Biology 3B(Section 0399) Fall 2015

Instructor: Bernice Filerman, Ph.D **email: filermba@wlac.edu**

Time: Thurs. 9:35am-12:50pm **MSA 309**

Office Hrs.: Thurs. 1:00-1:30pm **MSB 211or 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 that 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.

INSTRUCTIONAL METHODS: Each class will begin with an approximately 10 minute review of the previous lab (s) followed by a no longer than 30 min. presentation of the current lab. You are expected to take notes. This material will appear on exams. The remaining time is spent doing hands-on activities or experiments as prescribed by Prof. Fink's Lab Manual.

STUDENT LEARNING OBJECTIVES: Students will be able to explain:

- 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 microscope
- how to test for sugars, starch and protein
- diffusion and osmosis and expression of solution concentration
- the phases of mitosis and meiosis
- the appearance of mammalian tissues in the microscope
- how concentration, temperature and pH affect enzymes
- taxonomic classification
- the key characteristics and the classification of bacteria, fungi, protista, plants and animals

• the structure and function of the major organs of the fetal pig

INSTITUTIONAL STUDENT LEARNING OUTCOMES (SLOS)

- **Critical Thinking**: analyze problems by differentiating fact from opinions, using evidence, and using sound reasoning to specify multiple solutions and their consequences
- **Quantitative Reasoning**: identify, analyze and solve problems that are quantitative in nature
- **Technical competence**: utilize the appropriate technology effectively for informational, academic, personal and professional needs

PROGRAM STUDENT LEARNING OUTCOMES

Natural Science/Biological Science General Education Requirement (non-biology majors)

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.

BIOLOGY 3B COURSE STUDENT LEARNING OUTCOMES
At the end of the semester a student should be able to

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

REQUIREMENTS:

1. **Attendance**: 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.**
Roll will be taken; must take final; all exams are returned to the student in person. Students who are adding the class must complete the process by the 3rd class meeting

2. **Grading Policy**: 88-100% A; 77-87% B; 62-76% C; 50-61% D. Below 50% F.

Computation of the Course Grade:
4 quizzes: ..... = 300pts [75 pts. per quiz]
1 midterm ..... = 250 pts.
1 final ..... = 300 pts.
Lab Report(includes rough draft): ... = 100 pts.
10 drawings/worksheets/exit slips..... = 100 pts. [10 pts. each]
Class Contribution:.....= 50 pts. **[consistent quality participation including asking questions, carrying out the lab, collecting experimental data, making accurate and understandable diagrams and engaging in class**

discussions about the lab]

The total points for determining the course grade are1000. If any of the listed categories end up with more points than those indicated, then those extra points are always used as a **credit** toward your final grade. **Adding all possible points as shown above gives a total of 1100 points** to make the 1000 needed for a perfect score. **Your personal percentage** for your final letter grade at the end of the course will be determined as follows:

your personal total points /1000 regardless of how many additional total points are available; In other words, you could earn 1100 pts. which would then be divided by1000 and your percentage would be 110%! ☺

Examinations consist of objective questions (matching, true -false and identifying pictures and/or real lab materials.

3. Required Books and Materials:
S.A. Fink: Biology Laboratory; BioBooks Pub;2014
S. Mader Biology: Inquiry into Life; McGraw- Hill Publishers
#2 PENCIL; #882 SCANTRONS; 884-E
Gloves (for pig dissection)
Pencil and/or colored pencils

4. Laboratory Resources:
http://www.professorfink.com
Virtual fetal pig dissection and review
http://www.biologycorner.com/pig.review.html
http://mhhe.com/biosci/genbio/maderbiology7/studentindex.mhtml

5. Interpersonal Skills: Collaboration

6. Personal Skills: Organization and Communicatio

7. Lab Rules

- **Cell phones/beepers must be on a silent mode (off would be nice).**
- **No food or beverages in the room except water. This is an OSHA regulation**
- **There is a 20 minute break at approximately 10:45AM. The timing of the break is usually determined by where we are in the actual lab activity.**
- **Do not talk during formal presentations (no side-bar conversations) However, asking clarifying questions directed toward me is very much appreciated.**

8. Recommendations for Succeeding in the Class:

1. Work hard
2. Get to class on time every time
3. Find a contact buddy in the class
4. Be organized. Study by reviewing previous work

and then look forward to the upcoming week's work
5. Hi-lite appropriate sections in the lab manual
6. Make study guides that organize the content covered in lab, quizzes and midterm

9. Standards of Student Conduct
http://www.wlac.edu/academics/pdf/WLAC_Catalog_Policies.pdf

Board Rule 9803.10: Willful disobedience to directions of college officials acting in the performance of their duties.
Board Rule 9803.12: Dishonesty such as cheating
Board Rule 9803.15: Disruption or interruption of classes, administration, disciplinary procedures, or authorized college activities

