2015

163-09 General Biology II Laboratory

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GENERAL BIOLOGY II LABORATORY, BIOL 163, SPRING 2015
(This course satisfies 1d, 1e, 3a, 3b, 9a, 9b, 9c, 9d of NSTA Science Standards)

Section  Day    Time       Instructor    Office in Albers    Phone       Email
01    MW   8:00 - 9:50    Kathy Tehrani    105A        745-3494    tehranik@xavier.edu
02    MW   10:00 - 11:50    George Farnsworth    312A        745-2062    farnsworth@xavier.edu
03    MW   12:00 - 1:50    Mollie McIntosh    112        745-3363    mcintoshm2@xavier.edu
04    MW   2:00 - 3:50    Kathy Tehrani    105A        745-3494    tehranik@xavier.edu
05    TR   8:00 - 9:50    Matthew Neatrour    105D        745-3048    neatrourm@xavier.edu
06    TR   10:30 - 12:20    Matthew Neatrour    105D        745-3048    neatrourm@xavier.edu
07    TR   12:30 - 2:20    Howard Pecquet    312C        745-3623*    hpecquet@zoomtown.com
08    TR   2:30 - 4:20    Neema Nourian    105C        745-3808    nourian@xavier.edu
09    TR   4:30 - 6:20    Heather Balyeat    312B        745-4324    balyeath@xavier.edu

*This phone number is the Department phone number, not the individual faculty’s. When you dial this number, you will reach Deborah Kostoff; you can leave a message with Deborah for your instructor.

Course Description
General Biology II Laboratory (BIOL163) is the second half of a two-semester series in introductory biology laboratory exercises for science majors. The topics covered during the spring semester will be evolution, ecology, animal behavior, taxonomy and phylogenetics, and plant anatomy. In addition, you will read primary, scientific literature, design a scientific experiment (in teams), and write a scientific paper (individually).

Goals of the Course
By the end of this course you will have a better understanding of the core principles of:
1. Evolution (mechanisms, major evolutionary events, evidence for evolution)
2. Ecology
3. Animal behavior
4. Taxonomy/phylogenetics (major groups of living organisms, their characteristics, and the evolutionary relationships between the groups)
5. Plant anatomy
6. Scientific experimentation and scientific writing

Text

Grades
Your grade for this course will be calculated in the following manner:

<table>
<thead>
<tr>
<th></th>
<th>Scale</th>
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<tbody>
<tr>
<td>Exams (4)</td>
<td>A  93% - 100%</td>
</tr>
<tr>
<td></td>
<td>C+ 77% - 79%</td>
</tr>
<tr>
<td>Pre-lab Quizzes</td>
<td>A- 90% - 92%</td>
</tr>
<tr>
<td></td>
<td>C  73% - 76%</td>
</tr>
<tr>
<td>Post-lab Quizzes</td>
<td>B+ 87% - 89%</td>
</tr>
<tr>
<td></td>
<td>C- 70% - 72%</td>
</tr>
<tr>
<td>Scientific Paper Quizzes/Assignments</td>
<td>B  83% - 86%</td>
</tr>
<tr>
<td></td>
<td>D+ 67% - 69%</td>
</tr>
<tr>
<td>Independent Project Paper</td>
<td>B- 80% - 82%</td>
</tr>
<tr>
<td></td>
<td>D  60% - 66%</td>
</tr>
<tr>
<td></td>
<td>F  &lt; 60%</td>
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</table>

Description of Quizzes and Assignment
1. **PRE-LAB AND POST-LAB QUIZZES.** There will be two types of quizzes in this course, pre-lab quizzes and post-lab quizzes. Pre-lab quizzes will consist of a few general questions designed to determine whether you have read the assigned material for that day’s lab. There will be a pre-lab quiz on every lab meeting except on days when a post-lab quiz or an exam is scheduled. Post-lab quizzes, on the other hand, are longer and more comprehensive quizzes, intended to determine whether you have learned the material from the previous lab meetings and to help you prepare for the upcoming lab exams. The date for each post-lab quiz is listed on the schedule (below).

