SCIENCE OF CONTEMPORARY ISSUES 2 – COURSE SYLLABUS

University of Denver – CHEM 1002 – Winter Quarter 2021

Professor: Dr. Emily Barter
DU Office Location: Boettcher West 222, **Winter Quarter Office Location:** My House!
Office Hours (on zoom): Thursdays (1:15pm – 3:15pm) & Fridays (10:00am – 11:15am)
E-mail: Emily.Barter@du.edu
Office Phone: As my office is now my house, if you need to talk to me outside of class or office hours – send me an email and I will call or zoom you during business hours.

Teaching Assistant	E-Mail Address	Lab Sections
Clint Boldt	Clint.Boldt@du.edu	07 & 08 (Tuesday Afternoon & Evening)
Alexa Gomez	Alexa.Gomez@du.edu	04 & 06 (Monday Morning & Afternoon)
Austin Haider	Austin.Haider@du.edu	09 & 10 (Wednesday Morning & Afternoon)
Emma Oldani	Emily.Oldani@du.edu	05 & 11 (Monday & Wednesday Evening)
Jack Snow	Jackson.Snow@du.edu	07 & 13 (Thursday Afternoon & Evening)

Welcome to CHEM 1002:

This course is the 2nd part of a three-part, yearlong course sequence that fulfills the natural scientific inquiry common curriculum requirement. This quarter we will use the skills developed in CHEM 1001 to explore the real-world chemistry of water, nuclear power, nuclear weapons, electrical devices, renewable power plants, and the effect of carbon dioxide on oceans. The skills from CHEM 1001 and CHEM 1002 will prepare you to learn about the large and sometimes complicated molecules present in plastics, drugs, foods, and your own body during the third quarter of this course (CHEM 1003). It is going to be interesting and a lot of fun! The skills you acquire in this course will help you make wiser choices – whether voting, buying a new product, explaining science to friends and family, or deciding how to get to school or work.

Quarter	CHEM 1001: Fall	CHEM 1002: Winter	CHEM 1003: Spring
Topics	• Sustainability • Air Pollution • The Ozone Layer • Climate Change • Fossil Fuels • Power Plants	• Purification of Drinking Water • Nuclear Power • Nuclear Weapons • Solar Power • Batteries • Alternative Energy Sources	• Plastics • Drugs • Nutrition • Chemical Components of Foods • Genetically Modified Organisms (GMOs)

Science of Contemporary Issues is a three-part, yearlong course sequence that fulfills the natural scientific inquiry common curriculum requirement. This course focuses on real-world applications of chemistry. I have worked to minimize the use of complex calculations in this course in favor of an emphasis on learning the other skills that chemists use to solve problems and understand the sub-microscopic world. This and next quarter (CHEM 1002 & 1003) will build upon the knowledge and skills that you acquired during Fall quarter. In other words, this is a year-long sequence because chemistry is a cumulative science. The work we do this quarter will provide the context that makes the 3rd quarter of the course both approachable & interesting.

CANVAS COURSE WEBSITE: CHEM 1002 – WINTER 2021

This is where you will go to get files for labs and homework, turn in warm-up assignments, take quizzes and exams, and see your grades. I will use the course Canvas page to post all course files and communicate with the class. If you haven't done so yet, please go to Canvas now and:

- Review the **"Getting Started"** Module in Canvas: https://canvas.du.edu/courses/111368/modules
  - Make sure you have all of the required course materials.
  - **Configure your notification settings** so that you are alerted when files, announcements, or grades are changed on the Canvas page
- Register your clicker subscription through the **"TurningPoint v8 Clicker Registration"** link in the **"Clicker Registration Module"** in Canvas. For proper Canvas integration, you must register your clicker through the Module in Canvas, please **do not** skip this step. ***If you were registered last quarter, you do not need to do another registration. You only need to register your clicker if you are new to CHEM 1002 or have purchased a new clicker.***
  - See the course materials module for additional information on setting up your clicker.
- **Complete the 1st Warm-Up Assignment:** https://canvas.du.edu/courses/111368/quizzes/118526

