

Biology 105
Biological Concepts: Unity
Section A09C
Spring 2014

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LECTURE INFORMATION

LECTURE SCHEDULE: 9:10-10:10 MWF in HS106.

LECTURE TEXT: Reece, J.B., M.R. Taylor, E.J. Simon and J.L. Dickey (2012) **Campbell's Biology: Concepts and Connections**, 7th edition. Second custom edition for the University of Wisconsin-Oshkosh (ISBN 10:1-256-16987-0; ISBN 13: 978-1-256-16987-1). BUY IT, USE IT (see list of readings, below).

LECTURE EXAMS: Five lecture exams will be given, the dates of which are provided in the syllabus. A missed exam will result in a score of zero for that exam, unless a student qualifies for a makeup exam.

LECTURE MAKEUP EXAM: One makeup lecture exam will be given on Friday, December 13th, 2014 during the regularly scheduled class period for anyone who missed one of the previous four lecture exams. This exam will be comprehensive (covering material from all four prior exams). In order to be eligible to take this exam a student must receive **prior** permission from me and permission will be considered only for those who contacted me before the exam missed. Only one missed exam may be replaced with the makeup exam score. The makeup exam cannot be used to replace a low score on a previous exam.

LECTURE ATTENDANCE POLICY: I will not take attendance. However given that each lecture represents ~10% of the subsequent exam, skipping lecture is the most foolish and grade-damaging thing a college student can do. I will not repeat lectures and I do not publish my lecture notes. I do, however, post pod-casts on D2L. If you want to know what will be on the next exam, you have to come to class every day. If you skip class you will have to get notes from a fellow student, or rely on the pod-cast. Any student with a valid excused absence will be allowed to make up any missed material, with the exception of in-class quizzes. However, an excused absence does not excuse a student from the responsibility of knowing the material covered during the day class was missed.

Students with disabilities are asked to contact their lecture and lab instructors in the first week of class so that all possible accommodations may be arranged.

LABORATORY INFORMATION

LABORATORY TEXT: BIO 105: Concepts in Biology: Unity: Laboratory Manual (11th ed). You must bring it to every laboratory meeting. It contains a full explanation of every laboratory, instructions on how to conduct the laboratory exercise and pages that will be filled out and left with your instructor at the end of the lab period.

LABORATORY ASSIGNMENTS: Your laboratory instructor (of which we have many) is responsible for assigning and grading the 200 points of various lab reports, quizzes and worksheets. He/she will explain this the first day of lab.

LABORATORY ATTENDANCE POLICY: Students are required to attend the laboratory section in which they are enrolled. **THERE WILL BE NO MAKE UP LABS. THEREFORE, MISSED LABS CANNOT BE MADE UP.** It may be possible to attend an alternative section if there is room in that section and if both instructors are notified in advance. It is the responsibility of the student to contact instructors of the lab they intend to miss (see D2L for laboratory schedules and contact information for the various laboratory instructors) and the lab they wish to attend in its place. Lab instructors are under no obligation to accept other students into their labs and will only do so if there is space available.

STUDY AIDS: Each student will need to develop a personal study system that works for him/her. Here are some suggested tools.

MANAGE YOUR TIME: Make up a weekly class and study schedule and stick to it.

ATTEND CLASS: Do not skip, pay attention, take good notes.

REWRITE YOUR LECTURE NOTES: Every lecture, before the next lecture.

USE THE TEXTBOOK: Don't just read it, use it.

TALK TO ME: phone, email, office hours, drop in (but not right before lecture!).

DEVELOP A STUDY ROUTINE: place, time, study partner, study group, study supplies, reward system

ATTEND S.I. SESSIONS: S.I. leader is Drew Shupe. S.I. hours are posted on D2L.

GO TO THE READING AND STUDY SKILLS CENTER: 201 Nursing/Education, 424-1031,
www.uwosh.edu/programs/readingstudycenter

GO TO THE CENTER FOR ACADEMIC RESOURCES: 102 Student Services Center, 424-2290, www.uwosh.edu/car/. Free tutors are available.

GRADING: there is a total of 700 points

LECTURE GRADING: There will be five lecture exams, each worth 100 points, for a total of 500 points.

