

CHEMISTRY 331 BIOCHEMISTRY II

Winter, 2014-15 1st MTRF O205

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TEXTBOOK: *Lehninger Principles of Biochemistry*, 6th edition, David L. Nelson and Michael M. Cox, Freeman & Co., 2013

EXAMS: The course will have at least two mid-term exams, and a comprehensive final exam. Missed exams require an Institute Official Notice (from the student affairs office) or a signed diagnosis from a physician to allow scheduling of a make-up exam. Unexcused absences for in class exams will result in an excruciatingly difficult oral examination.

HOMEWORK: There will be frequent homework assignments, and occasional **unannounced** in-class assignments. Late homework will be subject to a grade penalty, and its return is likely to be delayed.

Grade Breakdown:	Exams	65%
	Problem Sets/Quizzes	30%
	Participation	5%

COMMENTS AND PHILOSOPHY: a single quarter (or even three quarters, with the inclusion of CHEM 330 Biochemistry I and CHEM 430 Advanced Biochemistry) is not sufficient time to allow a full exploration of a field as broad as biochemistry. The goal for CHEM 331 is to explore the diversity of biological pathways, to discuss the rationale for biochemical reactions and processes, and to develop a better understanding of the interactions between different biochemical systems. CHEM 331 is a new course, and the overall philosophy for the course is likely to change somewhat as the course progresses.

HELPFUL HINTS: You will find your life much easier and this course far more useful if you read the material in the textbook prior to class. To assist you with this, the chapters from the textbook we should be covering are included on the tentative schedule.

Biochemistry is highly integrated, and many of the concepts covered in one class will be used extensively in subsequent classes. If you fall behind, you will find it extremely difficult to catch up. Studying for the course should be an ongoing process; if you only study during the week of the exam, you are unlikely to do well. One additional advantage inherent in keeping up is that you will know what it is you do not understand; this allows you to ask questions in class, which is something that everyone will find useful.

The problem sets are designed to help you stay caught up with the material. Working together on these problem sets is encouraged; remember, however, that *each individual is responsible for turning in their own work*. Copying the work of others without proper attribution is both unethical and a form of

Academic Misconduct; in addition, if you allow others to do your work for you, you will find yourself at a severe disadvantage on the exams. This means that you should understand the answers you write on your problems sets, and not merely copy answers from your friends or from other sources.

The problem sets may include study questions for which answers do not need to be submitted. I strongly recommend, however, that you make sure that you understand the questions and have at least attempted to answer the questions. I also recommend that, if you do not understand any of the study questions, you ask for clarification, either inside or outside of class.

CHEM 331 TENTATIVE CLASS SCHEDULE

Week	Topic	Chapter
1	Review of CHEM 330	
	Fatty Acid Breakdown	17
	Amino Acid Breakdown	18
2	Nitrogen Metabolism	
	Photophosphorylation	19
	Photosynthesis	20
3	Hexose Monophosphate Pathway	14
	Lipid Synthesis	21
	Exam 1 (date TBA)	
4	Lipid Synthesis	
	Amino Acid Synthesis	22
5	Amino Acids as Biological Precursors	
	Nucleotide Biosynthesis	
6	DNA	24, 25
	Exam 2 (date TBA)	
7	RNA	26
8	Protein Synthesis	27, 28
9	Protein Synthesis	
10	Special Topics	

Final exam – TBA