

# BIOLOGICAL SCIENCES 105 -- SYLLABUS

SPRING 2010

<u>INSTRUCTORS</u>	<u>OFFICE</u>	<u>PHONE</u>	<u>EMAIL</u>
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TEXTBOOK: *Integrated Principles of Zoology*, 14th edition, Hickman, Roberts, Larson

ATTENDANCE: Students are expected to attend all scheduled lectures and laboratories. Absences for illness (with Doctor's note), family emergency (with Dean of Students note) or religious holiday are excused. Other situations may be approved also. For excused absences we will try to arrange make-up examinations and laboratory work, but only if we are informed in advance of the scheduled exam or laboratory. If arrangements are not possible, the lowest grade on any piece of work will be assigned as the missing grade. If an absence is not excused by an instructor then no make-up will be arranged and a zero will result for that exam or laboratory.

BEHAVIOR: This is always a popular class that is held in a large classroom. In spite of these challenges, however, we will attempt to start each lecture on time and to maintain an atmosphere conducive to concentration and learning. To support this effort we expect responsible and appropriate behavior from each student. This includes being on time, ensuring that cell phones and beepers are turned off during class and, once the lecture period has begun, keeping traffic in and out of the room and unnecessary conversation to an absolute minimum.

LABORATORIES: Labs will meet in Hoffberger G27 and will begin promptly at the scheduled hour. Students are expected to have read assigned laboratory materials before class and laboratory period.

Lab work is due at the beginning of the laboratory period. If you are late to lab your work will be considered late. Late work is penalized 5 points per working day. No computer problems are accepted as excuses. Normally, late work will not be accepted after on-time papers have been graded and returned.

ANIMAL WORK: Bio 105 is a course that studies the biology of vertebrate animals. Laboratory work will include the dissection of properly prepared vertebrate specimens. In addition, experimental work on anesthetized animals will also be conducted. All work in this course has met the normal standards for teaching at the college level and has been approved by the college's Animal Care and Use Committee. **If you do not want to do animal work, do not take this course.**

EXAMINATIONS: Examinations will cover material in lectures, assigned readings and laboratory exercises.

FINAL GRADES:	Three one-hour examinations	45%
	Quiz and homework	5%
	Laboratory grade	30%
	Final examination	20%

**Bio 105 goals:**

- To develop an appreciation for the diversity and evolution of vertebrate life.
- To develop an understanding of scientific thought and experimentation.

**Specific Course objectives:**

1. To understand how evolution explains emergence of new adaptations and species
2. To know the main types of evidence supporting evolutionary theory
3. To know the phylogenetic relationships among deuterostomes
4. To know the major structural adaptations used by deuterostomes and how these function in the specific environmental conditions

**Reminder: All students are bound by the standards of the Academic Honor Code, found at [www.goucher.edu/documents/General/AcademicHonorCode.pdf](http://www.goucher.edu/documents/General/AcademicHonorCode.pdf)**

<u>Week</u>	<u>Date</u>	<u>Lecturer*</u>	<u>Topic</u>	<u>Readings</u>
1	Jan 26 or 28 Jan 29	S S	Basic Needs, Natural Selection and Adaptations Developmental Patterns and Classification of Organisms	Ch. 1, p. 199-202, 212-215 p. 158-170
2	Feb 1 Feb 3 Feb 5	S S S	Echinoderm Biology Echinoderm Diversity Introduction to Chordates	Ch. 22  Ch. 23
3	Feb 8 Feb 10 Feb 12	S R R	<b>QUIZ</b> and Early Vertebrates Biology of Sharks and Rays I (Respiration/ Circulation) Biology of Sharks and Rays II (Reproduction/ Osmoregulation)	Ch. 24 Ch. 24 Ch. 24
4	Feb 15 Feb 17 Feb 19	S S S	Bony Fish: Origin and Evolution Bony Fish: Structure and Function Fish Adaptations	Ch. 24 Ch. 24
5	Feb 22 Feb 24 Feb 26	 R R	<b>EXAMINATION I</b> Evidence for evolution Amphibians - Origins & Adaptations	 p.104-126, 132-135 Ch. 25
6	Mar 1 Mar 3 Mar 5	R R R	Review of Orders/Biology Metamorphosis Reptiles - Adaptations/Amniotes - Characteristics/Biology	Ch. 25 Ch. 25 Ch. 26
7	Mar 8 Mar 10 Mar 12	R R R	Reptiles - Review of Orders Reptile Biology Reptiles/ Dinosaurs	Ch. 26 Ch. 26
8	Mar 15-19		<b>SPRING BREAK</b>	

<u>Week</u>	<u>Date</u>	<u>Lecturer*</u>	<u>Topic</u>	<u>Readings</u>
9	Mar 22	R	Dinosaur Extinction	
	Mar 24	R	Dinosaurs: Biology	
	Mar 26	R	Reptile to Bird Transition Origin of Flight	Ch. 27
10	Mar 29		<b>EXAMINATION II</b>	
	Mar 31	R	Feathers & Adaptation for Flight	Ch. 27
	Apr 2	R	Avian Biology - Behavior & Ecology	Ch. 27
11	Apr 5	R	Avian Biology – Migration, Mammals - Overview	Ch. 27 and 28
	Apr 7	R	Mammals - Characteristics	Ch. 28
	Apr 9	S	Mammals - Reproductive Strategies	Ch. 28 and pp. 175-178
12	Apr 12	S	Mammals - Reproductive Hormones	Ch. 7
	Apr 14	R	Mammals - Integument & Derivatives	Ch. 28, pp. 644-648
	Apr 16	R	Mammals - Thermoregulation	p. 679-684
13	Apr 19	S	Mammals - H <sub>2</sub> O Balance	p. 673-679
	Apr 21	S	Mammals - Digestion	Ch. 32
	Apr 23	R	Mammalian Adaptations - Aquatic Mammals, Bats	
14	Apr 26		<b>EXAMINATION III</b>	
	Apr 28	S	CNS Evolution	p. 726-740
	Apr 30	S	Primate Characteristics	p. 632-640
15	May 3	S	Primate Evolution	
	May 5	S	Evolution of body plan in vertebrates	

\* S = Janet Shambaugh  
R = Hank Ratrie