LABORATORY GRADING: 200 points will be assigned to various lab reports, quizzes and hand-ins to be announced in laboratory by your lab instructor (see your laboratory syllabus).

COURSE GRADE: The 500 points from the lecture exams will constitute 71% of the total course grade, while the 200 points total from the laboratory will constitute the other 29% of the total course grade. I do not curve. I do not normalize. End-of-the-semester letter grade assignments will be made using the grading scale given below.

GRADING SCALE:

<u>Total points</u>	<u>Percent</u>	<u>Letter grade</u>
700-644	100-92.0	A
643-630	91.9-90.0	A-
629-616	89.9-88.0	B+
615-574	87.9-82.0	B
573-560	81.9-80.0	B-
559-546	79.9-78.0	C+
545-504	77.9-72.0	C
503-490	71.9-70.0	C-
489-476	69.9-68.0	D+
475-434	67.9-62.0	D
433-420	61.9-60.0	D-
419-0	<59.9	F

OFFICE HOURS

Monday and Wednesday 4:10-5:30, or by appointment. I'm not very good at returning phone calls (I don't like playing phone tag over voice mail) but I will gladly answer any questions via email or if you stop by my office. The best way to reach me is right after lecture or via email. The worst time is right before lecture.

STATEMENT ON USE OF ELECTRONIC DEVICES IN CLASS

In order to protect and foster the proper learning environment, the use of cell phones is not allowed in lecture or lab. That includes sending or receiving voice or text messages, or even checking to see if new calls/messages have come in. Please turn your phone off at the start of class to prevent interruptions from incoming calls. Wireless laptop computers are allowed, but only if their use is limited to activities directly related to course performance such as taking notes or looking up content on the web. Use of portable music devices is not allowed in lecture or lab at any time. Use of any electronic device during an exam will result in an automatic zero for that exam.

STATEMENT ON ACADEMIC DISHONESTY

Students are referred to the University of Wisconsin Oshkosh Student Discipline Code as detailed in Specific provisions of Chapter 14 of the State of Wisconsin Administrative Code. Any student(s) found in violation of any aspect of the above Code (as defined in sections UWS 14.02 and 14.03) will receive a sanction as detailed in UWS 14.05 and 14.06. Sanctions range from an oral reprimand to expulsion from the University of Wisconsin-Oshkosh. Students have the right to request a hearing and to appeal sanctions (as defined in UWS 14.08-14.10). Talking during an exam or looking at another student's exam will constitute grounds for disciplinary action.

Sadly, I have enforced, and I will continue to enforce, the above policy.

STATEMENT ON THE VALUE OF A LIBERAL ARTS EDUCATION

Our goal in this course is to provide you with basic knowledge about *life* and how it operates. For some of you, this course will be a precursor to further science coursework. For others, it will become part of your education in the liberal arts and your sole contact with such material. Biology is in the news every day: medicine, environmentalism, genetic engineering, "intelligent design", etc. To understand the implications of all this, you need to know the basics of biology. If studying *life* isn't germane to your *life*, what is?

