

CELL BIOLOGY
BIOL3030
Spring 2011
Tuesday/Thursday 8:00 am-9:15 am
Memorial Field House 2100

INSTRUCTORS:

Dr. Deborah Vestal
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OFFICE HOURS

Tues. 9:20-10:30 and Thurs. 9:20-10:15, by appointment

COURSE DESCRIPTION

The focus of Cell Biology is the study of the structure and function of the cell. In this course we will focus on Eukaryotic cell biology and will cover topics such as membrane structure and composition, transport, and trafficking; the cytoskeleton and cell movement; the breakdown of macromolecules and generation of energy; and the integration of cells into tissues. We will also cover important cellular processes such as cell cycle regulation, signal transduction, apoptosis (programmed cell death), and cancer cell biology. Throughout the semester we will attempt to relate defects in these various cellular processes to human diseases to help gain a better understanding for what happens when cells don't work as they should.

REQUIRED TEXT

Lodish et. al. *Molecular Cell Biology*. Seventh Edition. Freeman Press.

A free Companion Website accompanies the book at <http://bcs.whfreeman.com/lodish7e>. There you will find additional activities and resources.

IMPORTANT DATES

Jan. 11-Add via web ends

Jan. 18- Last day to add

Jan. 21-Last day to drop

Jan. 29-EXAM I

Feb. 26-EXAM II

Mar. 22-Last Day to Withdraw

Mar. 26-EXAM III

April 30-FINAL EXAM (8:00 am-10:00 am)

STUDENT EVALUATION

There will be three in-class exams during the semester. The first will count for 15% of your final grade and the second and third will each count for 25% of your final grade. The final exam will count for 35% of your final grade.

The in-class exams will consist of approximately 50 multiple-choice questions. These exams will only cover new material (i.e.-material covered since the previous exam)

The final exam will be comprehensive and will likely consist of approximately 100 multiple-choice questions. About 70% of the final exam will cover topics discussed since the third exam. The remaining 30% will cover topics discussed from the start of the semester.

Students arriving more than 10 minutes late for an exam will not be allowed to take the exam. In addition, under no circumstances will students be able to take an exam once other students have completed the exam and left the room.

Bring 2-3 sharpened number 2 pencils with good erasers to the exam.

Students must present a picture I.D. to the instructor or proctors when turning in exams.

If an exam is missed, I must be notified within 48 hours and documentation of the reason for missing the exam should be provided. Acceptable excuses include a death in the immediate family and illness of the student.

Make-up exams will be given at the discretion of the instructor and will consist primarily of essay type questions. Because of this, it is likely that make-up exams will be more difficult than the exam taken in class.

Exams will be based on materials from lectures and assigned textbook readings, however material covered in the lectures will be emphasized so students should attend class and take detailed notes. The instructors will not provide lecture notes, so if you miss a class be sure to get notes from other students.

If you chose to stop attending class, be sure to withdraw. If you take one or more exams and then stop attending class but do not withdraw you will receive the grade that you earn after receiving zeros for the remaining exam. Be certain that without withdrawing you will still receive a letter grade.

TENTATIVE GRADING SCALE

% of available marks	Grade	Standard
90-100	A	Achievement of outstanding quality
88-89	A-	Achievement of slightly less than outstanding quality
85-87	B+	Achievement of slightly more than high quality
78-84	B	Achievement of high quality
75-77	B-	Achievement of slightly less than high quality
73-74	C+	Work of slightly more than acceptable quality
64-72	C	Work of acceptable quality
62-63	C-	Work of slightly less than acceptable quality
61-62	D+	Work slightly above the quality expected
52-60	D	Work below the quality expected
50-51	D-	Work slightly below the quality expected

