Steven A. Fink; Instructor **Office: MSB 201**
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sec. #0400 **web site: www.professorfink.com**
OFFICE HOURS: 12:50-1:15 [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.; 2014

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

Laboratory Examination Schedule (Tentative):

Lab Examination 1.....	**MARCH 27 (FRI)**
Lab Examination 2.....	**MAY 1 (FRI)**
LAB FINAL EXAMINATION.....	**JUNE 5 (FRI)**

Computation of the Course Grade:

2 Laboratory Examinations.....60% of Course Grade
LAB FINAL EXAM.....40% of Course Grade

The average of the 2 "mid-term" exams will count 60% towards your Course Grade. The Final will count 40% of your Course Grade. About 1/4 of the questions on the Final Lab Exam will come from the previous 2 lab exams, and 3/4 from information presented after the 2nd Mid-term Exam.

Lab exams will consist of identification questions, as well as objective-type questions (ex: True/False; Multiple Choice; and Matching) that will be answered on **SCAN-TRON (882) forms**. You will be expected to provide SCAN-TRON 882 forms (available at the bookstore) and a **soft lead no. 2 pencil with a good eraser** for each examination for computer scoring.

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 8.**
(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 EXAM.

KEEP YOUR EYES ON YOUR OWN EXAM.

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

Showing a fellow student your 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 exams at least 1 week in advance.

7. Anything you turn-in (exams, lab reports) should look neat.

TENTATIVE SCHEDULE OF TOPICS

(schedule subject to change)

DATE:	LAB	LABORATORY TOPIC:	Mader Textbook
February 13		**<u>NO CLASS</u>: LINCOLN'S BIRTHDAY**	
February 20	**A** **B**	**Quantification in Biology** **Introduction to the Microscope** **[Today is the Last Day to Drop without a "W"]**	**Appendix A-7** **Page 53**
February 27	**B** **D**	**Introduction to the Microscope** **Introduction to the Cell**	**Page 53** **chapter 3**
March 6	**D** **E**	**Introduction to the Cell** **Diffusion & Osmosis**	**chapter 3** **Pages 71-73**
March 13	**E** **F**	**Diffusion & Osmosis** **Cell Division: Mitosis & Meiosis**	**Pages 71-73** **Chapter 5 (esp. Pages 86-87) (& Pages 94-96)**
March 20	**F** **G** **H**	**Cell Division: Mitosis & Meiosis** **Taxonomy** **Viruses**	**chapter 5 (esp. Pages 86-87) (& Pages 94-96)** **Pages 6-7 & Pages 569-571** **Pages 596-601**
March 27	**C**	**<u>LAB EXAMINATION 1</u>** **Identification of Organic Compounds**	**chapter 2**

TENTATIVE SCHEDULE OF TOPICS

(schedule subject to change)

DATE:	LAB	LABORATORY TOPIC:	Mader Textbook
April 3	**I** **J** **K** **L**	**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 10		**<u>NO CLASS:</u>** **SPRING BREAK**	***Celebration of the Vernal Equinox*** **[& PASSOVER!]**
April 17	**I** **J** **K** **L**	**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 24	**L** **N**	**Plant Kingdom: Terrestrial Plants & Trees** **Angiosperm Reproduction** [Angiosperm Structure]	**Pages 610-619** **Pages 619-621** **Pages 176-183**
May 1	**O** **P**	**<u>LAB EXAMINATION 2</u>** **The Animal Kingdom: The Invertebrate Animals**	**Chapter 31** **Pages 626-651**
May 8	**O** **P**	**The Animal Kingdom: The Invertebrate Animals** **[<u>TODAY</u> IS THE LAST DAY TO DROP!]**	**Chapter 31** **Pages 626-651**

TENTATIVE SCHEDULE OF TOPICS

(schedule subject to change)

DATE:	LAB	LABORATORY TOPIC:	Mader Textbook
May 15	**V**	The Skeletal System	Page 373
	R	The Vertebrate Animals	Pages 652-663
May 22	**R**	**The Animal Kingdom: The Vertebrate Animals**	**Pages 652-663**
	S	**Introduction to Histology**	**Chapter 11 Pages 198-204**
	U	**Fetal Pig Dissection & Organ Systems**	**Pages 206-207**
		Digestive System	**Chapter 14**
		Heart & Circulation	**Pages 224-225**
		Hormones	**Pages 396-397**
		Male Reproductive System	**Pages 418-421**
		Female Repro. System	**Pages 423-424**
May 29	**R**	**The Animal Kingdom: The Vertebrate Animals**	**Pages 652-663**
	S	**Introduction to Histology**	**Chapter 11 Pages 198-204**
	U	**Fetal Pig Dissection & Organ Systems**	**Pages 206-207**
		Digestive System	**Chapter 14**
		Heart & Circulation	**Pages 224-225**
		Hormones	**Pages 396-397**
		Male Reproductive System	**Pages 418-421**
		Female Repro. System	**Pages 423-424**
June 5		**FINAL LAB EXAMINATION**	