

**Physiology & Molecular Biology of Animals, PCB 4723C**  
**Spring 2015**  
**Dr. H. B. Lillywhite, Instructor**

Department of Biology  
Dr. Marta Wayne, Chair  
220 Bartram Hall, 392-1175

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**GENERAL CLASS INFORMATION:**

*Course Summary*

This course will feature the fundamental principles of animal physiology at molecular, cellular, tissue, and systemic levels of organization. Discussion will cover the processes and mechanisms of maintenance, activity, and integration in animals, with emphasis on vertebrates. The course is comparative in the sense that many different species of animals will be considered, although it is understood that principles learned from any animal is applicable, in general, to humans. Laboratory experience will include discussions of primary physiological literature, computerized simulations, a “hands-on” activity, problem sets, and team projects to reinforce principles discussed in lectures. Prerequisites: General biology (BSC 2010/2011), general chemistry (CHM 2046 or 2047), and general physics (either PHY 2048 or PHY 2053 or PHY 2060), all with minimum grades of C. Genetics, cell biology, and biochemistry are also highly recommended, but not a strict requirement. 5 Credit hours.

*Instructors*

**Course Lectures:**

**Dr. Harvey B. Lillywhite** (Lectures from 8:30 to 10:25 AM, Tuesdays and Thursdays, CLB room C130)  
Email: hblill@ufl.edu; voice phone: 392-1101  
Office hours: Tuesday, 1100-1200 AM, room 122 Bartram (*or by appointment*)

**Laboratory Teaching Assistants:**

**Daniel Sasson**, <dsasson@ufl.edu>  
**Vincent Cannataro**, <vcannataro@ufl.edu>  
**Mark Sandfoss** <mrsandfo@ufl.edu>  
**Nicole Botteri** <nbotteri@gmail.com>  
(Further information will be announced at the first laboratory meeting.)

*Required Course Materials*

Textbook: Sherwood, Klandorf and Yancey, *Animal Physiology. From genes to organisms*, 2<sup>nd</sup> Edition, 2013, Pearson/Benjamin Cummings (available at university book stores).

*Course Website*

The instructor will maintain a website that you can visit periodically (from your computer) to find various items of information that are not included in this syllabus. These include exam information, practice problems, postings of lecture notes, and laboratory information. This will be a site at Sakai and will be further updated with access information at the beginning of classes.

**Grading** There are 900 points possible in the class, distributed as follows:

Lecture portion of class:

2 midterms @ 200 points each (including final) = 400 points

1 final exam @ 200 points = 200 points

*Total points for lecture = 600 points*

Laboratory portion of class:

300 points to be distributed as announced by laboratory staff

*Total points for laboratory = 300 points*

Anticipated grade distributions:

Below are grade levels you *might expect* from various percentages of **total course points**, but the grade cutoffs (or scale) may be adjusted if warranted by the overall class performance. **Please note the following scale is an approximate expectation only:**

- A 90-100%
- B 78-89%
- C 60-77%
- D 50-59%
- E <50%

***Examinations***

Midterms and final exam are **tentatively** scheduled for the following dates, which are subject to change and will be announced:

1st Midterm: Thursday, February 12, in class

2nd Midterm: Thursday, March 27, in class

Final Exam: Friday, May 1, 7:30 to 9:30 in classroom

All written exams will be held in the usual lecture room unless announced otherwise. The two midterms and final exam are sequential and not cumulative; that is, each will cover a block of material different from the others. All exams will be based on *lectures, assigned readings* in the textbook, *specified assigned readings in the laboratory*, and *any other assigned readings or information* that might be announced in lecture during the term. Exams will consist of short-answer objective questions such as multiple choice. Further information concerning the format of examinations and suggestions for preparation will be given to you in class sometime prior to the first midterm.

There are three **absolute policies** relating to examinations. **1)** There are *no* make-up exams, unless previously arranged. *Exam scores are considered final two weeks after an exam is returned.* **2)** If you wish to have errors in grading corrected, you must do so *within one week* following the return of any exam. You *must* read the posted key to any exam *before* questioning the instructor about credit that was missed. Exams will not be re-graded merely for random attempt to "gain more points." It is expected that questions about the grading of exams will be legitimate and specific. **3)** Cheating will not be tolerated, and anyone caught at it will fail the course.

