

Biochemistry I, CHE 450

MW, Section -30

Instructor: Dr. Noel Sturm, SI 311

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Course Organization and Policies:

1. **Prerequisites:** (a) General Chemistry (1 year) **and** (b) Organic Chemistry w/ Laboratory (1 year or a 1 semester survey course w/ lab) **and** (c) Quantitative Analysis (may **NOT** be taken concurrently w/ Biochemistry 450).

2. **REQUIRED Text:** Lehninger: Principles of Biochemistry, 8th Edition; Authors: Nelson and Cox

We will be Using the myCSUDH-ImmediateAccess- program.

How Does It Work?

The required course ebook will be available through BlackBoard in a digital format .

You will receive Free Access on the first day of classes.

Discounted pricing, \$89.99, has been negotiated with publishers.

Students will have until Friday, September 23rd, 2022 to opt out of the program..

After the opt-out deadline, any students who has not opted out will be charged on their CSUDH student account by the university, allowing more time to pay for the required material.

Here is a link from the publisher, Macmillan, that provides ISBN information for the text book and Sapling Learning.

[Lehninger and Sapling](#)

3. The reading list consists of links (see below) for Lehninger that highlight the sections and sub-sections of each chapter that are important for understanding the chemistry of biological systems and are relevant to the questions you will be asked in the homework and on the exams.

4. **Power Point Slides:** The power point slides are on-line, arranged via lecture topic, see below. **Examination questions will be derived directly from the readings, power point slides and homework.** There are also additional .html files provided to give an alternative presentation of the material.

5. **On-Line and On-Campus Sessions:** We will meet on-line every Monday 1:00 PM-2:10PM, using Blackboard Collaborate Ultra and on-campus every Wednesday 1:00-2:10PM, NSM C-221. We will discuss lecture material, do *quick thinks* and answer questions. It is very important that you attend all of the on-line sessions in order to succeed in this course. You must have a working computer, reliable internet connectivity and browser is an important requirement, please use Firefox 2.0.x or higher.

Instructions for Blackboard Collaborate Ultra:

https://help.blackboard.com/Collaborate/Ultra/Moderator/Get_Started/About_Collaborate

In Blackboard:

<Tools

<Blackboard Collaborate Ultra

<Click-on the "Session"

<Click-on "Join Room"

6.Examinations: There will be four multiple choice examinations (see syllabus for specific dates) each worth 99 points. Absolutely **NO** make-up exams will be given. All examinations will be on-line through Bb Collaborate Ultra using the Respondus Lockdown Browser.

7. Final Exam: The final exam (100 pts), will be on-line through Bb Collaborate Ultra using the Respondus Lockdown Browser and for section -30 is scheduled for Monday, December 12th, 2022, 1:00PM-3:00PM.

8. Homework:

- Homework can be found in the "Homework" link on Bb.
- There are twenty-two, on-line, multiple choice homework assignments.
- The homework assignments are based on the readings from Lehninger: Principles of Biochemistry.
- **Each homework assignment has a specific due date and homework submitted after that date will not be graded.** (See Syllabus)
- Each homework assignment is worth 10 points for a total of 220 points towards your final course grade.

9. The Goal of this course is to understand and outline Proteins, Enzymes, Vitamins, Membranes and all of the Carbohydrate Metabolic Pathways.

10. Grading Criteria: Letter grades are based on the following point distribution. Grades are criterion-referenced not norm-referenced; each student has an equal opportunity meet the criteria charted below:

Homework	220 pts
Respondus Test Question	4 pts
Exams	396 pts
Final Exam	100 pts
Total	720 pts

Grade	Percentages	Grade	Percentages
A	100-91	A-	90-89
B+	88-87	B	86-81
B-	80-79	C+	78-77
C	76-71	C-	70-69
D+	68-67	D	66-60
F	59-0		

11. Case Studies/Clinical Correlates: Related directly to the general biochemical principles being taught are intended to give "real-life" significance to the *biochemistry* experience and should be printed from the web site.

