

# ENVIRONMENTAL SCIENCES 2160-002 - BIODIVERSITY

## Syllabus Fall semester - 2015

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Office Hours: Friday 1:00 pm – 3:00 pm (in WO1230)  
Lab Coordinator: Dr. Von Sigler  
Class Hours: Friday 9:00 am – 11:50 pm  
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\*Include EEES2160 in the subject line

### Materials for this course:

1. Recommended: A Photographic Atlas for the Biology Laboratory (6<sup>th</sup> Edition) by Ken M. Van De Graaf and John L. Crawley, Available at bookstore.
2. Recommended: Campbell Biology
3. Recommended: Pechenik. A Short Guide to Writing about Biology.
4. Recommended: Henderson's Dictionary of Biology
5. **Required:** Read and print a copy of each Laboratory from the course website, which can be accessed from the courses section of the “MyUT” website, at <http://myut.utoledo.edu>. Login, click on the “Student” tab, click on “My Courses,” and then select your section of Biodiversity Lab from the list. From there you will be able to access the lab exercise files in the “Labs” section of the website. Read each lab exercise before you attend the lab session. This will really help you to get through lab quickly and efficiently.
6. **Required:** Read and print a copy of each assigned journal article from the course website (as above)

### Course Description

This course is a companion to EEES 2150-Biodiversity, which serves as an introduction to the basic principles of evolution, diversity, and ecology. EEES 2150 begins with a discussion of the characteristics of living organisms, the hierarchical structure of biology, and its major organizing concepts. It briefly examines chromosomes, cell division, and the concept of heredity in order to understand the mechanisms of evolution and the formation of species. Biological diversity is emphasized in the context of evolution, rather than as a ‘parade of kingdoms.’ The lab course, EEES 2160, intends to complement the material covered in lecture, but does not follow the exact same sequence of topics as the lecture (mostly because we have to run the outdoor labs when it is relatively warm outside instead of when they correspond to the lectures).

### Evaluation Procedures

Your grade is based on 285 possible points, consisting of a combination of 15 lab assignments (160 pts total), 5 journal article critiques (10 pts each, 50 points total) and 5 quizzes (15 pts each, 75 pts total). All lab assignments will be due at the start of the next laboratory period. Quizzes will cover material of previous two to three labs. Subject to change.

## Schedule of Laboratory Topics and Assignment Due Dates

WEEK	DATE	TOPIC	ASSIGNMENT # & (POINTS)	Article Discussion	QUIZ DATE & WEEKS COVERED
Week 1	August 28	Introduction to the Scientific Method, Hypothesis Testing	<u>#1 Scientific Method</u> (10 pts)		
Week 2	September 4	Data Analysis and Introduction to Biodiversity			
Week 3	September 11	<b>FIELD TRIP</b> Measures of Biodiversity	<u>#2 Data Analysis</u> (10pts) <u>#3 Irwin Pre-lab</u> (10pts)		
Week 4	September 18 * Computer Lab BO1010	Simulating Natural Selection	<u>#4 Field Trip report</u> (10pts)	Article - MHC (10 pts)	<u>#1 (1-3; 15pts)</u>
Week 5	September 25	Mendelian Genetics	<u>#5 Natural Selection</u> (10pts)		
Week 6	October 2 * Computer Lab BO1010	Population Genetics	<u>#6 Men. Genetics</u> (10pts)	Article – Sparrow (10 pts)	
Week 7	October 9	Systematics and Phylogenetics	<u>#7 Pop. Genetics</u> (10pts) <u>#8 Phylogenetics</u> (10pts)		<u>#2 (4-6; 15pts)</u>
Week 8	October 16	Microscopy Lab		Article - Biodiversity (10 pts)	
Week 9	October 23	Invertebrates & Vertebrates	<u>#9 Microscopy</u> (10pts)		<u>#3 (7-8; 15pts)</u>
Week 10	October 30	Invertebrate & vertebrate Dissection	<u>#10 Inverts &amp; Verts</u> (10pts)	Article - Yellowstone (10 pts)	
Week 11	November 6	Fish Ecophysiology (Dissection)	<u>#11 Inverts &amp; Verts</u> Dissection (20pts)		
Week 12	November 13	Veteran's Day – No lab			
Week 13	November 20	Plant Evolution	<u>#12 Fish Ecophys.</u> (10pts)		<u>#4 (9-11; 15pts)</u>
Week 14	November 27	Thanks giving Break			
Week 15	December 4 * Computer Lab BO1010	Metapopulation Dynamics, Conservation Biology & Population Management	<u>#13 Plant Evo. (10 pts)</u>	Article - Lamprey (10 pts)	
Week 16	December 11	<b>Zoo Lab</b>	<u>#14 Management</u> (10pts) <u>#15 Zoo Lab (10 pts)</u>		
Week 17	TBD	Finals Week - NO LAB -Date for Quiz 5 TBD			<u>#5 (13,15-16)</u>

**Course materials:**

Blackboard will be used extensively for the coordination of this course.

- All lab manuals/handouts, supplemental materials, journal articles and assignments will be posted on blackboard. It is your responsibility to print them in advance and bring them to class
- Check for announcements prior to class
- The blackboard safe assignment link is required for online submission (emailed assignments will not be accepted).
- Your grades will be updated on blackboard regularly throughout the course.

**Grading**

Your overall grade will be calculated on a straight scale (A, 100 – 93%; A-, 92 – 90%; B+, 89 – 87%; B, 86 – 83%; B-, 82 – 80%; etc.) based on your earned points total (275 total points possible).

You will be evaluated on your level of participation during group activities and discussions. Refusal to participate or assume an equal portion of the work will result in a score lower than the group mark for the assignment.

**Absences**

In general, no provisions can be made for make-up labs. Should you have a specific date that you know you will not be in lab, let your TA know at least two weeks in advance for some chance of leniency. If you have an excused absence, you are responsible for all material covered in class which you missed. An advance excuse may only be used **once**, unless there are mitigating circumstances, and must meet the guidelines outlined by UT's missed class policy (see [http://www.utoledo.edu/facsenate/missed\\_class\\_policy.html](http://www.utoledo.edu/facsenate/missed_class_policy.html) for details).

**Collaboration in preparing assignments:**

In many of the exercises, you will work with one or more lab partners. You are encouraged to discuss the exercises with one another. But collaboration should **not** extend to the writing of lab reports or the analysis of data, unless specifically instructed to do so. Identical or highly similar phrasing in written reports of two or more students will be viewed with suspicion, and may be regarded as evidence of excessive collaboration, to be dealt with according to University rules regarding academic dishonesty.

**General Instructions for writing lab assignments:**

- Submission: An electronic copy (word doc or pdf) is to be uploaded to the SafeAssignment link in Blackboard for the appropriate lab prior to class on the due date, and a paper copy is due at the beginning of the lab period. **Late lab reports will be penalized 10% per day late. Assignments will not be accepted more than 7 days late (before the next lab period) without prior authorization.**
- Lab assignments must be typed, with proper spelling, grammar, punctuation, etc.
- All assignments should be written in an appropriate scientific format. It should be informative and concise.
- No quoting is allowed for any of the written assignments. Everything must be in your own words.
- Once the grade is given, there will be no resubmissions.
- See the Pechenik guide to writing on the course web page for detailed instructions on how to properly cite and format papers, and writing samples.