



PCB 4723
Animal Physiology
Summer 2019



Course Description

This course will elaborate extensively on the major topics of animal physiology. It will focus mostly on the study of vertebrate physiology, and with emphasis on mammals. Topics will include neurophysiology, neurotransmission, sensory reception systems, the nervous system, the endocrine, circulatory, urinary, respiratory, and digestive systems, osmoregulation, muscle physiology, motor outputs, and behavior. Relevant topics that are covered in pre-requisite courses will be reviewed briefly in the context of the course topics, but will not be discussed in greater detail. Therefore, only students who have taken all the pre-requisite courses, especially PCB 3023 or an equivalent, should be taking this course.

Instructor:

Dr. Walter Sotero-Esteva

Office: Bio 202 B

E-mail: wsotero@ucf.edu

(please indicate your section in your message)

Section Number: B001 (54108)

Class Times and Room:

Mo-Fr 9:30-11:20, Bio 209

Instructor's Office Hours:

Mo-Th 11:30-12, or by appointment
(no office hours on exam days)

References

Textbook: *Eckert Animal Physiology: Mechanisms and Adaptations*, 5th edition, by Randall, Burggren and French. Freeman, 2002. Recommended, but not required. Available at the UCF Bookstore.

Supplemental materials: all lecture notes with figures will be posted on Webcourses (the "Files" section of your PCB4723-19SummerB001 course on <https://webcourses.ucf.edu/>). You may bring printouts of these files to class, or you may access them in class with your laptop computer, tablet, or other devices.

Course Objectives

Students should demonstrate understanding of how specific organs and organ system work in different groups of animals, and be able to identify parallels and distinctions. Students should also have an understanding of how the different organs interact with each other in a concerted and regulated way. Learning outcomes include:

- Understand the mechanisms of electrophysiology and neurotransmission, and their importance in the physiology of all animal organ systems.
- Understand the endocrine system and how it regulates the functions of other organs and organ systems in different animals.
- Understand how individual muscles work and how the activities of groups of muscles are regulated and coordinated to produce specific animal behaviors.
- Understand how the circulatory and respiratory systems work, and the interactions between these two systems, in both air-breathing and water-breathing animals.
- Understand how the osmoregulatory and urinary systems work, and compare the osmoregulatory strategies of different groups of animals.

- Understand how food acquisition, digestion, and absorption occurs in mammals.

Exams and Grading

Exams. There will be five regular exams plus a comprehensive final exam. All six exams will consist of fifty multiple-choice questions (2 points/question). You will receive a score of 0 for any exam that you miss. Make-up exams may be given under special circumstances, but the instructor will ultimately decide the merit of each case. All exam scores will be posted on <https://webcourses.ucf.edu/>.

The lowest of your *six* exam scores will be dropped and will not count toward your final grade. For example, if you take the first five regular exams and do not take the final exam, you will receive a score of 0 for the final exam but that score will be dropped and will not count toward your final cumulative score.

Bonus quiz. In addition to the exams, you will also be offered an online bonus quiz that will be worth 10 points (2% of the grade bonus). The date, topics, and instructions for the bonus quiz will be announced at a later date.

Final grading. The following formula will be used to calculate your cumulative score and course grade: (sum of your *five* highest exam scores plus your score in the bonus quiz)/5. Results ending in .5 or a higher decimal round up to the next whole number (meaning an 89.5 would round-up to a 90%; an 89.4 would not). The following grading scale will be applied: 90-100: A, 80-89: B, 70-79: C, 60-69: D, 0-59: F. The score of the online Practice Quiz (see “Documenting” on this page) will *not* count toward your final grade. There will be no additional assignments for extra credits. Because of its format, there can be no make-up for the bonus quiz, so be sure not to miss it.