If you must miss an exam because of an allowable scheduled absence (e.g., to participate in a sanctioned university function), you must notify the instructor as soon as the even is scheduled or during the first week of classes. If you miss class because of an allowable but unscheduled 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 you were not able to attend class on the day(s) in question. It is not sufficient for the note to simply indicate you were seen at a clinic on a given day.

***Important tips for doing well in this class***

Please note this information *will not be repeated* in response to questions along the lines "How can I better my scores or performance in class" that might arise during the semester. Please consider the following advice carefully and **take it seriously**.

1. Factual detail is necessary for understanding mechanisms of function. However, bear in mind that examinations will stress learning and application of **principles** and **concepts**. Thus, when you study, do so for understanding; *do not simply memorize factual information*.

2. It is helpful to take notes during lecture and to organize these notes carefully. It is further helpful to formulate your own questions based on concepts covered in class or textbook, then write or verbalize answers to these questions. Studying with someone else, using a tape recorder, talking to a mirror, or writing answers to questions will help you to understand the information. In other words, some form of *active involvement* with the information (including taking notes during lecture!) facilitates learning, in contrast to simply “glancing over” your notes or having a casual approach to studying. Most important, you must keep up with a study schedule and not put off reading and study of information until a few days prior to an exam. This latter approach almost guarantees failure. Unfortunately, it is a common practice among a small subset of students who almost always experience poor performance as a result.
3. If you miss class, you must obtain notes for the missed days from a classmate. These will not be provided by the instructor, except for lecture notes and other information that are posted at the website. It is *your* responsibility to be actively engaged in learning from the lectures. ***Class lectures will not be repeated for individuals.***
4. Extra readings may be assigned in addition to the text assignments listed below. ***Please keep up with the assigned reading!*** You will do better if your reading is current (or ahead) and if you read difficult material more than once. Poor performance on examinations is usually associated with failure to keep a study schedule current. Lecture and textbook are intended to be complementary; do not expect material covered in lecture always to duplicate what is in the textbook, and *vice versa*. Also, do not expect the *structure* and *order* of information given in lectures to follow that in the text. Differences in the two approaches (lecture and text) will actually enrich your exposure to, and learning of, the information. Examinations will cover material from *both* lectures and the assigned textbook readings.
5. Attendance at class meetings is required and will be necessary to keep up with class information. Failure to attend class meetings has been found to correlate with poor performance on examinations. ***It is your responsibility to know what is happening in class.*** Email questions about exam schedules or other information provided here in this syllabus will not be answered.

### **Communications**

1. Before lectures, please avoid asking Dr. Lillywhite questions while he is in front of the computer loading the day’s lectures and trouble-shooting any computer problems. Once he completes this set-up, if there is extra time he will give you a “nod” and you may then ask questions.
2. Please do not send email communications to Dr. Lillywhite unless it is an emergency. He receives sometimes more than 100 emails per day, and he cannot keep up with a lot of student communications. This is simply a pragmatic constraint, but a very real one. He will not reply to questions that duplicate what is in this syllabus or given during lectures.
3. Please be courteous during lectures, to the instructor and to your fellow classmates. This means do not text or otherwise engage electronic devices for purposes other than taking notes. Do not read the newspaper in class.

### **Illness**

If you are ill with an infectious or contagious illness such as cold or flu, you should ***not*** attend class. If you have a fever associated with any illness, you should ***not*** attend class until you have been free of the fever for at least 24 hours. The instructor reserves the right to ask any student to leave the classroom at any time if there is a reasonable likelihood that the student’s presence in the classroom places other students at substantial risk of infection.

### **UF Counseling Services**

Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include: 1) UF Counseling & Wellness Center, 3190 Radio Rd, 392–1575, psychological and psychiatric services. 2) Career Resource Center, Reitz Union, 392–1601, career and job search services. Many students experience test anxiety and other stress related problems. “A Self Help Guide for Students” is available through the Counseling Center (301 Peabody Hall, 392–1575) and at their web site: <http://www.counsel.ufl.edu/>.

