

BSC3096– Human Physiology

Syllabus Policy

You are responsible for reading and following the instructions, guidelines and schedules in this syllabus, and for checking the e-Learning announcements at least weekly 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.

Course Description

The course involves the study of the functioning of human tissues, organs and organ systems, emphasizing the physical, chemical and mechanistic bases of normal physiology and the integrated function of the human body. The course also introduces pathophysiological changes associated with human diseases. 3 credits.

Prerequisites

Either Integrated Principles of Biology 2 (BSC 2011) or Applied Human Physiology with Laboratory (APK 2105C); and General Chemistry 2 (CHM 2046) or Basic Chemistry Concepts and Applications 2 (CHM1031), all with a minimum grade of C, or permission of instructor.

Corequisite

None

Instructors

COURSE INSTRUCTOR

Andrew Hill, Ph.D. (Neuroscience),

Adjunct Full-time Lecturer, Department of Biology

Office hours: Thursday 9-10:30 am in 123 Bartram Hall, Office phone: 352-294-0532, Cell phone 201-469-6508

COURSE GRADUATE TAs

None

COURSE SCHEDULE

This is an online course so there are no meeting dates. However, assignments have fixed deadlines, the Midterm and the Final are on fixed dates.

Course Fee

None. However, you will need to purchase a Peerceptiv license for \$6.95, see below.

There will be two exams: a midterm and a final. You are responsible for paying for these exams. You are allowed 2 hours to complete each exam. Exams proctored through ProctorU cost \$21.50 (2-hour exam), billed when you schedule the exam. All appointments should be made at least 3 days in advance, since reservations made within 72 hours of your exam are subject to a \$5 late reservation fee.

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

Human Physiology: An Integrated Approach. 7th Edition, by Dee Unglaub Silverthorn. Pearson, 2015.

ISBN-13: 978-0321981226

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 \$116.25.
- 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 \$153.50. Both options provide access to the same materials. Note that the UF All Access is quite a bit 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 \$37.50.

REQUIRED ONLINE SOFTWARE LICENSES

- Peerceptiv license for \$6.95 (peer assessment technology, improves writing and critical thinking skills by engaging students in the role of the teacher). The course code is **field34**. You will use this code to enroll yourself into the Peerceptiv class. You will create your own account, using your UF email as your user name.
- JustPhysiology, physiology simulation software, is \$10.00. The teacher will send a list of student UF email addresses to Just Physiology. They will then create an account for each student with the student's email address as the login name. A unique password is sent to each student. Students login and pay \$10 using PayPal.

CLASSROOM RESPONSE 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 contact Brad Maynard, our Pearson Representative at "brad.maynard@pearson.com". He can answer all Pearson related issues. See the document entitled "How to register for MasteringA&P" in the "Files" section of the course in Canvas.

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

To complete the tutorials outside of class, you must have a computer that runs the Windows operating system. As of December 2016, all of the simulations also run on Intel-based Macs running Boot Camp or VMware.

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 based on the HumMod simulation engine.

See "Required Online Software licenses" 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 352-392-4357, 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 lessons, homework experiments using JustPhysiology simulations, and writing and peer-review of 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 Just Physiology to explore systems physiology. These lessons have embedded questions that gauge and reinforce your comprehension of key physiology concepts. Each lesson will typically require 20 to 30 minutes to complete.

PEERCEPTIV

Create an account in Peerceptiv. See instructions above “Required Online Software licenses.”

RESEARCH REPORTS AND PEER REVIEW

You will individually complete one research report during the term. You will be provided with a research problem about a physiological phenomenon. You will explore a number of physiological variables to see if you can find evidence that either helps to support a hypothesis or can be used to reject a hypothesis. You will produce figures (with legends), a results section, and a conclusion section, which will contain an argument based on the evidence presented in the results section for supporting or rejecting a hypothesis.

For each report, you will typically do the following:

1. Design and conduct an experiment to test your hypothesis using the physiology simulation software.
2. Collect and analyze the data.
3. Craft a clear, well-supported draft report explaining the answer to the question.
4. Submit your first draft or your report for peer review.
5. Participate in peer reviews of other student draft reports.
6. Revise your report based on reviewer feedback.
7. Back-evaluate your reviewer feedback.
8. Submit your final draft of the report.
9. Participate in peer reviews of other student reports.
10. Back-evaluate the reviewer feedback you received on your report.

Your report must be formatted according to the detailed instructions provided for each report, 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. Completion of each research report, including the peer review process, will typically require 10 hours. The total grade will be determined from the following criteria:

- **Review Grade** - 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** - average score given by reviewers which is then curved, and then any Writing Late Penalties are subtracted.
- **Task Grade** - 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.
- **Overall** - The sum of all of the weighted grades

EXAMS

There will be one midterm exam and a final exam. These will consist mostly of problem-based, multiple choice, fill-in-the-blank, ordering and numeric (calculation) questions. The midterm will consist of approximately 50 questions, will be administered online (120 minutes in duration). The online final exam will cover all course material from the entire term but will focus primarily on the last section of the course. It will also consist of approximately 50 questions, it will be administered on the last day of class (120 minutes in

duration). Both exams will be closed-book and you will not be allowed to use notes. The exams will be proctored using ProctorU (<https://www.proctoru.com/>).

