

Fundamentals Of Life Science I (BIOL 2150 sections 003 and 091)
Diversity Of Life, Evolution And Adaptation
Fall 2013

Class Time:

TR 1-2:40 PM

Class Location:

Wolfe Hall 1201/ Wolfe Hall 3246 (for students in section 091 first two weeks of class and exam days only)

Instructors:

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Scope of Course:

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

Required Materials:

Morris *et al.* (2013) "Biology: How Life Works", 1st Edition, W.H.Freeman, in either print or electronic form. Make sure you chose the option that includes access to the "Launch Pad". This text will also be used in BIOL 2170, so if you will be taking both courses get

the complete text. (If you are *only* taking BIOL 2150 you can chose to get the split Volume 2, chapters 21-48.)

Turning Technology's Response Card RF: aka "clicker". You will use this device in many courses throughout your UT college career.

Course Website: Basic information about this course and clicker registration are on the course website at UT's Blackboard portal. Pre-class quizzes and homework will be posted on the Launch Pad portal. A link to this courses Launch Pad portal will be provided on Blackboard, or you can access it directly by bookmarking the link. You will be able to access Launch Pad without a special code for the first three weeks of the semester, after that point you will need use the access code bundled with your text, or purchased separately.

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 social media, or homework for other classes. 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. Clicker questions are only in-class. 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.

Assessment: Your progress in meeting learning outcomes will be assessed through a combination of Homework, Pre-class quizzes, Clicker questions, and Exams. There is no extra credit.

Homework: There will assigned homework due Sunday at 5 PM each week, worth in total 8% of the final grade. The homework will always cover the topics discussed in the most recent class meetings. There will be no homework on the Sundays following exams. There will be no makeup homework. Late homework will be accepted within 5 days but your grade on the late assignment will drop 20% per day late.

Pre-class quizzes: There will be a pre-class quiz due by 9AM of each Tuesday and Thursday, except the first day (duh!) and exam days. These quizzes are worth in total 2% of your final grade, and will always cover the upcoming day's topic. There will be no makeup pre-class quizzes, but the lowest 2 quizzes will be dropped.

Clicker questions: There will be in-class questions that you will need to answer using the Turning Technologies Response Card RF (clicker) based on what is being discussed in class. A varying number of clicker questions will be asked each day, but in total they are worth 5% of your final grade. You will get full credit for correct answers and half credit for incorrect answers, and no credit for not answering a question. There will be no make-up questions, but the lowest 10% will be dropped. In order to get credit for using your clicker you will need to register on the Blackboard site. Clickers must be registered by Friday, August 23. Carrying a clicker for a student who is absent with the intent to give the absent student points is academic dishonesty. Both the student present student with 2 clickers and the absent student will receive a 0 for all clicker points for the term for academic dishonesty.

Exams: The exams are used to evaluate your understanding and mastery of biological fundamentals, and are worth 85% of your final grade. 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 12th, October 17th and November 21th and are worth 20% of your final grade each. The final exam will be on December 11th and will be worth 25% of your final grade. 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 short answer questions. *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 on other distractions. Laptops and tablets may be used for note taking and other class related use; this does not include checking your friends' status on Facebook, shopping, or keeping up with your favorite sports teams. Based on personal experience, I do not recommend using a smartphone for note taking or class activities, and in any case phones are not to be used in class for either calls or texts. They should be off and placed out of sight. *If you are expecting an emergency call please let me know and an exception will be made.*

On exam days, 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 be considered evidence of academic dishonesty (cheating) resulting in confiscation of your exam and a grade of F on the exam.*

Honors Students:

If you are taking this course as an Honors Student (e.g. you are in section 091) – you will **initially meet in WO3246** for the first two weeks of class **and for all exams!** In addition to the above requirements, you will be asked to complete an extra honors level project. We will discuss this during class meetings in WO 3246.

Important Dates:

The last day to withdraw from the course is October 25. After that date, you are committed to completing the course.

Grades:

Your grade is determined by adding together the percentage you earned from Homework, Pre-class quizzes, Clicker questions, and Exams.

90.0 or above = A	70.0 to 73.9 = C
87.0 to 89.9 = A-	67.0 to 69.9 = C-
84.0 to 86.9 = B+	64.0 to 66.9 = D+
80.0 to 83.9 = B	60.0 to 63.9 = D
77.0 to 79.9 = B-	55.0 to 59.9 = D-
74.0 to 76.9 = C+	below 55.0 = F

Pointers to success:

- Attend all the classes.
- If you don't understand something, ask.
- 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 LearningCurve activity on the website and Quick Check and Self Assessment questions in the chapters that are applicable to what we have emphasized¹.
- Study in a group. Get to know at least two other members of the class so you can compare notes, study together, and, if you can't make a lecture, you will have a source for notes.

Planned outline of topics (subject to change, changes will be announced in class):

DATE	TOPIC	TEXT READING (Chapter)
20-Aug	Biology, science and levels of biological organization	1
22-Aug	Basic genetics, DNA and mutations	Handout *
27-Aug	Evolution and Natural Selection	21
29-Aug	The origin of species	22
3-Sep	Phylogeny and the history of life on Earth	23
5-Sep	Human Origins	24
10-Sep	Carbon cycle and energy flow	25
12-Sep	EXAM I	
17-Sep	Bacteria and Archea	26
19-Sep	Eukaryotes	27
24-Sep	Multicellularity	28
26-Sep	Plants Structure and Function	29
1-Oct	NO CLASS: FALL BREAK	
3-Oct	Plant Reproduction	30
8-Oct	Plant diversity	33
10-Oct	Wrap up non-Animal physiology	
15-Oct	Animal Nervous Systems	35
17-Oct	EXAM 2	
22-Oct	Animal Sensory Systems and Brain Function	36
24-Oct	Animal Movement	37
29-Oct	Hormones	38
31-Oct	Animal Reproduction	42
5-Nov	Cardiovascular and Respiratory Systems	39
7-Nov	Animal metabolism, Nutrition and Digestions	40
12-Nov	Salt, water balance and nitrogen excretion	41
14-Nov	Immunology	43
19-Nov	Wrap up Animal Physiology	
21-Nov	EXAM 3	
26-Nov	Animal Diversity	44
28-Nov	NO CLASS: THANKSGIVING	
3-Dec	Ecology	47
5-Dec	Human impacts on the environment	48
11-Dec	FINAL EXAM (2:45-4:45 PM)	

¹ Points or scores earned in these exercises are to help you gauge your level of learning only, and do not apply to your final grade.

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