

Introductory Biochemistry - Chem-106
Spring 2012 – BRN 101
Tue / Thur 9:30 – 10:45 pm

Prerequisite:

Chem-105: General Chemistry

Supplemental Text for Chem-106:

'General, Organic, and Biological Chemistry, Structures of Life' Third edition (Timberlake).

Chapters 11-24 will be covered for the semester.

Instructor:

Dr. Karen Hooper (skhooper5@gmail.com)

Office Hours: Tues 12:15 – 12:45pm, Brown 171

Percentage Grade Allocation:

Lab	Weekly labs	15%
Quizzes	Quiz 1-4	20%
Exams	Exam I and II	40%
Finals Week	Final Comprehensive Exam	25%

Periodic quizzes (~20min) will be administered during discussion sessions (see Tentative Schedule). Any changes to the topics to be covered will be announced prior to the change. You are responsible for **ALL** the material covered in class and stated in the assigned chapters unless explicitly stated otherwise.

There are no make-up quizzes, laboratory periods or exams. A review before each exam will be held out of class by the instructor with the time and date announced in class. An hourly exam missed for a **valid** reason (first discussed with the instructor) will be replaced by the corresponding grade on the final (Final is then 50% of your total grade).

By the end of this course, you should have a better understanding on the following:

An understanding of the structure of biomolecules (including organic molecules such as alcohols, aldehydes, ketones, carboxylic acids, thiols, amino acids, peptides, proteins, carbohydrates, lipids and nucleic acids): their main interactions in the cellular, and how their structures are stabilized by surrounding forces.

An understanding of the chemical reactivity of biomolecules, with particular emphasis on biomolecules such as amino acids, peptides, and proteins.

A broad understanding of the catalytic properties of enzymes.

An introduction to the central aspects of the following metabolic pathways: glycolysis, tricarboxylic acid cycle, and oxidative phosphorylation. Using this knowledge to integrate between pathways.

**Tentative Class Schedule for Chem-106
(Spring 2012)**

Week	Dates	Topic	Text Chapter
1	Feb 7 and 9	Introductions to Alkanes, Cycloalkanes, Naming Alkanes	Chapter 11
2	Feb 14 and 16	Functional Groups and Reactions Alkenes, Alkynes	Chapter 12-16
3	Feb 21 and 23	Water and pH Titration of Organic Acids	Chapter 10
4	Feb 28 and Mar 1	Quiz 1 Peptides and Proteins	Chapter 19/21
5	Mar 6 Mar 8	Peptides and Proteins Exam I (weeks 1-4)	Chapter 19/21
6	Mar 13 and 15	Enzyme Kinetics and Catalysis Coenzymes and Vitamins	Chapter 20 Chapter 20
7	Mar 20 and 22	Quiz 2 Carbohydrates	Chapter 15
	Mar 27 and 29	Spring Break	
8	Apr 3 and 5	Introduction to Metabolism	Chapter 22
9	Apr 10 Apr 12	Glycolysis Exam II (weeks 6-8)	Chapter 22
10	Apr 17 and 19	Glycolysis	Chapter 22
11	Apr 24 and 26	Quiz 3 The Citric Acid Cycle	Chapter 23
12	May 1 and 3	The Citric Acid Cycle	Chapter 23
13	May 8 and 10	Quiz 4 Electron Transport Oxidative Phosphorylation	Chapter 23
14	May 15	Lipids and Membranes Lipid Metabolism	Chapter 17 Chapter 24
16	May 18-25	Finals Week	