

CHEM 4332 Syllabus
Spring 2017
MWF 10-10:50, Cav 215

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CAV 204A

Office Hours: MWF 11:00-12:00, R 10:50-11:50, or by appointment

Required Text: David L. Nelson and Michael M. Cox, Lehninger Principles of Biochemistry 6th ed., W.H. Freeman and Company, New York, (2013).

Online Homework: The class will use online homework from Sapling Learning.

Calculator: Bring a nonprogrammable scientific calculator to class every day and to all exams. You may not use a graphing calculator or cell phone on any quiz or exam.

Blackboard: This course will use Blackboard. Be sure to check Blackboard for postings.

Course Description: Coordinated examination of enzymatic processes in the living cell.

Prerequisite: CHEM 4331 Biochemistry

****CHEM 4332 is an ASU Designated Community Engaged Class**** This class will have an additional focus on social responsibility. This will include the opportunity to develop the concept of your civic responsibility as a scientist and facilitate your engagement with the San Angelo community. As part of the CONNECT! Program, you will be required to participate in one co-curricular event, the Angelo State University Multicultural Center Science of Diversity Day.

Course Objectives:

- Gaining factual knowledge (terminology, classifications, methods, trends)
- Learning fundamental principles, generalizations, or theories
- Learning to apply course materials (to improve rational thinking, problem solving and decisions)

Student Learning Outcomes:

After completion of this course students will be able to:

- analyze complex chemical problems and draw logical conclusions.
- understand and apply scientific reasoning in the chemical sciences.
- demonstrate technical and analytical skills in chemistry and biochemistry.
- demonstrate an increased awareness of the concept of social responsibility by reflecting on their experience of communicating science to the public at the ASU Science and Diversity Day.

Evaluation of Student Learning Outcomes:

Student learning outcomes will be evaluated by test questions.

Exams: There will be three 100 point regular exams during the semester and a comprehensive final exam of 150 points during the final exam period. Exam questions may be multiple choice, short answer, matching, and may require application of the covered material. Due to the cumulative nature of the course, some concepts from previous chapters may be necessary to solve problems in later chapters. Exams will not be curved. During exams, all items except your nonprogrammable calculator and pencil will be placed at the front of the room. You may not wear hats during the exam.

When I give you the exam back, I will briefly review important points regarding the test and answer any questions regarding the test. I will also discuss the distribution of grades. During this discussion time, you will need to decide if you would like a regrade of any test question.

Make-up exams: No make-up exams will be given except for university-sponsored events. If you miss an exam for an accepted excuse, i.e. a death in your family or personal illness, the final exam score will be used to replace the missed exam. Only one exam can be replaced in this fashion. If you miss two exams, you will not pass the course. If you miss the final, you will not pass the course. If you have taken the three hour exams, you may use the final exam score to replace your lowest exam score. Example: your exams are 60 pts, 70 pts, and 80 pts and your final is 100 pts. The 100 is $100/150 = 67\%$, so you can replace the 40 pt exam with 67 pts.

Quizzes: Quizzes on selected pathways and chapter material will be given throughout the semester. On the pathway quizzes, you will draw out the selected pathway in its entirety. This will allow more time for fair evaluation of other important course materials on the exams. No reference materials (notes, worked problems or text) may be used on paper quizzes. There will be twelve quizzes during the course of the semester. The lowest two quiz scores will be dropped. No makeup quizzes will be given except for university-sponsored events. Quizzes missed for university-sponsored events must be made up within one week of the missed quiz.

Homework and in-class activities: Online homework from Sapling Learning will be assigned. There will also be some in-class activities. Preparation material for in-class activities will be announced in class or on Blackboard. No credit will be given for late homework or in class assignments missed for any reason, including tardiness. In calculating your grade, I will drop 10% of this category of points and normalize to 50 points for the category.

Paper and presentation: Information from reputable websites (MedlinePlus, Protein Databank, NIH, pharmaceutical manufacturers), texts, and peer-reviewed journal articles will be used to write a paper to describe biochemical topic. The paper should be written for a biochemistry student audience. The presentation will be made to the general public and will be presented at the Science of Diversity Day in the University Center. The paper should be a minimum of 1500 words, Arial font, font size 11, 1.5 spacing. Students will turn in on Blackboard an electronic copy of their paper. Students will also give a 10 +/- 2 minute Powerpoint presentation on the topic. Deadlines for topic approval, outline, first submission, and final submission are given below. Please note that the first submission is not a rough draft. You should view this as submitting a paper to a journal. You want your best work presented and to have very little alterations before the final document. Direct copying of information from websites or other published sources is considered plagiarism and will result in an F on the assignment. Papers should be cited using superscript numbers. For example.¹ References should be numbered in order of appearance. A numbered list of references should be included in a reference section at the end of the paper. Follow the citation rules listed for the CSE Scientific Style and Format found at <http://www.scientificstyleandformat.org/Tools/SSF-Citation-Quick-Guide.html>. Citations

should be given next to or on the same slide as any copied figures. Wikipedia and answers.com are often helpful starting points, but they are NOT peer reviewed sources, and thus are not always accurate. You will be given an F on the assignment if you chose to cite these websites and websites like them as sources.

