

# Bio 325-UEX: Genetics (Spring 2009)

TTH 7:30-9pm in BIO 301

**Prof: Dr. Stuart Reichler**

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Office Hours: anytime, contact for an appt.

<u>Date</u>	<u>Subject</u>	<u>Textbook Chapters</u>
Jan 27	Introduction, Philosophy of Science, and Strong Inference	article on webpage
29	DNA and Gene Structure	9
Feb 3	Signal Transduction	
5, 10	Transcription and Translation	12, 13
12	Regulating Gene Expression in Prokaryotes	14
<b>Feb 17</b>	<b>Exam 1</b>	
19, 24, 26	Regulating Gene Expression in Eukaryotes	15
Mar 3, 5	Development and Genome Organization	23, 10
10, 12,	Biotechnology	18
<i>16-20</i>	<i>Spring Break</i>	
24	Biotechnology	18
<b>Mar 26</b>	<b>Exam 2</b>	
31, Apr 2, 7	DNA Replication, Mitosis, Mutations, and Cancer	3, 11, 16, 22
9, 14	Meiosis and Developing Genetic Diversity	3
16, 21, 23	Inheritance	2, 4, 5, 7
28, 30	Evolution and Population Genetics	24
<b>May 5</b>	<b>Exam 3</b>	
7	Final Exam Review	
<b>Saturday, May 9, Final Exam 9am-noon</b>		

**2/16** is the last day to Q drop without instructor permission. **3/30** is the last day to Q drop with instructor permission and the last day to change to/from pass/fail.

While a very broad outline of topics is presented above, I will define more specific lecture topics based on our progress. We will not cover everything in every textbook chapter related to these topics. You can look at the related chapters to get a preview of the broad topics, and more specific readings will be posted on the class webpage a few days before each lecture.

The class **webpage** is: [www.bio.utexas.edu/courses/stuart/class.html](http://www.bio.utexas.edu/courses/stuart/class.html)

**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 BIO 301. 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 earned from the exams with up to 5 bonus points added to your exam average.

There will be four exams, three mid-terms and a cumulative final. The mid-term exams will be during class on 2/17, 3/26, and 5/5. Each 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 therefore worth 1/3<sup>rd</sup> of your final grade. **\*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.

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 1.5 points. Collectively you can earn up to 5 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 “Genetics: Analysis and Principles” 3rd ed. (2009) by R. Brooker 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.