BSC 3096 - HUMAN PHYSIOLOGY
3 CREDITS ~ Summer 2020 online

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Preferred contact method is Canvas mail.

Welcome to Human Physiology.
Together we will spend the next 12 weeks discovering the physiology of the human body and connecting how the components of anatomy and physiology work together to keep us healthy and alive. Whether you are preparing for a career in health science, biology, or here to learn more about your own body, I hope you have an enjoyable learning experience and a successful semester.

Syllabus Policy:
You are solely responsible for reading and following the instructions, guidelines, and schedules in this syllabus, and for checking canvas regularly for announcements regarding any changes. Not having read the information in this syllabus or the announcements will not constitute an excuse for missing an assignment or deadline. Please consult the syllabus and check canvas regularly.

Course description:
How cells, organs, and higher-level systems function in an integrated and coordinated manner to support the processes necessary for life. 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:
Integrated Principles of Biology 2 (BSC 2011) or Applied Human Physiology with Laboratory (APK 2105C) and General Chemistry (CHM 2046 or CHM 2047) or Basic Chemistry Concepts and Applications 2 (CHM1031), all with a minimum grade of C, or permission of the instructor.

Corequisites:
None

Course Graduate TAs
Steven Cassidy
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Course Objectives:
At the end of the course, students should be able to:

- Explain physiological mechanisms of humans and representative model organisms by applying basic principles of biology and chemistry.
- Describe the fundamental mechanisms underlying normal function of cells, tissues, organs, and organ systems in humans and other animals.
- 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 using mathematical models of complex physiological systems, and then analyze, interpret and report experimental results.

Required Course Materials, Software, Licenses, and Hardware:
Primary Course Textbook
Human Physiology: An Integrated Approach. 8th Edition, by Dee Silverthorn. Pearson, 2019.
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 $140.00.

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.

Note that the etext (electronic textbook) is included when you opt-in or purchase MasteringA&P. However, there is also 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.

MasteringA&P online system
We will use the MasteringA&P online system to both aid in your understanding of the course material and for assessment of your understanding. If have difficulty registering for the Pearson course content see the document entitled “UF All-Access - Student Instructions Fall 2018.pdf” in course introduction module in Canvas. If you are still not able to register for the Pearson course content contact Christina Bolton, our Pearson Representative at christina.bolton@pearson.com. She can answer all Pearson related issues.
Pearson tech support provides 24/7 assistance. You will always receive a “case number” that can be referenced later. https://support.pearson.com/getsupport/s/

REQUIRED ONLINE SOFTWARE LICENSE: JustPhysiology
JustPhysiology, physiology simulation software, is $15. The teacher will send a list of student UF email addresses to JustPhysiology about halfway through the first week. JustPhysiology will then create an account using your UF email address as the username. You will be sent an email from JustPhysiology with further instructions. Once you login, you have to pay $15 using the PayPal, and then you can go to My Account at top of page and change password.
You will receive an email from JustPhysiology to your UFL account with instructions to pay the subscription fee and activate your account. Note that the subscription can currently only be paid using PayPal.
If you lose the original email from JustPhysiology, go to https://justphysiology.com/users/login and click on "Reset Password." You will then be asked for your email address. Enter your UF email address and select Reset Password. Enter the new password and then continue to pay the subscription fee as noted above. Note that UF subscriptions are discounted by 25% (normally $20).

