

Topics: Debates in Biochemistry

CLASS MEETINGS

MWF 11:00–11:50 p.m., Olin 103

INSTRUCTOR

Prof. Scott Horowitz
scott.horowitz@du.edu

Instructor Office Hours
ECS Building, Room 561 (or if not there, in lab across the hall, knock at door of lab)
M/W 3:00 p.m. – 4:00 p.m. or by appointment

COURSE DESCRIPTION

This course is meant to be an introduction to reading and understanding biochemistry primary literature. Students will also learn about grant writing and leading scientific discussions. Required reading will be primary biochemistry literature, with further reading to be discussed individually with discussion leaders and prior to the final grant writing assignment.

COURSE LEARNING OUTCOMES

1. Present, discuss and analyze the science in each paper in the course.
2. Compare the points of view in the classroom debates.
3. Design and write a novel research grant independently.

The course reading, participation, presentations, and Foldit puzzles all contribute to course learning outcomes 1 and 2. The Foldit puzzles are intended to provide students an avenue for understanding the biochemistry that will contribute to their discussion.

These course learning outcomes are intended to fulfill the core goals of the Chemistry & Biochemistry graduate program to enable independent learning and advance fundamental understanding and communication in biochemistry.

COURSE REQUIREMENTS

1. Attendance (5% of grade)
2. In-class participation when not presenting (20% of grade)
 - Participation is graded primarily on amount of participation and secondarily quality of participation.
3. Reading before each class (10% of grade, based on Canvas quizzes)
4. Foldit puzzles (10% of grade, broken down below)
 - 7/10% for logging into the puzzle and posting a score

- 3/10% graded linearly from the lowest puzzle score in the class to the highest puzzle score in the class
5. Presentations (30% of grade).
 - Detailed presentation outlines and slides must be sent to instructor at least 24 hours prior to your presentation.
 - In the case of presenting in pairs, each presenter must have specified separate figures/text they are responsible for as opposed to both presenting on everything. This must be specified in the outline.
 6. Grant-writing project (25% of grade).
 - 15/25% from final grant
 - 4/25% from initial topic deadline
 - 4/25% from second topic deadline
 - 2/25% comes from written comments on other grants.

LATE WORK/EXAM AND ATTENDANCE POLICY

Late written assignments are penalized 10% for each day past the deadline. Except under extraordinary circumstances (e.g. a doctor's note is required for illness), class presentations cannot be made up.

If you are unable to attend class due to a legitimate emergency, please contact me via e-mail. If you are not in class for any other reason, you will be marked absent and earn a zero for the day. Students who arrive more than five minutes late will earn 50% attendance for the day.

PRESENTATIONS AND DISCUSSION

Typically, we will be discussing two papers a week, and each paper will be presented by a different person. Based on the size of the class, this means that everyone will present twice over the course of the quarter. In most weeks, two students giving presentations, with one student signed up to lead discussion on each paper. The other student will be expected to comment and discuss the paper that they did not sign up for at a high level. Other members of class will be expected to read the papers and participate in discussion.

DETAILED SCHEDULE

Date	Subject	Due Dates
7-Jan	Introduction	
9-Jan	CH...O Bonds 1	Read Sutor 1962 and Donohue 1968, quiz.
11-Jan	CH...O Bonds 2	Read Taylor 1982. Accept Foldit group invite, quiz
14-Jan	CH...O Bonds 3	Read Schwalbe 2012, quiz
16-Jan	Grant writing	Sign up for two papers.
18-Jan	Phosphorous 1	Read Westheimer 1987, quiz
23-Jan	Phosphorous 2	Read Wolfe-Simon 2011, quiz; First topic deadline
25-Jan	Phosphorous 3 and grant assignment intro	
28-Jan	TAR 1	Read Zhang 2007, quiz
30-Jan	TAR 2	Read Bardaro 2009, quiz
1-Feb	TAR 3	Complete Puzzle "DU TAR 2018"

4-Feb	Lipid raft 1	Read Zhu 2005, quiz
6-Feb	Lipid raft 2	Read Otahal 2010, quiz; Second topic deadline
8-Feb	Lipid raft 3	
11-Feb	Chaperone 1	Read Zahn 1996, quiz
13-Feb	Chaperone 2	Read Tang 2008, quiz
15-Feb	Chaperone 3	Complete Puzzle “DU Chaperone 2018”
18-Feb	Enzymology 1	Read Schwans 2011, quiz
20-Feb	Enzymology 2	Read Fried 2014, quiz
22-Feb	Enzymology 3	Complete Puzzle “DU Enzyme 2018” ; Grant drafts due
25-Feb	Histones 1	Read Gao 2011, quiz; Peer review intro
27-Feb	Histones 2	Read Kamps 2015, quiz
1-Mar	Peer review day	Grant comments due to peers & email copy to instructor
4-Mar	Histones 3	
6-Mar	DNA damage 1	Read Slupphaug 1996, quiz
8-Mar	DNA damage 2	Read Cao 2004, quiz
11-Mar	DNA damage 3	
13-Mar	AB 1	Read Cheng 2007, quiz
15-Mar	AB 2	Read Pieri 2012, quiz
18-Mar	AB 3	Complete Puzzle “DU AB 2018”
20-Mar		Grant final version due