



BIOL 4461.001.18S – BIOPHYSICAL CHEMISTRY

Course Syllabus – Spring 2017

MW 9:30-11:15 am, FO 3.616

Instructor	Duane Winkler, PhD
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Office Hours	MW 11:30-12:30, or by appointment

General Course Information

Pre-requisites	(MATH 2417 and PHYS 2325 , or equivalent) and (BIOL 3361 or CHEM 3361)
Course Description	A focus on the interface between biochemistry and structural biology. Provides an advanced treatment of the physical principles underlying modern molecular biology techniques. Topics include biochemical thermodynamics and kinetics, structural dynamics, and chemical equilibria. The focus is on lab-based techniques, not mathematical theory.
Course Objectives	<i>Students will be able to</i> recognize and apply physical and chemical concepts utilized by established techniques necessary for determination of bio-molecular structure and function.
Required Texts & Materials	<i>Physical Biochemistry: Principles and Applications</i> – David Sheehan, 2 nd Ed. (2009) ISBN 978-0-470-85602-4
Optional Texts & Materials	<i>Biochemistry</i> – Garrett and Grisham, Brooks/Cole, Cengage Learning, 5 th Ed. (2012) ISBN-10: 1-133-10629-3
eLearning	Login to BIOL 4461.001 for class slides, problem sets, study guides, announcements, and grades.

Grading

Exams	The course will be divided into four sections that generally follow the text chapters. However, exams will be based upon the material emphasized within lectures. An in-class exam will follow each of the first three sections. THE LOWEST OF THE THREE EXAM SCORES WILL BE AUTOMATICALLY DROPPED. The final exam will contain subject matter from the fourth section and topics covered on the previous three exams and cannot be dropped.
Make-up Exams	There will be NO make-up exams. If an exam is missed for any reason, that will be the exam score dropped. Every exam should be attempted. Students participating in a UTD sanctioned event that directly conflicts with an exam date must coordinate with the instructor before that date.
Course Project	A group course project pertaining to and applying the topics and techniques discussed in the course will be presented in-class near the end of semester.

Grading Format

Tasks	Points	Percent	Final Percentage	Letter Grade
Exams 1-3	200	50%	89 to 100%	A- to A+
Course Project	100	25%	79 to 88%	B- to B+
Final Exam	100	25%	69 to 78%	C- to C+
Total	400	100%	59 to 68%	D- to D+
			< 59%	F

Classroom & Academic Calendar

Date	Topic(s)	Reading (Chapter)
M 1/08	Intro. into Macromolecules	-
W 1/10	Intro. into Macromolecules II	-
M 1/15	HOLIDAY – MLK Day	-
W 1/17	Biochemical Thermodynamics	-
M 1/22	Statistics	-
W 1/24	Structural Dynamics I	-
M 1/29	Structural Dynamics II	-
W 1/31	Chemical Equilibria	-
M 2/5	EXAM I	
W 2/07	Expression & Purification	2
M 2/12	Chromatography	2
W 2/14	Electrophoresis I	5
M 2/19	Electrophoresis II	5
W 2/21	Hydrodynamic Methods	7
M 2/26	Biocalorimetry	8
W 2/28	EXAM II	
M 3/5	X-ray Diffraction & Crystallization	6
W 3/7	X-ray Crystallography	6
M 3/12	HOLIDAY – SPRING BREAK	-
W 3/14	HOLIDAY – SPRING BREAK	-
M 3/19	Spectroscopic Methods I	3
W 3/21	Spectroscopic Methods II	3
M 3/26	NMR	3 & 6
W 3/28	NMR II	3 & 6
M 4/2	EXAM III	
W 4/4	Mass Spectrometry	4
M 4/9	Mass Spectrometry II	4
W 4/11	Proteomics & Bioinformatics	9 & 10
M 4/16	New & Emerging Methods	-
W 4/18	Drug Development	-
M 4/23	Project Presentations	-
W 4/25	Project Presentations	-
M 5/7	FINAL EXAM	

UT Dallas Syllabus Policy and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. <http://go.utdallas.edu/syllabus-policies>

The descriptions and timelines in this syllabus are subject to change at the discretion of the Instructor.