Co-curricular activity: Students are required to participate in one co-curricular activity during the semester. Students will present their presentations at the Science and Diversity Day that will be held in partnership with the Multicultural Center. Students will be graded on a reflective essay about the activity that relates to a scientist's social responsibility to promote the knowledge of science to the public and also on ability of the student to explain their activity to the professor in their own words.

Lecture Notes: Lecture outlines will be posted on Blackboard, but you will still need to take notes in class.

Review sessions: Help sessions will be given before the exam. As these help sessions are directed by student's questions, what is covered in the review sessions may or may not be covered on the test.

Grading corrections: Any discussion of corrections must be made within three weekdays of the returned work.

Grades:

Point cutoffs

603	A	300	100 points per regular exam (3)
540	B	100	points quizzes
469	C	50	points homework and in class assignments
402	D	150	points comprehensive final
<402	F	50	points paper and presentation
		<u>20</u>	points for co-curricular activity
		670	total points

Courtesy: Please be on time, refrain from eating, do not work on or read material for other courses, and turn off cell phones (i.e. please refrain from texting). Please help create a positive, focused learning environment for yourself and your classmates. Please be respectful of your instructor and your classmates. No credit will be given for any assignment or exam that contains drawings or writings that are inappropriate or disrespectful.

Attendance: You are expected to attend all class meetings. You are expected to arrive on time and to stay until you are dismissed. In-classroom activities such as worksheets cannot be made up. You will not be automatically dropped if you stop attending class. Daily attendance will be taken at the beginning of class. If you are tardy, you will be counted absent.

Flu: If you have the flu, please stay home. Do not help spread the flu to everyone else. Please keep me informed as to your status by email or telephone.

Academic Dishonesty: The ASU policies on academic dishonesty can be found in the Academic Honor Code http://www.angelo.edu/forms/pdf/Honor_Code.pdf . The penalty for ANY sort of dishonesty, including cheating or plagiarism is: 1) a grade of zero on the assignment and 2) disciplinary action as warranted in accordance with university guidelines. Unless otherwise

stated, any homework/bonus work assigned should be your own work. Any Excel graph made should be your own graph.

Excerpt from Angelo State University Student Academic Honor Code

(<http://www.angelo.edu/forms/pdf/honorcode5.pdf>) :

STUDENT ACADEMIC HONOR CODE STATEMENT

Angelo State University students shall maintain complete honesty and integrity in their academic pursuits.

ADA statement: If you have any ADA accommodations that need to be fulfilled, please contact the Student Life Office, Room 112 University Center, in order to request such accommodations. You are encouraged to make this request early in the semester so that appropriate arrangements can be made.

Course Schedule

Week of January 16	Review of syllabus, overview of metabolism, Science and Diversity Chapter 11 Biological Membranes and Transport
January 23	Ch 12 Biosignalling Lehninger Part II Bioenergetics and Metabolism
January 30	Chapter 13 Bioenergetics and Biochemical Reaction Types
February 6	Chapter 14 Glycolysis, Gluconeogenesis, and the Pentose Phosphate Pathway
February 13	February 17, Exam One
February 20	Chapter 15 Principles of Metabolic Regulation
February 27	Chapter 16 The Citric Acid Cycle
March 6	Ch 16 continued
March 13	SPRING BREAK
March 20	Chapter 17 Fatty Acid Catabolism
March 27	Chapter 18 Amino Acid Oxidation and the Production of Urea March 29, Exam Two March 31, Last day to withdraw
April 3	Chapter 19 Oxidative Phosphorylation
April 10	Chapter 21 Lipid Biosynthesis Friday, April 14 - Spring Holiday
April 17	Chapter 22 Biosynthesis of Amino Acids, Nucleotides, and Related Molecules April 21, Exam Three
April 24	Chapter 23 Hormonal Regulation and Integration of Mammalian Metabolism
May 1	Chapter 23 continued
May 8	Final exam 10:30 a.m.-12:30 p.m.

Graduate and Honors Students

Graduate students will do additional activities, such as writing an additional paper and giving a lecture to the class on a metabolism related topic. Additional instructions will be provided.