CLASS SCHEDULE

Jan.	8	Introduction to Cell Biology
	10	Protein Structure and Function
	15	Protein Structure and Function/Membranes and Cell Architecture
	17	Membranes and Cell Architecture
	22	Membranes and Cell Architecture
	24	Membrane Transport
	29	EXAM 1
	31	Cellular Energetics
Feb.	5	Translation Overview
	7	Membrane Trafficking
	12	Membrane Trafficking
	14	Vesicular Traffic, Secretion, and Endocytosis

	19	Vesicular Traffic, Secretion, and Endocytosis
	21	Metabolism and Movement of Lipids
	26	EXAM II
	28	Cytoskeleton-Microfilaments and Intermediate Filaments
Mar.	5	Spring Break
	7	Spring Break
	12	Cytoskeleton-Microtubules
	14	Integrating Cells into Tissues
	19	Integrating Cells into Tissues
	21	Immunology
	26	EXAM III
	28	Cell Signaling
April	2	Cell Signaling
	4	Signaling Pathways that control Gene Activation
	9	Signaling Continued/ Cell Birth, Lineage, and Death
	11	Cell Birth, Lineage, and Death
	16	Cell Cycle and Cell Growth Control
	18	Cancer Cell Biology
	23	Cancer Cell Biology
	25	finish up
April	30	FINAL EXAM-8:00-10:00 am

<u>TOPIC</u>	<u>BOOK CHAPTER</u>
<u>Introduction to Cell Biology</u>	Chap. 1
<u>Protein Structure/Function</u>	Chap. 3
<u>Biomembrane Structure</u>	Chap. 10 (parts 1 and 2)
<u>Membrane Transport</u>	Chap. 11
EXAM I	
<u>Cellular Energetics</u>	Chap. 12

<u>Translation Overview</u>	Chap. 4 (4.3 and 4.4)
<u>Moving proteins into membranes and organelles</u>	Chap. 13
<u>Vesicular Traffic, Secretion, and Endocytosis</u>	Chap. 14
<u>Metabolism and Movement of Lipids</u>	Chap. 10.3
EXAM II	
<u>Cellular Organization and Movement</u>	
<u>Microfilaments</u>	Chap. 17
<u>Microtubules and intermediate filaments</u>	Chap. 18
<u>Integrating Cells into Tissues</u>	Chap. 20
<u>Immunology</u>	Chap. 23
EXAM III	
<u>Signal Transduction and G protein-coupled receptors</u>	Chap. 15
<u>Signaling Pathways that Control Gene Activation</u>	Chap. 16
<u>Stem Cells, Cell Asymmetry, and Cell Death</u>	Chap. 21
<u>The Eukaryotic Cell Cycle</u>	Chap. 20
<u>Cancer</u>	Chap. 24

STATEMENT OF ACADEMIC DISHONESTY

Department of Biological Sciences

Academic dishonesty by students enrolled in undergraduate and graduate courses and programs offered by the Department of Biological Sciences will not be tolerated. Academic dishonesty includes but is not limited to:

1. Obtaining assistance from another individual during an examination.
2. Giving assistance to another individual during an examination.
3. The unauthorized use of study material or textbooks during an examination.
4. Changing answers on an examination after it has been returned and then submitting it for regrading.
5. Plagiarizing written assignments. Plagiarizing includes but is not limited to: a) Copying laboratory reports from previous years, b) copying or paraphrasing reports, term papers, or these prepared by other students, c) unauthorized collaboration in the preparation of reports, term papers, or theses, and d) use of another author's materials without appropriate acknowledgement through quotation and citation.
6. Attempting to bribe or otherwise induce an instructor to alter either a grade or examination score.
7. Obtaining or attempting to obtain a copy of an examination prior to its administration.

In accordance with policies presented in The Student Handbook and The University Catalog, Instructors have the responsibility and right to report cases of alleged dishonesty to departmental, college, and university administrative units. Students involved in academic dishonesty may expect to receive a grade of F on specific assignments as well as in the course where the assignment was made. In addition, disciplinary action may be recommended through appropriate college and university disciplinary committees. Please consult your instructor for instructions on the implementation of this policy.