

**Elizabeth Jordan; Instructor**

**Spring 2014**

**Saturday 9:35-12:50**

**[Jordanea@wlac.edu](mailto:Jordanea@wlac.edu)**

**sec. #0402**

**OFFICE HOURS: Before Class or by appointment Room MSA 309**

## **BIOLOGY 3-B LAB**

**Course Description:** This is a course in general biology designed to fulfill a laboratory science requirement and will also provide a foundation for advanced courses in biology, including human anatomy, physiology, and microbiology. The lecture portion of the course emphasizes the basic principles in biology, cell structure and function, and the levels of organization in the human body. Lecture topics include the scientific method, an introduction to biological chemistry, heredity, evolution, the genetic control of cellular processes, ecology, and the organ systems of the body.

This laboratory portion of the Biology course emphasizes the diverse types of organisms and their anatomy and physiology. Laboratory topics include an introduction to the microscope, study of the cell, study of enzyme activity, a survey of the microorganisms, plants, and animals that comprise the 5 Kingdoms of life, and the anatomic study of the earthworm, grasshopper, and fetal pig.

Students will perform lab manual exercises which incorporate completion of brief lab reports, mathematical computation, analytic techniques, and laboratory skills. Completion of the laboratory manual exercises requires written short answer observations, logical analysis of experimental results, and careful preparation of drawings to document observations.

**Student Learning Objectives:** A student who completes this class will be able to explain:

- (1) how to measure using the metric system
- (2) the parts, use, & care of the light microscope
- (3) the appearance of prokaryotic & eukaryotic cells when viewed through the microscope
- (4) how to test for sugars, starch, and protein
- (5) diffusion & osmosis and expression of solution concentration
- (6) the phases of mitosis and meiosis
- (7) the appearance of mammalian tissues in the microscope
- (8) how concentration, temperature, and pH affect enzymes

(9) taxonomic classification

(10) the key characteristics and the classification of bacteria, fungi, protista, plants, and animals

(11) the structure and function of the major organs of the fetal pig

**Required Books & Materials:**

**S.A. Fink; BIOLOGY LABORATORY; BioBooks Pub.; 2008**

**S. Mader; Biology; Inquiry Into Life; McGraw-Hill Publishers; 2008 (12th ed) [ISBN 978-0-07-298675-4]**

Student Study Guide for Mader's Biology; McGraw-Hill Publishers; [ISBN 978-0-07-298680-8]

Thomas G. Rust; A Guide to Biology Lab; Southwest Educational Enterprises (3rd ed.); 1983 (optional)

Rubber gloves

**Laboratory Resources:**

**<http://www.professorfink.com>**

**Virtual fetal pig dissection & review:**

**<http://www.biologycorner.com/pig/review.html>**

**[http://www.mhhe.com/biosci/genbio/maderbiology7/student\\_index.mhtml](http://www.mhhe.com/biosci/genbio/maderbiology7/student_index.mhtml)**

**There is no eating or drinking in the laboratory. Make sure cell phones are off.**

**Computation of the Course Grade:**

100 points for 12 quizzes (10 pts each), 2 get dropped.

Quizzes will be taken the first ten minutes of class. Extra time will not be permitted for those who are late. No make-ups under any circumstances. Quizzes will consist of True/False, multiple choice, matching, and fill-in-the-blank.

120 for labs, 10points each lab. ( Depending how many labs there are, If applicable, I will drop 2 labs). You must get your lab signed by me before you leave. If it is not signed by me, I will assume you never completed the lab. You are responsible for reading each lab experiment before attending lab. Labs will be due the following Saturday after each lab. My signature will ensure that you have completed the work before you leave.

**THERE WILL BE NO LATE OR MAKE-UP LAB EXAMS GIVEN!!****Grading Policy:**

88 - 100%	A
77 - 87%	B
62 - 76%	C
50 - 61%	D
below 50%	F

**Attendance Policy:**

Roll will be taken. There is a strong correlation between poor attendance and poor grades. **You are responsible for information, exam announcements, date changes, etc. presented in class, whether or not you are present**

Students who are given add slips must complete the process by the 3rd class meeting. No replacement add slips will be signed.

**Withdrawal from Class:**

**You are responsible** for your credit and enrollment status. Any student withdrawing from class must inform the admissions office of this decision. **Students failing to follow the correct procedure for withdrawals will receive a grade of "F" for the semester. No withdrawals are permitted after Friday, May 3.**

(see Schedule, page 1).

**Cheating/Academic Dishonesty:**

Each student is expected to do his/her own work on all assignments, reports, examinations, etc. **CHEATING ON AN EXAM WILL RESULT IN AN "F" FOR THE COURSE.**

Here is a list of some actions that are considered cheating:

**NO TALKING DURING THE Quiz or EXAM.**

**KEEP YOUR EYES ON YOUR OWN Quiz/EXAM.**

**USING NOTES OF ANY KIND (ON CARDS, STRIPS OF PAPER, DESK TOP, ETC.) DURING AN EXAM or Quiz IS NOT PERMITTED.**

Showing a fellow student your quiz/exam, or passing information in any way is not

permitted.

