

# Bio 301L: Molecules to Organisms (Fall 2005)

MWF 9-10am in PHR 2.108

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<b>Date</b>	<b>Class Subject**</b>	<b>Book Chapter(s)</b>	<b>Textbook Chapter(s)</b>
Aug 31	Introduction/Philosophy of Science		
Sept 2	Strong Inference	article on webpage	1
5	<i>Labor Day (no class)</i>		
7	Biochemistry	<u>Nature via Nurture</u>	2, 5
9	Biomolecules		3
12	What is a gene?	1	3, 10
14	Cellular Components		4
16	Signal Transduction	2	11, 37
19, 21, 23	Gene Expression	3	11
<b>Sept 26</b>	<b>Exam 1</b>		
28, 30	Development (9/28 last day to drop w/o penalty)	4-5	45
Oct 3, 5	DNA Replication	6	10
7	Cell Division ( <b>extra credit #1 due 10/7</b> )	7	8, 9
10, 12	Mutations and Cancer	8	8, 10
14, 17	Inheritance	9	9, 14
19, 21	Genetic Engineering	10	13, 14
<b>Oct 24</b>	<b>Exam 2</b>		
26, 28	Evolution (10/26 last day to Q drop)	<u>Grizzly Years</u>	15, 16, 17
31, Nov 2	Plants ( <b>extra credit #2 due 11/2</b> )	1-2	22, 30-33
4	Regulating Body Temperature and Water Balance	3-4	34, 40
7, 9	Obtaining Energy		36
11, 14	Immunity	5-6	41
16, 18	Sensing the Environment	7-8	42
<b>Nov 21</b>	<b>Exam 3</b>		
23-25	<i>Thanksgiving (no class)</i>		
28, 30	Reproduction	9-13	44, 45
Dec 2, 5	Circulation and Respiration	14-19	38, 39
7, 9	Movement ( <b>extra credit #3 due 12/7</b> )	20-24	35
<b>*Dec 14</b>	<b>Exam 4 and Final Exam 7-10pm</b>		

\*\*These class subjects are approximate. The exact content of each class will depend on our discussions of the books.\*\*

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

**Course Description:** Important and life altering decisions about biology (stem cells, human and animal cloning, genetically altered crops, etc) are being and will be made. Only by understanding the biology behind these technologies can you make informed decisions. This class will involve reading and discussing two non-fiction, non-textbook books about biology.

**Lecture:** MWF 9-10am in PHR 2.108. Most of the test material will come from information presented in lecture. Lectures will be divided between teaching about basic biology and discussing topics from the books. 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.

**Discussion Sessions:** The discussion sessions serve as an opportunity to review the information presented in class and to ask questions in a small class setting. At each discussion session there will be a short quiz that will allow you to test your mastery of the material prior to taking the exams. Discussions are not mandatory, but students who attend and participate in discussion sessions will be awarded up to 2 points to their final course grade. You may attend whichever discussion session best suits your schedule. The discussion times are:

M 11-12pm in WEL 3.266, 2-3pm in RAS 213

T 8-9am in RLM 6.122, 9-10am in RLM 6.114, and 12:30-1:30pm in ETC 2.114

Discussions will start Monday Sept 12. There will not be discussions on 9/26-27; 10/24-25; 11/21-22.

**Grading and Exams:** There will be five exams, four in-class and a cumulative final. Each 50 minute in-class exam will include only the information presented since the previous exam. Exam four and the final exam will both be given during the three-hour final exam period on Dec 14<sup>th</sup>. 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, so that each one will be worth 25% 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.

**Extra Credit:** Three optional, extra credit, short essays will be due in class on 10/7, 11/2, and 12/7. Each assignment will be worth a maximum of 2 points added to your final course grade. Essay subjects will be posted on the class webpage at least one week before the due date of each assignment.

**Books:** We will be studying biology by reading two different non-fiction books. First we will read "Nature via Nurture" by Matt Ridley, which looks at the effects of genes and environment on shaping human beings. The next book will be "Grizzly Years" by Doug Peacock. This book touches on topics such as the structure and function of organisms as well as ecological issues with an emphasis on grizzly bears. These books are available at local bookstores as well as on-line.

Most of the figures used in class will come from either "Asking About Life, 3<sup>rd</sup> ed." by Tobin and Dusheck or "Biology, 6<sup>th</sup> ed." by Campbell and Reece. There are copies of these basic biology textbooks on reserve in the Life Science library. Handouts will be available in class or on the webpage as appropriate.