Digital Lessons
All non-textbook course readings and lessons will be either directly accessible from the Canvas website or information in Canvas will be posted directing you to the appropriate website (https://elearning.ufl.edu).
Computer Requirement
The course instructor will not provide any computer support. You may be able to get assistance from the UF Computing Help Desk, but in the past, most students have gotten the best support from other students in the course via discussion posts.
Simulation Software
JustPhysiology (www.justphysiology.com) is a web application. See above for information on the generation of student accounts.
Course Website (E-Learning)
Class material including the syllabus, exam results, and other information related to the course will be posted on the course E-Learning website (http://lss.at.ufl.edu). The course is found under "E-Learning in Canvas". You are responsible for all announcements posted on the course website for this class. For help with E-Learning, call the UF Computing Help Desk at 352-3924357, or visit the E-Learning support website: https://lss.at.ufl.edu/help.shtml.
Activities and Assessments
The class content will include textbook reading, homework questions, experiments using physiological simulations, as well as writing peer-reviewed research reports.
MasteringA&P
You will be asked to answer questions and solve problems. You will provide your answers using an online system (MasteringA&P).
Simulations
You will complete a number of lessons in JustPhysiology to explore systems physiology. These lessons have embedded questions that gauge and reinforce your comprehension of key physiology concepts.
REQUIRED ONLINE SOFTWARE LICENSE: Peerceptiv
Peer-Review System
You will need to create an account in Peerceptiv.
Peerceptiv license cost is $15.00 (peer assessment technology, improves writing and critical thinking skills by engaging students in the role of the teacher). The website is at https://go.peerceptiv.com/ You will enroll yourself into the Peerceptiv class by creating your own account, as follows. If you are new to Peerceptiv, you should click on "Sign up" rather than "Login." They will ask for your first name, last name, email, and password. The email must be your UF email. Select "Student" as your Role. Peerceptiv

will then send an email to your UF account. You can then login to Peerceptiv and join the class using the class code. The name of the course in Peerceptiv is BSC 3096 - Human Physiology. The course code is yes68. You will be asked to create a pseudonym. The pseudonym is the name that other students will see. You should pick something that doesn't identify who you are because the reviewing process works best if it is completely anonymous.
If you attempt to self-register without using the instructions in the activation email, you will receive an on-screen message indicating that an account already exists with your email address. In that case, or if you no longer have access to the activation email, use the Forgot Password link to access your account.

You will write one scientific report based on the data you gather using simulations in JustPhysiolology. 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.
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.
All research reports, evaluations, and other associated activities are due at 11:59 PM 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

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.

Final Exam
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 in earlier in the course. It will also consist of approximately 40 questions and will be administered during the final exam period (2 hours duration).

For the online version of this class the midterms and the final will be administered online using Honorlock. The duration of each exam is 120 minutes.

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.

Honorlock
The exams will be proctored using Honorlock (https://www.honorlock.com/). On their website, you can find a checklist as well as video on how the system works. You should be able to use any computer, as long as the computer meets the technical specifications and the location is secure. You will download a google chrome extension to access the screen sharing technology, but there is no software added to the computer. A secure location must be a private area in which others are not around and access to the area can be restricted by closing a door. Everyone must sign an Honorlock agreement prior to testing. The agreement can be found the introductory module on canvas.

Grading
Assessments

Assessment Type	Quantity	Percent of total
Mastering A&P	Approximately 20	25%
Tutorial quizzes	10-12	15%
Simulation Research Report	1	15%
Midterm exams	2	30%
Final exam	1	15%
Total		100%

Grade distribution:

Percent	Letter Grade	Percent	Letter Grade
93.33 or higher	A	73.33-76.65	C
90-93.32	A-	70-73.32	C-
86.66-89.99	B+	66.66-69.99	D+
83.33-86.65	B	63.33-66.65	D
80-83.32	B-	60-63.32	D-
76.66-79.99	C+	< 60	F

The letter grades will be assigned by based on the point ranges given in the table above. A “C-” is not a qualifying grade for critical tracking courses at UF. In order to graduate, students must have an overall GPA and an upper-division GPA of 2.0 or better (C or better). A "C-" average is equivalent to a GPA of

1.67, and therefore, it does not satisfy this graduation requirement. More information on grades and grading policies is here: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx
Extra Credit
There will be no opportunities for extra credit.

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. This course is 3 credits, so you should therefore expect to devote about 12 hours per week to this course. You are responsible for budgeting the time you will spend on 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 probably be reflected in poor performance on the various activities and assessments, causing you to receive a lower overall course grade.

