, indicating how helpful it was.
7. Revise your first-draft report based on reviewer feedback (this may involve designing and running new experiments).
8. Submit your second-draft (final) report for peer review.
9. Participate in peer reviews of other student second-draft (final) reports.
10. Back-evaluate your reviewer feedback, indicating how helpful it was.

Your research report must each be formatted according to the detailed instructions provided for each, which will be posted on the course home page. Reports that are not formatted correctly will receive a score of zero. You are welcome to work on your report with other students in the course, but the final product must represent your own work. Reports that are copied from others will receive a zero.

All research reports, evaluations, and other associated activities are due at 23:59:00 Eastern time on the date indicated in the syllabus schedule. The timestamp for every submission is based on the clock of the

Peerceptiv server (which is synchronized with the NIST Internet time service), not the clock of the personal computer you are using. Problems with your computer or your internet access will not be grounds for extending the deadline, so don't wait until the last few minutes to complete any submission.

The total grade for each research report will be determined from the following criteria:

- **Review Grade (40%)** - a combination of the Accuracy and Helpfulness grades, which are then curved, after which any Reviewing Late Penalties are subtracted.
- **Accuracy** - correlation of your own ratings to mean ratings by others on same documents.
- **Helpfulness** - how helpful the author thought your comments were via back evaluation.
- **Writing Grade (40%)** - average score given by reviewers which is then curved, and then any Writing Late Penalties are subtracted.
- **Task Grade (20%)** - accounts for the percentage of assigned reviews and back-evaluations that were done. It represents only your reviewing activities, which is then curved.
- **Weighting** – How each category is weighted. The breakdown is 40% reviewing, 40% writing, and 20% task. The first and second draft of a report are equally weighted.
- **Overall** - The sum of all of the weighted grades

MasteringA&P

You will be asked to answer questions and solve problems as homework problems. You will provide your answers using an online system (MasteringA&P). You are allowed to collaborate with others on MasteringA&P homework, but you should ensure that you are able to answer **similar questions** on the exam **on your own**.

Extra Credit

There will be **no** opportunities for extra credit beyond the extra credit that is already offered. Please do **not** ask. It's unpleasant for everyone involved.

Grading Discrepancies

Concerns regarding the accuracy of graded assignments will only be taken into consideration if the respective instructor has been notified **within 3 working days** after the assignment grade is posted.

Time Commitment

The UF College of Liberal Arts and Sciences assumes that you will devote 3-4 hours per week per credit-hour to each course during the regular fall and spring semesters. Because this course is 3 credits (including the Discussion session), you should therefore expect to devote about 12 hours per week to this course. If you find yourself spending more than 12 hours per week on average, discuss this with your course instructor to see if you can refine your work and study habits. If you find yourself spending less than 12 hours per week on average, you should recognize that you may have difficulty fully learning and comprehending the material in this time, which will likely be reflected in poor performance on the various activities and assessments, causing you to receive a lower overall course grade.

Communication

Updates and changes to the course schedule (these may happen), this syllabus, and any other aspects of the class content and structure will be communicated to you via **announcements** on the course e-Learning site. You are responsible for checking this site regularly for announcements, at least once per week.

Communicating electronically with the Instructor and Graduate Teaching Assistant

There are two primary modes of electronic communication for this class -- the discussion forum and Canvas mail. To ensure that your questions are answered as promptly as possible, please follow the communications guidelines below:

Discussion Forum: This course is participatory. Use the discussion forum on the course website for questions/answers about the course content, structure, assignments and activities. You are strongly encouraged to respond to your peers if you know the answer or can provide guidance. The instructor will monitor this area, but the instructor/TA may not be able to read every posting and therefore this should **not** be used to communicate with the instructors.

Direct Canvas Mail to the Instructors: Direct email to Dr. Rich should be used only for messages that are **private** in nature or that have been posted to the Discussion Forum but were not solved. Use the Mail tool in Canvas for all such direct email. If you use any other email tool please include the course code as it may be filtered as spam or otherwise not be seen by your instructor. If you send a directly email to the instructor please include your course code.

Technical Support

MasteringA&P: Contact Christina Bolton, our Pearson representative at christina.bolton@pearson.com.

E-Learning in Canvas. For help with E-Learning, call the UF Computing Help Desk at 352-392-4357, or visit the E-Learning support website: <https://lss.at.ufl.edu/help.shtml>.

JustPhysiology: Contact Robert Hester at robert@justphysiology.com. Robert is the president of this company so he will not know details about the lessons or your grades; however, he will be able to help with technical issues.

Peerceptiv: support@peerceptiv.com.

Course Policies

Academic Honesty

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honorcode/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TA in this class.

Policy Related to Absences and Make-up Work

Requirements for class attendance and make-up exams, assignments, and other work are consistent with university attendance policies: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

If you must miss an assignment or exam due to an allowable scheduled absence (for example, to participate in a sanctioned university function), you must notify the instructor as soon as the event is scheduled or during the first week of classes. If you miss an assignment or exam due to an allowable but unscheduled and unpredictable absence (e.g., illness), you must submit proper documentation to the Dean of Students Office (dsocares@dso.ufl.edu) before you will be allowed a makeup.

Late Work

Late work will **not** be accepted unless it is the direct result of an allowable but unscheduled and unpredictable absence (e.g., illness), as defined above, at the discretion of the instructor.

Campus Resources

Health and Wellness

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

Accommodations for Students with Disabilities

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center (DRC) by visiting the [Get Started page](#). It is important for students to share their accommodation letter with their instructor and discuss their access needs as early as possible in the semester.

Academic Resources

E-learning technical support: 352-392-4357 (select option 2) or e-mail to Learningsupport@ufl.edu.
<https://lss.at.ufl.edu/help.shtml>.