LECTURE SCHEDULE			
Section	**Day and Time**	**Time**	**Location**
01	Mon and Weds	12 noon – 1:30 pm	Zoom – See Canvas Home Page
02	Tues and Thurs	10:00 am – 11:30 am	Zoom – See Canvas Home Page

LABORATORY SCHEDULE				
Section	**Day**	**Time**	**TA**	**Location**
06	Mon	9:00 am – 11:50 am	Alexa Gomez	https://udenver.zoom.us/my/alexa.gomez
04	Mon	2:00 pm – 4:50 pm	Alexa Gomez	https://udenver.zoom.us/my/alexa.gomez
05	Mon	6:00 pm – 8:50 pm	Emma Oldani	https://udenver.zoom.us/my/eoldani
07	Tues	2:00 pm – 4:50 pm	Clint Boldt	https://udenver.zoom.us/my/cboldt
08	Tues	6:00 pm – 8:50 pm	Clint Boldt	https://udenver.zoom.us/my/cboldt
09	Weds	9:00 am – 11:50 am	Austin Haider	https://udenver.zoom.us/my/austinhaider
10	Weds	2:00 pm – 4:50 pm	Austin Haider	https://udenver.zoom.us/my/austinhaider
11	Weds	6:00 pm – 8:50 pm	Emma Oldani	https://udenver.zoom.us/my/eoldani
13	Thurs	2:00 pm – 4:50 pm	Jack Snow	https://udenver.zoom.us/my/jack.snow
14	Thurs	6:00 pm – 8:50 pm	Jack Snow	https://udenver.zoom.us/my/jack.snow

THE SCIENCE AND ENGINEERING CENTER (SEC) - http://portfolio.du.edu/sec

The teaching assistants will hold all of their office hours through zoom. The TA office hour schedules and zoom locations are posted on our Canvas course home page. 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 chemistry, physics, and engineering 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 one-on-one tutoring center, it is a place where students can get guidance from TAs as well as their peers, and where students can work together (on-line) to learn and create community. **The SEC is free and open to all DU students.** The SEC is physically located in the Northwest corner of the first floor of the Anderson Academic Commons.

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 to me at any time by sending me an email. 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.

TECHNOLOGY IN THE CLASSROOM

Our entire course will be scheduled through technology. Please do your best to attend our lectures, live via Zoom, as scheduled. This is going to be challenging and I am going to ask that everyone does their best to stay engaged and active during our zoom lectures. I am planning to post the lecture recordings to Canvas after our synchronous classes. I anticipate we will have technology challenges at some point during the quarter and we will adapt as needed. We are going to work through this together and continue to learn and challenge ourselves.

In my experience, distracting technology has an overall negative impact on student learning in the classroom. I recommend taking notes by hand and staying engaged.

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.

