

SCIENCE OF CONTEMPORARY ISSUES 3 – COURSE SYLLABUS

Chemistry in Context Chapters 9, 10, 11, and 12

University of Denver – CHEM 1003 – Spring Quarter 2016

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Office Hours: Mondays and Tuesdays from 3pm to 5pm in the SEC inside Anderson Academic Commons. If these times do not work for your schedule, use the QR code on the right to [check my calendar](#). E-mail me with a proposed meeting time when I do not have something already scheduled. You can also drop by my office without making an appointment any time when I do not have something scheduled.



LECTURES

Section	Day and Time	Time	Location
01	Mon and Weds	12:00 noon – 1:30 pm	Olin Hall 205
02	Tues and Thurs	10:00 am – 11:30 am	Sturm Hall 254

LABS

Section	Day	Time	Teaching Assistant	E-mail Address:
03	Mon	2:00 pm – 4:50 pm	Nairi Pezeshkian	Nairi.Pezeshkian@du.edu
04	Mon	6:00 pm – 8:50 pm	Lukas Woodcock	Lukas.Woodcock@du.edu
05	Tues	2:00 pm – 4:50 pm	Nairi Pezeshkian	Nairi.Pezeshkian@du.edu
06	Tues	6:00 pm – 8:50 pm	Lukas Woodcock	Lukas.Woodcock@du.edu
07	Weds	2:00 pm – 4:50 pm	Niki Shoup	Niki.Shoup@du.edu
08	Thurs	2:00 pm – 4:50 pm	Niki Shoup	Niki.Shoup@du.edu

All labs are held in Boettcher West room 015 (the CHEM 1001 and 1002 lab space)

This course is the final part of a three-part, yearlong course sequence that fulfills the natural scientific inquiry common curriculum requirement. In this quarter we will use the skills that you developed in CHEM 1001 & 1002 to explore the real-world chemistry of large molecules. This might not sound exciting yet, but it will be: we will learn about the chemicals that make up plastics, drugs, foods, and even your own body. It is going to be interesting and a lot of fun.

Quarter	CHEM 1001: Fall	CHEM 1002: Winter	CHEM 1003: Spring
Topics	<ul style="list-style-type: none">• Sustainability• Air Pollution• The Ozone Layer• Climate Change• Fossil Fuels• Power Plants	<ul style="list-style-type: none">• The Purification Of Drinking Water• Nuclear Power• Nuclear Weapons• Solar Power• Batteries	<ul style="list-style-type: none">• Plastics• Drugs• Nutrition• Chemical Components of Foods• Genetically Modified Organisms (GMOs)

CANVAS COURSE WEBSITE: [HTTPS://CANVAS.DU.EDU/COURSES/26976](https://canvas.du.edu/courses/26976)

This is where you will go to print files for lab, turn in Warm-Up assignments, take quizzes, and see your grades from assignments. I will use the course Canvas page to post all course files and communicate with the class. If you haven't done so yet, go to Canvas now and:

- **[Configure your notification settings](#)** so that you are alerted when files, announcements, or grades are changed on the Canvas page.
- Familiarize yourself with the new format of our Canvas page

EXAM DATES				
Exam	Section	Date	Time	Location
#1	01	Wednesday, April 13	12:00 pm – 1:30 pm	Olin Hall 205
	02	Thursday, April 14	10:00 am – 11:30 am	Sturm Hall 254
#2	01	Wednesday, May 11	12:00 pm – 1:30 pm	Olin Hall 205
	02	Thursday, May 12	10:00 am – 11:30 am	Sturm Hall 254
#3 (final)	01	Saturday, May 28	12:00 pm – 1:50 pm	Olin Hall 205
	02	Tuesday, May 31	10:00 am – 11:50 am	Sturm Hall 254

HOMEWORK	
Homework	Due (by 11:59 pm)
#1	Wednesday, April 6
#2	Monday, April 25
#3	Friday, May 6
#4	Thursday, May 26

LEARNING JOURNALS	
Chapter	Due (by 11:59 pm)
9	Tuesday, April 5
10	Thursday, April 21
11	Thursday, May 5
12	Thursday, May 26

THE SCIENCE AND ENGINEERING CENTER (SEC)

Joe and the teaching assistants will hold office hours in the Science and Engineering Center (SEC), inside Anderson Academic Commons. For more information on the SEC, follow this link: <http://portfolio.du.edu/sec>

MY PLEDGE TO YOU

I want this class to be a valuable, meaningful, and memorable experience for all of you. 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 using an online survey tool. I will do my best to incorporate it into how I teach the class. Let's have a great quarter! This is the URL for the survey tool: <https://www.suggestionox.com/r/eb6eKS>

