

**Animal Physiology - BIO 345-001 and -002**  
**Dobo Hall, Room 134 – MWF 11:00 – 11:50**  
**Fall Semester, 2009**

*Instructor :* Dr. Amanda Southwood, Dobo Hall Room 114  
tel 962-4064, e-mail [southwooda@uncw.edu](mailto:southwooda@uncw.edu)  
Office hours – M/T 09:30 – 11:00 (or by appointment)

*Course website:* <http://people.uncw.edu/southwooda/BIO345.htm>

*Text :* Hill, R.W., Wyse, G.A., and Anderson, M. 2008. Animal Physiology 2<sup>nd</sup> Edition, Sinauer Associates, Inc., Sunderland, MA.

*Course description :* Physiology is an integrative discipline that explores how living organisms function in their environment. In this course we will study physiological mechanisms of animals and put this information in the context of adaptation and evolution.

The course will cover the following general topics:

- 1) Basic principles of physiology
- 2) Nervous system
- 3) Muscle physiology
- 4) Cardiorespiratory physiology
- 5) Osmoregulation
- 6) Endocrinology
- 7) Digestion and nutrition
- 8) Energetics
- 9) Thermoregulation

*Course evaluation :* Your final grade for this course will be based on the number of points you earn out of 270 points. Points are distributed as follows:

Mid-term 1	60 points
Mid-term 2	60 points
Mid-term 3	60 points
Final exam	60 points
Quizzes	30 points
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TOTAL	270 points

Exams – There are four non-comprehensive exams scheduled for this semester, 3 Mid-term Exams and 1 Final Exam. Each exam is equally weighted and worth 60 points towards your final grade. Exams cover lecture material and relevant textbook readings. Exams will consist of multiple choice, short answer, short essay, or problem-solving questions. Please see the lecture outline for details re. dates for each exam. Study aids (Powerpoint slides used during lecture, reading lists, chapter outlines) are provided on the course website.

Quizzes – There will be six unannounced in-class quizzes throughout the course of the semester. Each quiz is worth 5 points towards your final grade. Quizzes will contain true-or-false or multiple-choice questions that cover material from previous lectures.

**NOTE ON EXTRA CREDIT:** There will be opportunities to earn extra credit points with in-class assignments. If you are not present in class the day that extra credit is assigned, you are not eligible to earn the extra credit points. I may also put extra credit questions on the exams. There will be no other options for extra credit in this course. Don't ask! The answer is "No!"

*Make-up policy :*

*Exams*

The only valid excuses I will accept for missing an exam are unavoidable conflicts such as a previously scheduled academic obligation, serious illness, injury, hospitalization, or a family emergency/obligation. You must contact me and provide me with written/verifiable documentation of the conflict **BEFORE** the exam. If you miss an exam and have a *valid* excuse for doing so (which you inform me of before the exam), a make-up exam will be administered. Make-up exams will not be the same format as the exam administered at the scheduled time. Make-up exams will likely consist of 3 essay questions worth 20 points each (for a total of 60 points). If you fail to provide me with your *valid* excuse for missing an exam **BEFORE** the exam, you will receive a grade of 0 for the missed exam with no exceptions. Please do not miss exams!

*Invalid Excuses for Missing an Exam – Greatest Hits!*

"I overslept!", "I forgot that the exam was today!", "I had a cold!", "My car broke down!"

*Quizzes (with a note on class attendance policy...)*

You are expected to attend all scheduled classes. The unannounced quizzes are a means for me to assess class attendance and insure that students are keeping up with course material. If you have a valid reason for missing class (academic, medical, or family obligation) and you let me know the dates you will be absent in advance, I will allow you to make-up any missed quizzes that occur during your absence. If you miss an in-class quiz and do not provide me with a valid excuse for your absence in advance, you will not be permitted to take a make-up quiz.

*Final letter grade :*

A	90 – 100%
B	80 – 89%
C	70 – 79%
D	60 – 69%
F	≤ 59%

\*\*\*NOTE\*\*\* I do not assign +/- grades

*"Face time" and E-mail etiquette:* I prefer to interact with students face-to-face rather than by e-mail. If you have questions about course material or your grade, please do not hesitate to talk with me after class, visit me during office hours (M/T 09:30 – 11:00), or schedule an appointment for a time that is convenient for you. If you have a very quick question about course material or schedule I can answer by e-mail, but more detailed explanations of course material and concepts are best answered verbally. Please do not ask me to send you your grade by e-mail. I will not send exam, quiz, or final grades by e-mail. Exams and quizzes will be returned to you in class in a timely manner (within one week of the exam/quiz date).