12. Course Description: The chemistry of amino acids and proteins; the chemistry and metabolism of carbohydrates and lipids; energetics in living systems. The course is taught with a medical emphasis and covers peptides, proteins, myoglobin/hemoglobin, enzymes, vitamins, catecholamines and metabolism, as well as, clinical correlates and case studies.

13. Academic Integrity Statement: A university is a community of learners bonded together by the search for knowledge; the pursuit of personal, social, cultural, physical, and intellectual development; and the desire for the liberating effects of an

advanced education. California State University, Dominguez Hills (CSUDH) has a culture--an academic culture--shared with other universities and colleges across the nation. Integral to that culture is a set of values such as academic freedom, dedication to teaching and learning, diversity, civility toward others, and academic integrity. Academic integrity is of central importance in the university community and involves committed allegiance to the values, the principles, and the code of behavior held to be central in that community. Integrity concerns honesty and implies being truthful, fair, and free from lies, fraud and deceit.

14. Disabled Student Services: CSUDH adheres to the American with Disabilities Act with respect to providing reasonable accommodations for students with temporary or permanent disabilities. To receive accommodations, students with disabilities must register with Disabled Student Services. For more information, please contact their office in Welch Hall B250 at (310) 243-3660 or (310) 243-2028.

Date	Lecture	Reading (Lehninger: Principles of Bicochemistry, 7th Edition)	Case Study	Homework
August 29	Chemistry of Life / The Cell Molecules of Life / Water Ch. 1: Lehninger Introductory Ppt Ch. 2: Lehninger Water Ppt	Chapter 1		
August 31	Acidosis / Alkalosis Ch. 2: Lehninger Water Ppt	Chapter 2	Case Study 1 Solution	Chapters 1 & 2 DUE: Friday, 09/02
September 5	HOLIDAY			
September 7	Amino Acids / Proteins Ch. 3: Lehninger Amino Acids, Peptides and Proteins Ppt	Chapters 3	Case Study 2 Solution	Chapter 3 DUE Friday, 09/09
September 12	Protein Synthesis and Maturation Ch. 27: Lehninger Protein Metabolism Ppt	Chapter 27		Chapter 27 DUE: Wednesday, 09/14
	Proteins: 3D Structure			Chapter 4

September 14	Ch. 4: Lehninger 3D Structure of Proteins Ppt	Chapter 4		DUE: Friday, 09/16
September 19	Membranes Ch. 11: Lehninger Membranes Ppt	Chapter 11		Chapter 11 DUE: Friday, 09/23
September 21	Exam 1			
September 26	Myoglobin / Hemoglobin Ch. 5: Lehninger Protein Function Ppt	Chapter 5	Case Study 3 Solution	Chapter 5 DUE: Wednesday, 09/28
September 28	Enzymes: Catalysis & Kinetics Ch. 6: Lehninger Enzymes Ppt	Chapter 6	Case Study 4 Solution	
October 3	Enzymes: Isozymes & Regulation Ch. 6: Lehninger Enzymes Ppt	" "	Case Study 5 Solution	Chapter 6 DUE: Wednesday, 10/05
October 5	Overview of Nutrients / Vitamins of CHO Metabolism Intro To & Thermo Of Metabolism Ch. 13: Lehninger Introduction to Metabolism Ppt	Chapter 13	NADH and FADH₂ Structures Case Study 6 Solution	Chapter 13 DUE: Friday, 10/07
October 10	Study Guide Overview of CHO Metabolism Ch. 7: Lehninger Carbohydrates Ppt	Chapter 7		Chapter 7 DUE: Friday, 10/14
October 12	Exam 2			
October 17	Glycolysis, Gluconeogenesis and the PPP Ch. 14: Lehninger Glycolysis, Gluconeogenesis and the PPP Ppt	Chapter 14		Chapter: 14 DUE: Wednesday, 10/19
	Citric Acid Cycle		Case Study 8	Chapter 16 DUE:

