

CELL BIOLOGY
BIOL3030-001
Spring 2014
Tuesday/Thursday 8:00 am-9:15 am
Memorial Field House 2100

INSTRUCTOR:

Dr. Deborah Vestal
MC Office BO 1098
BHS 391
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Deborah.Vestal@utoledo.edu

OFFICE HOURS

Tues. 9:20-10:30 and Thurs. 9:20-10:15, by appointment. The professor will also answer questions by email.

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. 10-Add via web ends

Jan. 17- Last day to add

Jan. 20-Last day to drop

Jan. 28-EXAM I

Feb. 25-EXAM II

Mar. 21-Last Day to Withdraw

Mar. 25-EXAM III

April 29-FINAL EXAM (8:00 am-10:00 am)

REVIEW SESSIONS

There will be review session each of the Saturdays before an exam. They will be from 9 am until about 11 am in the morning. Attendance is optional but recommended.

Saturday Jan. 25 th	WO 1205
Saturday Feb. 22 nd	BO 1045
Saturday Mar. 22 nd	BO 1045
Saturday Apr. 26 th	BO 1045

CLASS FORMAT

In large part to better prepare students for up-coming changes in the pre-professional exams, such as the MCAT, the format for Cell Biology will be changed this semester. Instead of the traditional lecture approach, we will be trying to approach something referred to as “active learning”. The course lectures were taped last year and will be posted on blackboard. The expectation is that you will have listened to, digested, and learned the material from the lecture for each class prior to attending class. During class you will take one or more clicker quizzes to evaluate your proficiency with the material and to identify areas of confusion for the class. The in-class time will be spent in discussion of the material and in trying to clear up areas of confusion. Success will require that you have done the work assigned before class and come with questions and areas that you feel need additional clarification. Class attendance, as determined by your participation in the clicker quizzes, will be 5% of your final grade. Your grades on the in-class clicker quizzes will make up 15% of your final grade.

STUDENT EVALUATION

There will be three in-class exams during the semester. The first will count for 10% of your final grade and the second and third will each count for 20% of your final grade. The final exam will count for 30% of your final grade.

The in-class exams will consist of a combination of multiple-choice, short answer, and short essay 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 multiple-choice, short answer, and short essay 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. Students should listen to the taped lecture and take detailed notes. Be prepared to contribute to scheduled classes by taking quizzes and by asking questions about anything you are not completely clear about.

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.	7	Introduction to Cell Biology
	9	Protein Structure and Function
	14	Protein Structure and Function/Membranes and Cell Architecture
	16	Membranes and Cell Architecture
	21	Membranes and Cell Architecture
	23	Membrane Transport
	28	EXAM 1
	30	Cellular Energetics
Feb.	4	Translation Overview
	6	Membrane Trafficking
	11	Membrane Trafficking
	13	Vesicular Traffic, Secretion, and Endocytosis
	18	Vesicular Traffic, Secretion, and Endocytosis
	20	Metabolism and Movement of Lipids
	25	EXAM II
	27	Cytoskeleton-Microfilaments and Intermediate Filaments
Mar.	3	Spring Break
	5	Spring Break
	11	Finish Microfilaments/Cytoskeleton-Microtubules
	13	Finish Microtubules
	18	Integrating Cells into Tissues
	20	Integrating Cells into Tissues
	25	EXAM III
	27	Cell Signaling
April	1	Cell Signaling
	3	Signaling Pathways that control Gene Activation

8	Signaling Continued/ Cell Birth, Lineage, and Death
10	Cell Birth, Lineage, and Death
15	Cell Cycle and Cell Growth Control
17	Cell Cycle and Cell Growth Control
22	Cancer Cell Biology
24	Cancer Cell Biology

April 29 **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

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

FINAL EXAM

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.