

CHM 310

Biochemistry I Lecture

Fall 2011

Instructor: Dr. Matthew Junker
314 Boehm Science Center
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Office hours: Tues., 1-3 pm; Wed. 11 am - noon, Thu. 1-2 pm

Lecture time and location: M, W, F 1:00 – 1:50, Boehm 262

Textbook: *Lehninger Principles of Biochemistry*, 5th edition, by David L. Nelson and Michael M. Cox, W. H. Freeman and Co., ISBN: 0-7167-7108-X.

Textbook website: www.whfreeman.com/lehninger

Lecture notes posted online under D2L: <https://desire2learn.kutztown.edu/>

Pre-requisites: Organic Chemistry I & II (CHM 214 & 216)

Co-requisite: CHM 310 Biochemistry I Laboratory

Grading: The average of 4 exams (each worth 100 points) will be 80% of final score
The average of all problem sets will be 5% of final score
The total lab score will be 15% of final score

Final scores will be scaled to 100 points

Minimum guaranteed scale for letter grades (final scale can be more generous but not less):

A: 90-100 points, B: 80-90 points, C: 70-80 points, D: 60-70 points, F: <60 points

Plus and minus letter grades will be used as allowed by KU policy. Lecture attendance is not included in the grading.

Course objectives: Upon successful completion of this course, a student will be able to

- Describe the distinguishing structural and chemical properties of the major types of biomolecules (amino acids, proteins, carbohydrates, lipids, and nucleic acids)
- Relate the chemical properties of each type of biomolecule to its physiological function
- Explain the primary, secondary, tertiary, and quaternary structures of the molecular components of cells
- Describe protein and lipid dynamics and perform pertinent calculations

ADA Notice: Please contact me early in the semester if you need accommodation for a disability. You should also contact the KU Disability Services Office at 610-683-4108 or in Stratton 215.

Lecture schedule:

Date	Topic	Lehninger Chapter
Aug. 31	Overview, major types of biomolecules	1
Sept. 2	Thermodynamics in biochemistry	1
Sept. 5	LABOR DAY- NO CLASS	
Sept. 6 (Tues!)	Water and molecular forces in aqueous environments	2
Sept. 7	Water: pH, and acid-base chemistry I	2

Date	Topic	Lehninger Chapter
Sept. 9	Water: pH, and acid-base chemistry II	2
Sept. 12	Amino acids (Ch. 3 section 3.1)	3
Sept. 14	Peptides and polypeptides (Ch. 3 section 3.2)	3
Sept. 16	Protein structure I (Ch. 4 sections 4.1 - 4.2)	4
Sept. 19	Protein structure II (Ch. 4 sections 4.1 - 4.2)	4
Sept. 21	Protein methods (Ch. 3 sections 3.3 - 3.4)	3
Sept. 23	Protein methods (Ch. 3 sections 3.3 - 3.4)	3
Sept. 26	EXAM 1	
Sept. 28	Protein structure III (Ch. 4 section 4.3)	4
Sept. 30	Protein structure IV (Ch. 4 section 4.3)	4
Oct. 3	Protein structure V (Ch. 4 Box 4-5 & section 4.4)	4
Oct. 5	Protein structure VI (Ch. 4 section 4.4; Ch. 3 section 3.4)	4, 3
Oct. 7	Protein function I	5
Oct. 10	COLUMBUS DAY- NO CLASS	
Oct. 12	Protein function II	5
Oct. 14	Protein function III	5
Oct. 17	Protein function IV	5
Oct. 19	Protein function V	5
Oct. 21	EXAM 2	
Oct. 24	Enzymes I	6
Oct. 26	Enzymes II	6
Oct. 28	Enzymes III	6
Oct. 31	Enzymes IV	6
Nov. 2	Enzymes V	6
Nov. 4	Enzymes VI	6
Nov. 7	Carbohydrates I	7
Nov. 9	Carbohydrates II	7
Nov. 11	Nucleic acids I	8
Nov. 14	EXAM 3	
Nov. 16	Nucleic acids II	8
Nov. 18	Nucleic acids III	8
Nov. 21	DNA technologies	9
Nov. 23	THANKSGIVING – NO CLASS	
Nov. 25	THANKSGIVING – NO CLASS	
Nov. 28	Lipids I	10
Nov. 30	Lipids II	10
Dec. 2	Membranes and transport I	11
Dec. 5	Membranes and transport II	11
Dec. 7	Membranes and transport III	11
Dec. 9	Membranes and transport IV	11
Dec. 14 (Wed.)	FINAL EXAM 8:00 am - 10:00 am	