Exams Schedule

Exam 1: July 2	Exam 4: July 26
Exam 2: July 11	Exam 5: August 1
Exam 3: July 19	Final Exam: August 2

Documenting Students’ Academic Activity

All faculty members are required to document students' academic activity at the beginning of each term. In order to comply, please take the **Practice Quiz** on <https://webcourses.ucf.edu/> by the end of the first week (by 5 PM on the Friday of the first week of class). *Failure to do so may result in a delay in the disbursement of your financial aid.* The score of this quiz will *not* count toward your final grade.

Attendance

Your instructor will not keep a record of your attendance to class, but attending all the lectures is strongly encouraged. As a general rule, the students who attend lectures regularly are the ones that tend to earn better grades. The topics to be discussed in class may not be limited to those found in the textbook or class notes, and not all the sections from the textbook chapters will be covered in class. *Only topics covered in class will be included in the exams.* However, the bonus quiz may include topics not covered in class.

Please show respect for the instructor and your classmates by arriving on time to class and by staying until the lecture is over. Do not walk across the classroom in front of the instructor while he is lecturing. As a courtesy to everyone in the classroom, please silence your phones or any other devices during lectures and exams. Do not text or talk on the phone in the classroom during lectures. No smoking or vaping is allowed.

Calendar and Schedule of Lecture Topics for the Summer 2019 B-Term

The term begins on June 24th and ends on August 2nd.

There will be no class on July 4th.

The following schedule of topics may be subject to modifications.

<u>Units</u>	<u>Topics</u>	<u>Chapters*</u>
1	The physiology of neuronal function	5
2	Neurotransmission & the neuromuscular junction	6
3	Sensory reception & chemoreception	7
4	Mechanoreception & vision	7
5	The organization of the nervous system	8
6	Secretory tissues, signaling, and hormones	9
7	Mammalian hormones	9
8	The physiology of muscle contraction	10
9	Regulation of skeletal muscle contraction	10
10	Behavior	11
11	Sensory and motor networks	11
12	The circulatory system	12
13	Hemodynamics and the regulation of circulation	12
14	Gas exchange & acid-base balance	13
15	Breathing & regulation of gas transfer	13
16	Osmoregulation	14
17	The digestive tract	15
18	Digestion and absorption	15

*Eckert Animal Physiology, 5th edition

Guidelines for Exam Taking

- All six exams will be offered during regular class times (see “Exams Schedule” on page 2).
- From the beginning of the regularly scheduled time, you will have an hour and twenty minutes to finish each of the five regular exams and an hour and fifty minutes to finish the final exam.
- If you are taking the exams in the classroom, you will not need to bring your own scantrons. They will be provided. *If you are taking the exams at the Student Accessibility Services (SAS, see “Course Accessibility” on page 4) testing center, you will need to bring your own scantrons with you to the testing center.*
- If you will be taking the exams at SAS, you are encouraged to begin the exam one hour before the regularly scheduled time, if possible.
- Please choose appropriately between right- and left-handed desks.
- If you arrive late on an exam day, you will be allowed to take the exam but you will be required to finish by the scheduled time. However, *once the first student has finished the exam and left the room, no other students will be allowed in to begin the exam.*
- You may not have any visible communication devices with you during exams. This includes phones, tablets, laptops, music players, or any similar devices.

- Know your *Student I.D. Number* for the exams (your PID, not your NID).
- Do not engage in, enable, or promote cheating, or any form of academic dishonesty.
- *Do not write the answer letters on the sides of the exam pages. This will be considered enabling cheating and will carry an automatic **2-points deduction** from your exam score.*
- Be sure you have finished filling all the bubbles for your answers and your I.D. number on your scantron before time expires. *You may not take any additional time to do this. Failure to follow this guideline may result in a **2-points deduction** from your exam score.* To avoid this, you are encouraged to complete the I.D. number section of your scantron before answering any exam questions.
- Once the exam scores become available on webcourses you may review them during the regular office hours. Be ready to show a valid identification. However, you may not take any notes when reviewing your old exams.
- There are no deadlines to review any specific exams, but you are encouraged not to wait until the end of the term to see your exams because traffic through the office may be too high. There will be no office hours after the final exam.
- If you decide not to take the final exam, you do *not* need to show up on the day of the final exam or write your name on a scantron. You will automatically get a score of zero (which will be dropped if it's your lowest score).
- If you take all the exams except the final, you will have completed the minimum number of assignments required for calculating the final grade from exams taken, as detailed in the grading guidelines (see "Grading" on page 2). In that case, you will be considered a "finished the course" student for the purpose of answering any inquiries from the school about your participation in the course after the end of the term. That means you would not be eligible for an "incomplete" grade.
- *Note:* the scores of the bonus quiz will not be added to your total cumulative score until the scores of the fifth exam are received.

