

Spring 2003 Biology 202 "Principles of Cell and Molecular Biology"

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Office hours: 10:00 AM to 11:30 AM Tues and Thurs

Lab coordinator: David Truesdale, Ph.D., htruesda@sunstroke.sdsu.edu

Lecturer: Kathleen McGuire, Ph.D., kmcguire@sunstroke.sdsu.edu

Office hours: 10:00 AM to 11:30 AM Tues, Wed, and Thurs

Lecturer: Marshal Hedin Ph.D., mhedin@sciences.sdsu.edu

Introduction:

Biology 202 "Principles of Cell and Molecular Biology" is considered by most SDSU undergraduate biology majors to be the most difficult and "eye-opening" biology course. This course provides an up-to-date summary of the molecular basis for biological function. It is by nature a blend of chemistry and biology and covers a lot of material. In order to pass the course, you will need to read your reading assignment before attending the lecture and take detailed notes (this usually involves more than copying down what the lecturer writes on the board! Try to answer questions at the end of the text chapters or use the "Interactive Study" guide on CD ROM which comes with your text. These are all proven mechanisms for obtaining command of the subject matter, but it requires time.

Each lecturer and lab TA has specific office hours and a desire to help students understand the material and the assignments. If you need assistance for any reason (for example to clarify a confusing concept or explain what the instructor expects, etc.) take advantage of office hours. If the posted times do not fit your schedule, arrange with the instructor a time of mutual convenience, but don't expect your instructor or TA to drop whatever she/he is doing at the moment you drop by to help you. You can also contact your instructors by E-Mail, and this will often prove an efficient and quick way to obtain answers to simple questions.

Finally, be sure you understand the material as we go. Memorizing facts without understanding the conceptual framework is like trying to memorize 100 telephone numbers. Use the text and/or the instructor's office hours to sort out difficulties in understanding the material when these problems arise, not the day before the exam! Most students find that the exams are hard! They will test your understanding of concepts as well as the facts that support them. We will ask you to use your knowledge, not just spit it back. One method many students find successful is to study in small groups, but also leave time to study on your own. A sample copy of previous examinations will be posted on the Biology 202 website. While the exams that you will take will be different than these exams, you may find them useful as study guides and to become familiar with the type of exam each instructor may use. After each exam is graded and analyzed, the estimated letter grade will be posted along with the answer key. Be sure to study this information in preparation for the final

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Lecture Schedule

Fall 2002: TuTh 8:00-9:15 / HH 130

Lecture Topic

Part I: Dr. Roger Davis's Lectures

Tuesday, Jan. 21	Introduction: Review of Chemistry	Chapter 2
Thurs, Jan 23	Carbohydrates and Lipids	Chapter 3
Tuesday, Jan 28	Amino Acids and Proteins	Chapter 4
Thursday, Jan 30	Energy, Enzymes, and Metabolism	Chapter 6
Tuesday, Feb 4	Cell Structure	Chapter 4
Thursday, Feb 6	Membrane Structure and Transport	Chapter 5
Tuesday, Feb 11	Cell Respiration: Glycolysis & Krebs Cycle	Chapter 7
Thursday, Feb 13	Mitochondrial Electron Transport	Chapter 7
Tuesday, Feb 18,	Photosynthesis: Light and Dark Reactions	Chapter 8
Thursday, Feb, 20	Cell Signaling; Cell Cycle	Chapter 15; pp 157-159
Tuesday, Feb, 25	EXAM I	

Part II: Dr. McGuire's Lectures

Thursday, Feb 27	Meiosis	Chapter 9; pp 164-175
Tuesday, Mar 4	Genetics: Mendel and beyond	Chapter 10
Thursday, Mar 6	Genetics: Mendel and beyond	Chapter 10
Tuesday, Mar 11	DNA and its Role in Heredity	Chapter 11
Thursday, Mar 13	DNA and its Role in Heredity	Chapter 11
Tuesday, Mar 18	From DNA to Protein I	Chapter 12

Thursday, Mar 20	From DNA to Protein II	Chapter 12
Tuesday, Mar 25	Prokaryotic Gene Expression	Chapter 13; pp249-254
Thursday, Mar 27	The Eukaryotic Genome and its Expression	Chapter 14
March 31-April 4 SPRING BREAK		
Tuesday, April 8	The Eukaryotic Genome and its Expression	Chapter 14
Thursday, April 10	EXAM II	

