

Class: Biology 3B
Semester: Fall 2015
Class Times: T 9:35am-12:50pm
Section #: 0398
Location: MSA 309

Instructor: Nurit Ziv
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Office Hours: T 9:00am-9:30am
held in MSA 309

BIOLOGY 3B LABORATORY

Course Description:

This is a course in general biology designed to fulfill a laboratory science requirement as well as provide a foundation for advanced courses in biology, such as anatomy, physiology, and microbiology. This course should be taken concurrently with Biology 3A, the lecture portion of the biology course. Bio 3A emphasizes the unity of living things, the basic principles in biology, cell structure and function, and the levels of organization in the human body. Lecture topics in Bio 3A include the scientific method, an introduction to biological chemistry, heredity, evolution, genetic control of cellular processes, ecology, and the organ systems of the body.

Bio 3B, the laboratory portion of the biology course, is intended to teach students basic biologic principles through hands on experience. Bio 3B emphasizes the diversity among types of organisms and their anatomy and physiology. Laboratory topics include an introduction to the microscope, study of the cell, study of enzyme activity, and a survey of various organisms. Students will learn the physical appearance common to various types of organisms and what features are used to classify them. Some of the organisms we will examine are: bacteria, protozoa, yeasts, molds, algae, plants, and animals. Students will also learn their habitat, how these organisms obtain nutrients, and how they reproduce. Lastly, we will perform dissections on an 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 describe:

- how to measure using the metric system.
- the parts, use, and care of the light microscope.
- the appearance of prokaryotic and eukaryotic cells when viewed through the light microscope.
- how to test for the presence of organic compounds such as carbohydrates and proteins.

- the mechanisms of transport of substances across membranes, such as diffusion and osmosis.
- the expression of solution concentration.
- the phases of mitosis and meiosis.
- the appearance of mammalian tissues in the light microscope.
- factors affecting enzyme activity, such as concentration, temperature, and pH.
- taxonomic classification.
- the key characteristics and classification of the bacteria, fungi, protists, plants, and animals.
- The structure and function of the major organs of the fetal pig

Student Learning Outcomes:

West L.A. College has created a series of Student Learning Outcomes (SLOs). SLOs are general skills, knowledge, or masteries which students are expected to have after completing a course or program of study.

- **Biology Program SLOs:**

A student who completes this program will be able to:

1. explain how scientists investigate causes of natural biological phenomena.
2. utilize biological information to make informed decisions about environmental issues.
3. utilize biological information to make informed decisions about personal issues.

- **Bio 3B Course SLO:**

Determine whether an unknown solution contains a sugar, a protein or starch using the Benedict's test, Biuret test and the Iodine test.

- As assessed by carrying-out a series of laboratory analytic tests and successfully completing a laboratory report, exercises, and examinations (multiple choice, short answer, fill-in-the blank, and/or matching).

Required and Recommended Textbooks & Materials: (Required in bold)

- **Books:**

- **S.A. Fink; Biology Laboratory; BioBooks Pub.; 2014**
- S.S. Mader; Biology: Inquiry Into Life; McGraw-Hill Publishers; 2014 (14th ed) [ISBN 978-0-07-352552-5] (required for Bio 3A)
- S.S. Mader; Student Study Guide for Mader's Biology; McGraw-Hill Publishers; [ISBN 978-0-07-298680-8]
- T. G. Rust; A Guide to Biology Lab; Southwest Educational Enterprises (3rd ed.); 1983 (optional)

- **Materials to Bring to Class:**

You will be expected to bring **your own lab manual**, paper, a number 2 pencil, and colored pencils to each laboratory. Drawings are to be done in **pencil or colored pencil**.

***Rubber gloves (for earthworm, grasshopper (Lab P) and pig dissections (Lab U)).**

Laboratory Resources:

<http://www.professorfink.com>

For a virtual fetal pig dissection and information:

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

http://www.mhhe.com/biosci/genbio/maderbiology7/student_index.mhtml

Contacting Instructor:

I hold office hours before lab from 9:00-9:30am in the lab room. **If you cannot make this time, you can always email me at: zivn@wlac.edu.** If you have questions that can be answered in a relatively short email, feel free to email me.

Special Accommodations:

Students with special needs due to physical, communication, or learning challenges need to contact the DSPS office located in the Student Services Building (SSB 320), 310-287-4450, or dsp@wlac.edu to enquire about eligibility for special accommodations such as tutoring, test proctoring, extended exam hours, or other accommodations.

Tutoring:

The HLRC Tutoring offers tutoring in Bio3B. They are located on the first floor of the HLRC. For more information, you can contact them at: 310-287-4404.

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" in the course** as well as a filing of a report with the Dean of Students. A second offense will result in disciplinary action, which can include a dismissal from the College.

