

CHEMISTRY 1210 – 070: General Chemistry I Syllabus

Instructor: Tascha Knowlton
Email: natascha.knowlton@utah.edu
Sandy Campus Room 106– T, Th 3:30-5:50pm

Phone: 801-585-7284
Main U of U Office: HEB 2112
Office Hours: Before or After Class or by Appointment

Course Description

Chemistry 1210-070 is a four-credit course that meets for two 2-hour periods each week. Chemistry 1215 is the companion one-credit lab course. Chemistry 1215 has an online pre-lab/quiz component and then meets for one three-hour period per week. CHEM 1210/1215 are general chemistry courses that are comparable to any science majors' sequence taught at major state universities in the United States. As a student, you are expected to perform at a level that is commensurate with students from other elite institutions across the country. We expect excellence from you as well as from ourselves! In addition to many crucial and fundamental chemical principles, we will integrate into our studies considerations pertaining to a topic very important to all life on Earth – **Sustainability**.

Materials

- **Pearson Mastering Chemistry Online**
- **A scientific calculator capable of log/exponential functions and scientific notation. PROGRAMMABLE CALCULATORS OR OTHER ELECTRONIC DEVICES CAPABLE OF STORING ALPHANUMERIC DATA ARE NOT ALLOWED FOR USE ON EXAMS.** TI-30 calculators which sell for ~ \$12 are appropriate and available in the University Bookstore.

Final Grades will be determined based on the following.

	% Per Assignment	Total % of Final Grade
Four Mid-Term Exams	10%	40%
ACS Conceptual Final	10%	10%
Final Exam	20%	20%
Homework	12%	12%
Reading Assessment	8%	8%
Participation - Learning Catalytics	10%	10%
		100%

Final grades will be assigned on the following basis:

A > 93.00%	A- 92.99 – 90.00%	B+ 89.99 – 87.00%	
B 86.99 – 83.00%	B- 82.99 – 80.00%	C+ 79.99 – 77.00%	
C 76.99 – 73.00%	C- 72.99 – 70.00%	D 69.99 – 60.00%	E <59.99%

Course Policies: General

- CHEM 1210 and 1215 should be taken concurrently. CHEM 1215 is an independent and separate course from CHEM 1210. Your grade in CHEM 1210 is not averaged with your CHEM 1215 grade nor vice versa. CHEM 1215 is required for most majors that require CHEM 1210. Students taking CHEM 1215 simultaneous with CHEM 1210 almost always “do better”!
- The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, 581-5020. CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in alternative format with prior notification to the Center for Disability Services.

Chronology

The following topics will be investigated in our efforts to master concepts, apply calculations and reach a personal, working definition of **sustainability** and vision for our **future**;

- Essentials: Units, Measurement, and Problem Solving
- Chapter One – Atoms
- Chapter Two – Quantum-Mechanical Model of the Atom
- Chapter Three – Periodic Properties of the Elements
- Chapter Four – Molecules and Compounds
- Chapter Five – Chemical Bonding I
- Chapter Six – Chemical Bonding II
- Chapter Seven – Chemical Reactions and Chemical Quantities
- Chapter Eight – Solutions and Aqueous Reactions
- Chapter Nine – Thermochemistry
- Chapter Ten – Gases
- Chapter Eleven – Liquids, Solids, and Intermolecular Forces

It is a good idea to **work numerous problems** in the back of each chapter. This will improve your mastery of the material.

Learning Outcomes

This course will provide opportunities to develop the following Learning Outcomes:

- have a sound understanding of the fundamentals of chemical theories and their application
- be able to predict, observe, analyze and explain the results of a chemical demonstration
- be skilled in problem solving, critical thinking and analytical reasoning
- use dimensional analysis and other numeracy skills to arrive at quantitative conclusions via quantitative literacy
- identify and employ various methods to solve chemical problems
- demonstrate oral and written communication skills used in communications with various audiences
- describe and detail chemical issues associated with global sustainability
- become life-long, scientific learners and critical thinkers capable of formulating defensible, informed opinions

This course will provide students with *Foundations and Skills for Lifelong Learning* since the problem solving skills developed in this course can be applied to real world problems. Our overriding theme of sustainability especially as it applies to science and technology will serve as a unifying theme, directing our efforts toward increased mastery of these outcomes.

Attendance

- To excel in CHEM 1210, it is crucial that you attend and participate in lecture. Question responses on Learning Catalytics will be some indication of your attendance/participation. If you miss a day, make sure to learn what you missed by talking with the instructor and your classmates.
- You will be allowed to miss two (2) classes without penalty to your grade.
- You should schedule all activities such as advising appointments, registration, etc. early in the semester so that they do not interfere with regularly scheduled assignments or labs. Such absences are not excused.
- Lectures, assignments or discussions missed because of participation in officially-scheduled University of Utah functions *will be considered as excused absences*. Typically, this means that we will average your other scores for the missed assignment and substitute the average score. A written statement by the sponsoring University of Utah faculty member, on University Department letterhead, must be submitted to your instructor one week prior to the function to receive an excused absence.
- This does **not** apply to club sports sponsored by Associated Students of the University of Utah. **You are responsible for announcements made in lecture! Absence from class does not relieve you of this responsibility.**
- Critically important announcements will also be posted as an announcement on our Canvas page – check these regularly!

