

Introductory Chemistry, Chemistry 1010, Fall 2021

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Office Hours: Attendance at office hours is NOT MANDATORY. However, I am happy to meet with you if you would like to ask questions or discuss anything about the course. Visit the link provided in Canvas to schedule a time to meet at your convenience.

Office hours will be held via Zoom. Upon scheduling an appointment, you will be sent a Zoom link to my personal meeting room. Please also check out the office hours offered by the SI leaders and UTF for CHEM 1010.

Course Description Chemistry 1010 is an introductory chemistry class designed for non-science majors focusing on chemistry conceptually. This class will provide a basic background of fundamental chemistry concepts as well as highlight the importance of chemistry in everyday applications.

Required Materials: *Introductory Chemistry*, Utah State University (Available for **FREE** online) <https://press.rebus.community/introductorychemistry/>

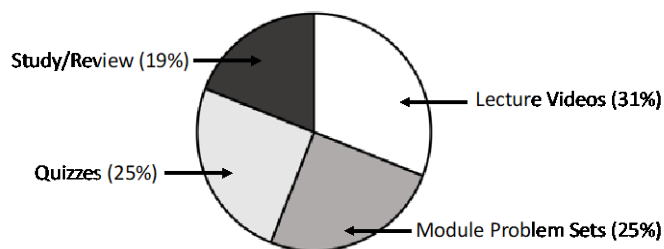
A basic scientific calculator is required. No cell phone calculators allowed.

It is required that you have a computer with a high-speed internet connection. Your computer must also have the Google Chrome browser, a webcam and a microphone if you wish to take your proctored exams with the Proctorio browser extension.

Prerequisite No prerequisites.

Course Fees \$15 per credit course fee is applied to all online courses to sustain current digital technologies and support services required for engaging and effective online learning.

Time Management A 3-credit course offered during the 15-week semester requires a time commitment of approximately 2.5 hours of “in-class” time (lecture videos) and 5-6 hours of time spent out of class (working on problem sets, taking quizzes, reviewing notes) for a total of approximately 8 hours/week.



Lecture Videos	2.5 hours
Module Problem Sets	2 hours
Quizzes	2 hours
Study/Review	1.5 hours
Total:	8 hours/week

**Course
Communication**

Course announcements will be made via the class Canvas page. **You are responsible for checking Canvas at least once a day for new announcements! An even better approach would be to set up Canvas announcements to go straight to your email.** My preferred method of communication is email, so please feel free to email me with questions! I try to maintain a 24-hour response time during the week and a 48 to 72 -hour response time on weekends. Often, I can respond much faster, however you should not plan to send last minute questions regarding quizzes or exams (ie. at 10pm on the evening that a quiz is due) and expect a rapid response. Office hours are offered by appointment for your convenience if you would like to discuss anything (virtually) face-to-face. Please visit the link provided in Canvas to schedule an appointment. For academic questions, I would prefer that you post your questions on Piazza (quiz questions are allowed). You will most likely get a quicker response this way. The link to Piazza is located on the Canvas navigation list on the left. Piazza is a free, online system where students can ask and answer questions. Not only will I be able to answer your questions, but TA's and other students will be able to offer answers as well. (I always double check that answers provided by students are correct and will provide clarification if needed). **Before you send a question, double check that someone else has not already asked it on Piazza, you may have an answer already waiting for you!** You also have the option to post anonymously on Piazza, although please be aware that as an instructor I will be able to see your identity. It is expected that your communication on Piazza will be respectful and considerate, no harassment of any kind will be tolerated. Piazza is not the forum to discuss personal information. If you have personal concerns, please email me directly.

**Canvas
Information**

All lectures (pre-recorded), course materials, and graded assignments (quizzes and exams) will be available through Canvas. For questions regarding your Canvas account or password, or any other technical support, please refer to the information below.

