Biochemistry II CHEM 3812
Membranes and Metabolism

Winter 2019

Instructor: Dr. Martin Margittai
Office: SGM 253
Contact Info: Phone: 871-4135; Email: martin.margittai@du.edu
Lectures: 11-11:50 am, MWF, BCA 101
Office Hours: Tuesdays and Thursdays 11:00 am-noon, or by appointment.

Text: Lehninger Principles of Biochemistry, Seventh Edition, Nelson and Cox, Freeman and Company, 2017

Homework: Homework will be given out occasionally. These assignments will not be graded. However, it is highly recommended to work through the problems as similar ones may appear in the exams.

Exams: There are two 1-hour midterm exams during the quarter worth 150 points each, plus a 2-hour cumulative final exam worth 200 points. Dates for these exams are posted below on the lecture schedule. THERE WILL BE NO MAKEUP EXAMS. The only exception to the no-makeup policy will be for members of a university team or group, e.g. athletic team or music group scheduled to be away from campus at the time of the exam. You must inform your instructor of this prior to the exam and make arrangements at that time for a makeup exam.

In-class Activities: There will be six in-class activities. These activities are worth 20 points each. They are either group assignments or quizzes. Only the five highest scores in these activities will count towards your final grade.

Grading:		
	Midterm Exams	300 points
	Final Exam	200 points
	In-class Activities	100 points

Lecture and Testing Accomodations - If you have a disability/medical issue protected under the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act and need to request accommodations, please make an appointment with the Disability Services Program (DSP); 303.871.2372/ 2278/ 7432; located on the 4th floor of Ruffatto Hall; 1999 E. Evans Ave. Information is also available on line at http://www.du.edu/disability/dsp. See the Handbook for Students with Disabilities.
Any student who feels they may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs. Please contact the Disability Services Program. If you qualify for academic accommodations because of a disability or medical issue please submit a Faculty Letter to me from Disability Services Program (DSP) in a timely manner so that your needs may be addressed. Disability Services determines accommodations based on documented disabilities/medical issues.

Dates	Topics Covered	Reading Chapters
WEEK 1	**Lipids**	
01/07/19	Class Introduction/Lipids	10
01/09/19	Storage Lipids and Lipids in Membranes	10
01/11/19	Lipids as Signals, Cofactors, and Pigments	10
WEEK 2	**Membrane Composition & Dynamics**	
01/14/19	Composition and Architecture of Membranes	11
01/16/19	Membrane Dynamics 1	11
01/18/19	Membrane Dynamic 2 **In-class Activities**	11
WEEK 3	**Membrane Transport**	
01/21/19	**Martin Luther King Day/ No Class**	
01/23/19	Transport across Membranes 1	11
01/25/19	Transport across Membranes 2	11
WEEK 4	**Carbohydrates**	
01/28/19	**EXAM 1**	
01/30/19	Monosaccharides and Disaccharides	7
02/01/19	Polysaccharides **In-class Activities**	7
WEEK 5	**Carbohydrates and Bioenergetics**	
02/04/19	Glycoconjugates	7
02/06/19	Bioenergetics	13
02/08/19	Biochemical Reaction Types **In-class Activities**	13
WEEK 6	**Glycolysis and Gluconeogenesis**	
02/11/19	Glycolysis	14
02/13/19	Glycolysis and Feeder Pathway	14
02/15/19	Gluconeogenesis	14
WEEK 7	**Pentose Phosphate Pathway and Metabolic Regulation**	
02/18/19	Pentose Phosphate Pathway	14
02/20/19	Metabolic Regulation 1	15
02/22/19	Metabolic Regulation 2 **In-class Activities**	15
WEEK 8	**Production of Acetyl-CoA**	
02/25/19	**EXAM 2**	
02/27/19	Production of Acetyl-CoA	16
03/01/19	Reactions of the Citric Acid Cycle 1	16
WEEK 9	**Citric Acid Cycle and Electron Transfer**	
03/04/19	Reactions of the Citric Acid Cycle 2	16
03/06/19	Regulation of the Citric Acid Cycle	16
03/08/19	Mitochondrial Respiratory Chain **In-class Activities**	19

WEEK 10	**Oxidative Phosphorylation**	
03/11/19	ATP Synthesis	19
03/13/19	Regulation of Oxidative Phosphorylation	19
03/15/19	P-450, Apoptosis and Mitochondrial Genes **In-class Activities**	19
WEEK 11	**Review and Final**	
03/18/19	Membranes and Metabolism Review	
03/20/19	**FINAL EXAM** (comprehensive), 10:00 am – 11:50 am, BCA 101	