

UNIVERSITY OF DETROIT MERCY

Course Syllabus

Genetics (BIO 270)

Credits: 3.0

Semester: Fall 2006

Instructor: Dr. Barbara Hollar

Times: T, R 9:55 to 11:10

Required texts:

Griffiths AJF, Wessler SR, Lewontin RC, Gelbart WM, Suzuki DT, Miller JH. 2005. Introduction to genetic analysis 8th ed. New York: W. H. Freeman and Co. 782 p.

Solutions manual to accompany the text

Course objectives:

1. The student should develop an understanding of the fundamental concepts of genetics and an appreciation of the relationships between genetics and other biological disciplines e.g. cell biology, biochemistry, and developmental biology.
2. The student should acquire the ability to evaluate data and to suggest hypotheses that explain the data.
3. Genetics is a problem-solving discipline. The student should begin to understand what the important problems in genetics have been and what questions remain unanswered. Various approaches to problem solving will be discussed.
4. The course will provide sufficient information about current topics in genetics so that students can make informed decisions about issues of public interest e.g. the use of genetics in forensics, transgenic crops, prenatal testing, etc.

Methods:

The course is a traditional lecture course supplemented with problem solving experiences.

Grading:

The grading will be based upon the average of 4 exams. The grading scale is:

90-100% = A	75 - 76% = C+
88 - 89% = A-	66 - 74% = C
86 - 87% = B+	64 - 65% = C-
79 - 85% = B	62 - 63% = D+
77 - 78% = B-	55 - 61% = D

If you are absent for a legitimate reason on the day of an exam, you will be given a make-up exam consisting of essays and problems. The make-up will be scheduled during the second hour of the final exam period from 9:00 to 10:00 a.m. on Thursday, December 14. Leaving to go on vacation is not considered a valid reason for missing an exam.

The answers to the exam will be posted on the doors in rooms 220/ 221. If you feel that a mistake has been made in grading your exam, please consult the answer sheet before you come to see me. If you then wish to have a correction on your exam, you must draw it to my attention before the next exam is administered. No grade corrections will be made on a previous exam, once the next exam has been administered.

A note on academic honesty:

I expect that all of the material submitted to me will be the sole work of the student whose name appears on the paper. I expect that material extracted from published sources will be properly documented in CBE style. Students who plagiarize any part of an assignment (yes, even one question) will receive a failing grade on the entire assignment with no opportunity to make up the work. Cheaters will be reported to the College for disciplinary action. Students who have been disciplined for cheating are generally not candidates for admission to medical school or dental school.

Problem sets:

There are problems at the end of each chapter in your text. The solutions to the problems can be found in the manual that accompanies your text, which is available in the bookstore. I will hand out a list of the problems that I expect you to do in conjunction with a given chapter. Since the answers are given in the solutions manual, I will not be correcting the papers. You need to be paying attention in class to determine where we are in the text, and then you need to do the practice problems accordingly. Once I assign the problems, I will not be announcing which problems you are to do at every class period. After determining a convenient time for most students, I will reserve some office hours for genetics students only. During those times I will do the problems for as many people as show up. It would be especially helpful to me if you try to attend those hours so that I do not have to do the same problem over and over for each person in the class individually. However, you are welcome to make an appointment with me at any time, and I will give you as much help as you need, so do not worry if you miss a problem session. Obviously, you do not need to attend any problem sessions or get any tutoring help from me if you are doing the problems correctly according to your answer manual.

The problems that I have picked resemble those that will be on the exam so be sure that you know how to do them. If there are additional problems in the chapter that you would like me to

do, please bring the numbers of the problems to class and give them to me. I will include them in the office hours presentation the following week.

Office hours:

If additional help is needed, please see me during my office hours. My office is Life Science 221. Office hours are posted on the door. My office phone is (313) 993-1408. My e mail address is hollarba@udmercy.edu. I generally check it every day and will respond if you e mail me with questions. DO NOT leave a voice mail for me as voice mail often is not working and I might not get your message. In case of bad weather, the University uses WDIV as its official notification station so watch the TV for up to the minute information. Our school is generally among the last to make a decision, so you may have to use your own best judgement as to whether to drive in inclement weather. Also, check the Blackboard web site for this course to see if any weather related items are posted there.

Attendance:

All of the material on the exam will come from the class lectures so it pays you to attend class. However, I do not take attendance nor do I take off points for failure to come to lecture.

I consider the time in class to be a time when all of us are working together. It shows a lack of courtesy to fellow students to disrupt the class by entering and leaving the room, getting up to plug in your tape recorder, etc. If you have an emergency, please leave quietly. If you return to class, quietly take a seat in the back of the room. If you know that you must leave early for a doctor's appointment, etc. sit on the end of a row or in the back so that you do not have to walk over other students as you leave.

MONTH	DAY	TOPIC	CHAPTER
Sept.	5,7	Patterns of Inheritance	1,2
	12	Mitosis, Meiosis	3
	14,19	Gene Interaction	6
	21	Chi Square and other tests	6
	26	EXAM	
	28	Linkage and mapping	4
Oct.	3	Specialized mapping techniques	4
	5, 10	Bacterial genetics	5
	12	Phage genetics	5
	17,19	Structure and replication of DNA	7
	24	EXAM	
	26	RNA	8
Nov.	31,2	Protein synthesis	9
	7	Regulation of transcription	10
	9,14	Recombinant DNA	11
	16	Genomics	12

	21	EXAM	
	28	Mutation	13, 14
Dec.	30,5	Chromosome rearrangements	15
	7	Dissection of gene function	16
	14	FINAL EXAM Thursday 8:00 a.m. to 9:00 a.m. Make-ups from 9:00 to 10:00 a.m. I will arrive at 7:30 so you may have extra time.	

Assigned problems:

Chapter 2	7,10,12,13,14,15,16,17,19,21,23,24
Chapter 2 II	26,27,28,29,30,31,32,51
Chapter 6 I	7,8,10,12,13,14,16,18,28,29,31(not h),33,35
Chapter 4	11,12,13,14,16,32,33,36,39
Chapter 5	1,4,6,8,10,14,15,17,18,19,25,26,28,31
Chapter 6 II	1,2,4 a and b only, 5,6,50
Chapter 7	10,11,12,14,15,16
Chapter 8	1,3,4,6,9,12,13,14
Chapter 9	1,3,26,27
Chapter 10	1,2,3a,4,12,13,14
Chapter 11	8,10,12,13,14,18,19,21,28
Chapter 12	12,13,22,34
Chapter 14	16,17
Chapter 15	13,16,21,22,23,26,27,35