- <http://canvas.usu.edu>
 - Your username is your A#, and your password is your global password (the same one you use for Banner or Aggiemail).
- For Canvas, passwords, or any other computer-related technical support, please refer to the information below.
 - 435 797-4357 (797-HELP)
 - 877 878-8325
 - <http://it.usu.edu>
 - servicedesk@usu.edu

**Supplemental
Instruction;
Undergraduate
Teaching Fellow
Information**

The supplemental instruction leaders will hold structured review sessions twice a week that review the material from the current week's lectures via Zoom. You may attend any SI sessions that you wish (attendance is optional and not mandatory). Dates/times and contact information will be announced on Canvas. The SI instructors for this course are:

Kenyon Gale
Mason Hovinga

The UTF for this course will hold weekly office hours via Zoom. Dates/times and contact information will be announced on Canvas.

Samantha Brumwell

Course Navigation

The course is divided into 12 modules. For each module, you should download the provided lecture notes prior to watching the lecture videos. While watching the lecture videos, you should add your own annotations to the notes provided. After watching the lecture videos, you should work the appropriate problem set examples and check your answers with the solutions provided. Then, begin your quiz attempts for the module (more information regarding quizzes is detailed below). Reading the appropriate section of the textbook will also help deepen your understanding of the topic, however I do not test on material in the text that I do not cover in lecture.

You are allowed to work ahead in this class. Due dates for lectures are suggested to help keep you on pace. However, **ALL EXAM DUE DATES ARE FIRM**. There will be a midterm exam after modules 3, 6, and 9, with a comprehensive final exam after module 12.

Quizzes

There is one “pre-test” quiz, and 13 graded quizzes each worth 10 points. The pre-test is worth 10 points, should be completed without any outside resources and is based on completion only. The first graded quiz is on the introductory class information, while each of the remaining 12 pertain to a specific chapter/module. **The pre-test and the introductory quiz must be completed within the first week of the course.** Quizzes pertaining to each exam will be available anytime during the open window before the exam due date, however due dates will be suggested to help keep you on pace. **Quizzes for each module pertaining to a specific exam will remain available to submit until 11:59pm on the due date for that exam.** For example, quizzes for modules 1-3 must be taken before Exam 1, quizzes for modules 4-6 before Exam 2, quizzes for modules 7-9 before Exam 3, and quizzes for modules 10-12 before the final.

All of the lectures and homework should be completed for each module before the quizzes are taken. Quizzes have a 30-minute time limit and should be done individually but are open note and open book. For each quiz you are given unlimited attempts and *your best score is the score that will be kept*. The questions on each attempt will not be identical, although they will cover the same concepts. Even if you do well on your first attempt, I strongly encourage you to utilize multiple attempts, as they will be good practice for your exams. As the quizzes are all available at the beginning of the semester, **late submissions for quizzes will not be accepted**. Please plan accordingly to avoid the potential issues that may occur with waiting until the due date to submit your quiz.

Midterm Exams

There will be a midterm exam after modules 3, 6, and 9 offered during specific testing windows as indicated in the course schedule and **that must be submitted by 11:59pm on the due date**. Each midterm exam will contain 33 questions worth 3 points each, plus one freebie point (100 points total per exam). **You will not be allowed to take the midterm exams after their due dates.** Towards the end of the semester, an optional comprehensive make-up exam will be offered. If you elect to take this exam and do better than one of your three midterms, this score will replace your lowest midterm score. If you do worse, this score will not be counted. The make-up exam is not allowed to replace your final exam score. **Exams must be taken at a proctored location or by using the Proctorio browser extension.**

Proctorio requires the use of a computer with Google Chrome, a webcam and a microphone. Please note that if you are taking the exam using Proctorio, you are allowed to have the linked allowed reference sheet, periodic table and blank scratch paper. **YOU WILL NEED TO PRINT THESE OUT AHEAD OF TIME.** For more information, please visit testing.usu.edu and see announcements on Canvas.

An additional 5 points can be earned to be added to each exam score by answering the embedded “quiz” questions within each lecture. Answering 70% of the questions correctly will earn you all 5 points. These questions can only be answered, and points can only be

earned by accessing the lectures from either the Course Modules or the Assignments page. Due dates are suggested for the lectures to help keep you on pace, however, lectures **must** be completed by the exam due date to earn points for that exam. More information on this will be provided in the course introduction video.

