SCIENCE OF CONTEMPORARY ISSUES 2 – LABORATORY SYLLABUS

University of Denver – CHEM 1002 Laboratories – Winter Quarter 2020

Professor: Emily Barter, Ph.D.

E-mail: Emily.Barter@du.edu

Teaching Assistant	E-Mail Address	Office Hours
Brody Bills	Broderick.Bills@du.edu	**Thursday 2:00pm – 4:00pm**
Austin Clark	Austin.Clark@du.edu	**Monday 10:00am – 12:00pm**
Kamryn Czysz	Kamryn.Czysz@du.edu	**Monday 1:30pm – 3:30pm**
Alexa Gomez	Alexa.Gomez@du.edu	**Tuesday 12:00pm – 2:00pm**
Rachael Judson	Rachael.Judson@du.edu	**Wednesday 5:00pm – 7:00pm**

LABORATORY SCHEDULE				
Section	**Day**	**Time**	**TA**	**Location**
04	Mon	2:00 pm – 4:50 pm	Brody Bills	Boettcher Center West 015
05	Mon	6:00 pm – 8:50 pm	Austin Clark	Boettcher Center West 015
06	Tues	9:00 am – 11:50 am	Alexa Gomez	Boettcher Center West 015
07	Tues	2:00 pm – 4:50 pm	Kamryn Czysz	Boettcher Center West 015
08	Tues	6:00 pm – 8:50 pm	Kamryn Czysz	Boettcher Center West 015
09	Weds	9:00 am – 11:50 am	Brody Bills	Boettcher Center West 015
10	Weds	2:00 pm – 4:50 pm	Alexa Gomez	Boettcher Center West 015
11	Weds	6:00 pm – 8:50 pm	Austin Clark	Boettcher Center West 015
13	Thurs	2:00 pm – 4:50 pm	Rachael Judson	Boettcher Center West 015
14	Thurs	6:00 pm – 8:50 pm	Rachael Judson	Boettcher Center West 015

SCIENCE AND ENGINEERING CENTER (SEC) – HTTP://PORTFOLIO.DU.EDU/SEC

The TAs will hold all of their office hours in the SEC. They are available to you for assistance with both the lecture and laboratory portions of the course.

The SEC is a collaborative space that is staffed by undergraduate and graduate TAs who are trained to assist students with first and second year science courses. Their goal is to help students grow as problem solvers by assisting with homework, lab reports, and exam preparations. The SEC is not a 1:1 tutoring center, it is a place where students can get guidance from TAs as well as their peers, and where students can work together to learn and create community. **The SEC is free and open to all DU students.** The SEC is located in the Northwest corner of the first floor of the Anderson Academic Commons.

STUDENT LEARNING OUTCOMES (SLOs)

Upon completion of this one-year course sequence, students should become proficient in these areas and/or develop these skills:

Scientific Inquiry – Natural and Physical World SLOs:

1. Apply knowledge of scientific practice to evaluate evidence for scientific claims.
2. Demonstrate an understanding of science as an iterative process of knowledge generation with inherent strengths and limitations.
3. Demonstrate skills for using and interpreting qualitative and quantitative information.

Course-Specific SLOs:

4. Use graphs to display numerical data and interpret graphical data.
5. When presented with a science-related question, find relevant information to help answer the question.
6. Evaluate sources of information – especially information gleaned from the Internet – to determine their usefulness.
7. Use the skills described above to evaluate scientific claims in the news; learn to identify bogus science and overblown claims.
8. Have the skills and knowledge to make informed choices that impact your health, the environment, and community well-being; view science as a source of power and not fear.
9. Always ask why. Become empowered to take time to do any necessary research to make your own informed decisions; building both confidence and critical thinking skills.

ABSENCES

Excused absences – if you are missing class because of a family emergency, illness, a DU athletic event that you are competing in, or a religious activity, submit documentation of the event from the Office of Health and Counseling, your physician, the Athletics Office, etc.