CHEM 1002 Lecture Schedule

Week	Sun	Monday	Tuesday	Wednesday	Thursday	Friday	Sat
1		**January 11**	**12**	**13**	**14**	**15**	**16**
		Lecture 1: Ch 8.0 – 8.3		**Lecture 2:** Ch 8.4 – 8.7 Lab 1 Information **and Quiz #1**		Syllabus Quiz due	
2	**17**	**18**	**19**	**20**	**21**	**22**	**23**
		No Classes – MLK Holiday		**Lecture 3:** Canvas Reading Assignment		Homework #1 due	
3	**24**	**25**	**26**	**27**	**28**	**29**	**30**
		Lecture 4: Ch 8.12 – 8.13 and Canvas Reading Assignment		**Lecture 5:** Lecture 1 – 4 Wrap-Up **(Planned Catch-Up Day)** **Quiz #2**		Homework #2 due	
4	**31**	**February 1**	**2**	**3**	**4**	**5**	**6**
		Lecture 6: Ch 8.8 – 8.9 Review for Exam 1		**Exam 1** Chapters 8.0 – 8.7, 8.12 – 8.13 and Canvas Reading Assignments			
5	**7**	**8**	**9**	**10**	**11**	**12**	**13**
		Lecture 7: Ch 8.10 – 8.11		**Lecture 8:** Canvas Reading Assignment and 11.12		**Big Homework #3 & #4 due**	
6	**14**	**15**	**16**	**17**	**18**	**19**	**20**
		Lecture 9: Ch 6.6 and 6.1 **Quiz #3**		**Lecture 10:** Ch 6.2 – 6.3 **Quiz #4**		Homework #5 due	
7	**21**	**22**	**23**	**24**	**25**	**26**	**27**
		Lecture 11: Ch 6.4 – 6.5 and Canvas Reading Assignment **Quiz #5**		**Lecture 12:** Nuclear Weapons and Treaty – Canvas Reading Assignment		Homework #6 due	
8	**28**	**March 1**	**2**	**3**	**4**	**5**	**6**
		Lecture 13: Finish Content & Review for Exam 2 **Quiz #6**		**Lecture 14:** Ch 7.1 – 7.5 Lab 8 Information			
9	**7**	**8**	**9**	**10**	**11**	**12**	**13**
		Exam 2 Chapters 8.8 – 8.11, 6.1 – 6.6 and Canvas Reading Assignments		**Lecture 15:** Ch 7.6 and 7.9 – 7.11 **Quiz #7**		Homework #7 due	
10	**14**	**15**	**16**	**17**	**18**	**19**	**20**
		Lecture 16: Ch 7.10 and 6.7 – 6.9		**(Mini) Exam #3** Chapters 7.1 – 7.6, 7.9 – 7.11, and 6.7 – 6.9 **Warm-Up** = Discussion Board			

CHEM 1002 Lab Schedule

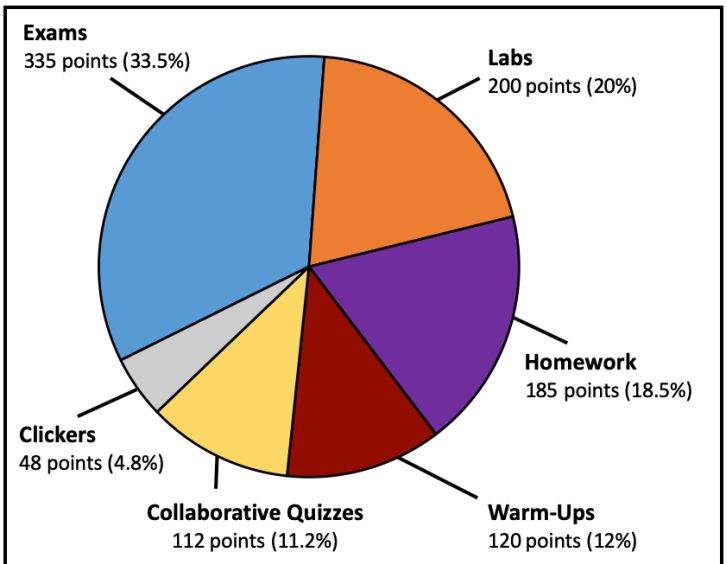
Week	Sun	Monday	Tuesday	Wednesday	Thursday	Friday	Sat
1		January 11	12	13	14	15	16
		First Week of Classes – No Labs This Week					
2	17	18	19	20	21	22	23
		MLK Holiday No Lab	Lab 1: Begin Lab 8 Flame Challenge Assignment				
3	24	25	26	27	28	29	30
		Lab 2: Title TBD					
4	31	February 1	2	3	4	5	6
		Lab 3: Title TBD					
5	7	8	9	10	11	12	13
		Lab 4: Title TBD					
6	14	15	16	17	18	19	20
		Lab 5: Title TBD					
7	21	22	23	24	25	26	27
		Lab 6: Title TBD					
8	28	March 1	2	3	4	5	6
		Lab 7: Title TBD					
9	7	8	9	10	11	12	13
		Lab 8: Flame Challenge Presentations					
10	14	15	16	17	18	19	20
		THERE ARE NOT ANY LABS THIS WEEK! (Study For Exams)					

Note: *Most of the laboratories are listed as "Title TBD", as I want to have the flexibility to be able to adapt and write new laboratory content as we progress through this unique quarter.*