Lecture and Laboratory Syllabus--Biology 105

Date	#	Topic	Text Sections
Feb 3	1	Syllabus and other business	***
Feb 5	2	Chemistry: Elements, Atoms and Compounds; Bonds	2.1-2.7
Feb 7	3	Chemistry: Hydrogen Bonds, Chemical Reactions and Water	2.8-2.16
Feb 10	4	Molecules: Organic Compounds, Carbohydrates and Lipids	3.1-3.10
Feb 12	5	Molecules: Proteins and Nucleic Acids	3.11-3.16
Feb 14	6	Cells: Introduction, Nucleus, Ribosomes, Endomembrne System	4.1-4.12
<i>Lab week #1</i>		<i>Exercise 1: The Scientific Method</i>	
Feb 17	--	Study methods	
Feb 19	7	Cells: Energy Converting Organelles, Cytoskeleton, Cell Surfaces	4.13-4.22 4-48
Feb 21	8	The Working Cell: Membrane Structure & Function	5.1-5.5
<i>Lab week #2</i>		<i>Exercise 2. Applying the Scientific Method to <u>Daphnia</u></i>	
Feb 24	--	Lecture Exam I (on lectures 1-7, Chapters 2-4, 54 modules)	***
Feb 26	9	The Working Cell: Water and Transport Across Membranes	5.6-5.9
Feb 28	10	The Working Cell: Energy and the Cell	5.10-5.12
<i>Lab week #3</i>		<i>Exercise 3: Molecules</i>	
March 3	11	The Working Cell: How Enzymes Function	5.13-5.16
March 5	12	Cellular Respiration: Aerobic Harvesting of Energy	6.1-6.7
March 7	13	Stages of Cellular Respiration	6.8-6.12
<i>Lab week #4</i>		<i>Exercise 4. Enzymes</i>	
March 10	14	Fermentation and Interconnections	6.13-6.16
March 12	15	An Overview of Photosynthesis	7.1-7.5
March 14	16	The Light Reactions and The Calvin Cycle	7.6-7.11
<i>Lab week #5</i>		<i>Exercise 5. Osmosis and Diffusion</i>	
March 17	17	Greenhouse Effect, Ozone Layer, Fall Foliage	7.12-7.14, & extra
March 19	18	Cell Division ... through Cytokinesis	8.1-8.6
March 21	--	Lecture Exam II (on lectures 8-17, Chapters 5-7, 46 modules)	***
<i>Lab week #6</i>		<i>Exercise 6. Respiration</i>	
<u>Spring Break--March 22-30</u>			
March 31	19	Anchorage, Growth Factors and Cancer	8.7-8.10
April 2	20	Meiosis and Crossing Over	8.11-8.14
April 5	21	Alterations of Chromosome Number and Structure	8.15-8.23
<i>Lab week #7</i>		<i>Exercise 7. Photosynthesis</i> <i>Exercise 8.1. Start Mendelian Genetics (set up P x P cross)</i>	
April 7	22	Human Gamete Production & Stem Cells	27.5, 27.9, 27.15, 11.15
April 9	23	Mendel's Laws	9.1-9.5
April 11	24	Variations on Mendel's Laws	9.6-9.10
<i>Lab week #8</i>		<i>Exercise 8.2. Continue (release P adults, leave F1 larvae to develop)</i> <i>Exercise 9.1. Start Genetic Engineering (streak Tet- and Tet+ plates)</i>	

April 14	25	Chromosomal Basis of Inheritance; Sex-Chromosomes and Sex Linkage	9.11-9.23
April 16	26	Structure of Genetic Material; DNA Replication	10.1 10.2-10.5
April 18	--	Lecture Exam III (on lectures 18-25, Chapters 8-9, 46 modules)	***
Lab week #9		<i>Exercise 8.3. Continue (score F1 adults and set up F1 x F1 cross)</i> <i>Exercise 9.2. Continue (isolate Tet^{resjGFP} plasmid)</i>	
April 21	27	Flow of Genetic Information from DNA to RNA to Protein	10.6-10.16
April 23	28	Genetics of Viruses and Bacteria	10.17-10.23
April 25	29	Control of Gene Expression	11.1-11.11
Lab week #10		<i>Exercise 8.4. Continue (release F1 adults, leave F2 larvae to develop)</i> <i>Exercise 9.3. Continue (perform transformation)</i>	
April 28	30	Cloning and The Genetic Basis of Cancer	11.12-11.19
April 30	31	Gene Cloning; Genetically Modified Organisms	12.1, 12.2-12.5 , 12.6-12.10, 12.11-12.21
May 2	32	Darwin's Theory of Evolution	13.1-13.6
Lab week #11	--	<i>Exercise 8.5. Finish (score F2 adults and discuss results)</i> <i>Exercise 9.4. Finish (inspect final plates and discuss results)</i>	
May 5	--	Lecture Exam IV (on lectures 26-31, Chapters 10-12, 48 modules)	***
May 7	33	Evolution of Populations; Mechanisms of Microevolution	13.7-13.17
May 9	34	The Origin of Species	14.1-14.11
Lab week #12		<i>Exercise 10. Quick Exercises in Selection and Speciation</i>	
May 12	35	Early Earth and the Origin/History of Life	15.1-15.6
May 14	36	Macroevolution; The Tree of Life	15.7-15.19
May 16	--	Lecture Exam V (on lectures 32-36, Chapters 13-15, 47 modules)	***