

Biochemistry Capstone Course, CHEM 4890, Fall 2018, 2 Credits

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Meeting: Wed 4 PM in ESLC 046 (there may be times when we meet in WID 330, the library); Fri 1:30-2:20 PM in ESLC053.

Office Hours: By appointment.

Course Goals: This course is designed for senior undergraduate students who are pursuing a BS degree in biochemistry. The goals of this course are to provide training in: oral presentations, literature reviews, and poster presentations. This will be accomplished through a combination of lectures, workshops, reading, interviews, group discussions, and writing assignments. The overall objective of the course is to provide training in areas critical to success in a job or academic pursuit that may not be covered in traditional courses. These topics are essential to success in a biochemistry related job, graduate work, or professional school. This course contributes to mastery of the following overarching learning objective for the biochemistry program:

- Students should understand the process of science, including hypothesis generation, experimental design, quantitative analysis, and data interpretation.

Texts: There is no assigned text for the course. Students are urged to purchase a copy of the book *Elements of Style*, Strunk and White, and *The ACS Style Guide: A Manual for Authors and Editors*, Dodd editor. Both are essential books to have on your bookshelf. Additional sections from books, reviews, and primary literature will be handed out as needed.

Canvas: Information essential to the course will be available through the course Canvas page. This site is found at canvas.usu.edu. Only students who are registered for the class will have access to the course pages.

Grading: This course will be graded based on the points received for the elements presented below (table). Final letter grades will be assigned based on the percentage of the total points possible with the following scale: A's 100%-90%, B's 90%-80%, C's 80%-70%, D's 70%-60%, F below 60%. Attendance at all of the assigned meetings is essential. A missed event can be made up at the discretion of the Professor. Activities required to make-up missed events will be decided by the Professor in consultation with the student. Missing more than two of the events will result in zero points for all missed events with no option for make-up. Assignments turned in after the deadline will have 2 points deducted for each 24 h period late.

Graded Elements: Following are the graded elements (with maximum possible points).

Chemistry 4890 Fall 2016 Points		
Element	Description	Max. Points
Attendance	Attend all assigned class sessions	Required
Seminar Critiques	4 Critiques (5 points each)	20
Seminar discussion	Participate in discussion of paper for Marletta seminar	5
Assignment 1	Literature assignment	10
Assignment 2	Overview presentation	10
Assignment 3	Storyboard outline (10) and peer review (5)	15
Assignment 4	Results section	10
Assignment 5	Big picture (10) and peer review (5)	15
Assignment 6	Poster peer review	10
Assignment 7	Poster to department	30
Assignment 8	Talk to department	30
ACS Final Exam	Standardized biochemistry exam (during finals week)	15
Total		170

Assessment: Assessment of the course will be conducted by the online IDEA system toward the end of the semester. Information from the Evaluation will be used to improve the course in subsequent years.

Provisions: This course will adhere to the USU Academic Policies and Procedures Manual found at the web site <http://www.usu.edu/policies/>. Any student with a disability who requires accommodation must contact the instructor. The disability must be documented by the Disability Resource Center. Course materials may be requested in alternative formats.

Chemistry 4890, Spring 2018 Calendar				
Date	Day	Time	Location	Topic/Assignment
8/29	W	4 PM	ESLC046	Organization/ /Seminar etiquette /Finding, keeping, using literature-Zotero; Assignment 1 introduced
8/31	F	1:30 PM	ESLC053	Presentation skills; Assignment 2 introduced
9/5	W	4 PM	WID 330	Attend Department Seminar – Bruce Bugbee, Apogee Instruments Assignment 1 due
9/7	F	1:30 PM	ESLC053	Critique #1 due Meet with Dr. Hevel about chosen paper
9/12	W	4 PM	ESLC046	Meet with Dr. Hevel about chosen paper
9/14	F	1:30 PM	WIDt 330	Attend Biochemistry seminar
9/19	W	4 PM	ESLC046	Assignment 2 due– Overview presentation
9/21	F	1:30 PM	ESLC053	Assignment 2 due– Overview presentation Critique #2 due
9/26	W	4 PM	WIDT 330	Attend chemistry seminar- Cleo Davie-Martin, Oregon State University
9/28	F	1:30 PM	ESLC053	Storyboard outline, picking/choosing data to present a story & Making posters Critique #3 due
10/3	W	4 PM	ESLC046	meet in class to evaluate Assignment 3-BRING your Storyboard
10/5	F	1:30 PM	ESLC053	Assignment 3 Storyboard peer review due in CANVAS Assignment 4- Results section presented
10/10	W	4 PM	ESLC046	Assignment 4- Results section presented
10/12	F	1:30 PM	Widt 330	Discuss Marletta paper with grad students
10/17	W	4 PM	ESLC046	Assignment 4–Results section presented
10/19	F	1:30 PM	No class	FALL BREAK
10/24	W	4 PM		Attend seminar- Hansen Symposium WID 007 Dr. Michael Marletta UC Berkeley
10/26	F	1:30 PM	ESLC053	Critique #4 due Meet in class to do present Assignment 5 – Big picture intro peer review in class
10/31	W	No Class		Assignment 5 Big picture peer review due in CANVAS One-on-one appointments with faculty to practice talk
11/2	F	No Class		One-on-one appointments with faculty to practice talk
11/7	W	No Class		One-on-one appointments with faculty to practice talk
11/9	F	1:30 PM	ESLC053	Meet in class to do present Assignment 6 – Poster draft peer review in class
11/14	W	No Class		Assignment 6 Poster draft peer review due in CANVAS One-on-one appointments with faculty to practice talk
11/16	F	1:30 PM	Widt 2 nd lobby	Assignment 7 due– Poster presentations
11/21	W	4 PM		One-on-one appointments with faculty to practice talk
11/23	F	1:30 PM		Thanksgiving holiday
11/28	W	4-5:30 PM	Widt 330	Assignment 8 due - Student Seminars
11/30	F	1:30 PM	ESLC053	Assignment 8 due - Student Seminar
12/5	W	4 PM	ESLC046	Assignment 8 due - Student Seminar
12/7	F	1:30 PM	ESLC053	ACS final exam
Finals week				No final

