Biology202L - Genetics Lab/Discussion Syllabus for Spring 2016

Dr. Claudia Barreto

Lab Meets: Tuesdays from 10:30-11:45am in A135. *Successful completion of all lab/Discussion learning activities is required to pass the course.*

Learning Objectives: By the end of the semester, ***you should be able to demonstrate that you understand and can accurately & comprehensively EXPLAIN, in your own words***:

- The purposes, processes, and outcomes of nuclear division by mitosis and meiosis
- Patterns of inheritance, including:
  - Mendel's law of segregation
  - Mendel's law of independent assortment
  - Punnett Square analysis
  - Extensions of Mendel's rules
    - Gene linkage
    - Allele & gene interactions in inheritance
    - Sex determination & sex-linked inheritance
- The structure & functions of DNA
- Gene expression & how it is controlled
- Principles of biotechnology/bioengineering
- Applications of genetics in the biomedical sciences
- Genomics
- Principles of Development

Proposed L/D Schedule:

Date	Assignments to Prepare for Today's L/D	Today's D/L Topic
Jan. 19	**Read & Study** the **Mitosis** Section of "Mitosis & Meiosis Simulations" Handout	Mitosis
26	***Complete Ch. 13 LM Assignment B***	***Meiosis (13-1)***
28 (TH)	**Read & Study** the **Meiosis** Section of "Mitosis & Meiosis Simulations" Handout **Complete Ch. 12 LM Assignment D**	Meiosis Simulation
Feb. 02	***Complete Ch. 14 LM Assignment A &*** **Complete Ch. 13 LM Assignment D**	***Mendel & the Gene (14-1)***
04 (TH)	**Study** Punnett Squares (LM 14 part C) **Complete Ch. 13 LM part D**	Genetics Problems 1
09	**Study** Punnett Squares (LM Part C)	Genetics Problems 2
16	Optional Review Session	Unit 1 Review
23	**Read & Study** "Modeling DNA Structure & Functions" Handout	DNA Structure & Functions
Mar. 01	**Read & Study** "Transcription & Translation Simulations" Handouts	How Genes Work
08	***Complete Ch. 17 LM Assignment A***	***Transcription (17-1)***
SPRING BREAK		
22	**Read & Study** "DNA Profiling Lab" Handout & information on web: http://www.biotechlearn.org.nz/focus_stories/forensics/dna_profiling	DNA Structure & Functions
24	Work on Your Lesson Assignment	No Lab Meeting
29	Work on Your Lesson Assignment	No Lab Meeting
Apr. 05	Be Prepared to Present Your Lesson	Student Presentations
12	Be Prepared to Present Your Lesson	Student Presentations
19	**Read & Study** HeLa Cell Handouts	HeLa Cells
26	**Read & Study** Development Handout	Animal Development
May 03	Optional Review Session	Unit 4 Review

ALL COURSE POLICIES ARE THE SAME AS PER OUR 202L CLASS SYLLABUS.

GRADING: Course grades are based on your performance in class and lab. For lab, your achievement of the course learning objectives will be determined from:

DATE	LAB/DISC POINTS	TOPICS & ACTIVITIES
JAN. 19	5 Participation 20 Mitosis Quiz	MITOSIS
26	5 Participation	***MEIOSIS (13-1)***
28 (TH)	5 Participation 20 Meiosis Quiz	MEIOSIS SIMULATION
FEB. 02	5 Participation	***MENDEL & THE GENE (14-1)***
04 (TH)	5 Participation 20 Punnett Square Quiz #1	GENETICS PROBLEMS 1
09	5 Participation 20 Punnett Square Quiz #2	GENETICS PROBLEMS 2
16	Optional Review Session	UNIT 1 REVIEW
23	5 Participation 20 DNA Structure Quiz	DNA STRUCTURE & FUNCTIONS
MAR. 01	5 Participation 20 Transcription & Translation Quiz	HOW GENES WORK
08	5 Participation **5 Turn in Lesson Topic**	***TRANSCRIPTION (17-1)***
SPRING BREAK		
22	5 Participation 20 DNA Profiling Lab **20 Turn in Lesson Reference List**	DNA STRUCTURE & FUNCTIONS
24	Work on Your Lesson Assignment	NO LAB MEETING
29	Work on Your Lesson Assignment	NO LAB MEETING
APR. 05	10 Participation **100 Turn in Lesson Plan** 50 Presentation	STUDENT PRESENTATIONS
12	10 Participation	STUDENT PRESENTATIONS
19	5 Participation 20 Biotechnology Quiz	HELA CELLS
26	5 Participation 20 Development Quiz	ANIMAL DEVELOPMENT
MAY 03	Optional Review Session	UNIT 4 REVIEW
	435 POSSIBLE POINTS	

Lab assignments ***must be completed & turned in on the dates indicated on this L/D syllabus to earn credit.*** Total possible L/D points = 435. Successful completion of all course requirements = 1693 possible points. The points you earn in lab & class will be added and then divided by the total possible points. There is no curve in the grading for this course. ***You are welcome to attend my office hours so I can help you achieve the learning objectives.*** To calculate your course grade, apply the following formula: (Class Points + Lab Points)/1693.

100% or higher = A+; 91-99% = A; 90 = A-; 89% = B+; 81-88% = B; 80 = B-; 79% = C+; 71-78% = C; 70 = C-; 60-69% = D; below 60% = F