Tutoring Room

- The Chemistry Department has a tutoring area in room 1316 of the Chemistry Building. It is open and available to you Monday through Friday. Exact hours of operation will be posted on the door soon after the beginning of the semester. Each general chemistry TA is required to spend at least 2 hours per week there. You may attend any of our TA office hour sessions.
- This is the perfect time and place for you to get one-on-one tutoring from one of our TA's. Please take advantage of this opportunity!

Pre-Lecture Reading Assignment (8% of Total Grade)

- Students are expected to read their textbook before class to preview the material we will be covering that day. Students can refer to the MyLab & Mastering program for assigned sections that will be discussed during class that day. Students who do not prepare for class will be at a disadvantage. Optional supplemental videos will be posted to Canvas.
- The Pre-Lecture Assignment will be due at 3:59pm before each class via the MyLab & Mastering system – DO NOT put off this assignment until the last minute. **Late homework submissions will not be counted.**

Homework (12% of Total Grade)

- Homework problem sets are assigned by the end of each class, and are to be completed online through the Mastering Chemistry System. Completing these assignments is an important part of ensuring your success in the course. Experience with prior classes shows that if you score at least 80% on assignments you will have a very high probability of passing the course.
- **Late homework submissions will not be counted.** Planning ahead and having internet access is important!

In-Class Exercises/Participation (10% of Total Grade)

- In class question/exercises will be administered in class using the LearningCatalytics system.
- Only students who attend that day's lecture are entitled to participate. We anticipate you being able to use any web-abled device or a text/data-able device to respond to questions. There will be no makeup for lecture question/exercises administered. **Any student who answers questions for another student not present in class is in violation of the University's Academic Honesty code. All students who participate in this activity will receive an E for the course.**
- During each class session question/exercises will be given that are designed to reinforce and expand your knowledge of the subjects being studied that day. Students will often work in groups to answer these questions. Some of these questions will be evaluated for correctness while others will be simply for "participation". Some of these questions will be answered individually while others will be discussed with your colleagues.
- At the start of the semester, one noncredit exercise will be given so that everyone has a chance to see if their account has been successfully established. YOU are responsible for establishing or 'fixing' your account.

Midterm Exams (10% each toward Total Grade)

- The material covered on each examination will include everything in the assigned chapters except material that is explicitly excluded. An announcement of the point at which each exam will "stop" will be made in class and posted on the Canvas site the week before each exam. To be fair to all, questions about what will be covered on exams will be answered in class only. No such questions will be answered by telephone or e-mail.
- The only legitimate excuses for missing your testing period are extenuating circumstances that are beyond your control. Examples of these circumstances are illness, death in the family, or car accidents on the way to take the test. Forgetting when to come take your exam or sleeping through your exam period are not legitimate excuses. Excuses must be accompanied with proper documentation. **Students that miss an exam due to illness must bring documentation from a physician stating that they were seen in the physician's office and that they were too ill to attend classes on that date.** Legitimate excuses must be documented within two days of the missed exam period. If you miss your exam period because of extenuating circumstances, it is your responsibility to inform your instructor in a timely fashion. Your instructor will then discuss with you an appropriate measure to remedy the situation.
- Exams missed because of participation in officially-scheduled University of Utah functions can be taken at another time agreed upon in advance with your professor.
- Midterm exams will be given during class time. The exam will last approximately 50 minutes. The exams will consist of paper-based multiple-choice, calculations, and problem-solving questions. Show all work as you complete your exam.
- Credit for your correct answers will only be awarded if you *submit* the correct answer. If you intend to mark the correct answer but inadvertently submit another, you will earn no credit.
- **You must also bring your calculator and a pen or pencil. Only approved calculators can be used in CHEM 1210 exam sessions. You will be provided with scratch paper, a periodic table and an equation/constant sheet.**
- Exam scores are typically posted on the Canvas grade book within four school days of the last exam day. A message will be posted on the Canvas Announcements letting everyone know when grades are posted.
- Any questions regarding credit on an exam question must be submitted in writing within two days after the grades have been posted on Canvas. Any questions regarding exam credit will not be considered after two days.
- Midterm Exams will be given on the following dates:
 - **Midterm Exam 1 TBD**
 - **Midterm Exam 2 TBD**
 - **Midterm Exam 3 TBD**
 - **Midterm Exam 4 TBD**

ACS First Term Final (30% of Total Grade)

- **Final examinations for classes held at off-campus sites should be held during finals week. Arrangements will be made by the instructor after consultation with the students – this will occur shortly after the drop deadline for spring semester.**
- This will be a 70-question, American Chemical Society (ACS)-authored, 120-minute multiple-choice exam focusing on the fundamental chemical principles studied throughout the semester.
- This exam will be done on paper with a number 2 pencil.
- As with each Midterm Exam, credit for your correct answers will only be awarded if you *submit* the correct answer. If you intend to mark the correct answer but inadvertently mark another, you will earn no credit.
- The only students who will be allowed to take the final exam at an alternate time, are those with an exam conflict or three (3) exams in a single day. No other exceptions will be made.