ASSIGNMENTS & GRADING

Assignment Category	Points	% of Grade	Additional Info
Exams	335	33.5%	2 exams × 130 points each 1 mini-exam x 75 points
Lab Assignments	200	20%	Labs 2, 3, 4, 5, 6, and 7 × 25 points, Lab 1 + 8 = 50 pts
Homework	185	18.5%	5 HW assignments × 25 points each 1 HW assignment x 45 points 1 syllabus quiz × 15 points
Warm-Up Questions	120	12%	Full credit for participation 8 points per lecture × 16 lectures 8 points x 1 discussion board Lowest 2 scores dropped
Collaborative Quizzes	112	11.2%	7 quizzes × 16 points each
In-Class Clicker Questions	48	4.8%	Full credit for participation 4 points per lecture × 16 lectures Lowest 4 scores dropped
TOTALS	**1000**	**100**	**–**

Letter Grade	Points
A	1000 - 930
A−	929 - 900
B+	899 - 870
B	869 - 830
B−	829 - 800
C+	799 - 770
C	769 - 730
C−	729 - 700
D+	699 - 670
D	669 - 630
D−	629 - 600
F	599 or fewer



Point Breakdown by Category

- Final grades will be assigned based on the point scale shown above. The types of assignments and assignment-specific grading procedures will be discussed during Lecture #1. If you have questions, please talk with Dr. Barter.
- When your lowest scores for warm-ups and clickers are dropped, they will appear gray in the Canvas grade book
- When calculating your course grade, pay attention to the number of points in the Canvas grade book, **NOT** the letter grade calculated by Canvas.

DESCRIPTION OF ASSIGNMENT CATEGORIES

Exams

- Will be administered through Canvas.
- Composed of multiple-choice, fill in the blank, and long-answer questions.
- May use a *non-phone* calculator for exams.
- May only use the provided supplemental materials during exams.
- Make-up or late exams are available only with documentation supporting an excused absence and communication must be initiated prior to the start of the exam.
- Once an exam is opened, the score earned stays.
- **Please check the exam schedules now and make sure that you do not have any scheduling conflicts.**

Labs

- Unless otherwise noted, labs will always held in your TA's Zoom room.
- Lab points will be based on your performance on lab assignments.
    - What the laboratory assignments look like will change throughout the quarter.
- The TAs will be present in their zoom room for a minimum of the 1st hour of your scheduled laboratory period. You will join your TA, in their zoom room, when your laboratory section is scheduled to begin. This will help to build community and your TAs will run the laboratories and provide assistance with the content.
- **We will be taking academic integrity very seriously.** As we will not have lab partners, there is no reason students should turn in identical work. All work must be your own.
- **If your lab has a pre-lab assignment** it is due at the beginning of the laboratory. These assignments will help you prepare to engage during lab.
- **Laboratory worksheets** are due at the beginning of your next lab period.
- **Lab attendance**: You should plan to attend all of your labs, as scheduled. *If you are going to miss a lab, plan ahead to try to reschedule.*
    - **Rescheduling Labs:** You may **reschedule one lab per quarter for a pre-planned absence, excused absence, or emergency**:
        - Labs may 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 5, you may attend that lab with a different section 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 do not complete 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. **Please avoid missing labs!**

Homework (due by 5:00 pm on due date)

- Composed of assignments that will be posted through Canvas.
- Will be turned-in through Canvas, as 1 PDF file.
- Graded on correctness with some partial credit.

Warm-Ups

- Before every lecture I will assign three to five questions.
- These are graded based on a thoughtful, complete effort, not on correctness. Students typically earn warm-up scores of 100%, as long as they remember to submit the assignments on-time. The two bullet points below give an idea of how the grading works:
    - Answers that use evidence to bolster their argument and show an effort and understanding of the reading assignment will receive full credit.
    - Answers that rely on direct quotes from the text, are copied directly from websites, are composed of sentence fragments, or are have questions left blank or incomplete will receive a score of zero.
- Warm-ups are due **by** (not at) 7:00 am the morning before every lecture. (Please manage your time so that you are not rushing every morning before lecture to get these done.)
- Since warm-ups will be used during class, they **may not be turned in late.**
- Your lowest 2 warm-up scores will be dropped and will not be counted in your final grade.
- Some warm-ups will be marked "CER" and have additional requirements for full credit. The "Claims Evidence Reasoning (CER)" Page in Canvas contains more information .

