

Biology 341 – Genetics

Fall 2008

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Office hours: Mon 2-3pm; Tues 10:30-11:30am, Thurs 10:30-11:00am.

Lecture: 9-10:15 am Tu/Th MLH B10

Lab: W 1:30-4:30 MLH 210

Text: Text: Genetics – A Conceptual Approach. 3rd Edition Benjamin A. Pierce

General Course Information

1. Attendance is expected in lecture and lab; if you miss a lecture you are responsible for getting notes from another student. Participation will be a factor in assigning grades in borderline cases.
2. There will be no make-up exams except in the case of illness with a doctor's note, if make-up exams are necessary they may be an entirely different format from the regular exam. If you will miss an exam due to a trip out of town for a university sanctioned event or a job/professional school interview please talk to me about this as soon as possible so we can make arrangements.
3. Late homework and assignments will not be accepted, if you can not make class then the homework is due in my office before class begins.
4. In order to encourage science undergraduates to continue to develop their writing skills this class has been designated a writing-integrated course. The quality of this writing will be evaluated and students will be encouraged to enhance their written communication skills. Writing will be integrated into the course in several ways; firstly students will demonstrate their understanding of class material with a number of "minute essays" which will be peer reviewed for both scientific content and writing quality. There will be two formal writing assignments in the form of papers; for both of these assignments several drafts will be prepared and revised before submitting the final product. This is to encourage students to critically assess their own and their peers' writing and to improve the quality of the final paper.
4. The last date to withdraw from the class without a "W" on your transcript is Sept 8; the last date to withdraw from the course is Oct 31. After that date withdrawal is permitted by petition only and requires the approval of the division chair and documentation of extraordinary circumstances.
5. I will use Blackboard and LCMail for contact with the class, please be sure to check regularly for important updates. You are responsible for ensuring that you read your messages in a timely fashion. What is timely? I would recommend at least once per school day.
6. Disruptive behavior in class or lab will not be tolerated; this includes the use of cell phones during class periods.
7. Academic integrity: cheating in any form will not be tolerated. Plagiarism is the most common form of cheating in upper division classes; please be sure to use your own words in all written material. Cases of cheating will be reported to advisors and dealt with according to college policy.

Disability Statement

If you need course adaptations or accommodations due to a disability; if you have emergency medical information or need special assistance to evacuate from the building please make an appointment to see me as soon as possible. Accommodation assistance can be found at the office of Student life, Room 11, Reid Centennial Hall.

Course Structure:

The course will be taught primarily in a lecture format with time for discussions and questions. Class notes will be provided on Blackboard prior to class however these notes are incomplete and are designed to be supplemented with information given in class. If you miss class or fail to take notes you may miss valuable information that would help with tests. The emphasis of the class will be on understanding key concepts and achieving a level of learning that allows for the application of these concepts to novel situations. Genetics can be a tough subject for many students and this class will require a major time commitment on your behalf to ensure success; a minimum of three hours of study per hour of lecture time is recommended. I am here to help you achieve your goals in this class so if you have any concerns or questions please come and talk to me sooner rather than later.

Exams & Quizzes: There are three exams including the final and twelve quizzes. The final will be comprehensive; no more than 25% of the material will be from earlier in the semester. No make up quizzes will be provided but the lowest two scoring quizzes will be dropped. Exams and quizzes may be multiple choice, short answer or essay type questions. Quizzes will be given during lab time at the beginning, during or end of lab depending on the experiment that week.

Homework: I will assign homework problems most Thursdays these are due at the beginning of lab the following Wednesday; there will not be time in lab to complete homework so please come and see me earlier in the week if you need some pointers. Late homework will not be graded.

Minute Essays: I will assign unannounced "minute essays" during lecture or lab time. These are designed to assess student understanding of key concepts and to encourage good writing habits. The essays are to be written quickly but with attention to structure and grammar. Students will be asked to read their essays to the rest of the class for critical assessment by their peers. The essays will be turned in and graded based upon content and structure.

Genetics in the News: In order to encourage students to read newspapers and popular journals for genetics in the news everyone is required to find and report on a current issue in genetics. No two students may report on the same article so when you find an article of interest please bring a copy to me ASAP. In addition to a verbal report on October 22nd (lab time) you are required to write a 3-4 page paper on the subject that will require the original source paper. **Make sure you can find the source document before deciding on the paper you wish to present.** A draft of the paper is due two weeks before the final deadline.

Ethics paper: Recent advances in genetics have raised many ethical questions. In this paper you will pose an ethical question and then propose arguments both for and against the issue. Please note the due dates course calendar for the outline, first draft, second draft and final paper.

Lab: You will be required to keep a lab notebook of the experiments that will be done in lab. I will check these notebooks periodically; they should always be up to date! I will explain the requirements for the lab notebooks in the lab session. Bioinformatics projects are considered part of the lab notebook for grading purposes. Some lab sessions may be devoted to problem solving; if so these problem sets should be completed within the lab time.

<u>Grades:</u>		points
Exams (3)	100	300
Quizzes (10)	10	80
Homework	100	100
Genetics in the News -oral	20	20
Genetics in the News –paper	50	50
Minute essays (10)	10	100
Ethics paper	50	50
Lab notebook	150	150
	Total	850

A grade book will be maintained on Blackboard so that you can track your progress.

Grading scale:

93-100% A	90-92% A-	87-89% B+
83-86% B	80-82% B-	77-79% C+
73-76% C	70-72% C-	67-69% D+
60-66% D	<60% F	

Tentative schedule; any changes will be discussed in class or on Blackboard

	Topic	Relevant Chapter
26-Aug	Intro/history	1
28-Aug	Chromosome structure/meiosis/mitosis	2
2-Sep	Introduction to Mendelian Genetics	3
4-Sep	Principles of heredity I	3
9-Sep	Sex determination/sex linkage Ethics paper Outline	4
11-Sep	Principles of heredity II	5
16-Sep	Principles of heredity III	5
18-Sep	Pedigree Analysis I	6
	Ethics Paper First draft	
23-Sep	Pedigree Analysis II	6
25-Sep	Exam 1 100 Points	
30-Sep	Linkage Studies I	7
2-Oct	Linkage Studies II	7
	Ethics Paper Second draft	
7-Oct	Gene mapping	7
9-Oct	Chromosome Variation/Rearrangements	9
14-Oct	Chromosome Variation/Rearrangements	9

16-Oct	Structure of DNA	10
21-Oct	DNA packing	10
	Ethics paper due	
23-Oct	Replication	12
28-Oct	Exam 2 100 points	
30-Oct	Replication/DNA repair	12 + 17
4-Nov	Transcription	13
6-Nov	Types of RNA	14
11-Nov	Genetic Code Draft of Genetics in the News paper	15
13-Nov	Class cancelled	
18-Nov	Translation I	15
20-Nov	Translation II	15
Nov 24-28	Thanksgiving break	
2-Dec	Control of Gene Expression II	16
4-Dec	Recombinant DNA Technology I	18
	Final Genetics in the News Paper Due	
9-Dec	Recombinant DNA Technology I I/ Genomics	18 + 19
11-Dec	Organelle DNA	20
18-Dec	Final Exam (Exam 3 100 points)	