Place your answer sheet(s) directly in front of you.

If you have a question, quietly walk up to the instructor and whisper your question.

Translation dictionaries are not permitted.

Changing the answers on a returned Exam & claiming it was scored wrongly.

**All of these demonstrate a lack of Honesty & Integrity which is Essential in all jobs, all relationships, & in all Areas of Life.)**

**Recommendations for Succeeding in Class:**

- 1. Expect to Work. This is not supposed to be easy.**
- 2. Get to class on time, every time, and stay the whole time.**
  - Never miss class unless you're dead, & take good notes.
- 3. Find someone in the class to contact if you miss a meeting.**
- 4. Be organized! Use a daily calendar to set times for regular studying for each of your classes.**
- 5. Study & Review each night the class is given.**
  - Learning is easier if you schedule time daily to read, to think & review.
  - Every time you study. spend at least 10 minutes reviewing previous lessons. (These "refresher shots" are the secret for long-term memory.)
  - Focus your studying on the class Lecture Notes.
  - Read the relevant chapters in your textbook; hi-lite pertinent lines, & add these notes to your class notes (never read without writing).
  - Use the CD-ROM & Web-Sites.
  - Use associations to help you remember things.
  - Prepare note cards and carry them with you to review.
- 6. Begin preparing for your quizzes/exams at least 1 week in advance.**
- 7. Anything you turn-in (quizzes, exams, lab reports) should look neat (and labs should be in pencil).**

**Please Note: The schedule was written to the best of my knowledge and ability at time of writing. Schedule may change.**

## TENTATIVE SCHEDULE OF TOPICS

(schedule subject to change)

DATE:	LAB Manual Section	LABORATORY TOPIC:	
February 14		<b><u>NO CLASS:</u> LINCOLN'S BIRTHDAY</b>	
February 22	A B	Quantification, The Microscope	
February 29	B D	Quiz 1. The Microscope, Introduction to the Cell	
March 8	E	Quiz 2. Diffusion & Osmosis	
March 15	F	Quiz 3. Cell Division: Mitosis & Meiosis	
March 22	G, H	Quiz 4. Taxonomy Viruses	
March 29	C	Quiz 5. Identification of Organic Compounds	
April 5	I J K L	Quiz 6. Kingdom Monera Kingdom Protista SYMBIOSIS Kingdom Fungi Plant Kingdom: The Algae	Pages 576-583 Pages 583-590 Pages 703-704 Pages 591-596 Pages 584-586

April 12		<b><u>NO CLASS:</u></b> <b>SPRING BREAK</b>	<i>Celebration of the Vernal Equinox</i> <b>[&amp; PASSOVER!]</b>
April 19	I J K L	Kingdom Monera Kingdom Protista <b>SYMBIOSIS</b> Kingdom Fungi Plant Kingdom: The Algae	Pages 576-583 Pages 583-590 Pages 703-704 Pages 591-596 Pages 584-586
April 26	L N	Quiz 7. Plant Kingdom: Terrestrial Plants & Trees Angiosperm Reproduction [Angiosperm Structure]	Pages 610-619 Pages 619-621 Pages 176-183
May 3	O P	Quiz 8. The Animal Kingdom: The Invertebrate Animals	Chapter 31 Pages 626-651
May 10	O P	Quiz 9. The Animal Kingdom: The Invertebrate Animals	Chapter 31 Pages 626-651
May 17	V R	Quiz 10. The Skeletal System The Vertebrate Animals	Page 373 Pages 652-663
May 24	R S U	Quiz 11. The Animal Kingdom: The Vertebrate Animals Introduction to Histology  Fetal Pig Dissection &	Pages 652-663 Chapter 11 Pages 198-204 Pages 206-207

		<b>Organ Systems</b> <b>Digestive System</b> <b>Heart &amp; Circulation</b> <b>Hormones</b> <b>Male Reproductive System</b> <b>Female Repro. System</b>	<b>Chapter 14</b> <b>Pages 224-225</b> <b>Pages 396-397</b> <b>Pages 418-421</b> <b>Pages 423-424</b>
<b>May 31</b>	<b>R</b> <b>S</b> <b>U</b>	<b>Quiz 12. The Animal Kingdom:</b> <b>The Vertebrate Animals</b> <b>Introduction to Histology</b>  <b>Fetal Pig Dissection &amp; Organ Systems</b>  <b>Digestive System</b> <b>Heart &amp; Circulation</b> <b>Hormones</b> <b>Male Reproductive System</b> <b>Female Repro. System</b>	<b>Pages 652-663</b>  <b>Chapter 11</b> <b>Pages 198-204</b>  <b>Pages 206-207</b>  <b>Chapter 14</b> <b>Pages 224-225</b> <b>Pages 396-397</b> <b>Pages 418-421</b> <b>Pages 423-424</b>