If you will be absent for any required course activities during the quarter, tell us about it as far in advance as possible, preferably by the end of the first week of classes. Regardless of the reason for your absence, you will need to provide documentation to validate your absence. Speak with Dr. Barter *before* your absence to work out the details. If you anticipate missing multiple days during the quarter, I recommend a meeting outside of class time where we can sit down and make plans for each of your expected absences.

MY PLEDGE TO YOU

I was fortunate to have amazing professors and classmates during my time in both college and graduate school. My goal is to provide all of you with that same experience. I want this class to be a valuable, meaningful, and memorable experience for all of you. Our classroom is going to be one of inquiry and inclusiveness; I want everyone to feel welcome to ask any questions that may have. If you have a question it is likely that someone else in class has the same question, so go ahead and ask it! I will do everything I can to make this the best class it can be. If you have comments, you can submit them **anonymously** at any time by leaving a note for me in my mailbox in the chemistry department (Olin Hall, Room 202). I will do my best to incorporate your feedback into how I teach the class. I am thrilled to have each of you in this class and am looking forward to a great quarter.

DESCRIPTION OF LABORATORY ASSIGNMENTS

Labs

- Unless otherwise noted, labs are always in Boettcher West room 015.
- Lab points will be based on your preparedness and safety in lab, and your performance on pre-lab and post-lab assignments.
- **Pre-lab assignments** are due at the beginning of the lab period when the experiment will be conducted. Most labs will include a pre-lab assignment, but Labs #2 and #8 will not. These assignments will help you prepare to do the experiment.
- **Post-lab assignments** are due at the beginning of your next lab period. To complete Post-labs you will analyze your data, reflect on what you learned, and/or perform calculations.
- **Lab tardiness**: If you are late to lab by more than 10 minutes, you will miss the weekly safety lecture, and *you will not be allowed to perform the experiment*.
- **Lab attendance**: if you do not perform an experiment, your TA cannot accept your assignments for that lab. *If you are going to miss a lab, plan ahead and try to reschedule.*
- **Rescheduling Labs:** you are allowed to **reschedule one lab period per quarter**:
    - Labs may **ONLY** be rescheduled for an excused absence (see Page 2).
    - Labs can only be completed during the week they are scheduled in the syllabus.
    - The rescheduling must be completed before your normal lab meeting time.
    - You will need approval from Dr. Barter and both your TA and the TA whose section you will work with that week.

For example, if you normally have lab on Monday but will be absent on Monday during Week 6, you may complete lab #5 on Tuesday, Wednesday, or Thursday, as long as Dr. Barter, the TA from that lab period, and your normal TA approve the switch before your normally scheduled lab period.

- ***The labs are a required component of the class – you will automatically fail the class if you miss two or more labs. Please do not let this happen.***

Make sure that you understand this policy. It is a chemistry department policy that we must follow. **Avoid missing labs!**

CHEM 1002 Lab Schedule

Week	Sun	Monday	Tuesday	Wednesday	Thursday	Friday	Sat
1		January 6	7	8	9	10	11
		First Week of Classes – No Labs This Week					
2	12	13	14	15	16	17	18
		Lab 1: Evaporation and Intermolecular Forces Meet in Boettcher Center West 015 for this and all subsequent labs					
3	19	20	21	22	23	24	25
		MLK Holiday No Lab	Lab 2: Begin Lab 8 Flame Challenge Assignment				
4	26	27	28	29	30	31	Feb 1
		Lab 3: Behind the Scenes of Ionic Reactions					
5	2	3	4	5	6	7	8
		Lab 4: Titrating the Acetic Acid in Vinegar					
6	9	10	11	12	13	14	15
		Lab 5: Biodiesel Synthesis					
7	16	17	18	19	20	21	22
		Lab 6: Biodiesel Calorimetry					
8	23	24	25	26	27	28	29
		Lab 7: Electrochemical Cells					
9	March 1	2	3	4	5	6	7
		Lab 8: Flame Challenge Presentations					
10	8	9	10	11	12	13	14
		THERE ARE NOT ANY LABS THIS WEEK! (Study For Final Exams)					
11	15	16	17	18	19	20	21
		Final Exams – No Labs					