Students with disabilities are required to register with the Disability Resource Center (DRC) if they are requesting accommodations. The DRC may be contacted at (352) 392-2565 or refer to the website at <http://www.dso.ufl.edu/drc>.

## TOPICAL LECTURE SCHEDULE

Topic	Approx. No. of Lectures *	Required Reading **
Introduction to Physiology; Homeostasis & Integration	3	Chapter 1
Respiratory Gas Exchange		Chapter 11
- Principles and Aquatic Exchange	5	"
- Aerial Exchange	4	"
- Oxygen, CO <sub>2</sub> Transport in Blood	4	Chapter 11; also Chapter 9, pp. 391–393 <i>only</i> ; Chapter 13, pp. 636–651 <i>only</i>
Blood Circulation	5	Chapter 9
Energy Metabolism	4	Chapter 15, pp. 715–729
Temperature Regulation; Endothermy	5	Chapter 15, pp. 730–756
Nutrition, Digestive Physiology	2	Chapter 14
Oxidative Stress	2	Chapter 2, pp. 53–54 <i>only</i>
Water and Osmotic Regulation	5	Chapters 12, 13
Information Processing; Neurobiology	7	Chapters 4, 5
Muscle and Movement	4	Chapter 8
Sensory Physiology	4	Chapter 6

\* **Note:** A “lecture” refers to a 50-minute period, so there are *two* such lectures during one class meeting. Also, required readings may be modified according to changes announced in lectures or posted at Sakai.

\*\* **Text:** Sherwood, Klandorf and Yancey, *Animal Physiology, from Genes to Organisms*, 2<sup>nd</sup> Edition, Brooks/Cole, Cengage Learning, 2013.

### Laboratory

Please note there are *no laboratory sections meeting the first week of classes*. Laboratory sections will meet beginning the second week of classes.

Further information concerning the laboratory syllabus will be provided during the first week of classes. You may expect to see an updated version of this syllabus at that time. Each teaching assistant will also provide further clarification of expectations and schedule of activities in his/her respective laboratory section.

## Academic Honesty

In 1995 the UF student body enacted a new honor code and voluntarily committed itself to the highest standards of honesty and integrity. When students enroll at the university, they commit themselves to the standard drafted and enacted by students.

**Preamble:** In adopting this honor code, the students of the University of Florida recognize that academic honesty and integrity are fundamental values of the university community. Students who enroll at the university commit to holding themselves and their peers to the high standard of honor required by the honor code. Any individual who becomes aware of a violation of the honor code is bound by honor to take corrective action. The quality of a University of Florida education is dependent upon community acceptance and enforcement of the honor code.

**The Honor Code: We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.**

On all work submitted for credit by students at the university, the following pledge is either required or implied: **"On my honor, I have neither given nor received unauthorized aid in doing this assignment."**

The university requires all members of its community to be honest in all endeavors. A fundamental principle is that the whole process of learning and pursuit of knowledge is diminished by cheating, plagiarism and other acts of academic dishonesty. In addition, every dishonest act in the academic environment affects other students adversely, from the skewing of the grading curve to giving unfair advantage for honors or for professional or graduate school admission. Therefore, the university will take severe action against dishonest students. Similarly, measures will be taken against faculty, staff and administrators who practice dishonest or demeaning behavior.

If you witness any instances of academic dishonesty in this class, please notify the instructor or contact the Student Honor Court (392-1631) or Cheating Hotline (392-6999). For additional information on Academic Honesty, please refer to the University of Florida Academic Honesty Guidelines at: <http://www.dso.ufl.edu/judicial/procedures/academicguide.html>.

**Please photocopy this single page, read the statement in bold italics below, print and sign your name in the spaces below, and return the signed sheet to Dr. Lillywhite on or before Tuesday, January 13. Note: *this is worth 5 course grade points.***

***I have read the University of Florida Honor Code and herewith pledge to follow it during all work related to this course (PCB 4723C)***

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Printed name

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Signed name

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date