

Bio 325-UEX: Genetics (Fall 2007)

TTh 7:30-9pm in BIO 301

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Office Hours: anytime, contact for an appt. (I will be available at 7pm TTh)

<u>Date</u>	<u>Subject</u>	<u>Textbook Chapters</u>
Sept 6	Introduction, Philosophy of Science, and Strong Inference	article on webpage
11	DNA and Gene Structure	7
13	Signal Transduction	
18, 20, 25	Transcription and Translation (Homework #1 due 9/20)	8, 9
Sept 27	Exam 1	
Oct 2	Gene Expression in Bacteria and Viruses	5, 10
4, 9, 11	Gene Expression in Eukaryotes and Development	11, 12
16	Genome Organization	13
18, 23, 25	Biotechnology	20
Oct 30	Exam 2	
Nov 1	Mitosis and the Cell Cycle	2
6, 8	Mutations and Cancer	14, 15
13	Meiosis and Developing Genetic Diversity	2, 3
15, 20	Inheritance	2, 3, 4, 6
<i>Nov 22</i>	<i>Thanksgiving (no class)</i>	
27, 29	Inheritance	2, 3, 4, 6
Dec 4	Evolution	17, 18, 19
Dec 6	Exam 3	
Dec 8	Final Exam 9am-noon	

The class **webpage** is: www.bio.utexas.edu/courses/stuart/class.html As the semester progresses the webpage will be updated with the homework and bonus assignments and their due dates.

Course Description: Biology is a vast subject, and an introductory course only has time to briefly cover each topic. In this class we will study many of the same topics as your introductory biology classes, but more profoundly. I want to go beyond simply understanding the basics of genetics to look at specific examples and situations. This way you can begin to develop a sense for how science works, how it fails, what we know, and what the next steps might be.

We will study some general concepts from the textbook, but then we will also look at more in-depth information from contemporary scientific journals. This will allow us to see how this general information is used to increase our knowledge. I hope this will lead to a dynamic and useful learning experience. The drawback is that there will not be an easy source of information outside of class.

Lecture: TTh 7:30-9pm in BUR 224. Most of the test material will come from information presented in lecture and the articles we study. I recommend that you take good notes and/or record the lectures. The easiest way to learn and perform well in my class is to attend the lectures and discussion sessions. I will post the articles we will discuss on the class webpage.

Each week, except after exams, you will get a short quiz that will allow you to test your mastery of the material prior to taking the exams. These quizzes are not mandatory, but students who complete the quizzes will be awarded up to 2 points to their final course grade.

Grading, Exams, and Homework: I find that much of the time grades discourage learning. I have designed the assignments in this class to encourage you to learn and participate in the class. I hope that the assignments will serve to help you learn and provide useful feedback on your progress.

The semester will be graded on a maximum of 100 points broken down as: exams= 88 points, homework= 12 points, and up to 6 bonus points.

There will be four exams, three mid-terms and a cumulative final. The mid-term exams will be during class on 9/27, 10/30, and 12/6. Each 90 minute mid-term exam will include only the information presented since the previous exam. The final will be cumulative and is optional. If you take the final exam, this grade will replace a previous exam grade. If you miss an exam, contact Stuart as soon as possible. Each test will be equally weighted, and collectively your three exams will count for a maximum of 88 points. ***The exams will be short answer and essay.** There will be no multiple-choice questions.*

My teaching and testing style emphasizes the ability to understand and use the information presented in class; therefore, at each exam you will be allowed to bring ONE 8.5 X 11 inch sheet of paper with whatever information you want written on it. In this way I want to minimize your dependence on memorization and encourage you to think critically about biology. See the webpage for sample test questions from previous semesters and answer keys after this semester exams have been returned.

I will assign four homework assignments during the semester that will typically consist of 1-3 page papers. Each assignment will be graded from 0-4 points, and your best 3 scores will be counted for up to 12 points.

Bonus points can be received for completing the quizzes, up to 2 points. Also, two bonus assignments consisting of short papers will be posted on the class webpage throughout the semester. Each bonus assignment can be worth up to 2 points. Collectively you can earn up to 6 bonus points that will be added to your exam and homework grade.

Textbook: The textbook is not required. Questions on the exams will be based on material from lecture. Lectures will use information from "Introduction to Genetic Analysis" 9th ed. ©2008 by Griffiths et al and supplement it with articles from current scientific journals. I will post my lecture slides on the webpage after class. Handouts and links to articles will be available on the webpage.