2. **SCIENTIFIC PAPER QUIZZES/DISCUSSIONS.** You will be expected to read and discuss three scientific papers that will serve as examples of primary, scientific literature. On days when a scientific paper is assigned, you will take a brief quiz on the content of the paper and then do a group assignment that will encourage you to discuss the paper and help you to better understand the mechanics of scientific writing. The quiz will be open note, i.e., you will be allowed to bring and use any handwritten notes you have on each paper.

3. **INDEPENDENT PROJECT PAPER.** Each team (3-4 students working together) will design and perform a scientific experiment of their choosing. The experiment should be biologically based, should be limited to one experimental and one control group, but it should not involve vertebrates. After the experiment is completed, each student will then independently write a scientific paper on the experiment that his or her team completed. There will be no rewriting of the paper. In other words, when you turn in your paper, your instructor will grade it and whatever grade you get will be the final grade for your paper. (Refer to Appendix A in the lab manual, which includes checklists, to help you write your paper.)
Missed Quizzes, Missed Exams, and Late Assignments

1. MISSED QUIZZES AND EXAMS. If you miss a quiz or an exam because of an unexcused absence, you will receive a zero for that quiz or exam. If you miss a quiz or exam because of an excused absence, as defined below, let your instructor know beforehand, or immediately after the quiz or exam date (no later than one day after the date the quiz or exam was given) to make arrangements for a makeup.

2. LATE ASSIGNMENTS. For any assignment that is turned in late, 10% will be deducted from your grade for that assignment for each day the assignment is late.

Attendance Policy
Attendance is mandatory. Unexcused absences will affect your grade. (Please keep in mind that you will be considered absent if you attend a section other than the one for which you are registered, unless you obtain prior approval from your instructor.) Being late to class will also hurt your grade, as all quizzes and exams start at the start of the lab. In other words, don’t miss any lab, don’t be late, and attend the section for which you are registered.

Excused Absences
An absence is considered excused only if it meets either of the two following criteria:
1. ILLNESS/EMERGENCIES. An absence is considered excused if it is due to an illness or a family emergency. However, you will need to explain to your instructor that your absence was necessary.
2. UNIVERSITY-SPONSORED EVENTS. An absence is also considered excused if it is due to a university-sponsored event (e.g., you are part of a team and the team is traveling at the time). You will need to provide evidence, however, that the event was university-sponsored.

Review Materials
Review materials from previous labs will be available in Albers 307. You can come in to review the material any time there is no class in 307, i.e., between classes, all day on Fridays, and during specific hours on some weekends (the weekend meetings will be announced ahead of time).

Conduct
No talking while the instructor is talking; cell phone and computer use is limited to lab work (no other purpose is allowed); leave lab clean and organized; return everything you use to its proper location.

Academic Honesty
Academic Honesty (From the 2006-2008 Xavier University Catalog, page 54): “The pursuit of truth demands high standards of personal honesty. Academic and professional life requires a trust based upon integrity of the written and spoken word. Accordingly, violations of certain standards of ethical behavior will not be tolerated at Xavier University. These include theft, cheating, plagiarism, and unauthorized assistance in assignments and tests...and the falsification of results and material submitted in reports. All work submitted for academic evaluation must be the student’s own. Certainly, the activities of other scholars will influence all students. However, the direct and unattributed use of another’s efforts is prohibited as is the use of any work untruthfully submitted as one’s own. Penalties for violations of this policy may include one or more of the following: a zero for that assignment or test, a grade of F in the course, and expulsion from the University.”

You may collaborate with fellow students on the development of ideas, the collection of data, and the construction of tables and graphs. However, whatever you turn in must be of your own creation, including organization, phrasing, figure captions, etc.

