

CHEMISTRY 430 ADVANCED BIOCHEMISTRY

Spring, 2012-13

MTThF 5th hour in G308

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TEXTBOOK: *Lehninger Principles of Biochemistry*, 5th edition, David L. Nelson and Michael M. Cox, Freeman & Co., 2008

EXAMS: The exams in this course will be take-home exams. Guidelines for taking the exam will be included on the exam.

HOMEWORK: there will be frequent homework and in-class assignments. While these cannot be performed late, *excused* missed assignments will not count against your grade.

Grade Breakdown:	Exams	60%
	Presentations	20%
	Problem Sets/Quizzes	15%
	Participation	5%

Total Points 100%

COMMENTS AND POLICIES: Large portions of the class sessions will be devoted to discussions and problem solving related to the reading assignments. If you do not do the reading, you will find it much harder to follow the class discussions and to work on the problems discussed in class.

Biochemistry is highly integrated, and many of the concepts covered in one class will be used extensively in subsequent classes. A large part of understanding biochemistry involves integrating concepts discussed at different times. Studying for the course should be an ongoing process; if you only study while working on a take-home 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 everyone will find useful).

The homework and in-class problem sets are intended to help you understand 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.

CHEM 430 LIST OF POSSIBLE TOPICS

Protein purification
Molecular mechanisms of intoxication and anesthesia
Xenobiotic metabolism (including drugs & environmental compounds)
Molecular mechanisms of infectious disease
Biochemical issues related to stem cells
Gene therapy
Molecular mechanisms of carcinogenesis
Experimental techniques, especially spectroscopy
Molecular mechanisms of genetic disorders
Data analysis, experiment design, and project design

“membrane trafficking and metabolism and stuff”

Protein structure determination and analysis
Protein folding and structure/function relationships
Nuclear receptor biochemistry
DNA and gene transcriptional manipulation
RNA interference
Endocrine physiology
Nutrition
Molecular mechanisms of protein transport/targeting