Career Resource Center: Reitz Union, 392-1601. Career assistance and counseling.
<http://www.crc.ufl.edu/>

Library Support: <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.

Course Evaluation Process

I strongly encourage and welcome your thoughts on this course at any time in the semester. Please feel free to contact me or come to office hours if you feel the course could be improved or if you have any concerns. I will also ask directly for your feedback in the semester.

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://gatorevals.aa.ufl.edu/>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open.

Course Schedule (subject to change)

Any changes to the schedule will be reflected on Canvas and will be flagged in announcements.

Wk #	Week of	Reading Topic (Chapter)	Simulation Tutorial	Research Report
1	May 10	Introduction to Physiology (1); Molecular Interactions (2)	None	
2	May 17	Compartmentation: Cells and Tissues (3); Energy and Cellular Metabolism (4)	Glucose Homeostasis_ Short-Term; Glucose Homeostasis_ Long-Term	
3	May 24	Membrane dynamics (5); Communication, Integration, and Homeostasis (6)	None	
4	May 31	May 31 st Memorial Day; Communication, Integration, and Homeostasis (6); Midterm1 on chapters 1 to 6 (Friday June 4th)	Thyroid hormone; Vasopressin	
5	June 7	Introduction to the Endocrine System (7); Neurons: Cellular and Network Properties (8)		
6	June 14	Sensory Physiology (10); Efferent Division: Autonomic & Somatic Motor Control (11)	None	Report 1st draft & Excel file
		June 21 st to June 25 th Summer break		
7	June 28	Muscles (12); Control of Body Movement (13)	Action potential	Report 1st draft review
8	July 5	July 4 th Holiday; Control of Body Movement (13) Midterm2 on chapters 7, 8, 10, 11, 12, 13 (Friday July 9th)		
9	July 12	Cardiovascular Physiology (14)	Blood donation	Report 1st draft back evaluation ; Report 2nd draft

10	July 19	Blood Flow (15); Mechanics of Breathing (17)	Alpha and beta adrenergic receptors	
11	July 26	Gas Exchange and transport (18)	Baroreceptor reflex; GFR filtration forces	Report 2 nd draft review
12	Aug 2	Kidneys (19); Final Exam on chapters 14, 15, 17, 18, 19 (Friday August 6th)	Creatinine clearance	Report 2nd draft back evaluation

1. 1st day of classes is May 10th
2. Monday May 31st is a holiday (Memorial Day).
3. No class on the week of June 21st due to summer break.
4. Last day of classes is August 6th.
5. There are no reading days for summer classes

Assignments are due at 11:59 p.m. on the date indicated on the course e-Learning site schedule

SUGGESTED STUDY METHODS

Come to class (even remotely) and participate

There is tremendous variation in how people learn and in the foundation they have upon entering this course. However, one thing that is certain is that you will not do well if you do not **participate and work**. Seniors have failed or withdrawn from this class and had to repeat it. Some of them had GPAs above 3.5 and were already conditionally accepted to medical or dental schools. They decided they would get through by cramming for exams. They were wrong and it cost them. You will need to “participate” in the class and work hard to do well. Here’s some of the best ways to do that:

- Read the textbook and watch any video links in the chapters
- Review the chapter learning objectives (found in Canvas) prior to reading
- Study both independently AND with others- use the discussion boards, set up Zoom sessions, be proactive!
- Work on understanding the concepts behind the Mastering A&P questions, Canvas quiz questions, and JustPhysiology questions. These questions will introduce you to the types of questions and concepts that will be on the exams. Review these questions and try to anticipate how **different versions of the questions** might show-up on exams. They will. They will show up.
- Set aside dedicated time to study for this class every week (preferably every day)
- Don’t get behind! This class will cover a LOT of content, so staying on schedule is important.
- Make sure you understand the figures and graphs. What are the axes? What are the variables? What is the main point of the figure or graph? What if you changed axes?
- There is a large amount of material covered. Exams will be based on the concepts and material in the homework questions and JustPhysiology simulation questions. Work on these questions as

we progress. Compare your answers with those of other students, ask Dr. Rich and the graduate TAs for guidance, and share answers and uncertainties with other students on the discussion boards.

- **Participate in discussion boards and chats** There are many other students in the class trying to learn the same material. Post and answer general questions and comments related to the material you read and homework questions. Use the discussion boards to ask and answer questions about the study questions as you prepare for exams. The graduate TAs and the instructor will monitor and direct the discussions as necessary. These are read by all students and instructors, so make sure your comments are appropriate and respectful.
- **Keep up with material** This is likely to be one of the most conceptually difficult courses you will take. It also has the potential to be one of the most stimulating and rewarding. You will be required to build on what you have learned in other courses and to **apply** concepts as opposed to memorizing facts. Physiology is where you actually get to apply what you learned in courses like algebra, physics, chemistry, biochemistry, and cell biology. You will need to be able to interpret graphs, calculate quantitative physiological variables, and integrate multiple physiological systems to understand and predict outcomes. This will require you to learn incrementally and build on concepts as they are learned. Everyone learns differently, but the best advice I can give you is to stay current on the notes, study questions, reading, and synthesis of material.
- **Visit Dr. Rich during office hours.** I am happy to answer questions during office hours. I will be available each week on Zoom, and I'm happy to schedule time outside of that to meet with you. Use these office hours if you're struggling, need clarification, have any questions, or just want to know why that weird physiological thing happens in the human body.

A Final Note...

I really want you to do well in this class. And I want you to go on to do well wherever you go from here. You're happy, I'm happy, everybody wins. So if you're unhappy or stressed or overwhelmed, please come talk to me or talk to someone at UF's Counseling and Wellness Center. We are here for you, because without you we don't have a job and don't get to do what we love.