LABORATORY SAFETY

Lab safety is very serious. If you do not follow safety rules as outlined below and by your TA, you may be asked to leave the lab and given a 0 for that assignment. Chemicals have a reputation for being dangerous. The truth is that chemicals are like tools – they are dangerous when they are not used properly. Using chemicals safely comes down to these factors:

Clothing
Shoes must cover entire foot
No bare legs, stomachs, or shoulders
Goggles must be worn at all times
No excessively baggy clothing
Wear gloves when using chemicals

Preparedness
Read the lab procedure and arrive ready to do the experiment
Learn about the hazards of the chemicals you will be using by looking up the MSDS for each chemical. See the *Canvas Lab Course* for more info.

Behavior
Do not bring food or drink to lab
Label all the containers that you use with their contents

Chemical Waste
Follow TA instructions for waste disposal
Never pour anything down the drain unless you are instructed to do so

If you are dressed inappropriately for lab, your TA cannot allow you to attend the lab session.

These rules are here to protect you from chemical spills, accidental fires, eye injuries, and tripping. Safety is our number one priority in the lab. To emphasize the importance of laboratory safety, some points on each lab will be awarded for safe clothing, behavior, and preparedness.

You are required to wear safety goggles during lab. Safety goggles can be purchased very inexpensively from Amazon.com or a variety of retailers. Your TA will review this during lab.

ACADEMIC HONESTY

I encourage you to do CHEM 1002 laboratory work in groups. Some of your best learning can happen when you explain what you know to someone who doesn't understand. ***However, all work that you turn in must be your own.*** If two identical assignments are turned in, both students will receive grades of zero.

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 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

For more information, consult these resources:

DU Honor Code Statement: http://www.du.edu/studentlife/studentconduct/index.html
DU Policies for Student Conduct: http://www.du.edu/studentlife/studentconduct/policies/

DISABILITY SERVICES PROGRAM

Any student who feels s/he may need an accommodation based on the impact of a disability should contact the Disability Services Program (DSP) in a timely manner to coordinate reasonable accommodations. DSP is located in Ruffatto Hall; 1999 E. Evans Ave. and can be reached at 303-871-2372. Information is also available online at http://www.du.edu/disability/dsp; see the *Handbook for Students with Disabilities*. DSP will provide me with an official notice of accommodations so I can provide support. I cannot provide accommodations without this step.

LEARNING EFFECTIVENESS PROGRAM

The Learning Effectiveness Program (LEP) provides academic support services beyond basic academic accommodations. http://www.du.edu/studentlife/learningeffectiveness

HEALTH AND COUNSELING CENTER

The Health & Counseling Center (HCC) provides many medical and mental health services.
http://www.du.edu/health-and-counseling-center/

INCLUSIVE LEARNING ENVIRONMENTS

In this class, we will work together to develop a learning community that is both inclusive and respectful. Our diversity may be reflected by differences in race, culture, age, religion, sexual orientation, socioeconomic background, and a myriad of other identities and life experiences. The goal of inclusiveness, in a diverse community, encourages and appreciates expressions of different ideas, opinions, and beliefs, so that conversations and interactions that could potentially turn divisive turn instead into opportunities for intellectual and personal enrichment.

A dedication to inclusiveness requires respecting what others say, their right to say it, and the thoughtful consideration of others' communication. Both speaking and listening are valuable tools for furthering thoughtful, enlightening dialogue. Respecting one another's individual differences is critical in transforming a collection of diverse individuals into an inclusive, collaborative, and excellent learning community. Our core commitment shapes our core expectation for behavior inside and outside of the classroom