

BIOL 2311/2111 INTRODUCTION TO MODERN BIOLOGY I and WORKSHOP.

Tues and Thurs: 12:30 -1:45 in CN 1.120

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Required text: Biological Science by Scott Freeman, 2nd edition, volume 1 (the cell, genetics and development) published by Prentice Hall.

This course is designed to give students information about the basic concepts of biology with an emphasis on the molecular and cellular basis of biological phenomena. Topics include the chemistry and metabolism of biological molecules, elementary classical and molecular genetics, selected aspects of developmental biology, as well as study of major groups of biological organisms such as bacteria, viruses and fungi.

Syllabus for BIOL 2311: All students who are registered for the 2311 course must also be registered for the workshop (BIOL 2111) associated with it.

Lecture schedule

Date and day	Chapter, topic	Assigned reading
August 17, Th	Chap 1. Biology and the tree of life.	Why are chili peppers hot?
August 22, T	Chap 2. Atoms and molecules of ancient Earth	Properties of water
August 24, Th	Chap 3: Protein structure and function	Function of proteins in cells
August 29, T	Chap 4. NA and the RNA world	Dimensions of DNA secondary structure
August 31, Th	Chap 5. An introduction to carbohydrates	How some antibiotics kill bacteria
September 5, T		Test I
September 7, Th	Chap 6 Lipids, membranes and the first cell	Does adding cholesterol to a membrane affect its permeability?
September 12, T	Chap 7. Inside the cell	Cell structure correlates with function
September 14, Th	Chap 8. Cell to cell interaction	Do animal cells adhere selectively?
September 19, T	Chap 9. Cellular respiration and fermentation	Relationship between anabolism and catabolism
September 21, Th	Chap 10. Photosynthesis	What happens to the sugar that is produced by photosynthesis?
September 26, T		Test II
September 28, Th	Chap 11. The cell cycle	Properties of cancer cells
October 3, T	Chapter 12: Meiosis	Seedless fruits
October 5, Th	Chap 13. Mendel and the gene	How does the physical environment affect phenotype?
October 10, T	Chap 14. DNA synthesis	<i>Xeroderma pigmentosum</i>
October 12, Th	Chap 15. How do genes	Exception to the central dogma

	work?	
October 17, T	Chap 16: Translation and transcription	Comparing transcription in bacteria and eukaryotes
October 19, Th	Chap 17. Control of gene expression in bacteria	Similarities and contrasts in control of the <i>trp</i> and <i>lac</i> operon
October 24, T		Test III (up to Chapter 16)
October 26, Th	Chap 18. Control of gene expression in eukaryotes	Fly eyes and other strange tales of gene regulation
October 31, T	Chapter 19: Analysis and engineering genes	Why are viruses not the 'ideal vectors' they appear to be for delivery of normal human alleles
November 2, Th	Chap 20: Genomes	Designing vaccines
November 7, T	Chap 21, 22: Introduction to development, pattern formation and differentiation	
November 9, Th	.	Test IV
November 14, T	Bacteria & Archaea,	Lecture notes
November 16, Th	Fungi, Protists	Lecture notes
November 21, T	and Viruses	Lecture notes
November 23, Th	Thanksgiving break	
November 28, T		Test V

- Each test from tests I to IV is worth 50 points. You will be allowed to drop your lowest score of the four tests after you have taken all four, provided you make at least 69.6% as your lowest score. Test V will include some material from earlier chapters and will be worth 100 points. You will be provided with a list of these topics during workshop. Your final grade will be calculated based on the points made out of 250.
- If you do not take all four tests your grade will be calculated on points made out of 300. Thus it is in your best interest to make sure you take all four tests.
- Letter grades are calculated as follows: 100-89.6% is A, 89.5-79.6% is B, 79.5-69.6 is C, 69.5-59.5 is D and less than 59.5 % is F. The detailed breakdown is as follows: 89.6-93.4 % is an A minus, 93.5-96.4 is an A and 96.5 % and above is an A plus, the same scale applies to B, C and D grades.
- The grade you will be assigned for workshop is the same as the lecture grade.
- Each workshop will be conducted by a teaching assistant and will cover topics discussed during both lectures of the week. Workshops will be used to discuss and review material including those categorized as assigned reading. In addition tests will be handed back and the key discussed, TAs will also discuss study guides for each chapter.
- Workshop attendance is mandatory. You will attend only the workshop assigned to you.

Use the following guidelines for the course

- You will be notified of any change from the above schedule should one occur.
- Students are expected to read lecture chapters prior to class, be prepared for 'pop' quizzes.
- Unless there is a documented medical emergency, no make up tests will be possible. Please let me know as soon as you are sure you cannot come to a test.
- Make up tests are usually more difficult than the scheduled ones in addition to having a different grading system, thus it is in your best interest to take tests when scheduled.
- Please come to class on time and do not leave early unless you have discussed it with me prior to class.
- Academic dishonesty in any form will not be tolerated and will be handled according to the rules and procedures of the University of Texas at Dallas.

Tests and exams

1. If you have any questions regarding grading, change in scores or any other issues, please discuss it with me **within a week** of getting your tests back. No test papers will be re-evaluated after this time period.
2. Make sure your TA has been notified of any changes in scores
3. Do not compare your paper with someone else's, if you do, be prepared to bring his/her paper to me for further evaluation of both papers.
4. Keep track of your scores and be aware of your standing in the course, check periodically with your TA.
5. Only pens are to be used when writing answers to quizzes and exams.
6. Hand your completed tests and exams directly and only to the proctor.
7. Please make sure you write your name and your TA's name on your tests.
8. I will re-word test questions for you if need be, don't hesitate to ask if you are not sure of the question.
9. Make sure you attend all review sessions etc organized by the TAs, do not miss any workshop, all material covered during workshop will be on the tests.
10. Exams will be based on all the material covered during lectures as well as assigned reading topics and lecture notes. Questions will be a combination of multiple choice as well as a variety of short-answer type questions.
11. If you have concerns or questions regarding any aspect of the course bring it to my attention as soon as possible, all communication will be kept strictly confidential.