Collaborative Quizzes

- These will be similar to other in-class quizzes that you have taken, with one exception: you will have time to compare answers and collaborate with classmates (and Dr. Barter!) and revise your answers based on your discussions.
- Study for these quizzes! They will give you valuable practice with exam-style questions.

Clickers

- I will ask multiple-choice questions in class and you will answer with your digital clicker app. You will feel like you are playing a game and will have more fun. More seriously, clickers help me notice if/when the class is struggling with a difficult concept.
- Grades are based on participation, not correctness.
- To receive clicker points you need to **register your subscription through Canvas:**
    - Described on Page #2 of the syllabus
    - You only need to complete the registration once.
- I will post clicker grades in the grade book at the end of each week throughout the quarter. Check the grade book to make sure that you are getting credit.

LATE ASSIGNMENTS

Homework assignments are the *only* assignments in CHEM 1002 that may be turned in late for partial credit. Late homework penalties are assessed as follows:

Late by 1 week or less	Late by more than 1 week
Score decreased by 50%	Automatic score of zero

ABSENCES

Excused absences – If you are missing class because of an emergency, illness, or a religious activity, communicate with me ASAP. I know this is a challenging situation and I will do my best to help everyone with excused absences or emergencies. Please also recognize the immense challenges for myself and the TAs as we navigate this, together – as a community.

Make-up assignments – If your absence is excused or planned, make-up assignments and/or due date extensions can be arranged. If you do not provide at least 24 hours of advanced notice, we cannot guarantee that a make-up assignment will be available.

If you already know that 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. You still must complete all of the course assignments, but may be able to do so at a different time. Speak with Dr. Barter *before* your absence to work out the details. If you anticipate missing multiple days, schedule a private meeting with Dr. Barter to discuss your needs.

ACADEMIC HONESTY

I encourage you to do your CHEM 1002 coursework 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. The exams in CHEM 1002 count for about one third of your grade and must be accomplished individually, so you need to be able to perform independently.

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/

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.

DISABILITY SERVICES PROGRAM

Any student who feels that they 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. Information is 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/

ONLINE AND WEB-SUPPORTED CLASSES

It is your responsibility to procure reliable, readily-accessible Internet service in order to fulfill course expectations. I am under no obligation to accept late assignments or waive required tasks (e.g., discussion participation) due to lack of online access or malfunctioning computer hardware. Please consider identifying an alternative Internet source in case of technical problems. Computer help is available from University Technology Support (UTS) Help Center.

RESTRICTION OF AUDIO OR VISUAL RECORDING, REPRODUCTION, AND DISTRIBUTION OF CONTENT IN ONLINE COURSES

At the University of Denver, we protect the intellectual property of all our faculty, and safeguard the privacy of all our students in online learning environments. To this end, students may not record, reproduce, screenshot, photograph, or distribute any video, audio, written, or visual content from their online courses.

This restriction includes but is not limited to:

- Pre-recorded and live lectures or laboratories
- Live discussions
- Discussion boards
- Simulations
- Posted course materials
    - *Students who post to, or copy work from, any web environment (such as Chegg or Course Hero) will be reported to the Office of Student Rights & Responsibilities.*
- Faculty feedback forms
- Visual materials that accompany lectures/discussions, such as slides
- Virtual whiteboard notes/equations, etc.

As we engage in online learning as an academic community, it is imperative to be respectful of all. Keep in mind that if any student is identifiable in an online class recording, this may constitute a violation of the educational record protections provided under FERPA.

Students who violate this policy will be reported to The Office of Student Rights & Responsibilities and may be subject to both legal sanctions for violations of copyright law and disciplinary action under *Student Rights & Responsibilities Policies.*