Fundamentals Of Life Science I (BIOL 2150): Honors
Diversity Of Life, Evolution And Adaptation
Fall 2012

Lectures (Both Sections):
TR 12:30-1:45 PM
BO 1053

Discussions:

Section 91	**Section 92**
F 10-10:50 AM	F 1-1:50 PM
Wolfe Hall 3246	Wolfe Hall 3246

Instructors:
Dr. John Plenefisch
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Scope of Course:

This course is designed primarily for science majors, and is an introduction to organismal biology including the diversity, comparative structure, organ system function, development, phylogeny, taxonomy and systematics of organisms, especially animals. We will also explore the principles of evolution including speciation and natural selection, examine ways in which organisms respond and interact with the external environment and briefly introduce ecosystems and animal behavior.

Course Learning Objectives:
Students who successfully complete this course will be able to:

- Define basic biological concepts and processes.
- Describe levels of organization and related functions in plants and animals.
- Identify the characteristics and basic needs of living organisms.
- Describe the relationships between organisms and their environment.
- Identify impacts on ecosystems.
- Describe how natural selection has resulted in the diversity of life on earth.
- Explain the processes by which animals acquire nutrients, water and oxygen, eliminate wastes, protect against foreign substances, acquire information about their environment and reproduce.

Required Text:

Sadava, D., Hillis, D. M, Heller, H. C., Berenbaum, M. (2011) Life: The Science of Biology, 9th Edition. Sinauer Associates, Inc. Sunderland, MA. In either print or electronic form

The Study guide to accompany Life: The Science of Biology, 9th Edition. Sinauer Associates, Inc., Sunderland, MA, is useful for many students and is bundled with the text at the campus bookstore.

Course Website: Take home exercises and problem sets will be posted on the course website, available via UT's Blackboard portal. If you have issues accessing the portal or with its function you can let me know, but for technical assistance you must contact Learning Ventures (classic view: www.utoledo.edu/dl, or mobile view: m.utoledo.edu/dl)

Expectations: It is expected that the reason you are taking this course is that you want to learn. The best way to succeed is to *read* the text, *attend* the lectures, and work the *study* questions. It is extremely helpful to read the text *before* attending the lecture. When you come to class it is expected that the focus of your attention will be on what is discussed in class, not what is on facebook, twitter, you tube, or even the homework for your chem class. I encourage you to attend the lectures, in class I will outline and illustrate the course topics. The class also provides an opportunity for you to ask questions about the topics as they are being discussed, and helps me know when you are having difficulties with the material. What is discussed in class is *much* more likely to appear on an exam than material that is not. If the material is unclear or confusing, I encourage you to ask questions. If you are having difficulties with the material talk to me directly after class, during office hours, via email or phone. My goal is to help you succeed in learning.

Let me emphasize that the purpose of this course is to help you learn and understand biology. If you find you are having difficulties mastering the material or doing poorly on the exams, make time to talk with me, sooner rather than later.

Lectures Sections versus Discussion Sections: Tuesday and Thursday classes will be mostly lecture format: I will introduce the weekly topic(s), present the salient details and/or logical arguments in a concise manner, and give illustrative examples. On Friday the class will be an interactive format with discussions of the weekly topics based primarily on *the questions you bring to class*. Friday class attendance is required since in addition to discussions, there will be in-class activities and graded assignments associated with these activities (100 points total over the semester).

Guest instructors: For some topics, individuals who are experts in the specific topic may be involved in lecture or discussion of the topic.

Homework and Online Quizzes: There will be either an assigned homework or quiz due Monday of each week (50 points total over the semester). The homework will always cover the upcoming week's topics. There will be no homework or quiz on weeks that exams are scheduled.

Exams:

The exams are used to evaluate your understanding and mastery of biological fundamentals. Questions will be based on both the readings and the lectures, with an emphasis on what is discussed in class. There will be 3 exams and a final. The first 3 exams will be given on September 18th , October 23th and November 20th and are worth 100 points each. The final exam will be on December 11th and will be worth 150 points. The exams will be a mix of multiple choice, fill in the blank, short essay, or other types of questions.