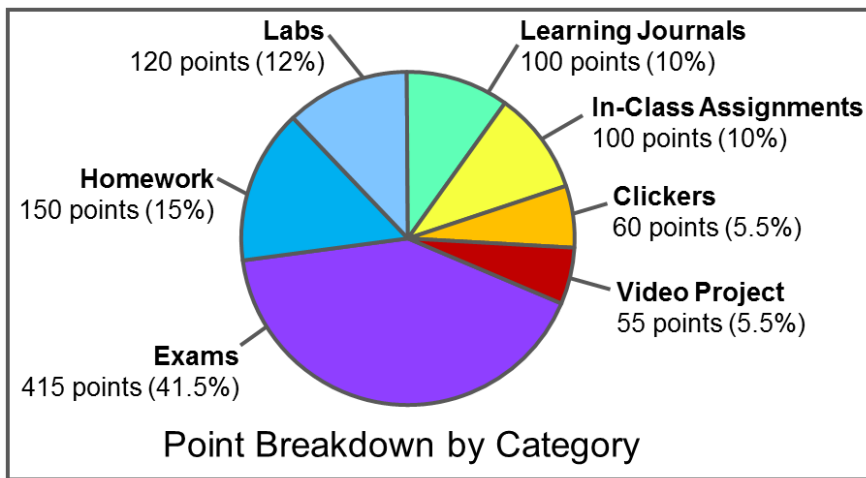
QUESTIONS FOR JOE

If you want to ask me a question, you can always send me an e-mail (joseph.meredith@du.edu) or you can use the anonymous tool (previous section) if that feels better to you.

ASSIGNMENTS & GRADING

Assignment Category	Points	% of Grade	Additional Info
Exams	415	41.5	2 × 125 points and 1 × 165 points
Homework	150	15	Individual assignments completed outside of class time; 4 × 35 points Syllabus quiz in week 1 = 10 points
Labs	120	12	6 × 20 points each
Learning Journals	100	10	1 per chapter 4 × 25 points each
In-Class Assignments	100	10	Various assignments throughout the quarter
In-Class Clicker Questions	60	6	During every class
Video Project	55	5.5	See the canvas video project page for more info
TOTALS	1000	100	-

Letter Grade	Points
A	930 - 1000
A-	900 - 929.9
B+	870 - 899.9
B	830 - 869.9
B-	800 - 829.9
C+	770 - 799.9
C	730 - 769.9
C-	700 - 729.9
D+	670 - 699.9
D	630 - 669.9
D-	600 - 629.9
F	599.9 or fewer



- Final grades will be assigned based on the **point scale** shown above. The types of assignments and assignment-specific grading procedures are the same as those from CHEM 1001 and 1002. If you have questions, talk with Joe or your TA.
- When your lowest scores for 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 or percent score calculated by Canvas.

CHEM 1003 Lecture Schedule

Week	Sun	Monday	Tuesday	Wednesday	Thursday	Friday	Sat
1	Mar 20	21	22	23	24	25	26
		Lecture 1 Ch. 9.0 – 9.3		Lecture 2 Ch. 9.4 – 9.5 & p.418 Lab 1 Info			
2	27	28	29	30	31	April 1	2
		Lecture 3 Ch. 9.6 – 9.7 & p. 470 – 471		Lecture 4 Ch. 9.8 – 9.11 Lab 2 Info			
3	3	4	5	6	7	8	9
		Lecture 5 Ch. 9 Review		Lecture 6 Ch. 10.0 – 10.3 Lab 3 Info			
4	10	11	12	13	14	15	16
		Lecture 7 Ch 10.4 – 10.6		Exam 1 Chapter 9			
5	17	18	19	20	21	22	23
		Lecture 8 Ch 10.7 – 10.8 Lab 4 Info		Lecture 9 Ch 10.9 – 10.10 & outside reading			
6	24	25	26	27	28	29	30
		Lecture 10 Ch 11.0 – 11.1 & outside reading		Lecture 11 Ch 11.2 – 11.6 Lab 5 Info			
7	May 1	2	3	4	5	6	7
		Lecture 12 Ch 11.7 – 11.10 & outside reading		Lecture 13 Ch 11.11 – 11.12 Lab 6 Info			
8	8	9	10	11	12	13	14
		Lecture 14 Ch 10 & 11 Review		Exam 2 Chapters 10 & 11			
9	15	16	17	18	19	20	21
		Lecture 15 Ch 12.0 – 12.3 (DNA)		Lecture 16 Ch 12.4 – 12.5 (Protein Structure)			
10	22	23	24	25	26	27	28
		Lecture 17 Ch 12.6 – 12.8 (Genetic Engineering)		Lecture 18 Ch 12 Wrap-up & Review			Final Exam Sect. 01
11	29	30	31	June 1	2	3	4
		Memorial Day Holiday	Final Exam Section 02				

