

Biochemistry Lab
CHEM 3820
Fall 2022

Instructor: Erich G. Chapman, PhD
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Class Schedule: In person, SGM 209 Mon, Wed 1:00-4:50pm MDT

Office Hours: Monday and Wednesday mornings 10-11am
Also online by appointment as needed
zoom url: <https://udenver.zoom.us/j/3038713681>

Textbook: none needed, we will use primary scientific literature and protocols distributed in class

Course Website: <https://canvas.du.edu/courses/145091>

I'll use Canvas to supplement in-class instruction. Course assignments, lectures and supplementary materials will be uploaded as they accumulate.

Assessment:

There is an initial biosafety training assignment available on Canvas worth 20 points.

Five 20 point quizzes, each on a primary research paper related to the class' work will be administer on alternating Fridays throughout the term beginning with week 2.

At the end of each unit each group will prepare a figure portraying their results from the last ~3 weeks. These figures will encapsulate the results your team obtained throughout the training period and are group assignments. There will be 3 units, each with data that can be used to produce a figure. Each "figure" will be worth 20 points.

The will be one 20 point final assessment, the format of which will be announced closer to the end of the term and will depend on the progress of the class.

In research science, simply showing up is sometimes half the battle. Therefore half the points in class (200) will be awarded for showing up on time with a positive attitude and ready to go for lab.

400 points total.

Tentative plans for each unit (subject to change):

Unit 1			Unit 2			Unit 3			
Protein Expression and Purification			DNA/RNA: Synthesis and Purification			Enzyme Kinetics: RNA Degradation Assays			
	procedure	location	procedure	location	location	procedure	location		
Day 1	inoculate cultures, monitor OD's	SGM 123	mini-prep, send for sequencing, primer design	SGM 209	SGM 209	SDS page gel, spec intro	SGM 109		
Day 2	lyse and Ni-NTA chromatography	SGM 209, 111, 259	PCR, agarose gel	SGM 123	SGM 123	assay setup/ controls	SGM 109		
Day 3	SDS-PAGE gel, imaging	SGM 123	transcription/EtOH precip or PCR 2	SGM 209	SGM 209	kinetics 1	SGM 109		
Day 4	*possible re-start, or 2nd affinity	SGM 123/SGM 259	resuspension, quantification, dPAGE	SGM 123 or SGM 209	SGM 123 or SGM 209	kinetics 2	SGM 109		
Day 5	gel #2/advanced characterization: circular dichroism	SGM 209/SGM 259	restart transcription or RNA cleavage assay	SGM 123	SGM 123	kinetics 3	SGM 109		
Day 6	advanced characterization: Western blot/wrap up	SGM 209/ SGM 259	advanced characterization/wrap up	SGM 123	SGM 123	advanced characterization/wrap-up	SGM 109		
Experimental goals:			Transcribe RNA			Kinetic Measurements			
Purified protein									
Technical Skills:			PCR, Transcription			Spectroscopy/Assay Design			
Liquid Chromatography									
Professional Skills/ Assessment:			Methods Reporting			Data Analysis			
Publication Quality Figures									

Additional Policies:

Diversity and Inclusion Statement:

Inside and outside of this classroom I expect everyone to respect one another and help foster a positive and inclusive learning environment. I will do my best to create an open and inquisitive classroom and would appreciate your help. If specific issues arise please let me know immediately in person or by email. We can work together to help resolve and correct them.

Additional resources addressing Diversity and Inclusion can be found on the Office of Diversity and Inclusion's website at: <https://www.du.edu/equity>

DU Honor Code:

All members of the University of Denver are expected to uphold the values of *Integrity*, *Respect*, and *Responsibility*. These values embody the standards of conduct for students, faculty, staff, and administrators as members of the University community.

Our institutional values are defined as:

Integrity: acting in an honest and ethical manner;

Respect: honoring differences in people, ideas, and opinions;

Responsibility: accepting ownership for one's own conduct.

A complete explanation of University's policies and procedures regarding student conduct can be found at: <http://www.du.edu/studentlife/studentconduct/media/documents/honorcode.pdf>

Title IX Statement:

Discrimination, harassment, and gender-based violence can happen to anyone regardless of race, class, age, appearance, gender identity, or sexual orientation. The University of Denver is committed to providing an environment free of discrimination on the basis of sex (gender), including sexual misconduct, sexual assault, relationship violence, and stalking, and other protected classes, such as race, color, national origin, age, and disability.