There are two practice exams available for each midterm exam. Practice exams are available digitally in Canvas and as PDFs. Written solutions are provided for both practice exams.

Final Exam

A final exam (60 questions) worth 200 points must be taken by using the Proctorio browser extension or at a USU testing center. The final exam will contain approximately 50% material from Modules 1-9, and 50% material from Modules 10-12.

An additional 5 points can be earned to be added to the final exam score by answering the embedded “quiz” questions within the lectures from Modules 10-12.

Coursework and Grading

Your grade will be based on the percentage of points earned from the following coursework:

Weekly Online Quizzes (Best 12 of 14, @ 10 points/each)	120 points
Midterm Exam (3 @ 100 points/each) *Optional Make-Up Exam (1 @ 100 points, allowed to replace lowest midterm exam score)	300 points
Final Exam	200 points
Total	620 points

In terms of final assignment of grades, you are *guaranteed* the following grades if your final class percentage lies within the indicated ranges in the table below. Grades will not be rounded. A final grade of 91.9% would earn an A-, while a 92.0 would earn an A. **In an effort to be fair and consistent to all students, grade breaks will not be shifted based on individual student petitions.**

Grade	Range
A	100 % to 92.0%
A-	< 92.0 % to 88.0%
B+	< 88.0 % to 85.0%
B	< 85.0 % to 81.0%
B-	< 81.0 % to 77.0%
C+	< 77.0 % to 73.0%
C	< 73.0 % to 64.0%
C-	< 64.0 % to 60.0%
D+	< 60.0 % to 57.0%
D	< 57.0 % to 50.0%

Course Flexibility

Life happens. In order to provide some flexibility, the following course provisions (as detailed in other locations in the syllabus) are available to all students:

1. Your lowest two quiz scores are dropped and the best 12 of 14 quizzes (1 pre-test quiz, introductory quiz, and 12 module quizzes) count towards your final grade.
2. Quizzes can be taken an unlimited number of times to provide you the opportunity to master the course content.
3. Your lowest MIDTERM exam score may be dropped and replaced with your score on the comprehensive makeup exam. Your total of three midterms, OR two best midterm exam scores + comprehensive make up exam score count towards your final grade. (Note: You CANNOT drop your final exam score.)
4. Midterm exams are open for an entire week. This is not to encourage procrastination but rather to allow for flexibility in your schedule and to allow you

to take your exam on a day/time that works best for you. Consistently taking exams on the last available date will mean that you will be behind schedule come the end of the semester.

5. Extra credit can be earned by completing the embedded “quiz” questions within the recorded lectures. These questions can only be answered, and points can only be earned by accessing the lectures from either the Assignments page or from within the Course Modules. If you have issues that prevent you from accessing and streaming the lectures via either of these methods, please email me.

Course Integrity You are expected to do your own work. Academic dishonesty is not tolerated, and violations of academic integrity will be reported to the Office of Student Affairs. If you feel the need to cheat due to difficult circumstances, please reach out to me first. I can provide resources to assist in your learning and to help you get back on track.

Course Schedule This course is semi self-paced in that you can work ahead, although **ALL EXAM DUE DATES ARE FIRM, LATE SUBMISSIONS WILL NOT BE ACCEPTED! Quizzes for each module pertaining to a specific exam will remain available to submit until 11:59pm on the due date for that exam.** Quiz and exam due dates can be found on the assignments page or the quizzes page on Canvas.

Each exam and the associated quizzes must be completed by the final date of the availability window as listed below.

	Exam Availability Windows
Exam 1 (Modules 1-3)	Fri Sept 17- Thurs Sept 23
Exam 2 (Modules 4-6)	Thurs Oct 14-Thurs Oct 21
Exam 3 (Modules 7-9)	Tues Nov 9- Mon Nov 15
Final Exam (50% Modules 1-9, 50% Modules 10-12)	Mon Dec 13- Thurs Dec 16

The administration of CHEM 1010 will adhere strictly to the academic policies outlined in the most recent USU General Catalog, which can be found here:

- <http://catalog.usu.edu/content.php?catoid=12&navoid=3139>
- <http://www.usu.edu/provost/faculty-life/syllabus.cfm>

IDEA Objectives

1. Gaining a basic understanding of the subject (e.g., factual knowledge, methods, principles, generalizations, theories).
2. Learning to apply course material (to improve thinking, problem solving, and decisions).
3. Developing specific skills, competencies, and points of view needed by professionals in the field most closely related to this course.

