MOLECULAR & CELL BIOLOGY LAB/DISCUSSION - BIOL 201L.501
SYLLABUS FOR FALL 2015 SEMESTER
DR. CLAUDIA BARRETO

OFFICE HOURS: You're welcome to attend office hours so I can help you succeed. My office is HS100A. You do **not** need an appointment to come to my regularly scheduled office hours on MONDAYS 7:30-8:30AM & 1:30-2:30PM, WEDNESDAYS 7:30-8:30AM & 10:30-11:30AM, & THURSDAYS 10:30-11:30AM. *If you have a conflict at these times, please contact me by email (barr@unm.edu) so we can schedule an alternate time to meet.*

LAB/DISCUSSION MEETS: Tuesdays (T) from 10:30 to 11:45AM in A135. ***You are required to complete all class & lab learning activities to pass this course.***

LEARNING OUTCOMES: In lab we will participate in student-centered, active learning activities that will help us achieve the course learning outcomes (= gain an understanding of the concepts and processes we study over the semester as per our course syllabus). From ***your participation*** in the lab learning activities *you* will be expected to ***demonstrate your:***

- ***Comprehension of the biological principles and processes we study in molecular & cell biology over the semester***
- ***Ability to solve problems by applying the scientific method.***

Students tell me that the atmosphere and activities in lab make it easy to learn biology and the skills and logic used in scientific research. They also claim that participating in the lab projects definitely helps them to better understand and appreciate biology.

PREPARING FOR LAB: ***Read & study*** *each lab exercise* ***prior*** *to coming to lab* so you will have the background information and understand the logistics of the learning activities. *You will have trouble learning the material and completing the lab exercises if you do not come to lab prepared.*

Textbook: UNM Biology Lab by Perry, Morton & Perry, 2006, Thompson – Brooks/Cole. ISBN: 0-495-14235-2

GRADING: 33% of your course grade is based on your performance in Lab/Discussion! Your achievement of the course learning outcomes will be based on your performance on the 'Assignments' designated in this syllabus (616 total points) and on your daily participation in lab (56 points). Total possible points = 621. In lab we will work cooperatively to help each other to understand the material we are studying. Although collaboration and discussion are encouraged, Post-Lab Question responses and Lab Reports ***must be written individually and in your own words.*** You cannot earn credit for copied or late assignments.

STUDENTS WITH SPECIAL NEEDS: Students with disabilities/special needs should please come speak to me during office hours as soon as possible so I can best accommodate your capability to learn in this course.

ATTENDANCE POLICY: Attendance (= arriving on time & participating throughout lab) is necessary so you can develop the knowledge and skills necessary to achieve the learning objectives. You are responsible for signing in to document your attendance. *After 2 absences you will be dropped from the course.*

ACADEMIC MISCONDUCT: In this course you are expected to perform to the best of your ability in an honest manner. Cheating, plagiarism (e.g., copying the work of other authors), or other acts of misconduct will result in a severe penalty to you, as per university policy.

CELL PHONES: As a courtesy to the class, please turn off your cell phones. Texting is prohibited during lab.

Proposed Plan of Study

Week # (Date):	TOPICS/EXERCISE S	ω ASSIGNMENTS
1 (08/18)	Biological Evolution & Natural Selection	Study Ex. 1.1 to prepare for next week's lab. ***Pick up Sci. Method Lab handout!***
2 (08/25)	Scientific Method/Ex. 1.1	Complete Post-Lab Q's 3, 4, & 6 in lab. ***Complete Ex. 1.2 by 09/01.***
3 (09/01)	Microscopy/ Do Ex. 3.1 A-G & Read 3.5, "Other Microscopes"	Complete Post-Lab Qs 1-5 in lab. ***Pick up Enzyme Lab handout!*** ***STUDY:*** http://www.lib.ncsu.edu/tutorials/scholarly-articles/ https://www.lib.purdue.edu/help/tutorials/scientific-paper
4 (09/08)	1. More on Scientific Method & Scientific Research 2. Enzyme Activity Experiment 3. Quiz on peer-reviewed articles	**Write** 'Introduction' & 'Methods' sections of a formal lab report for enzyme experiment. **Due by 09/15**.
5 (09/15)	***LIBRARY: Learn to search databases.***	**Write** 'Abstract,' 'Results,' & 'Discussion' sections of enzyme report. **Due by 09/22**.
6 (09/22)	Macromolecules/Ex. 5.1 A-C	Complete Post-Lab Qs 1, 4, & 8 in lab.
7 (09/29)	Cell Structure & Function/Ex. 6.1 & 6.2 C & E.1	Complete Post- Lab Qs 1, 5, 8, & 11 in lab. ***Complete* Ex. 6.2 D & F by 10/06.**
8 (10/06)	Research Presentations	Evaluation of presentations
9 (10/13)	Research Presentations	Evaluation of presentations
10 (10/20)	Research Presentations	Evaluation of presentations
11 (10/27)	Respiration /Ex. 10.2 *Fermentation*	Complete Post- Lab Qs. 3 & 4 in lab. ***Complete 10.4 by 11/03.***
12 (11/03)	Aerobic Respiration/Ex. 10.1A *"Peas"*	Complete Post- Lab Q 1 in lab. **Write** 'Introduction' & 'Discussion' sections of a lab report on experiment 10.1. **Due by 11/10.**
13 (11/10)	Photosynthesis/Ex. 9.1 & 9.2	Complete Post- Lab Q 1 in lab. **Write** the 'Introduction' & 'Discussion' sections of a lab report on Exp. 9.2. **Due by 12/01**.
14 (11/17)	Photosynthesis/Ex. 9.5 & 9.6	Complete Post- Lab Q 5 in lab. *Study* 9.7, "Structure of the Chloroplast"
15 (11/24)	SimBio Photosynthesis	Complete Tutorial
16 (12/01)	Mitosis/Ex. 11.5 & 11.3	Complete Post- Lab Qs 1, 3, & 9 in lab.

ω NOTE on ASSIGNMENTS: Post-Lab Questions *are **due before leaving lab & must be answered independently & in your own words***. All assignments must be turned in as per the dates on this syllabus to earn credit.

GRADING: Post-Lab Q's (20 points each = 180). Quiz on peer-reviewed articles 25 points. Lab report writing assignments (50 points each = 200). Research presentation (80 points). Take-home lab assignments (10 points each = 20). Participation (2 points per lab & 10 points on presentation days = 56). Nat. Sel. Module (20 points). Library database workshop = 20 points. Photosynthesis SimBio = 20 points. Total possible points = 621.

RESEARCH PRESENTATION ASSIGNMENT: Choose an area in cell biology that interests you (this can be on any kind of cell: prokaryotic, eukaryotic, stem, cancer, cells infected by viruses, etc.). Write a brief description of the research topic you plan to study for **09/22** (10 pts.). Select 5 articles to read on your topic, *at least 2 must be from peer-reviewed journals*. On **9/29**, turn in your reference list (10 pts) & state a major research question scientists are investigating (10 pts.). Turn in a comprehensive outline of your presentation on **10/6** (30 pts.). For your presentation, you'll each have 15 minutes to *explain the topic you studied* (= present background information & current research in this area of cell biology) to your peers (20 pts).