Communication Intensive

This course qualifies as Communication Intensive (CI) being focused on developing both scientific writing and presentation skills. The assignments described below are designed to allow you to present and write, with feedback from the instructor and your peers. All of the assignments are designed to provide feedback as you develop these presentation skills.

Assignment Overview:

Attendance--Roll will be taken and attendance at all of the assigned events is expected as outlined above.

Discussion of Papers, Seminars, and Critiques

You will attend each of the scheduled seminars this semester as one way to learn effective presentation skills. You will fill out a critique of strengths and weaknesses for four of the seminars and turn them in on the due dates noted in the calendar. For the Marletta seminar, a paper from the speaker will be assigned and we will meet to discuss the paper. You are expected to read the paper and to participate in the discussion. Points will be given for active discussion.

Assignment 1: Finding and organizing literature

The assignment is meant for you to practice gathering and organizing literature using the major databases and collecting citations and papers using a citation database. Details of the assignment are provided on CANVAS.

Assignment 2: 5 minute Overview presentation of your paper

In this assignment, you will present the essence of the paper/research you will do your poster and presentation on. No slides. Emphasis is on having a clear story. Details of the assignment are provided on CANVAS.

Assignment 3: Storyboard outline

This will be a formal outline of ideas/figures for both your talk and your poster. You will present paper versions of your slides to a peer in class. You will receive feedback from your peers regarding order and content. You will type up a summary of the feedback and how you intend to alter your presentation and submit both the paper slides and the summary to me in CANVAS.

Assignment 4: 5-7 minute Results section

You will present the results section of your seminar in the form of PowerPoint slides. We will have a group discussion on the clarity and scientific correctness of your dialogue. Details of the assignment are provided on CANVAS.

Assignment 5: Big Picture presentation

You will present what will be the introduction to your final talk. You will receive feedback from your peers regarding order and content. You will type up a summary of the feedback and how you intend to alter your presentation and submit both the paper slides and the summary to me in CANVAS. Details of the assignment are provided on CANVAS.

Assignment 6: Poster draft and peer review

You will bring a one page printout of a draft of your poster. Peer review will help you edit and clarify your story. You will type up a summary of the feedback and how you intend to alter your presentation and submit the summary to me in CANVAS. Details of the assignment are provided on CANVAS.

Assignment 7: Presentation

You will present a poster to the entire department. Poster details will be provided on a separate assignment description. Details of the assignment are provided on CANVAS.

Final Seminar

You will give a formal presentation to the department in the regular seminar time. Grading will be on clarity of presentation. Details of the assignment are provided on CANVAS.

Peer review

You will be expected to provide detailed feedback to other students' storyboard outline and practice seminar presentations. Peer review must be completed before making one-on-one appointments with faculty to review your final seminar.

ACS Final Exam

This comprehensive biochemistry exam is given to all senior biochemistry majors. The goal is to assess your comprehensive understanding of biochemical principles. This is a standardized exam. Points will be assigned based on how your score compared to the national percentile ranking as follows:

Percentile score	Points
85	15
70	14
60	13
50	12
40	10
30	8
20	6
10	4
0	0