Course Accessibility

If you have any difficulties with course participation and/or test taking, please meet with your instructor to discuss reasonable options or adjustments. Do not wait too long before asking for help if you are not doing well or are having any difficulties. You are also encouraged to visit Student Accessibility Services (<http://sas.sdes.ucf.edu>) at Ferrell Commons 185, or contact them at 407-823-2371 or at sds@ucf.edu to explore options about special test-taking accommodations.

Because of their format, webcourses does not allow extra time for online quizzes for individual students.

UCF Cares

UCF Cares is a resource available to help you with your academic success and your overall well-being. It is an umbrella of care-related programs and resources dedicated to fostering a caring community of Knights. Visit <http://cares.sdes.ucf.edu> if you are seeking help for yourself or if you are worried about a friend or classmate. Free services and information are included for a variety of student concerns, including but not limited to substance abuse, sexual violence response, bias incidents, LGBTQ support,

mental health concerns, and financial and housing challenges. You will find links to the Knights Helping Knights Pantry, the Just Knights Response Team, UCF Victims Services, Veterans Academic Resource Center, Housing, Health Care, Legal Services, Counseling Services, Group Counseling Resources, UCF Safe Zone, and much more. You can also e-mail ucfcares@ucf.edu with questions or for additional assistance. You can reach a UCF Cares staff member between 8 a.m. and 5 p.m. by calling 407-823-5607.

If you are in immediate distress, please call Counseling and Psychological Services to speak directly with a counselor 24/7 at 407-823-2811.

Privacy of Student's Educational Records

The Family Educational Rights and Privacy Act (FERPA) of 1974 is a Federal law that protects the privacy of student education records. In accordance to this law, instructors may not disclose any personally identifiable information or student's records to anyone (including parents) without the written and signed consent of the student (unless ordered by a court or in case of an emergency, if the information is necessary to protect the health or safety of the student). These include student ID number, social security number, residency status, race/ethnicity, email address, test scores, grades, GPA, academic standings, class schedule, and transcripts.

In order to comply with FERPA, instructors may not disclose information about exam scores, grades or any other personally identifiable information or records to students via email, telephone or text messages. This information can only be released to the student in person and with a valid identification.

FERPA also gives students the right to review their educational records, the right to request amendment to records they believe to be inaccurate, and the right to limit disclosure from those records. For more information visit <https://ed.gov/policy/gen/guid/fpco/ferpa/index.html>.

Academic Integrity

As a UCF student, you are expected to follow the standards of conduct established in the *Golden Rule Student Handbook* (<http://goldenrule.sdes.ucf.edu>), a compilation of policies and procedures intended to define your rights and responsibilities as a student.

No disruptive behavior or disrespect to the instructor or to your classmates will be tolerated. Promoting or engaging in academic dishonesty in any form (*cheating* or *enabling cheating*) will be penalized. Any violations to the standards of conduct may result in judicial action, which could result in suspensions or expulsion from the University. At a minimum, violations of these rules may result in a permanent record of the infraction being placed in your degree audit.

You are responsible for knowing all course rules and policies. If any changes to the syllabus become necessary, the instructor will notify all the students about the changes in a timely manner before they are implemented.

The instructor has the ultimate authority to determine the correct interpretation of the contents of this syllabus.