*Personal electronics :*

Use of cell phones is not permitted in this class. This includes texting! Please turn off your cell phones prior to class. I will interpret a cell phone ringing during class as a sign that I should give a pop quiz (I'm serious!). Laptops may be used in this class for taking notes, but not for surfing the internet, checking e-mail, playing computer games, or any other activity not related to BIO 345! Please turn the volume down on your computer to avoid distracting others. Laptops will be banned from the classroom for the rest of the semester the first time any laptop user is seen engaging in non-classroom related activity.

*A note on academic honesty...*

Please refer to the section entitled Academic Honor Code outlined in the Student Handbook and Code of Student Life (p. 6-10) to familiarize yourself with UNCW policy on plagiarism and cheating (<http://www.uncw.edu/stuaff/doso/documents/Code.Of.Student.Life.pdf>). I expect all students to read this information, to abide by it, and to be aware that academic dishonesty will not be tolerated in BIO 345.

*Students with disabilities :* If you are a student with a diagnosed disability and require special accommodations to attend BIO 345, please contact the Office of Disability Services in Westside Hall (x3746) to obtain an accommodation letter. Bring a copy of the accommodation letter to me and we will discuss the appropriate accommodations based on the recommendations of Disability Services.

*Helpful hints:* If you would like to do well in this class, I suggest the following:

- 1) Attend class and take good notes.
- 2) Take advantage of the resources available on the course website.
- 3) Read chapters before class and review notes soon after class. I advise reviewing notes at least once a week.
- 4) Ask questions during class and take advantage of office hours.
- 5) Do not wait until the day before an exam to start studying for that exam!

## Lecture outline

	Date	Chapter	Topic
1) Basic principles of physiology	W 8/19	1	Course introduction
	F 8/21	2	Molecules and Cells
	M 8/24	4	Membrane proteins and epithelia
	W 8/26	4	Passive and active transport
2) Nervous system	F 8/28	14	Nervous system
	M 8/31	11	Neurons
	W 9/2	11	Action potentials
	F 9/4	12	Synapses
	M 9/7		<i>No class - Labor Day Holiday</i>
	W 9/9	13	Sensory structures
	F 9/11		Review for Midterm #1
	<b>M 9/14</b>		<b>MIDTERM EXAM #1</b>
3) Muscle physiology	W 9/16	19	Muscle structure and function
	F 9/18	19, 20	Muscle fiber types
4) Cardiorespiratory physiology	M 9/21	21	Respiration, principles of gas exchange
	W 9/23	22	Respiratory structures
	F 9/25	23	Gas transport – oxygen
	M 9/28	23	Gas transport – carbon dioxide
	W 9/30	24	Cardiovascular system – hearts & vessels
	F 10/2	25	Diving physiology
	M 10/5		<i>No class - Fall Break</i>
W 10/7		Review for Midterm #2	
	<b>F 10/9</b>		<b>MIDTERM EXAM #2</b>
5) Osmoregulation	M 10/12	26	Body fluid regulation
	W 10/14	27	Osmoregulation in aquatic habitats
	F 10/16	27	Osmoregulation in terrestrial habitats
	M 10/19	28	Kidney structure and function
	W 10/21	28	Kidney structure and function
	F 10/23	28	Kidney structure and function
6) Endocrinology	M 10/26	15	Neural vs. endocrine control (Dr. Lema)
	W 10/28		Reproductive endocrinology (Dr. Lema)
	F 10/30		<i>No class – Dr. Southwood out of town</i>
7) Digestion and nutrition	M 11/2	5	Food, nutrition
	W 11/4	5	Digestion, absorption, Review for Midterm #3
	<b>F 11/6</b>		<b>MIDTERM EXAM #3</b>
8) Energetics	M 11/9	6	Energetics
	W 11/11	6	Factors affecting metabolism
	F 11/13	7	Metabolic pathways, aerobic & anaerobic
	M 11/16	7	Steady vs. non-steady states
	W 11/18	8	Energetics of aerobic activity
9) Thermoregulation	F 11/20	9	Introduction to thermoregulation
	M 11/23	9	Poikilothermy and ectothermy
	W 11/25		<i>No class - Thanksgiving Holiday</i>
	F 11/27		<i>No class - Thanksgiving Holiday</i>
	M 11/30	9	Homeothermy and endothermy
	W 12/2	9, 10	Thermoregulation in extreme habitats Review for Final Exam
	<b>W 12/9</b>		<b>FINAL EXAM, 11:30 – 14:30</b>