If you cannot take an exam during the normally scheduled exam time, you must make arrangements to reschedule *in advance*. If you miss an exam without making prior arrangements to reschedule, you will get a zero on that exam. Make-up exams will be exclusively essay. *Missing the final without making prior arrangements will result in a grade of F.*

Electronic devices in class: If you come to class you should be focused on what is going on in class, and not technologically enhanced distractions. Cell phones are not to be used in class for

either calls or texts. They should be off and placed out of sight and access. *If you are expecting an emergency call please let me know and an exception will be made.* Laptops may be used for note taking and other class related uses, this does not include checking your friends' status on Facebook or monitoring your stock portfolio.

While the exams are in progress, cell phones, tablets, laptops and other electronic devices must be placed where they are not accessible, visible, or audible to you or others in the class. Failure to adhere to this rule will result in confiscation of your exam and a grade of F on the exam.

Important Dates:

The last day to withdraw from the course is October 28. After that date, you are committed to completing the course.

Grades:

Grades will be based on the total points you earned out of a total of 600 points. There will be no extra credit points.

540 or above = A	420 to 439 = C
520 to 539 = A-	400 to 419 = C-
500 to 519 = B+	380 to 399 = D+
480 to 499 = B	360 to 379 = D
460 to 479 = B-	340 to 359 = D-
440 to 459 = C+	below 340 = F

Pointers to success:

- If you don't understand something, ask.
- Attend all the classes.
- Keep up with the readings.
- Study the material as you go. (Don't wait until the night before the exam.)
- Look or (better) copy over your notes after class, and identify the important points. (If you don't understand what you wrote down in class, ask.)
- Don't depend on memorization without understanding.
- Test yourself. Try the self quizzes and challenge questions at the end of every chapter and/or at the web site.
- Study in a group. Get to know at least one or two other members of the class so that you can compare notes, study together, and, if you can't make a lecture, you will have a source for notes.

Planned outline of lectures (<u>subject to change</u>, changes will be announced in class)**:**

DATE	TOPIC	TEXT READING Chapter (sections):
8/21	Biology, science and levels of biological organization	1
8/23	Basic genetics, DNA and mutations	12(1), 13(2), 15(1)
8/28	Evolution and Natural Selection	21, 22(1)
8/31	The origin of species and their relationships	23
9/4	History of life on Earth	25
9/6	Prokaryotes and Viruses	26
9/11	Eukaryotes, Origins and major Clades	27 (1,5)

9/13	Plants	28 (1,2,3), 29(1)
9/18	EXAM I	
9/20	Plant Structure	34
9/25	Transport and nutrition in plants	35, 36 (1,2)
9/27	Plant Reproduction	38
10/2	NO CLASS: FALL BREAK	
10/4	Fungi and Animals I	30(1), 31 (1,2,5)
10/9	Animals II	32(1), 33
10/11	Ecology and the Distribution of Life	54
10/16	Species Interactions	56
10/18	Materials and energy flow through the living world	57 (1), 58
10/23	EXAM 2	
10/25	Physiology, homeostasis, and temperature regulation	40
10/30	Animal Hormones	41
11/1	Animal Reproduction	43
11/6	Immunology	42
11/8	Neurons and Nervous Systems	45
11/13	Sensory systems	46
11/15	Effectors (Muscle & Skeleton)	48
11/20	EXAM 3	
11/23	NO CLASS: THANKSGIVING	
11/27	Gas Exchange in Animals	49
11/29	Circulatory Systems	50
12/4	Animal Nutrition	51
12/6	Salt, water balance and nitrogen excretion	52
12/11	FINAL EXAM (12:30-2:30 PM)	

Academic Honesty.

The Department of Biological Sciences and the University of Toledo have specific policies regarding academic dishonesty. The departmental statement is attached. The University of Toledo's policies on Academic Honesty can be found in the University Catalog under general policies