The Office of Equal Opportunity & Title IX (EOIX) is responsible for responding to and investigating reports and complaints of discrimination, harassment, and gender-based violence. In addition, all non-confidential University employees are considered "responsible employees" and required to report such incidents to EOIX. For more information, please visit the Office of Equal Opportunity & Title IX website at <https://www.du.edu/equalopportunity/>.

Religious Accommodations:

University policy grants students excused absences from class or other organized activities for observance of religious holy days, unless the accommodation would create an undue hardship. Faculty are asked to be responsive to requests when students contact them in advance to request such an excused absence. Students are responsible for completing assignments given during their absence but should be given an opportunity to make up work missed because of religious observance.

Once a student has registered for a class, the student is expected to examine the course syllabus for potential conflicts with holy days and to notify the instructor by the end of the first week of classes of any conflicts that may require an absence (including any required additional preparation/travel time).

The student is also expected to remind the faculty member in advance of the missed class, and to make arrangements in advance (with the faculty member) to make up any missed work or in-class material within a reasonable amount of time.

Students with Disabilities/Medical Issues:

University of Denver complies with the American with Disabilities Act and Section 504 of the Rehabilitation Act. 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 and what we can do jointly to accommodate them. 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. Please contact the Disability Services Program located on the 4th floor of Ruffatto Hall; 1999 E. Evans Ave. to coordinate reasonable accommodations for students with documented disabilities/medical issues. 303.871.3241 Information is also available on line at <https://studentaffairs.du.edu/disability-services-program> see the Handbook for Students with Disabilities.

*Note that Letters of Accommodation from DSP are now being handled electronically. Please ensure that you have your letter forwarded through DSP to me within the first week of class.

There are other resources available on campus to help students with their learning and study needs. The Learning Effectiveness Program (LEP), a fee-based program that offers support services to DU students with LD and/or ADHD, which provides academic counseling, tutoring and other specialist services (<http://www.du.edu/disability/lep>, 4th floor of Ruffatto Hall, 303.871.2372). The Writing Center supports and promotes effective student writing helping with all kinds of writing projects: class assignments, personal writing, professional writing, and multimedia projects. They serve any student affiliated with the University and invite students in all classes, at all levels of writing ability, and at any stage of the writing process to visit them. To Schedule an Appointment: <http://myweb.du.edu>, Student & Financial Aid tab, Writing Center, 303.871.7456. They are located in the AAC and offer evening and weekend hours. The Career Center partners with faculty, staff, senior administration and employers, to help students and alumni make informed decisions about work and life. They offer self-assessment, career and educational options, self-marketing strategies and real-world experiences and can be contacted at <http://www.du.edu/studentlife/career>, 303.871.2150 and are located in the basement of the Driscoll Center.

Mental Health and Welfare:

As part of the University's Culture of Care & Support we provide campus resources to create access for you to maintain your safety, health, and well-being. We understand that as a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug concerns, depression, difficulty concentrating and/or lack of motivation. These stressful moments can impact academic performance or reduce your ability to engage. The University offers services to assist you with addressing these or ANY other concerns you may be experiencing. If you or someone you know are suffering from any challenges, you should reach out for support. You can seek confidential mental health services available on campus in the Health & Counseling Center (HCC) and My Student Support System (My SSP). Another helpful campus office is Student Outreach & Support (SOS), where staff work with you to connect to all the appropriate campus resources (there are many!), develop a plan of action, and guide you in

navigating challenging situations. If you are concerned about yourself and/or one of your peers you can send a SOS referral.

COVID Specific Information:

Masking Requirements:

Masking requirements may vary depending on vaccination status and campus alert level. This course will follow masking requirements set by the university.

Note: Currently, faculty may not require students to wear masks in class or during office hours. Discuss with your direct supervisor ways to maintain your safety and address your preferences for masking, especially in smaller groups or office hours. For example, you may consider language in your syllabus communicating to students that office hours will be held outdoors or virtually.

In-Person Attendance:

It is the expectation that you attend class in person as required unless you have made alternative arrangements with me prior to the start of class due to illness, medical reasons, or the need to isolate or quarantine due to COVID-19. As in any in-person course, attendance and participation are crucial for a complete understanding of course material. In choosing to attend the University of Denver, you've chosen to join a larger Community of Care, which means you've chosen specific responsibilities—including in this class. By enrolling in the University of Denver and in this course, you have agreed:

- Not to attend class when you're sick.
- Not to attend class when you've been exposed to people who have or may have Covid-19.
- To follow the university's masking policy