

LS4: INTRODUCTION TO GENETICS
SUMMER 2008 SESSION C: AUGUST 4-SEPTEMBER 12

INSTRUCTOR:	AMY L. MCWHORTER	
LECTURE:	MWF 10AM-11:50AM (MS 4000)	OFFICE HOURS: MW 8:30-9:30AM IN MS 4000
EMAIL:	AHENKENI@UCLA.EDU	(OR BY APPOINTMENT)

COURSE OBJECTIVE:

In this course, we cover a variety of topics relevant to the study of genetics, ranging from classical to nontraditional Mendelian genetics, from bacterial and viral genetics to human genetics, and include studies on molecular techniques and their applications.

GENERAL INFORMATION:

Course Materials

- Required Text: *GENETICS: From Genes to Genomes, Third Edition* by Hartwell, Hood, Goldberg, Reynolds, Silver and Veres (2008). The purchase of the book also allows you to access supplementary online material.
- Optional Materials: Study Guide/Solutions Manual for use with *GENETICS: From Genes to Genomes, Third Edition* by Debra Nero **AND** Interactive Genetics CDROM and Handbook, UCLA, L. Johnson & J. Merriam.

Lectures

Lectures cover all of the primary course material. They should focus your reading and studying. Copies of lecture slides will be posted on Blackboard™. If slides are not posted the day before lecture (Sunday, Tuesday, and Thursday) by 10:00 pm, copies of the lecture slides will be handed out during class. Specific pages and assigned questions for each chapter will be listed on the lecture slides.

Course website (Blackboard)

The main course website is <http://www.lsic.ucla.edu>. Login and click on the link to the course. Course information such as the syllabus, class announcements, office hours, additional problem sets and answer keys will be posted on the site. PowerPoint lectures will also be posted in PDF format.

Discussion sections

- Discussion sections meet twice a week.
- Teaching assistants (TAs) lead the discussion sections. They are responsible for clarifying important points from the lectures/readings and for answering any questions you may have about the course material. In addition TAs will help solve assigned problems.
- You must attend your assigned discussion section unless you have made other arrangements in advance with your TA and the TA of the session you would like to attend. This is a fast-paced course that covers a lot of material in a very short time. It is the responsibility of the student to keep up with the pace by doing all the readings and solving all assigned problems.

- Be active and participate in class discussions. Ask questions if a point is unclear. It helps to work together to help each other solve the problem sets.
- Quizzes will be given during your second discussion section of the week (W or Th). They will be based upon the questions assigned for that week. No quiz will be given during week 6. No make-up quizzes will be given.
- Each TA will have two hours of Office Hours per week. You are welcome to go to the office hours of any of the TAs, but note that TAs will give priority to students from their own sections. Times and locations for TA's office hours TBA.

Instructor Contact Information and Office Hours

E-mail: ahenkeni@ucla.edu Please put "LS4 STUDENT" in the subject heading of all e-mails. E-mails without this subject heading will be deleted. NOTE: E-mail is not an appropriate medium for long, technical questions—save those types of questions for discussion section or office hours. Office hours will be held on MW: 8:30-9:30am (MS 4000A)

TA Contact Information and Discussion Sections

Please put "LS4 STUDENT" in the subject heading of all e-mails.
 Oluwadara Oluwadayo (Dayo): oluwadara@yahoo.com, Sections: 1B, 1D, 1E, and 1F
 Anshu Shrestha: anshu.shrestha@gmail.com, Sections: 1A and 1C

Reading Assignments & Exams

Reading assignments are listed on the lecture slides.
 You must take exams on the scheduled dates. Please check your calendars NOW to make sure that you don't have conflicts.
 Check exam room assignments.

Administrative Issues

For enrollment, scheduling, etc., please contact Lily Yanez (lyanez@lifesci.ucla.edu) or Mark Katayama (katayama@lifesci.ucla.edu) in the Life Sciences Core Curriculum Office (Life Science Building, Room 2305). Phone # for LS Core Office is 310-825-6614.