Disability Assistance
Anyone who feels he/she may need academic accommodation based on the impact of a disability should contact the Disability Services Office to arrange for such accommodation. The Disability Services can be reached by calling at 513-745-3280, visiting the office on the Fifth Floor of the Conaton Learning Commons, Room 514, or by email Ms. Cassandra Jones at jonesc20@xavier.edu. We rely on the Disability Services Office for assistance in verifying your eligibility for academic accommodations related to your disability.
<table>
<thead>
<tr>
<th>Lab #</th>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
</table>
| 1     | M/T, Jan. 12/13 | Exercise 1: Introduction to Evolution  
Exercise 2: Mechanisms of Evolution, Part 1 |
| 2     | W/R, Jan. 14/15 | Exercise 2 Continued (if necessary)  
Exercise 3: Mechanisms of Evolution, Part 2 |
|       | M/T, Jan. 19/20 | NO LAB (Martin Luther King Holiday) |
| 3     | W/R, Jan. 21/22 | Exercise 3 Continued (if necessary)  
Exercise 4: Mechanisms of Evolution, Part 3 |
| 4     | M/T, Jan. 26/27 | QUIZ 1  
Exercise 4 Continued (if necessary)  
Exercise 5: Major Evolutionary Events |
| 5     | W/R, Jan. 28/29 | Exercise 6: The Evidence for Evolution  
SCIENTIFIC PAPER QUIZ AND DISCUSSION #1 |
| 6     | M/T, Feb. 2/3  | EXAM 1 |
| 7     | W/R, Feb. 4/5  | Exercise 7: Ecology: Predator-Prey Relationships |
| 8     | M/T, Feb. 9/10 | Exercise 8: Ecology: Effects of Disturbance on Species Diversity |
SCIENTIFIC PAPER QUIZ AND DISCUSSION #2 |
| 10    | M/T, Feb. 16/17 | Natural History Museum Fieldtrip (off-campus) |
| 12    | M/T, Feb. 23/24 | Exercise 11: Introduction to Taxonomy and Phylogenetic Systematics  
Exercise 12: Kingdom Archaea, Kingdom Bacteria |
| 13    | W/R, Feb. 25/26 | QUIZ 2  
Exercise 12 Continued  
DUE: SCIENCE PROJECT OUTLINE (one per team) |
|       | M/T, Mar. 2/3  | NO LAB (Spring Break) |
|       | W/R, Mar. 4/5  | NO LAB (Spring Break) |
| 14    | M/T, Mar. 9/10 | EXAM 2 on everything covered since Exam 1 |
| 15    | W/R, Mar. 11/12 | Exercise 13: Kingdom Protista |
| 16    | M/T, Mar. 16/17 | Exercise 14: Phylum Porifera, Phylum Cnidaria  
Exercise 15: Phyla Platyhelminthes, Nematoda, and Mollusca |
| 17    | W/R, Mar. 18/19 | QUIZ 3  
Exercise 16: Phylum Annelida, Phylum Arthropoda |
| 18    | M/T, Mar. 23/24 | Exercise 17: Phylum Echinodermata, Phylum Chordata  
SCIENTIFIC PAPER QUIZ AND DISCUSSION #3 |
| 19    | W/R, Mar. 25/26 | Cincinnati Zoo Fieldtrip (off-campus) |
| 20    | M/T, Mar. 30/31 | EXAM 3 on everything covered since Exam 2 |
| 21    | W, Apr. 1      | Exercise 18: Kingdom Fungi  
R/M, Apr. 2/6 | NO LAB (Easter Holiday) |
| 21    | T, Apr. 7      | Exercise 18: Kingdom Fungi |
| 22    | W/R, Apr. 8/9  | Exercise 19: Nonvascular Plants, Seedless Vascular Plants  
Monday, April 13 | LAST DAY TO WITHDRAW FROM CLASS |
| 23    | M/T, Apr. 13/14 | DUE: SCIENTIFIC PAPER  
Exercise 20: Gymnosperm and Angiosperms |
| 24    | W/R, Apr. 15/16 | Exercise 21: Plant Anatomy |
| 25    | M/T, Apr. 20/21 | Krohn Conservatory Fieldtrip (off-campus) |
| 26    | W/R, Apr. 22/23 | QUIZ 4  
Senior Research Symposium (attendance is mandatory) |
| 27    | M/T, Apr. 27/28 | Senior Research Symposium (attendance is mandatory) |
| 28    | W/R, Apr. 29/30 | EXAM 4 on everything covered since Exam 3 |

*The holiday dates listed on this syllabus may not apply to other courses, as we usually have no lab both days (M/T or W/R) when only one of the two days is a holiday.

This syllabus is subject to change in the event of extenuating circumstances.