Some actions that are considered cheating are:

- talking during an exam
- failing to keep your eyes on your own paper
- having identical or similarly worded answers on quizzes/lab exercises/lab reports to a classmate
- using unauthorized notes of any kind
- using any electronic device – **note: cell phone use during an exam constitutes cheating.**
- showing a fellow student your exam
- passing information in any way
- using translation dictionaries
- turning in someone else's work
- exiting the room during the exam before its completion
- plagiarism
- providing your work for someone else to copy

To guard against cheating, you should place your answer sheet directly in front of you during the test, and whisper questions to the instructor.

Behavioral Policies:

Students are expected to adhere to the "Rules, Regulations & Policies of Student Conduct" (pp. 40-44 in the West Los Angeles College 2014-2016 Catalog; see: http://www.wlac.edu/academics/pdf/WLAC_Catalog_Policies.pdf). Cell phones should be turned off during class. If you must have a phone on, set it to vibrate and take the call outside. **Absolutely no cell phone use is permitted during a test.** There is no exception to this rule and using a cell phone during an exam will be considered cheating! No food is allowed in class. Drinks are permitted, preferably with a lid. If you spill, clean up the mess.

Attendance Policy:

Since this is a laboratory class, attendance is crucial. Roll will be taken. In order to be considered present, you must be present for the **entire duration** of the lab. Students, who are absent for **3 consecutive class meetings or 6 class meetings throughout the course**, without informing the instructor of a valid excuse **may be dropped**. Regular class attendance and performance of laboratory work will be considered in the determination of the student's participation/discussion grade. There is a strong correlation between attendance and performance.

Note: You are responsible for all information covered in class. If you must miss class, you are responsible for information, exam announcements, date changes, etc. presented in class, whether or not you are present. Find a classmate from whom you can obtain missing information!

Missed Labs:

If you miss a lab, you can make up the same lab activity you missed with another instructor during the same week, provided you get authorization from that instructor.

Note: all sections should be performing the same labs **within the same week**. However, some sections might be a week behind or ahead of us so make sure you are making up the correct lab and that you make it up within the week that you missed it!

Adding Class:

The last day to add a class in person is **Friday, September 11, 2015**. It is your responsibility to **submit your Add slip to Admissions and make sure you are registered in the class.**

Withdrawal from Class:

You are responsible for your credit and enrollment status. Any student withdrawing from class **must drop officially through the Admissions office. Students failing to drop officially, who simply stop showing up to class, may receive an "F" for the semester.**

- The last day to drop a class **without** a "W" is **Friday, September 11, 2015**.
- The last day to drop a class **with** a "W" is **Friday, November, 20 2015** (See Fall 2015 Class Schedule, P. 1 http://www.wlac.edu/wlac2schedule/pdf/FALL_wlac_classes.pdf).

Class Format:

Each class will begin with a brief lecture of the laboratory exercise for that day, followed by the laboratory exercise and a brief review at the end if time permits.

Taking notes is strongly encouraged as you will be tested on all information covered in lab (including lectures and lab activities). On quiz days, the class will begin with the quiz, followed by the lecture and lab exercise.

You are expected to **read the appropriate lab exercise before you come to class**. For most labs, you will work in groups of 2-4 students. To answer a question, you are highly encouraged to first try to find the answer on your own and then work collaboratively with your lab group to figure out the answer. You must write your own original answer in the lab notebook in your own words, even if you came to the conclusion collaboratively with your lab partners. If you are unclear about the material or my explanation, please ask me for clarification. You must stay for the duration of the laboratory to be considered present. **If you leave before the duration of the lab, you are considered absent for that lab.**

Grade Components:

Your grade will be calculated from 4 components: 1. quizzes, 2. lab reports, 3. participation, and 4. examinations: a midterm and a final.

1. Quizzes

There will be 6 short quizzes at the start of class on days indicated on the lab schedule. If you arrive after the quiz is over, you are considered late and cannot take the quiz.

- **Note:** To accommodate for uncontrollable life circumstances, I drop **TWO** quizzes. Assuming you take all 6 quizzes, the lowest two will be dropped and the 4 highest quizzes will account for 30% of your course grade. **If you have an emergency and miss a quiz, this will be one of the quizzes you drop. You cannot drop more than two quizzes.** That is why it is strongly recommended to attend **all** quizzes for the case of unforeseen circumstances.
- Format of Quizzes: quizzes will be short and based on the lab exercises covered in the preceding week (with the exception of Quiz 1 which will cover labs A + B). They will consist of short answers, fill-in-the-blank, identification questions, diagrams, calculations, drawings, and may contain a few objective-type questions. You do not need scantrons for quizzes.

2. Lab Report

There will be 1 lab report you will need to hand in accounting for 10% of your course grade. Lab report structure will be described later on in the course. You must hand in the lab report on the date it is due. **Late work will not be accepted** unless you have a valid excuse, in which case it should be handed in the following week.

3. Participation/Discussion Grade:

Your attendance, active participation, and contribution to class discussions will be taken into account to calculate this grade. You will receive credit for attendance of each lab only if you attend it for its entire duration. This grade will account for 5% of your total course grade. In the cases of borderline grades, this grade will be considered.

