

## **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: Monday 4:00-5:30 pm and Thursday 4:15-5:30 pm in 123 Bartram Hall, Office phone: 352-294-0532, Cell phone 201-469-6508. I can also meet outside of these office hours, just email me.

The best way to contact your instructor is through the Canvas system. However, you may also use the following email: [andrew.hill@ufl.edu](mailto:andrew.hill@ufl.edu)

#### **COURSE GRADUATE TAS**

None

#### **COURSE SCHEDULE**

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, see REQUIRED ONLINE SOFTWARE LICENSES below. You will also have to purchase a JustPhysiology license, see REQUIRED ONLINE SOFTWARE LICENSES below.

### **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. 8<sup>th</sup> 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 **\$140.00**. 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 about **\$38.00**.

### REQUIRED ONLINE SOFTWARE LICENSES

#### Peerceptiv

- Peerceptiv license cost during the 2017-18 academic year is **\$12.50** (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 **BSC3096 Fall 2018**. The course code is **wait52**. 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.

#### 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.

#### **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 see the document entitled “UF All-Access - Student Instructions Fall 2018.pdf” in the “Files” section of the course in Canvas. If you are still not able to register for the Pearson course content contact Brad Maynard, our Pearson Representative at “brad.maynard@pearson.com”. He can answer all Pearson related issues.

#### **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](http://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 (<https://elearning.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). You are allowed to collaborate with others on MasteringA&P homework.

## **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. Each lesson will typically require 20 to 30 minutes to complete. You are allowed to collaborate with others on JustPhysiology homework.

## **PEERCEPTIV**

You will need to create an account in Peerceptiv. See instructions above “Required Online Software licenses.”

You will write two scientific reports 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.

## **RESEARCH REPORTS AND PEER REVIEW**

You will individually complete two research reports 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—in other words give feedback on how helpful the review of your report was.
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 in Canvas under “Files.” 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 15 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 **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 approximately 35 questions. 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 consist of approximately 35 questions

The midterm exams will be administered in class. The final exam will be administered during the exam period at the end of the term.

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.

## PROCTORU

The exams will be proctored using ProctorU (<https://www.proctoru.com/students/>). 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. There is a temporary file ProctorU will download 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. You can see the technical requirements for the computer by visiting <https://www.proctoru.com/resources/test-takers/live/>

## Grading

### ASSESSMENTS

| Assessment Type                         | Quantity |  |  | Percent of Total |
|---|----------|--|--|------------------|
| MasteringA&P                            | 20       |  |  | 20%              |
| Simulation (Just Physiology)            | 12       |  |  | 15%              |
| Simulation Research Report (Peerceptiv) | 2        |  |  | 20%              |
| Midterm Exams                           | 2        |  |  | 30%              |
| Final Exam                              | 1        |  |  | 15%              |
| <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            |

The letter grades will be assigned by based on the point ranges given in the table above. 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                          | 36           |
| Textbook Readings and Reviewing Notes | 90           |
| Simulation Tutorials                  | 20           |
| Simulation Research Report            | 16           |
| Midterm Exams                         | 4            |
| Final Exam                            | 2            |
| <i>Total</i>                          | <i>168</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](mailto:brad.maynard@pearson.com).

JustPhysiology: Contact your instructor (Andrew Hill) or Robert Hester at [robert@justphysiology.com](mailto: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](mailto: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 case of illness or personal emergency, students must submit documentation to the Dean of Students Office (P202 Peabody Hall, [dsocares@dso.ufl.edu](mailto: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](mailto: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](mailto: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/](http://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 20  | Introduction to Physiology (1)   |  |  |
| 2    | Aug 27  | Molecular Interactions (2);<br>Compartmentation: Cells and Tissues (3);                          | Glucose Homeostasis_<br>Short-Term                 |  |
| 3    | Sept 03 | <b>Labor day, Monday Sept. 3<sup>rd</sup></b> ; Energy and Cellular Metabolism (4)               | Glucose Homeostasis_<br>Long-Term                  |  |
| 4    | Sept 10 | Membrane dynamics (5); Communication, Integration, and Homeostasis (6)                           |  | Report1<br>1st draft<br>& Excel<br>file                              |
| 5    | Sept 17 | Introduction to the Endocrine System (7)<br><b>Midterm1 on chapters 1 to 6 (Friday Sept. 21)</b> | Lost in the<br>dessert                             | Report1<br>1st draft<br>review                                       |
| 6    | Sept 24 | Neurons: Cellular and Network Properties (8); Sensory Physiology (10)                            | Autonomic Control of MAP:<br>Experiment            | Report1<br>1st draft<br>back<br>evaluation<br>; Report1<br>2nd draft |
|      | Oct 1   | Efferent Division: Autonomic & Somatic Motor Control (11); Muscles (12)                          | Autonomic Control of Heart Rate:<br>Experiment     | Report1<br>2 <sup>nd</sup> draft<br>review                           |
| 7    | Oct 8   | Control of Body Movement (13); Cardiovascular Physiology (14)                                    | Aaliyah and the Bear: ANS effects on blood vessels | Report1<br>2nd draft<br>back<br>evaluation                           |
| 8    | Oct 15  | Blood Flow (15) <b>Midterm2 on chapters 7 to 14 (Friday Oct. 19)</b>                             | TBA  |  |

| Wk # | Week of | Lecture Topic (Chapter) | Simulation Tutorial | Research Report |
|------|---------|-------------------------|---------------------|-----------------|
|------|---------|-------------------------|---------------------|-----------------|

|    |        |   |   |  |
|----|--------|---|---|--|
| 9  | Oct 22 | Blood Flow (15 contined); Mechanics of Breathing (17)                           |   | Report2 1st draft & Excel file                       |
| 10 | Oct 29 | Gas Exchange and transport (18); <b>Homecoming, Friday Nov. 2<sup>nd</sup></b>  | TBA   | Report2 1st draft review                             |
| 11 | Nov 05 | Kidneys (19)  | TBA   | Report2 1st draft back evaluation; Report2 2nd draft |
| 12 | Nov 12 | <b>Veterans Day Observed, Monday Nov. 12th</b> Fluid & Electrolyte Balance (20) | Glomerular Filtration Rate 1                            | Report2 2nd draft review                             |
| 13 | Nov 19 | <b>Thanksgiving Nov. 21-24</b> Metabolism and Energy Balance (22)               | His little sister gave him his life back: estimated GFR | Report2 2nd draft back evaluation                    |
| 14 | Nov 26 | Metabolism and Energy Balance (22 cont.); Exercise (25)                         | TBA   |  |
| 15 | Dec 03 | Exercise (25 cont.); Reading days -- Dec. 6 <sup>th</sup> & 7 <sup>th</sup>     |   |  |
| 16 | Dec 10 | <b>Final Exam: 12/12/2018 @ 3:00 PM - 5:00 PM in CSE E231</b>                   |   |  |

1. 1<sup>st</sup> day of classes is Aug. 22<sup>nd</sup>
2. Sept. 3<sup>rd</sup> is Labor Day.
3. No class on Nov. 2<sup>nd</sup> due to Homecoming
4. No class on Nov. 12<sup>th</sup> due to Veterans Day Observed
5. No class on Nov. 21-23 due to Thanksgiving
6. Last day of classes is Dec. 5<sup>th</sup>.

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