Semester Start and End Dates

- Spring Semester 2019 begins on Tuesday, January 8, 2019 and ends on the final exam date. Requests to miss the final exam, take it early, etc. because of vacation or other personal plans will be denied.

Academic Dishonesty

- By submitting an assignment, you are representing that it is your own work and that you have followed the rules associated with the assignment. Incidents of academic misconduct (e.g. cheating, plagiarizing, research misconduct, misrepresenting one's work, and/or inappropriately collaborating on an assignment) will be dealt with severely in accordance with the Student Code. For more details, the Student Code for the University of Utah can be found at: <http://regulations.utah.edu/academics/6-400.php>. Bringing more than one clicker to lecture or discussion is considered an act of cheating. Speaking to a fellow student about an exam question before the last testing session for that midterm exam has closed is also considered an act of cheating. A single instance of academic misconduct may result in a failing grade for the course; however, multiple instances of misconduct may result in probation, suspension or dismissal from a program, suspension or dismissal from the University, or revocation of a degree or certificate. Incidents of academic dishonesty will be dealt with severely. Anyone caught cheating on an exam will be referred to the Dean for immediate disciplinary action and should expect to receive an 'E' in the course. Additionally, a letter detailing the cheating incident will be put in the student's permanent academic file.

Withdrawal Instructions

- Subject to changes in the official University of Utah Calendar, students may drop (delete) any class without penalty during the first week of the term. The last day to drop a class without tuition penalties is Friday, August 31. It is possible to withdraw from the course up to Friday, October 19, but you will still have to pay tuition for the course and a “W” will appear on your transcript. You do NOT need the instructor's signature to withdraw. After October 19, a student must petition for withdrawal to the Dean's office of their academic college. University policy states that withdrawals after this date should only be granted for "non-academic reasons beyond the student's control." "I want to avoid a bad grade" or similar does not qualify. Students must decide on or before Friday, October 19 if they wish to withdraw from CHEM 1210.
- With respect to the course content, it is the student's obligation to determine, before the last day to drop courses without penalty, when course requirements conflict with the student's sincerely-held core beliefs. If there is such a conflict, the student should consider dropping the class. A student who finds this solution impracticable may request a content accommodation from the instructor. Though the University provides, through this policy, a process by which a student may make such a request, the policy does not oblige the instructor to grant the request, except in those cases when a denial would be arbitrary and capricious or illegal. This request must be made to the instructor in writing, and the student must deliver a copy of the request to the office of the department Chair or to the office of the Dean of the College of Science. The student's request must articulate the burden the requirement would place on the student's beliefs.

Science Foundation General Education Requirement (SF)

This course meets the Science Foundation General Education Requirement (SF). This course is inherently useful to students since it provides them with tools to understand the world around them with a focus on matter and energy. Key topics include: Dimensional Analysis, Particulate Nature of Matter, Elements/Compounds/Mixtures, Scientific Method, Early Experiments, Atomic Structure & Periodicity, Nomenclature, The Mole Concept, Stoichiometry, Bonding & Molecular Geometries, Polarity, Chemical Energetics, Gasses, Intermolecular Forces & Phase Changes, Aqueous Solutions & Solution Stoichiometry, Types of Reactions and Calorimetry.

Students develop strong problem solving skills in this class. In particular, the first two-thirds of the course teaches the skill set needed to approach and solve quantitative problems that impact on science and technology. Students use the scientific method to propose and test theories that describe the workings of the material world.

A knowledge of chemistry is essential to understanding the great challenges facing the world in areas as diverse as energy, health care, the environment and sustainability issues. Discussion of these topics as examples of “applied” chemistry naturally arise in the classroom, text and the web. More broadly, the course employs the scientific method as a means of acquiring and assessing knowledge and thus contributes to the critical thinking skills of our students.

In spite of our potentially large class size, we allow substantial time for an interactive “lecture” environment utilizing team problem-solving sessions daily in both lecture and discussion.

Veterans Center

If you are a student veteran, the U of Utah has a Veterans Support Center located in Room 161 in the Olpin Union Building. Hours: M-F 8-5pm. Please visit their website for more information about what support they offer, a list of ongoing events and links to outside resources: <http://veteranscenter.utah.edu/>. Please also let me know if you need any additional support in this class for any reason.

Wellness Statement

Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive at the U. For helpful resources contact the Center for Student Wellness (www.wellness.utah.edu; 801-581-7776) and the University of Utah Counseling Center (counselingcenter.utah.edu; 801- 581-6826; SSB 426)

Disabilities Accommodation

The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the Center for Disability & Access, 162 Olpin Union Building, (801) 581-5020. CDA will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in an alternative format with prior notification to the Center for Disability Services.

Addressing Sexual Misconduct

Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801- 581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585- 2677(COPS).

Disclaimer: This syllabus is meant to serve as an outline and guide for our course. Please note that I may modify it with reasonable notice to you. I may also modify the Course Schedule to accommodate the needs of our class. Any changes will be announced in class and posted on Canvas under Announcements.