

Fall 2018
Biochemistry Laboratory, BIOC 433/833, BIOS 433/833, CHEM 433/833
Instructor: Dr. Jing Zhang, N106 Beadle jzhang24@unl.edu
Office Hour: Appointment by Email

Lecture: Tue: 11:00 – 11:50 am; N172 Beadle
Lab: Tue and Wed: 1:00 – 4:50 pm; N102 Beadle

TUE	Lecture	TUE & WED	Lab Activity	Assignments Due
Aug 21	1. Course Overview 2. pH metry, Buffers and Titration curves	Aug 21, 22	Check in & Lab Safety Exp 1: Micropipette Calibration and Buffer Titration Curves	---
Aug 28	Spectrophotometry	Aug 28, 29	Exp 2: pH Indicators and Spectrophotometry	Report 1 (20 pts)
Sept 4	Plasmid DNA, Restriction Analysis, PCR	Sept 4, 5	Exp 3: Plasmid DNA, Agarose Gel Electrophoresis, and PCR (Cloning I)	Report 2 (20 pts)
Sept 11	Protein Assays and Enzyme Assays	Sept 11, 12	Exp 4: Part I – Restriction Digestion and Transformation (Clong II) Part II – Measuring Protein Concentration	Report 3 (20 pts)
Sept 18	1. Protein Purification 2. MDH Introduction (How to read an Abstract)	Sept 18, 19	Exp 5: Purification of β -galactosidase and Enzyme Assay	Report 4 (20 pts)
Sept 25	1. SDS PAGE and Western Blotting 2. MDH: Bioinformatics and Hypothesis - I	Sept 25, 26	Exp 6: Part I – SDS PAGE and Western Blotting (Start) Part II – Chimera Bioinformatics and Hypothesis Worksheet	Report 5 (20 pts)
Oct 2	1. Regulation of β -galactosidase synthesis 2. MDH: Bioinformatics and Hypothesis - II	Oct 2, 3	Exp 7: Regulation of β -galactosidase synthesis Western Blotting (Finish)	1. Bioinformatics Worksheet (20 pts) 2. MDH Introduction Draft (Late: -2 pts)
Oct 9	Week 1: Hypothesis Presentation (1/2 TUE)	Oct 9, 10	Week 1: Hypothesis Presentation (1/2 TUE, WED) (15 pts)	Report 6: SDS PAGE and Western Blotting (20 pts)
Oct 16	No Classes Fall Break	Oct 16, 17	No Classes Fall Break	Report 7: Regulation of β -galactosidase (20 pts)
Oct 23	MDH Project Discussion	Oct 23, 24	Exp 8: Enzyme Kinetics of β -galactosidase	---
Oct 30	MDH Project Discussion	Oct 30, 31	Week 2: Wildtype MDH Kinetics - Initial Velocity - Specific Activity - K_m , V_{max}	Report 8: Enzyme Kinetics of β -gal (20 pts)
Nov 6	MDH Project Discussion	Nov 6, 7	Week 3: - Purification of Mutants - Bradford - Mutant MDH Kinetics	Week 2 Write-up: (Late: -2 pts) - Wildtype MDH Kinetics Methods and Results
Nov 13	MDH Project Discussion	Nov 13, 14	Week 4: - MDH Enzyme Kinetics (Cont.)	Week 3 Write-up: (Late: -2 pts) - Purification & Bradford - Mutant Kinetics Results
Nov 20	No Classes Thanksgiving Break	Nov 20, 21	No Classes Thanksgiving Break	---
Nov 27	MDH Project Discussion	Nov 27, 28	Week 5: - Peer review of Draft Final Paper: include- Discussion, Abstract, Title - Lab Check Out	Bring Final Paper draft for Peer Review on Nov 27 or 28 (Late: -2 pts)
Dec 4	TBD	Dec 4, 5	Project Presentation	Final Paper in JBC format (50 pts)

GRADING

Item	Points (out of 320 total)
8 Lab Reports, 20 points each	160
Bioinformatics and Hypothesis Worksheet	20
Hypothesis Presentation	15
MDH Project Final Report	50
MDH Project Final Presentation	30
4 Lecture Practice Questions, 3 points each	12
7 Pre-Lab Quizzes, 4 points each	28
Lab Notebook	5

Percent	Total Points	Grade
97	310- 320	A+
94	301- 309	A
90	288- 300	A-
87	278- 287	B+
84	269 -277	B
80	256- 268	B-
77	246- 255	C+
74	237- 245	C
70	224- 236	C-
67	214- 223	D+
64	205 -213	D
60	192- 204	D-
<60	< 192	F