CHEM 1003 Lab Schedule

Week	Sun	Monday	Tuesday	Wednesday	Thursday	Friday	Sat	
	Mar 20	21	22	23	24	25	26	
1		NO LAB THIS WEEK						
	27	28	29	30	31	April 1	2	
2		Lab 1: Synthesis of Polymers						
	3	4	5	6	7	8	9	
3		Lab 2: Synthesis of Aspirin						
	10	11	12	13	14	15	16	
4		Lab 3: Analysis of Aspirin (from lab 2) and Other Drugs						
	17	18	19	20	21	22	23	
5		Lab 4: Extracting Fats from Foods						
	24	25	26	27	28	29	30	
6		Meet with TAs to Discuss Video Project Progress						
	May 1	2	3	4	5	6	7	
7		Lab 5: Fermentation by Yeast						
	8	9	10	11	12	13	14	
8		Lab 6: DNA Isolation						
	15	16	17	18	19	20	21	
9		CHEM 1003 Video Project Screening						
	22	23	24	25	26	27	28	
10		NO LAB THIS WEEK						
	29	30	31	June 1	2	3	4	
11		Memorial Day No Class	Final Exam Week – No Labs					

ASSIGNMENT CATEGORIES

Exams

- Composed of multiple-choice, fill in the blank, and long-answer questions.
- **Bring a non-phone calculator and a pencil with an eraser to all exams.**
- Make-up or late exams will not be available. If you are not present for one of the midterm exams, that exam will count for zero points and your final exam will count for 290 points instead of 165 points ($290 = 165 + 125$).
- I will provide the class with exams and answer keys from the previous year for practice.

Check the exam schedule now and make sure that you do not have any scheduling conflicts. Let me know if your schedule is incompatible with the exams.

Labs

- Unless otherwise noted, labs are always in Boettcher West room 015. See the Lab Schedule on Page 5 for more information.
- 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. These assignments will help you mentally prepare to do the experiment.
 - Most labs will include a pre-lab assignment, but labs #2 and 8 will not. For lab 8 you will be completing a multimedia assignment with your partner before the lab period, so there is plenty of work to do before lab, even though there is not a “pre-lab assignment.”
- **Post-lab assignments** are due at the beginning of your next lab period. Lab 8 will not have a post-lab assignment. To complete Post-labs you will analyze your data, create graphs with MS Excel, 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:** You cannot turn in the assignments for an experiment that you are not present for. *If you are going to miss a lab, plan ahead and try to reschedule the lab.*
- **Rescheduling Labs:** you are allowed to **reschedule one lab period per quarter:**
 - 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 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 complete lab #5 on Tuesday, Wednesday, or Thursday, as long as 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.***

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

Warm-Ups

- Warm-Ups will not be a part of CHEM 1003!

Learning Journals

- Learning Journals will replace warm-up assignments. They will be turned in four times during the quarter. For more information, see <https://canvas.du.edu/courses/26976/pages/chem-1003-learning-journals>

In-Class Work

- These assignments can take a lot of different forms, and will happen during lectures throughout the quarter. You never know when one might happen!

Clickers

- I will ask multiple-choice questions in class and you will answer with your clicker. You will feel like you are playing a game and will have more fun. More seriously, clickers help me notice when the class is struggling with a difficult concept.
- Grades are based on participation, not correctness.
- If you are using the same clicker that you used for CHEM 1002, you do not need to register your clicker.
- In order to receive credit you need to **register your clicker**:
 - Go to the class Canvas page and complete the survey titled "[Clicker Registration](#)." You will need your clicker in front of you to complete this survey.
 - You only need to complete this survey once.
- I will post clicker grades in the grade book at the end of each week. Check the grade book to make sure that you are getting credit.
- Consult these instructions to ensure that you understand how to use your clicker. Talk to Joe if you have questions.
https://www.turningtechnologies.com/pdf/UserGuides/ResponseCard_RF_LCD_UG.pdf

LATE ASSIGNMENTS

Homework assignments, post-lab files, and learning journal assignments can all be turned in late for partial credit. For more information, see <https://canvas.du.edu/courses/26976/pages/chem-1003-late-assignment-policies>

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.

Make-up assignments – If your absence is excused, 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 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. You must complete all of the course assignments, but may be able to do so at a different time. Speak with Joe *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.

For more information, see <https://canvas.du.edu/courses/26976/pages/chem-1003-absence-policies>

TECHNOLOGY IN THE CLASSROOM

Phones – Please do not use your phone in the classroom. Phones are distracting to you and to those around you. If I notice you using your phone I will ask you to exit the classroom.

Laptops – You may want to bring your laptop to class to take notes or look up definitions of words. **However, if you use a laptop to take notes, please sit in the back of the classroom.** The changing colors and motion of a computer screen distract students around you, even if you are on-task for 100% of the time.

In my experience, laptops have an overall negative impact on student learning in the chemistry classroom. I recommend taking notes by hand and leaving your laptop at home.

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 you 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.