

# BIOLOGY 101 LABORATORY

Summer I 2011

Laboratory Director: Barbara Stegenga

TAs: M. Deal, E. Francisco

## I. LABORATORY REGULATIONS:

- A. **BIOLOGY 101 LABS BEGIN Thursday, May 12th**. Labs meet simultaneously in 208 and 209 Coker Hall, First Floor.
- B. Bring your lab manual to the first laboratory meeting which will last the full period: "Laboratory Exercises for Biology 101" is available in Student Stores.
- C. Prompt attendance is imperative: Instructions and demonstrations begin on time, so plan to get to lab early. It is expected that you read through the lab activities in the lab manual before coming to lab. If you read the material in advance and answer the questions throughout the lab manual, you will be better prepared to work on the assignments and take the quizzes and tests.
- D. You must be excused by your lab instructor within 48 hours of any absence. Admission slips for making up the lab are granted for:
1. Your own illness, or illness or death in your family with a written note from you.
  2. Official university function with written excuse from the official in charge.
- E. Generally, make up labs are not offered during the summer due to the fast pace of summer classes. If you know you have to miss a lab, you should immediately contact your TA. Do not assume an email has been received unless you receive a reply. You may only attend another lab to make up the one you missed if your TA has excused you. An **unexcused** lab deducts 10 points from your final grade and counts as a zero on any missed work.
- F. For safety reasons absolutely NO FOOD or DRINK is permitted in the laboratory rooms. Please turn off cell phones or quiet them as this is a distraction to your instructor and your fellow lab partners. Some lab exercises use dyes and stains or chemicals that might damage clothing. Pay attention to the lab you are doing each week so that you wear the appropriate clothing. No visitors are allowed in the lab.
- G. Copyright Information: All materials used in this course including notes and assignments are covered by copyrights and the University's Copyright Policy, which can be found at <http://www.unc.edu/campus/policies/copyright%20policy%2000008319.pdf>  
"STUDENT WORKS THAT CONSTITUTE NOTES OF CLASSROOM AND LABORATORY LECTURES AND EXERCISES SHALL NOT BE USED FOR COMMERCIAL PURPOSES BY THE STUDENT GENERATING SUCH NOTES."

## II. LABORATORY SCHEDULE:

Day	LABORATORY EXERCISE
Thursday, May 12	1. Scientific Method, Microbiology and Microscopy (Appendix)
Monday, May 16	2. Cells (Eukaryotes), Gram Stain (Appendix)
Tuesday, May 17	3. Enzymes (Enzymes draft due, Quiz)
Thursday, May 19	4. <b>TEST</b>
Monday, May 23	5. Genetics: The Principles of Mendel ®
Tuesday, May 24	6. Natural Selection and Adaptation (Present Case Study)
Thursday, May 26	7. Photosynthesis analysis (Procedures outline due, Quiz, Adaptation Essay due)
Monday, May 30	<b>NO LABS – MEMORIAL DAY</b>
Tuesday, May 31	8. Photosynthesis experiments (Draft of Intro, Materials & Methods due)
Thursday, June 2	9. Mammalian Anatomy: I ®
Monday, June 6	10. Mammalian Anatomy: II (Pig Part Quiz)
Tuesday, June 7	11. <b>FINAL EXAM</b>

® LAB REPORTS WILL BE DUE ON THESE DATES  
(See Assignments on next page)

# Biology 101 Laboratory Assignments

## Summer 2011

### Topic

### Assignment due

1. Scientific Method, Microbiology, Microscopy	
2. The Cell (Eukaryotes)	<ul style="list-style-type: none"> <li>● Outline of Lab Report for Hand Washing Experiment - <b>2pts</b></li> </ul>
3. Enzymes	<ul style="list-style-type: none"> <li>● <u>Enzymes draft due</u> - <b>2pt</b></li> <li>● Quiz - <b>2pt</b></li> </ul>
4. Test I	<ul style="list-style-type: none"> <li>● Test I - <b>30pts</b></li> </ul>
5. Genetics	<ul style="list-style-type: none"> <li>● Enzymes Lab Report Due - <b>20pts</b></li> </ul>
6. Natural Selection & Adaptation	<ul style="list-style-type: none"> <li>● Present Case Study - <b>2pts</b></li> </ul>
7. Photosynthesis Analysis	<ul style="list-style-type: none"> <li>● <u>Procedures Outline</u> - <b>2pts</b></li> <li>● Quiz – <b>2pts</b></li> <li>● Adaptation Essay Due – <b>8pts</b></li> </ul>
8. Photosynthesis Experiments	<ul style="list-style-type: none"> <li>● <u>Draft of Intro and Materials &amp; Methods section</u> - <b>2pts</b></li> </ul>
9. Mammalian Anatomy: I	<ul style="list-style-type: none"> <li>● Photosynthesis Lab Report Due – <b>20pts</b></li> </ul>
10. Mammalian Anatomy: II	<ul style="list-style-type: none"> <li>● Pig Part Quiz (Oral) - <b>8pts</b></li> </ul>
11. Final Test	<ul style="list-style-type: none"> <li>● Final Test - <b>50pts</b></li> </ul>

**TOTAL**

**150pts**

**Written Assignments:** All written assignments (The Outline of Hand Washing Experiment, Procedures Outline of Photosynthesis Experiment, Draft of Introduction and Materials and Methods Section of the Photosynthesis Lab Report, Photosynthesis Lab Report, Adaptation Essay, Procedures Outline of Enzymes Experiment and Enzyme Lab Report) are turned in to and graded by the TAs. Students do a peer review of the Photosynthesis draft that the TA then collects and grades. Drafts that are revised and graded are handed back to the student for use in writing the lab reports. Lab reports are to be no more than 10 pages of text in length and no less than 5 pages of text. The outlines should be 1-2 pages in length and the draft should be 2-3 pages in length. All written assignments are typed and include the Honor Code Pledge.