October 19	Ch. 16: Lehninger The Citric Acid Ppt	Chapter 16	Solution	Friday, 10/21
October 24	Electron Transport Electron Transport pdf Ch. 19: Lehninger Oxidative Phosphorylation Ppt CHO Pathways Review	Chapter 19	Case Study 10 Solution	Chapter 19 DUE: Wednesday, 10/26
October 26	Glycogen Metabolism Ch. 15: Lehninger Glycogen Metabolism	Chapter 15	Case Study 9 Solution	Chapter 15 DUE: Friday, 10/28
October 31	Fatty Acid beta-Oxidation Ch. 17: Fatty Acid Metabolism	Chapter 17		Chapter 17 DUE: Wednesday, 11/02
November 02	Amino Acid Metabolism Ch. 18: Amino Acid Metabolism and Urea	Chapter 18		
November 07	The Urea Cycle Ch. 18: Amino Acid Metabolism and Urea	" "		Chapter 18 DUE: Friday, 11/11
November 09	Exam 3			
November 14	Nucleotides: Composition and Structure Ch. 8: Lehninger Nucleotides and Nucleic Acids Ppt	Chapter 8	AT and GC Pair Structures	Chapter 8 DUE: Wednesday, 11/16
November 16	Ch. 22: Lehninger Nucleotide Synthesis Ppt Purine Metabolism (Study Guide) Pyrimidine Metabolism (Study Guide)	Chapter 22	Case Study 7 Solution	Chapter 22 DUE: Friday, 11/18
November 21	DNA Synthesis, Mutation and Repair	Chapter 25		Chapter 25 DUE:

	Ch. 25: Lehninger DNA Metabolism Ppt			Wednesday, 11/23
November 23	Holiday			
November 28	RNA Synthesis and Processing Ch. 26: Lehninger RNA Metabolism Ppt	Chapter 26		Chapter 26 DUE: Wednesday, 11/30
November 30	Genome Organization Ch. 24: Lehninger Genes and Chromosomes Ppt	Chapter 24	Study Guide/Worksheet: Genome Organization	Chapter 24 DUE: Friday, 12/02
December 05	Regulation of Gene Expression Ch. 28: Lehninger Regulation of Gene Expression Ppt	Chapter 28	Study Guide/Worksheet: Regulation of Gene Expression	Chapter 28 DUE: Friday, 12/09
December 07	Exam 4			
Monday, December 12 (-30)	Final Exam, 1:00PM-3:00PM			

Homework Assignment

Chapters 1 & 2
Chapter 3
Chapter 27
Chapter 4
Chapter 11
Chapter 5
Chapter 6
Chapter 13
Chapter 7
Chapter 14
Chapter 16
Chapter 19
Chapter 15
Chapter 17
Chapter 18
Chapter 8
Chapter 22
Chapter 25
Chapter 26

DUE DATE

Friday, 09/02, 2022
Friday, 09/09, 2022
Wednesday, 09/14, 2022
Friday, 09/16, 2022
Friday, 09/23, 2022
Wednesday, 09/28, 2022
Wednesday, 10/05, 2022
Friday, 10/07, 2022
Friday, 10/14, 2022
Wednesday, 10/19, 2022
Friday, 10/21, 2022
Wednesday, 10/26, 2022
Friday, 10/28, 2022
Wednesday, 11/02, 2022
Friday, 11/11, 2022
Wednesday, 11/16, 2022
Friday, 11/18, 2022
Wednesday, 11/23, 2022
Wednesday, 11/30, 2022

Log into Blackboard and then navigate to this course.
Click the "Homework" menu link.

Chapter 24

Friday, 12/02, 2022

Chapter 28

Friday, 12/09, 2022

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