Cheating/Academic dishonesty:
Here is a list of some actions that you should do so as not to be considered cheating during a test:
1. No talking during exams
2. Keep your eyes on your own exam
3. Place your answer sheet(s) directly in front of you and keep them covered
4. Do not use any kind of notes on cards, strips of paper, desk top, on an eraser, etc.
5. Do not show your exam to a fellow student or pass information in any way to a fellow student
6. Translation dictionaries are not permitted
7. If you have a question during the exam quietly come to the front to ask me
8. Do not change answers on a returned exam in order to claim it was scored wrongly

10. 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.

11. 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 **dsps@wlac.edu** to enquire about eligibility for special accommodations such as tutoring, test proctoring, extended exam hours, or other accommodations.

12. Dates to Remember:
Last day to drop WITHOUT FEE AND WITHOUT A W: Sept. 11
Last day to drop with a W: Nov.20

LAB SCHEDULE IS ON THE NEXT 2 PAGES.

WEEK	DATE	TENTATIVE LAB TOPIC SCHEDULE	LAB MANUAL SECTION	Mader textbook pages are for ed. 12
1	Sept. 3	Lab Orientation Questionnaire Sharing		
2	Sept. 10 **worksheet 1 due at end of period**	**Measurement in Biology** Scientific Notation Metric Conversions Using the Tools	A	Appendix C
3	Sept.17 **worksheet 2 due - end of per.**	**The Microscope and its Uses** Proper Care and Handling Magnification Field of View (Diameter of Field of View) Depth of Focus Estimating Real Size	B	p.53
4	Sept.24 **Quiz1** **worsheet 3 due- end of per.**	**The Cell** Introduction to Cell Structure	D	Ch.3 Ch.12 [227-231 (blood cells)]
5	Oct. 1 lab **worksheet 4 due-end of per**	**Cell Division**: Mitosis and Meiosis	F	Ch.5 (esp. 85-87); & 94-96
6	Oct. 8 **Quiz 2** **worksheet 5 due- end of per**	**Identification of Organic Molecules** Begin Experimental Design: Start Lab Report	C	Ch.2
7	Oct. 15 **worksheet 6 due**	**Diffusion and Osmosis** **Introduction to Graphing** Continue Experimental Design and Lab Report	E X	Ch.3 (71-74) Ch. 1 (6-7) Ch.27 (569-571)
8	Oct. 22	**ENZYMES**	**CC**	
9	OCT. 29	**Midterm (previous quizzes + new labs not yet tested)** Experimental Design Revisited/culmination of lab report		

WEEK	DATE	TENTATIVE LAB TOPIC SCHEDULE	LAB MANUAL SECTION	Mader textbook pages are for ed. 12
10	Nov. 5 **Lab report due**	**Classification of Organisms:** Taxonomy; Viruses; Kingdom Monera Kingdom Protista	G H I J	Ch.2(37-39);Ch.6(104-197) 596-601 576-583;585-590
11 **Quiz 3**	Nov. 12 **worksheet 7 due - end of per**	Kingdom Fungi; Symbiosis Kingdom Plants	K L	CH.28 (591-596) 703-704 CH.11 (198-204)
12	Nov. 19 **worksheet 8 due -end of per**	**Plant Kingdom:** The Algae: aquatic nonvascular Bryophytes: terrestrial nonvascular **Tracheophytes**: vascular plants (includes trees) Vegetative Organs & Reproduction in Angiosperms and Gymnosperms	L M N MM	CH.28 (528-586); CH.29 (610-618; 619-621; 176-183)
13	**Nov. 26**	**THANKSGIVING HOLIDAY ☺**		
14 **Quiz 4(take home)**	**DEC. 3** **worksheet 9 due -end of per**	**Animal Kingdom** Invertebrate Animals Vertebrate Animals Tissues Skeletal System	O P R V S	CH.9 (612-618) 618-621; CH.10 (171-180)
15	Dec.10 **worksheet 10 due-end of per**	Fetal Pig Dissection and Organ Systems: Digestive System Heart and Circulation Hormones Male and Female Reproductive Systems Introduction to Histology	U	Ch.30 (629-645) 626-651;652-663;373 Ch11(206-207)(198-204);Ch.14 Ch.12 (223-225) Ch.20 (396-397) Ch.21(418-421)(422-423)
16	**Dec. 17**	**FINAL EXAM PERIOD: final emphasiizes labs not on the midterm and previous quizzes. Midterm and old quizzes will be revisited by using questions from those old exams.**		