

Biochemistry II CHEM 3812

Membranes and Metabolism

Winter 2021

Instructor: Dr. Martin Margittai

Office: SGM 253

Contact Info: Phone: 871-4135; Email: martin.margittai@du.edu

Lectures: 11-11:50 am, Monday/Wednesday/Friday, Online via Zoom

Office Hours: 5-6:00 pm, Tuesday/Thursday, Online via Zoom

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 three 1-hour exams during the quarter worth 100 points each. Dates for these exams are posted below on the lecture schedule below. THERE WILL BE NO MAKEUP EXAMS.

In-class Activities: There will be ten in-class activities. These activities are worth 10 points each. They are either group assignments or quizzes. The lowest two scores in these activities will be dropped and replaced by the highest two scores.

Grading:	Exams	300 points
	In-class Activities	100 points

Lecture and Testing Accommodations - 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 online at: <https://www.du.edu/studentlife/disability-services/index.html>
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	
01/11/21	Class Introduction/Lipids	10
01/13/21	Storage Lipids and Lipids in Membranes	10
01/15/21	Lipids as Signals, Cofactors, and Pigments In-class Activities	10
WEEK 2	Membrane Composition & Dynamics	
01/18/21	Martin Luther King Day/ No Class	
01/20/21	Composition and Architecture of Membranes	11
01/22/21	Membrane Dynamic 1 In-class Activities	11
WEEK 3	Membrane Transport	
01/25/21	Membrane Dynamic 2	
01/27/21	Transport across Membranes 1	11
01/29/21	Transport across Membranes 2 In-class Activities	11
	Review Session, 4:00 pm – 5:00 pm	
WEEK 4	Carbohydrates	
02/01/21	EXAM 1	
02/03/21	Monosaccharides	7
02/05/21	Disaccharides In-class Activities	7
WEEK 5	Carbohydrates and Bioenergetics	
02/08/21	Polysaccharides & Glycoconjugates	7
02/10/21	Bioenergetics 1	13
02/12/21	Bioenergetics 2 In-class Activities	13
WEEK 6	Biochemical Reaction Types/Glycolysis	
02/15/21	Biochemical Reaction Types	13
02/17/21	Glycolysis	14
02/19/21	Glycolysis and Feeder Pathway In-class Activities	14
	Review Session, 4:00 pm – 5:00 pm	
WEEK 7	Gluconeogenesis /Acetyl CoA Production	
02/22/21	EXAM 2	
02/24/21	Gluconeogenesis	14
02/26/21	Production of Acetyl-CoA In-class Activities	16
WEEK 8	Citric Acid Cycle	
03/01/21	Production of Acetyl-CoA	16
03/03/21	Reactions of the Citric Acid Cycle 1	16
03/05/21	Reactions of the Citric Acid Cycle 2 In-class Activities	16

WEEK 9 Citric Acid Cycle and Oxidative Phosphorylation		
03/08/21	Regulation of the Citric Acid Cycle	16
03/10/21	Mitochondrial Respiratory Chain 1	19
03/12/21	Mitochondrial Respiratory Chain 2	In-class Activities 19
	Review Session, 4:00 pm – 5:00 pm	
WEEK 10 Oxidative Phosphorylation		
03/15/21	EXAM 3	
03/17/21	ATP Synthesis	19
03/19/21	Regulation of Oxidative Phosphorylation	In-class Activities 19