GRADING:

Your grade in this course will be determined as follows:

Points from Discussion Section:

With the exception of the **LAST** week, quizzes will be given each week during discussion section and are worth 10 points each, for a total of 50 points. Each quiz will consist of problems taken directly from the problem set assigned **for that week**.

Quizzes	(Weeks 1-5)	= 50 points
<i>Points from Lecture portion:</i>		
Midterm 1	(TBA)	= 100 points
Midterm 2	(TBA)	= 100 points
Final Exam	(TBA)	= <u>250 points</u>
TOTAL		= 500 points

Letter grades are established from a normal curve of total points following *standard UCLA guidelines*. The distribution varies from year to year, but in general at least the top 15% have received A+, A, or A-, and next 30% received B+, B, or B-.

Regrading Policy:

Regrades will only be considered if the exam is written in permanent ink. Presumed grading errors may not be discussed with teaching assistants.

- If you feel that there has been a simple addition error during the grading of your exam:
 1. Write a note on a separate piece of paper explaining the error. Attach that note to the front of the exam.
 2. Turn in your exam with the note to the LS core office within one week of the date the graded exams were returned.
 3. Keep a photocopy of the exam for your own records and for studying.
 4. These exams will be re-graded ASAP. During this process the entire exam will be reevaluated to look for errors. Thus, your score may increase *or* decrease.

Please note that when exams are graded, **they are photocopied**. Every year we have one or two students who add to their answer before turning in their exam for regrading. Thus, every year we have one or two students who get to meet the Dean and then leave UCLA.

CLASS EXPECTATIONS:

Be courteous and on time.

Silence cell phones and other electronic devices. Do not answer the phone during class.

Class participation.

Other Helpful Information:

- Complete the assigned readings prior to each class meeting. Class meetings are designed to clarify and/or expand on your assigned readings.
- The reading and work for this class should be taken seriously. All readings and problems assigned are your responsibility to complete. No homework will be collected and no additional quizzes will be given.
- You are strongly urged to attend class. In the case that you miss class, obtain notes from a classmate, as test material will be stressed during lectures.
- The lecture/exam schedule is somewhat flexible (depending on the pacing of the class) and may be subject to change at my discretion. Accordingly, it is your responsibility to find out if and when exam dates have been changed.
- Discussion is welcomed during lecture, so please feel free to ask any questions, seek clarification, etc. If you need extra help or if we are pressed for time during class, please see me during office hours.
- Attend discussion section regularly.
- The midterms and final are based upon many of the problems sets that are assigned.

TENTATIVE COURSE OUTLINE WITH ASSIGNED CHAPTER READINGS
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Week #	Week of	Topics Covered	Chapters
1	08/04	a) Introduction & overview; Mendelian genetics b) Extensions of Mendel, pedigrees, probabilities c) Mitosis, meiosis, chromosomes, sex-linked inheritance	Ch 1,2 Ch 2,3 Ch 4
2	08/11	a) Gene linkage & recombination, gene mapping (2 & 3 point crosses) b) Population genetics I, Hardy Weinberg Equilibrium c) Population genetics II, review	Ch 5 Ch 21 Ch22
3	08/18	MIDTERM I (Monday Aug. 18) a) Bacterial genetics b) Conjugation, transduction	Ch15, 17 Ch15
4	08/25	a) Bacteriophage genetics, Benzer- rII locus b) Definition of a gene: 1 gene 1 enzyme, protein structure function and interaction MIDTERM II (Friday Aug.29)	Ch 6 168-173 Ch 7
5	09/01	Labor Day: no class (Monday Sept. 1) a) Genetic code & gene mutations, transposable elements, chromosome mutation & rearrangement b) Disease, recombinant DNA, cloning strategies, molecular markers	Ch 8, 9, 14
6	09/08	a) Genomics, transgenics, gene therapy b) Genetic control of development, review FINAL EXAM (Friday SEPT 12) Cumulative with emphasis on lectures 11-14	Ch 10 Ch 20