Part III: Dr. Hedin's Lectures

Tuesday, Apr 15	An Introduction to Evolutionary Biology	Chapter 21
Thurs, Apr 17	Genes in Populations	Chapter 21
Tuesday, Apr 22	Natural Selection and Adaptation	Chapter 21
Thursday, Apr 24	Molecular and Genomic Evolution	Chapter 24
Tuesday, Apr 29	Species & Speciation	Chapter 22
Thursday, May 1	Systematics & Phylogeny Reconstruction	Chapter 23
Tuesday, May 6	Origin & History of Life / Course Evals	Chapters 25 & 20
Thursday, May 8	Lab Finals	

Final Exam / HH 130 / Tuesday May 15, 2003 8:00 - 10:00 a.m.

The lab exercises have been designed to reinforce concepts presented in lecture, and to introduce you to some of the procedures and instruments used in biological research. We have tried to schedule the various lab topics so that they come after the relevant material has been covered in lecture.

Textbook Required

Purves, Sadava, Orians, and Heller Life, the Science of Biology 6th Edition, Sinauer/Freeman Publishing Co. 2001

Assigned reading from the text accompanies each lecture and is indicated on the lecture outline. You are expected to have read the reading assignment before you attend the lecture. You are responsible for all text material assigned with emphasis on material that relates directly to the lectures. Do not bring the text to lecture or to lab meetings. There is a Lecture Notebook that may be packaged with the textbook; this contains figures from the text and space for lecture notes.

Lab Manual: Biology 202 Principles of Cell and Molecular Biology: Lab Exercises published by Burgess (ISBN# 0-8087-4495-X); available at Aztec Bookstore

Grading

Your final grade will be calculated using the following weighting: Lecture component 80% and Laboratory component = 20%. We use a point system and grade on a curve. The point values and dates of the lecture exams are shown on the lecture outline. The Final Exam is comprehensive, and segment coverage for this exam breaks down as follows:

Exam I material 52 points

Exam II material 52 points

Final Exam covers last 7 lectures and the previous lecture material (for exams 1 and 2).

Total points for final exam =96 points

Final grade total (250) = Exam 1 (52) + Exam 2 (52) + Final Exam (96) + Lab grade (50)

Your final grade will be determined using a curve analysis. In general 10% of the class receive As and Fs, 25% receive Bs and Ds and 30% of the class receive Cs. Please note that while the grades will be curved, anyone receiving less than 50% of the total possible examination points (not including the lab grade) will receive a F in the course irrespective of their lab grade.

The lecture exams will consist of both objective (mostly multiple choice) and short-answer essay (a sentence or two up to a couple of paragraphs). We don't accept lame excuses for missing an exam, but if you have a legitimate excuse, be sure to notify the appropriate lecturer (Davis for Exam I ; McGuire for Exam II and Davis for the Final) by the day after the exam and provide a written confirmation (letter from your doctor etc.). If you miss an exam, your final grade will be determined from the other exams (**THERE WILL BE NO MAKE-UP EXAMS!**) Job related excuses are not acceptable; you are responsible for arranging your work schedule around your classes.

Lab performance is evaluated by several criteria with the indicated weights:

Quizzes	20%
Write ups	60%
Lab final exam	20%

The quizzes are given at the beginning of the lab period and test whether you have carefully read the lab exercise(s) before coming to lab. Unprepared students tend to make mistakes in lab and become a liability for their lab partners. Write-ups refer to the material you hand in from the previous week's exercise (graphs, answers to questions, etc.).

Neatness counts here! In many cases you will share data with other students, but the lab write up you turn in must be your own work. Turning in a copy of someone else's work is Plagiarism and is considered a serious academic offense. Two students who turn in the same lab report will each receive no points for the write up. Offenses of cheating, including plagiarism, will result in the student being reported to the judicial office. The genetics paper is a formal write-up of the "Segregation Analysis" experiment, and must be typewritten in a format spelled out in the lab syllabus and by your lab instructor at the appropriate time. The lab final will cover the entire lab course; it will be given during the last week of classes.

Important Points to emphasize:

- I. Attendance at lab meetings is mandatory! Role is taken at each meeting, and missing more than one lab without a legitimate excuse is grounds for failing.
- II. You must pass both the Lecture Component and the Laboratory Component to pass the course. A superior performance in lab will not make up for a failing performance on lecture exams. A superior performance in lecture will not make up for a failing performance in lab.