4. Exams:

Note: the midterm and final exams CANNOT be dropped. There are no late or make-up exams/quizzes! Please note the dates for the exams and make sure you attend all exams.

The midterm (25% of your grade) and final (30% of your grade) examinations will consist of objective-type questions (i.e. True/False, Multiple Choice, Identification, and Matching questions; scantrons will be used).

- The midterm will cover all material prior to the week of the midterm.
- The final exam is **comprehensive for the entire semester**. It will **emphasize** material covered **after the midterm**.

You will need **1 SCAN-TRON 882** form (50 questions on each side) and **1 SCAN-TRON 884-ES** (100 questions on each side). You will need a no. 2 pencil and a good eraser for each exam.

Important Dates:

- **Tentative Quiz/Examination Schedule:**

QUIZ 1	September 22
QUIZ 2	October 6
QUIZ 3	October 20
MIDTERM	October 27
QUIZ 4	November 10
QUIZ 5	November 24
QUIZ 6	December 1
FINAL EXAM (comprehensive)	December 15

- **Lab Report:**

Organic Compound Lab: **due on October 13**

Computation of Course Grade:

4 of 6 highest Quizzes @ 60 pts each	240 pts (30%)
1 Lab Report/Exercises @ 80 pts	80 pts (10%)
Participation/Discussion @ 40 pts	40 pts (5%)
Midterm @ 200 pts	200 pts (25%)
<u>Final Lab Exam (comprehensive) @ 240 pts</u>	<u>240 pts (30%)</u>
Total	800 pts (100%)

Calculation of your percentage in the class: your total points in class/800 points x 100.
For example, if by the end of the semester your total points in class is 616, your grade in class is $616/800 \times 100 = 77\%$, resulting in a 'B' in the class.

Grading Policy:

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

Recommendations for Succeeding in Class:

- Expect to work!
- **Focus on understanding “why” and “how” rather than on rote memorization.**
 - **If you don’t understand a concept, ask!**
- Come on time, attend all classes in their entirety, and take good notes.
- Pre-read the lab manual section topic as well as the corresponding section of the textbook prior to the lab.
- Review the lab manual, class notes, and your data after each lab.
- Be organized!
- Begin studying for exams at least one week in advance.
- Actively listen, read, and ask questions.
- **Find someone in the class from whom to get information in case you do miss a class or lose material.**
- Keep up with the material, rather than cramming the night before the exam.
- Use mnemonic devices such as acronyms and word associations.
- Use websites and animations provided in your textbook.
- Prepare flash cards and review them regularly.
- Anything you turn-in (lab exams, reports, etc.) should look neat.

**Tentative Schedule
(Subject to Change)**

Week	Date	Laboratory Topic	Lab	Mader Textbook
1	Sep. 1	Laboratory Orientation		
2	Sep. 8	Measurement in Biology	A	Metric System page (beginning of book)
3	Sep. 15	The Microscope & Its Uses	B	P. 51
4	Sep. 22	Quiz 1 The Cell	D	Ch. 3
5	Sep. 29	Cell Division	F	Ch. 5 (esp. pp. 86-87; 89-93)
6	Oct. 6	Quiz 2 Identification of Organic Compounds	C	Ch. 2 (pp. 29-40) & pp. 264-265
7	Oct. 13	Lab Report Due Introduction to Graphing; Diffusion & Osmosis	X E	pp. 68-70
8	Oct. 20	Quiz 3 Enzymes	CC	pp. 104-107
9	Oct. 27	Midterm (bring scantron) Taxonomy (Classification of	G	pp. 6-7 & 555-557;

Week	Date	Laboratory Topic	Lab	Mader Textbook
		Organisms); Viruses;	H	574-579;
10	Nov. 3	Kingdoms Monera (Domains Archaea & Bacteria) and Protista	I J	567-574; 584-592;
11	Nov. 10	Quiz 4 Fungi The Plant Kingdom	K L	593-601 Ch. 30 (pp. 604-616)
12	Nov. 17	Angiosperm Vegetative Organs; Reproduction in Angiosperms; Dichotomous Keys	M N MM	Ch. 9 & pp. 616-619; Ch. 10 (pp. 169-182)
13	Nov. 24	Quiz 5 The Animal Kingdom; Invertebrates (lower & higher Invertebrates) (bring gloves!)	O P	Ch. 31
14	Dec. 1	Quiz 6 Vertebrate Animals; Histology; Introduction to Hematology	R S T	Ch. 32; pp. 190-195; pp. 212-216
15	Dec. 8	Fetal Pig Dissection & Organ Systems (bring gloves!) -Digestive System -Heart & Circulation -Hormones -Urinary System -Male Reproductive System -Female Reproductive System)	U	Ch. 14 (pp. 253-262); pp. 196-198; pp. 218- 223; pp. 393-398; pp. 296-297; pp. 409-412; pp. 413-418
16	Dec. 15	Final Exam (bring scantron)		