

**BIOLOGICAL SCIENCE II**  
**ABIO 102 (4 credit hours)**

**Lecture instructor: Dr. Andrew Dyer**

**Phone:** 641-3443

**Office hours:** MW 10:00 -12:00 or by appt.

**Office** Sciences 101E

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**Lecture instructor: Erin Casey**

**Phone:** 641-3349

**Office hours:** TBA

**Office** Sciences 112B

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**Lecture:** MWF 9:00 – 9:50 am in Sciences Building Room 107

**Labs:** Weekly in Sciences Building Room 103. Labs will meet in the first week.

Sec 005      Wed    11:00 - 1:40 pm      Casey

**Textbook:** Biology (5<sup>th</sup>, 6<sup>th</sup>, or 7<sup>th</sup> ed.) by Raven, Johnson, Losos & Singer. The 7<sup>th</sup> edition is available as an ebook for about half-price at <http://textbooks.zinio.com>. You may use any other good biology textbook as well.

**Lab supplies:** You need a 3-ring binder and a set of colored pencils for lab.

**Course description:** Biological principles and concepts from the tissue through ecosystem levels of organization.

**Objectives:**

- To acquaint students with biological principles associated with multi-cellularity, development, phylogeny, ecology and evolution.
- To acquaint students with the anatomical organization of organisms including tissues, organs, and systems and their functions.
- To trace the development of organisms.
- To trace the phylogeny of organisms.
- To acquaint students with the behavior, ecology, and evolution of organisms.

**Competency:** By the end of this course, the student will have demonstrated the ability to:

- Discuss biological principles and topics of historical and current interest and importance.
- Describe the biological processes that operate at the multi-cellular levels including histological, organismal, population, community, and ecosystem levels of organization.
- Apply theoretical concepts in the laboratory by following a written procedure.

**Presentation:** This course will consist of lectures by the instructor, classroom discussion, and group and individual laboratory exercises.

**Evaluation:** Achievement of course objectives will be evaluated by several lecture exams, a comprehensive final, laboratory quizzes and exams, and lab notebook grades.

**Grading: The course grade** will be an average of the lab and lecture grades.

The **lecture grade** counts for 60% of the course and will be based on Blackboard quizzes (10% of the grade), 4 lecture tests equally spaced throughout the semester (see the schedule for dates) and a final comprehensive lecture exam.

The **lab grade** counts for 40% of the course and will be based on 2 practical tests, about 10 weekly quizzes, a notebook (graded twice), and attendance. The two practical tests will count for half the lab grade.

**Please note:** This is a lab science course. If you fail the lab portion of the class, you fail the class regardless of your lecture grade. In addition, 75% attendance in lab is mandatory.

#### **Additional comments:**

- \* This is a survey course and covers a great deal of material! I attempt to give the details I want you to know in lecture. However, the text is a survey book and not an encyclopedia. If you do not understand something, consult other biology books in the library. Almost all standard texts contain the same information. You will understand lectures better if you read the text sections **beforehand** and you will do better on tests if you keep up with the reading.
- \* Please drop by my office if you have questions or are having difficulty in class or any other reason. You may make an appointment or drop in if I am not busy with another student. If my office hours conflict with your schedule, we can make arrangements to meet at another time during the week.
- \* I occasionally make mistakes grading tests. Please check for them, but don't wait longer than a week to ask for a correction.

#### **Laboratory**

- \* 75% attendance in lab is required. You **cannot** get a passing grade in lab with more than three absences and you **cannot** pass the course if you do not pass the lab. There will be **no makeups** of missed lab quizzes and tests. None.
- \* The lab is heavily scheduled and you will be expected to stay the full time. Some of the written work will be assigned as homework. You will need your lab manual every week. Also, the textbook can be **very** helpful in lab.

#### **General**

- \* You will be expected to endorse the following **Honor Pledge** on every test:

“On my honor as a University of South Carolina Aiken student, I have neither given nor received any unauthorized aid on this assignment/examination. To the best of my knowledge I am not in violation of academic honesty.”

**Infractions of this honor pledge are taken very seriously.**

- \* If you have a physical, psychological, and/or learning disability which might affect your performance in this class, please contact the **Office of Disability Services**, 126A B&E, (803) 641-3609, as soon as possible. The Disabilities Services Office will determine appropriate accommodations based on medical documentation.

<b>TENTATIVE LECTURE SCHEDULE</b>			
<b>Week</b>	<b>Date</b>	<b>Topic</b>	<b>Chapters</b>
1	9 Jan	Introduction, Science	1
	11-13	Cell division, mitosis/meiosis	11,12
	16	<b>MLK Day- no classes</b>	
2	18	Genes,	1, 21,22,23
	20	natural selection,	
3	23	and evolution	
	25	Classification of life, Viruses	26
	27	Prokaryotes: Bacteria and Archaea	27
4	1	Eukaryotes: Protista	28
	3 Feb	Eukaryotes: Fungi	30
	6	<b>Exam I</b>	
5	8-10	Plant phylogeny	29
	13-15	Vascular plant structure	35
6	17	Transport within plants	37
	20	Reproduction	41
7	22	Plant development, tropisms	36, 40
	24	Growth and regulation	
8	27	<b>Exam II</b>	
	1-3 Mar	Animal phylogeny	31,32
	6-10	<b>Spring Break</b>	
9	13	Animal phylogeny	33,34
	15-17	Reproduction, sex, and development	50, 51
10	20-22	Tissues and integration	
	24	<b>Exam III</b>	
11	27-29	Digestion	43
	31	Circulation	44
12	3-5 Apr	Respiration	44
13	7-10	Excretion and homeostasis	49
	12	Ecology	53
14	14	<b>Exam IV</b>	
	17	Populations	53
	19	Communities	54
15	21	Ecosystems	55,56
	24	And the biosphere	
	1 May	<b>Final exam: 8:00 - 11 :00am</b>	comprehensive

## TENTATIVE LABORATORY SCHEDULE

Lab	Date	Topic	Activities
I	11 Jan	Scientific method	Animal behavior with fish
II	25 Jan	Mitosis and meiosis	Microscopes
III	1 Feb	Prokaryotes / Protista	Begin 1 <sup>st</sup> project
		Fungi	
IV	8 Feb	Plant diversity	
V	15 Feb	Monocots and dicots, plant tissues	
VI	22 Feb	Flowers/fruit/seeds	Dichotomous key
VIII	1 Mar	<b>Exam I</b>	Finish plant projects, turn in lab books
	8 Mar	<b>Spring Break</b>	
IX	15 Mar	Animal development	Begin 2 <sup>nd</sup> project
X	22 Mar	Animal diversity: Porifera-Mollusca	
XI	29 Mar	Animal diversity: Arthropod-Chordata	
XII-XII	5 Apr	Vertebrate tissues, form and function	
XIII	12 Apr	Ecology, food webs	Owl pellets
	19 Apr	<b>Exam II</b>	Turn in lab books