Activity Time (hours)
Textbook Readings and MasteringA&P 122
Simulation Tutorials 20
Simulation Research Report 20
Midterm Exams 4
Final Exam 2
Total 168

Communication
Updates and changes to the course schedule, this syllabus, and any other aspects of the class content and structure will be communicated to you via announcements on the course eLearning site. You are responsible for checking this site regularly for announcements.
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: 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 course Graduate TAs will monitor this area, but the TAs 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. Rios or to the graduate teaching assistants 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, it may be filtered as spam or otherwise not be seen by your instructors.
Technical Support MasteringA&P and etext: contact Pearson tech support provides 24/7 assistance. You will always receive a “case number” that can be referenced later.
https://support.pearson.com/getsupport/s/

JustPhysiology: Contact your instructor or Robert Hester at robert@justphysiology.com. Robert is the president of JustPhysiology so he will not know details about the lessons or your grades. However, he will be able to help with technical issues like the site being down. Peerceptiv:

support@peerceptiv.com E-Learning in Canvas. For help with E-Learning, call the UF Computing Help Desk at 352-3924357, or visit the E-Learning support website: https://lss.at.ufl.edu/help.shtml. 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 (Links to an external site.)Links to an external site.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 TAs 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 (Links to an external site.)Links to an external site..

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 contact the instructor as soon as possible. In the case of illness, you must provide a signed note from your primary care provider indicating that you were unable to complete the assignment or take the exam on the day(s) in question. In case of illness or personal emergency, students must submit documentation to the Dean of Students Office (P202 Peabody Hall, dsocares@dso.ufl.edu) and request an instructor notification to be sent.

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.

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 (Links to an external site.)Links to an external site.. Career Resource Center: Reitz Union, 392-1601. Career assistance and counseling. http://www.crc.ufl.edu/ (Links to an external site.)Links to an external site.. Library Support: http://cms.uflib.ufl.edu/ask (Links to an external site.)Links to an external site.. Various ways to receive assistance with respect to using the libraries or finding resources. Accommodations for Students with Disabilities Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/ (Links to an external site.)Links to an external site.) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be

presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester. Course Evaluation Process Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu (Links to an external site.)Links to an external site.. 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. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/ (Links to an external site.)Links to an external site..

Topic Schedule

Wk #	Week of	Topic (chapter)	Simulation Tutorial	Research Report
1	May 11	Introduction to Physiology (1); Molecular Interactions (2)		
2	May 18	Compartmentation: Cells and Tissues (3); Energy and Cellular Metabolism (4)	Glucose Homeostasis_ Short-Term and Long - Term	
3	May 25	Memorial Day; Membrane dynamics (5)		Report1 1st draft & Excel file
4	June 1	Communication, Integration, and Homeostasis (6) Midterm1 on chapters 1 to 6	Thyroid hormone; Vasopressin	
5	June 8	Introduction to the Endocrine System (7); Neurons: Cellular and Network Properties (8)	Membrane potential	
6	June 15	Sensory Physiology (10); Efferent Division: Autonomic & Somatic Motor Control (11)		Report1 1st draft review
		Summer Break June 22-July 3		
7	July 6	Muscles (12)	Action potential	Report1 1st draft back evaluation Report1 2nd draft
8	July 13	Control of Body Movement (13) Midterm2 on chapters 7, 8, 10, 11, 12, 13		
9	July 20	Cardiovascular Physiology start (14); Blood Flow (15)	Blood donation	
10	July 27	Mechanics of Breathing (17); Gas Exchange and transport (18)	Alpha and beta adrenergic receptors	Report1 2nd draft review
11	Aug 3	Kidneys (19)	Baroreceptor reflex; GFR filtration forces	Report1 2nd draft back evaluation
12	Aug 10	Fluid and Electrolyte Balance (20) Final Exam on chapters 14, 15, 17, 18, 19, 20.		

1. 1st day of classes is May 11th

2. Monday May 25th is a holiday (Memorial Day).
3. No class on the week of June 22- July 3 due to summer break.
4. Last day of classes is August 14th.
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

- Read the textbook and watch any video links in the chapters
- Review the chapter learning objectives (found in Canvas) prior to reading (use as study guide)
- Recall the information – don't just try to memorize it.
- Study both independently AND with others
- Work on understanding the concepts behind the Mastering A&P questions and JustPhysiology questions
- 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?
- Answer and understand the concepts behind the homework questions and JustPhysiology questions. The homework and JustPhysiology 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.
- 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. Rios 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. Teaching other students is a great way to make sure you know the material. 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 built 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.
Use your instructor. I am here to help. If you are struggling, then get in touch with me. You can email anytime, and we can use Zoom for video conferencing.