Grading

ASSESSMENTS

Assessment Type	Quantity		Percent of Total
MasteringA&P	24		30%
Simulation (Just Physiology)	13		20%
Simulation Research Report (Peerceptiv)	2		10%
Midterm Exam	1		20%
Final Exam	1		20%
<i>Total</i>			100%

GRADE DISTRIBUTION

Point Range (%)	Letter Grade
93.33 or higher	A
90-93.32	A-
86.66-89.99	B+
83.33-86.65	B
80-83.32	B-
76.66-79.99	C+

Point Range (%)	Letter Grade
73.33-76.65	C
70-73.32	C-
66.66-69.99	D+
63.33-66.65	D
60-63.32	D-
< 60	E

Grades will not be assigned by a curve. In other words, if your final point accumulation is 93.33%, then you are guaranteed to receive an A. This means there is no upper limit to the number of "A" grades that can be given out.

Note that a "C-" will not be a qualifying grade for critical tracking courses. In order to graduate, students must have an overall GPA and an upper-division GPA of 2.0 or better (C or better). Note: 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. Because this course is 3 credits (including the Discussion session), you should therefore expect to devote 9-12 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 probably be reflected in poor performance on the various assessments, causing you to receive a lower overall course grade.

Activity	Time (hours)
MasteringA&P	40
Textbook Readings and Reviewing Notes	90
Simulation Tutorials	20
Simulation Research Report	10
Midterm Exam	2
Final Exam	2
<i>Total</i>	<i>164</i>

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 e-Learning 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: 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 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. Hill 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 instructor.

Technical Support

MasteringA&P: Contact Brad Maynard, our Pearson representative at brad.maynard@pearson.com.

JustPhysiology: Contact your instructor (Andrew Hill) 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 352-392-4357, 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 <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 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: <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 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.

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>.

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.

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/) 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>. 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/>.

Course Schedule (subject to change)

Wk #	Week of	Reading Topic (Chapter)	Simulation Tutorial	Research Report
1	Aug 21	Introduction to Physiology (1); Molecular Interactions (2); 1 st half of extra credit course survey	Receptor-Ligand Binding; Glucose Homeostasis: Short-Term	
2	Aug 28	Compartmentation: Cells and Tissues (3); Energy and Cellular Metabolism (4)	Glucose Homeostasis: Long-Term; Homeostasis 1: ANS	
3	Sep 04	Labor Day ; Membrane dynamics (5); Communication, Integration, and Homeostasis (6)		Report 1st draft & Excel calc
4	Sep 11	Introduction to the Endocrine System (7); Neurons: Cellular and Network Properties (8)	Homeostasis 2: Cardiovascular Center	
5	Sep 18	Central Nervous system (9); Sensory Physiology (10)		Report 1st draft review
6	Sep 25	Efferent Division: Autonomic & Somatic Motor Control (11); Muscles (12)	Homeostasis 3: Baroreceptor & Homeostasis 4: Chemoreceptors	
7	Oct 02	Control of Body Movement (13)		Report 1st draft back evaluation
8	Oct 09	Practice Midterm; Midterm (Friday October 13)	Pressure-Flow 1,2,3	
9	Oct 16	Cardiovascular Physiology (14); Blood Flow (15)		Report 2nd draft & Excel calc

Wk #	Week of	Lecture Topic (Chapter)	Simulation Tutorial	Research Report
	Oct 23	Blood (16); Mechanics of Breathing (17)	Control of ventilation & Gas exchange	

10	Oct 30	Gas Exchange (18); Kidneys (19)		Report 2nd draft review
11	Nov 06	Fluid & Electrolyte Balance (20); Veteran's day	Water and Solute Distribution	Report 2nd draft back evaluation
12	Nov 13	Digestive System (21); Metabolism and Energy Balance (22)	Physiological Integration	
13	Nov 20	Thanksgiving	Glomerular Filtration Rate 1	
14	Nov 27	Endocrine Control of Growth and Metabolism (23); Exercise (25)		
15	Dec 04	Practice Final (not for credit); Reading Days		
16	Dec 11	2 nd half of extra credit survey; Final exam Thursday Dec 14th		

1. 1st day of classes is Aug 21st
2. Sept 4, Oct 5, Oct 6, Nov 22, Nov 23, Nov 24, are holidays.
3. Last day of classes is Dec 6th.

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

Chapter	Begin	End	No. of pages	
1 Intro	1	27	27	Whole chapter
2 Molecular	28	57	30	Whole chapter
3 Compartmentation	58	91	34	Whole chapter
4 Energy and ...	92	121	30	Whole chapter
5 Membrane ...	122	164	43	Whole chapter
6 Communication ...	165	195	31	Whole chapter
7 Intro to endocrine ...	196	225	30	Whole chapter
8 Neurons ...	226	273	48	Whole chapter
9 CNS	274	290	17	End before "Brain Function" on p 290
10 Sensory physiology	309	329	21	End before "The ear: hearing" on p 329
11 Efferent division	358	376	19	Whole chapter
12 Muscles	377	403	27	End just before "Smooth muscle" on p 403
13 Integrative 1 ...	417	433	17	Whole chapter
14 Cardiovascular	435	476	42	Whole chapter
15 Blood flow and ...	477	510	34	Whole chapter
16 Blood	511	524	14	End before "Hemostasis and ..." on p 524
17 Mechanics of ...	534	563	30	Whole chapter
18 Gas exchange ...	564	588	25	Whole chapter
19 Kidneys	589	617	29	Whole chapter
20 Integrative 2 ...	618	653	36	Whole chapter

21 Digestive system	654	692	39	Whole chapter
22 Metabolism ...	693	728	36	Whole chapter
23 Endocrine control ...	729	752	24	Whole chapter
25 Integrative 3	786	799	14	Whole chapter