Week	Day	Date	Lecture	Topic	Module	Quiz
1	M	8/30		Course Introduction	1	
	W	9/1	1a	About Science (21 min)		
	F	9/3	1b, 1c	Measurement of Physical Quantities Part I and II (35 min, 19 min)		
2	M	9/6		Holiday: Labor Day	1, 2	1
	W	9/8	1d, 2a	Mass, Weight, Vol, Den (18 min); Particles of Matter (15 min)		
	F	9/10	2b, 2c	Energy/Heat/Temp. (29 min); Gas Laws (32 min)		
3	M	9/13	3a, 3b	Phys. and Chem. Prop. and Changes (26 min); Elem. and Cmpds (17 min)	3	2
	W	9/15	3c, 3d	Mixtures (26 min); Periodic Table (20 min)		
	F	9/17	3e	Naming Compounds (37 min)		
4	M	9/20		Review Day	4	3
	W	9/22	Exam 1 (Modules 1-3) Available: Friday 9/17-Thursday 9/23			
	F	9/24	4a, 4b	Subatomic Particles Part I and II (29 min, 25 min)		
5	M	9/27	4cI, 4cII	Light and Electrons Part I and II (24 min, 21 min)	4, 5	4
	W	9/29	5aI	Radiation Part I (21 min)		
	F	10/1	5aII	Radiation Part II (27 min)		
6	M	10/4	5b, 5c	Nuclear Reactions (14 min); Half Life (21 min)	5, 6	5
	W	10/6	5d	Fission and Fusion (18 min)		
	F	10/8	6a, 6b	Lewis Dot Symbols (23 min); Ionic & Metallic Bonding (21 min)		
7	M	10/11	6c, 6d	Covalent Bonds (15 min); Molecular Geometry (16 min)	6	6
	W	10/13	6e	Molecule Polarity (27 min)		
	F	10/15		Fall Break		
8	M	10/18		Review Day	7	
	W	10/20	Exam 2 (Modules 4-6) Available: Thursday 10/14-Thursday 10/21			
	F	10/22	7a	Intermolecular Forces (49 min)		
9	M	10/25	7b	Concentrations of Solutions (38 min)	7, 8	7
	W	10/27	7c, 8a	Solubility (32 min); Balancing Chemical Equations (17 min)		
	F	10/29	8b	Mass, Moles, # of Atoms (25 min)		
10	M	11/1	8c	Stoichiometry (34 min)	8	8
	W	11/3	8d, 8e	Bond Energies (14 min); Reaction Rates (13 min)		
	F	11/5	9a	Acid Base Reactions (23 min)		
11	M	11/8	9b, 9c	pH, kW (28 min); Buffers (15 min)	9	9
	W	11/10		Review Day		
	F	11/12	Exam 3 (Modules 7-9) Available: Tuesday 11/9-Monday 11/15			
12	M	11/15	10a	Oxidation Reduction Reactions (31 min)	10	
	W	11/17	10b	Electrochemical Cells (28 min)		
	Th	11/19	10c, 10d	Photovoltaics (14 min)		
13	M	11/22	11a	Corrosion and Combustion (9 min)	11	10
	W	11/24		Holiday: Thanksgiving Break		
	F	11/26		Holiday: Thanksgiving Break		
14	M	11/29	11b	Functional Groups	11, 12	11
	W	12/1	11c	Organic Synthesis, Polymers (21 min)		
	F	12/3	12a	Carbohydrates and Lipids (27 min)		
15	M	12/6	12b	Proteins (25 min)	12	12
	W	12/8	12c, 12d	Nucleic Acids (12 min); Nutrition (14 min)		
	F	12/10		Review Day		

Final Exam (½ Comprehensive; ½ Modules 10-12): Available Monday-Thursday December 13th-December 16th