### III. LABORATORY GRADING:

The honor code is strictly upheld in this course. Your grade will be determined by tests, daily grades and grades on lab reports. Each of these is to be your own creative work and no collaboration outside of lab in writing these is allowed. Your pledge must be included on all written work turned in to your instructor. All tests are cumulative. Any grading concerns (appeals) must be submitted within a week after the assignment is handed back in lab. Extra credit assignments are not allowed. If you are having trouble with assignments during lab, talk to your instructor first. You may also use tutoring services on campus and the Writing Center for help with your written assignments.

All assignments you submit for this class should be written by you alone. Even if a group worked collaboratively or if data were collected with a partner, the written product must be done on an individual basis without referring to the reports of other students. The statement "I pledge that I have neither given nor received unauthorized assistance on this assignment and it is entirely my own creative work" reflects in spirit and in letter the Honor Code that is upheld at this university. It should be included on all written work.

In addition to two tests, a quiz on Photosynthesis and Enzymes will be given before each of these labs begins. The quizzes are worth two points each and cover any material in the lab manual on the topic. The oral quiz given during the Mammalian Anatomy lab is worth eight points and requires students to identify internal anatomy of a dissected pig. This is an oral quiz with two minutes to identify four parts. The other assignments due during the semester are written assignments. Any assignment that is turned in late will have 10% of the value deducted for each day it is late. Grading concerns must be submitted within a week of receiving the graded work. Grades are no longer negotiable as of the final exam day. Computer problems are not acceptable excuses for late work, therefore, you should always save your work frequently and in more than one location. Do not wait until the last minute to print your work.

*Lab Reports:* Lab reports are based on experiments performed in lab and should be written completely in your own words. Quotations should be cited. Reports should be comprehensive descriptions of the hypotheses of interest, experimental methods designed to test those hypotheses, results of the experiments, and interpretations of the results. Guidelines for writing a lab report are in the laboratory manual and include:

- Limitation of 10 pages of text exclusive of title page and graphs, charts and tables. Lab reports should not be less than 5 pages of text.
- All text should be double-spaced
- All margins should be 1 inch
- Written in past tense and in paragraph form with the following sections: Introduction, Materials and Methods, Results and Discussion.

To help you write a full scientific lab report, Biology 101 requires students to write an outline (1-2 pages long), a partial draft (2-3 pages long and typed) and critique another student's draft report of the photosynthesis experiment. An outline of the experimental procedure for the enzyme experiment is also required and should be 2-3 pages in length and typed. The outline should be written in standard hierarchical outline format using numbers and letters to identify sections and major points. The partial rough draft of the photosynthesis lab report should include the Introduction and Materials and Methods sections. The partial rough draft will then be critiqued in lab by your lab partners.

*Genetics Case Study Presentation:* You will work as a group with your lab partners to prepare and present a genetics case study from the lab manual. The assignment requires working outside of lab. Research on the genetic disorder assigned is done by all members of the group and is then presented in lab. Presentations are no longer than ten minutes and require participation by all students in the group.

*Adaptation Essay:* The writing assignment at the end of the Natural Selection and Adaptation laboratory is to

demonstrate your understanding of the mechanisms of adaptation by mutation and natural selection, using examples from the lab. You will explore evolutionary mechanisms in this two-page typed assignment.

## **IMPORTANT INFORMATION FOR BIOLOGY 101 LABS SUMMER 2011**

### **BIOLOGY 101L TIMETABLE**

- It is recommended that you not switch sections. If you absolutely have to, you must do so the first week of labs and you will need to fill out an add/drop form.
- If you decide to drop the lab, you will need to fill out a drop form and get the appropriate signatures. The biology department **WILL NOT** automatically drop you from the lab if you do not show up.
- The lab is a separate course from the lecture. If you decide to drop the lab, you can always take it another semester.
- Making up a lab during the semester is possible but needs to be approved when it is absolutely necessary. If you don't go to lab because you didn't feel like it or you were away, your absence will not be excused and you will not be able to make up the lab.
- No late work will be accepted after one week has passed unless it has been approved by your TA. Late work may not be handed in by a friend or roommate unless it has been arranged by you and your TA. No lab assignments can be submitted via email or any electronic method.

### **HINTS FOR DOING WELL**

- Attend lab.
- Arrive on time.
- Read lab exercise **before** coming to lab.
- Keep cell phones off.
- Record your TAs email address and learn their name. Email is the main form of communication between you and your TA but should not be used to turn in assignments.
- Understand the Honor Code (see below).

No collaboration on any work such as tests, quizzes, lab reports, essays and outlines is allowed in lab or outside of lab. The only collaboration allowed is on group work for the Genetics Case Studies which your TA will assign. Studying together for the tests and quizzes is encouraged.

### **BLACKBOARD**

Lab Grades will not be posted on Blackboard. PowerPoint slides containing the objectives of the course will be available to all Biology 101 Lab students. Individual TA PowerPoint Slides will be available in lab during lecture, but will not be posted. All lab sections will have the same slides posted for each week.

See Biology 101 Lab web page at <http://www.bio.unc.edu/courses/Biol101/>