General Chemistry I FALL 2020

CHEM 031 | Section A | CRN: 90166

Instructor: Amy Hoeltge, Ph.D. **Email:** Amy.Hoeltge@uvm.edu

Office: Innovation E337 (online only Fall 2020)

Class Time: MWF 9:40-10:30 *on Teams*

Office Hours: by appointment *on Teams*

Exams: M 6:40-9:40pm *on Blackboard*

Group Office Hours: *on Teams*

Ruggles: TR 11:00am-1:00pm

Hoeltge: MW 11:00am-1:00pm

Goldberg: T 2:00pm-3:30pm

W 3:30pm-5:00pm

Pratt: MWF 10:00am-12:00pm

R 12:00pm-2:00pm

Course Description: This is the first semester of a two-semester course sequence. Topics include matter, stoichiometry, gas laws, thermochemistry, quantum theory, atomic structure, electronic configurations, bonding, and intermolecular forces.

Required Course Materials:

Textbook: Chemistry Structure and Properties ; 2nd Ed.; Tro, N. (ISBN-13: 978-0-13-429393-6)

Online Access: Mastering Chemistry (you will need to purchase an individual online access code. *There is no course ID*). ***Sign in via the link on our Blackboard page.***

Three ways to obtain your textbook and Mastering Chemistry:

- Online for approximately $300; text and mastering
- UVM bookstore for approximately $160; text, solutions manual, and mastering
- Digital access for approximately $120; etext and mastering

Lab Manual*: You will find all experiments as individual PDFs on your lab section's BB website. You are responsible for printing out each one and bringing it with you to lab.

Lab Notebook*: A carbon-less copy notebook is required. You can find these in the UVM bookstore.

Safety eyewear*: Everyone must wear OSHA approved safety glasses or goggles while in the lab. Students not observing this rule will receive a **zero** for the experiment.
**for students participating in on-campus labs*

Calculator: A non-programmable, non-graphing calculator to be used for exams in this course. You can find one at the UVM bookstore, or nearly anywhere, for about $10.

Class Time: I will meet with the class via Teams on MWF from 9:40-10:30am Eastern Time. This time will be used to cover homework problems, illustrate additional exercises, clarify lecture content, and to answer questions. In addition to this class time, you will be provided with the following materials – all found in the Course Materials section of our Blackboard page:

- Lecture presentation available as PowerPoint slides, courtesy of your textbook's publisher. These have been designed by the author, not by me, but I will make them available to you as an additional resource.

- My personal lecture notes, available as a PDF. These are more detailed, contain some example exercises, and are generally broken into smaller parts rather than the entire chapter all at once.

It is expected that you will have looked at the slides and notes before each class meeting. I will start each class with a sample of prudent exercises but I welcome questions from you! These meetings are designed to provide the additional support you would have received by simply walking into my office during non-COVID times.

Our class sessions may/will be audiovisually recorded for students in the class to refer back to, and for enrolled students who are unable to attend live. The recording will be available through the chat feature on our course Team.

Exams: Dates for each exam are listed on the lecture schedule. These three exams will be given to all CHEM031 sections on Monday evenings from 6:40-9:40 Eastern Time. Only non-programmable, non-graphing calculators are permitted for these exams. You will not be allowed to use cell phones, laptops, tablets, or any programmable devices on exams. Students caught with any other electronic devices will receive a grade of **zero** for the exam.

Exams are multiple choice, on BlackBoard, and written to take no more than 1.5 hrs. All students will have a full 3.0 hrs to take the exams. **Since double time is already built into the exam schedule, ACCESS accommodations for extended time do not apply.**

Attendance at all examinations and labs is required. A grade of zero will be assigned to any student who misses an exam or lab except in the case of an excused absence.
There will be no makeup exams given.

Review Sessions: Review sessions will be held on Teams the Sunday afternoon immediately before each of the three exams. These sessions represent an opportunity for students to ask questions about homework and class topics in preparation for the exams. If you keep up with the course work on a daily basis you will be best prepared to benefit from these sessions. Attendance is optional but highly recommended for students having difficulty with the course.

Homework: A long list of suggested practice problems can be found at the end of this syllabus, in the lecture schedule. These exercises will not be collected or graded. However, failure to master these problems will certainly not lead to a wildly successful experience in this course. You can check your answers by referring to the appendix of your textbook.

Online Quizzes: There will be ten graded quizzes (best 10 out of 12) during the semester. These will occur once we finish a chapter and will be found online, in Mastering Chemistry. You will have five whole days to get your chapter quiz done. No extensions will be granted.

Lab: More information can be found on the Blackboard page for your lab section.

Before the start of lab, purchase your lab manual, lab notebook, and safety glasses. On your lab's Blackboard page, review and complete the Safety Presentation and Safety Quiz. You will not be able to participate in lab until this is complete.

Students **must** attend the lab section to which they are assigned. If more than **two** labs are missed you will receive an **F** for the course. Only the academic dean of your college may grant an incomplete. An unexcused absence will result in a **ZERO** grade for the laboratory experiment. Official documentation of sickness or a family crisis is required for an excused absence.

Prior to attending your on-campus lab you must view the video that accompanies the experiment. Videos can be found at:
https://www.youtube.com/channel/UC8r6fR2K-8xAtsf-_a8edMg

Grading:

Exams*:	3 exams @ 125pts. ea.	375pts.	37.5%
Online Quizzes:	12 quizzes (top 10 counted) @ 12.5pts. ea.	125pts.	12.5%
Final Exam**:	comprehensive	250pts.	25%
Labs:	10 experiments	250pts.	25%
Total Course		1,000pts	100%

*If one of your three mid-semester exams is lower (percentage wise) than your final exam, the percent you have earned on the final will count as that mid-semester exam score. This will only happen for **one of your mid-semester exams, not all three.**

**You must take the final exam to pass the course.

Office Hours:

If you would prefer to discuss something personal or would like additional help outside of the group office hours, you may schedule a private Teams session with me via email. I am exceedingly available outside of class time, during evening hours, and on weekends.

Send up a flare if you would like to meet with me and we can work out a date/time that fits both of our schedules. I will create a Teams invitation for your private session and I ask that you kindly reply so I know whether or not to expect you.

Please send me an email at least two hours prior to our private session if you will not be able to make it. That way I can offer the time slot to one of your classmates.

Accommodations:

Student Learning Accommodations Statement

"In keeping with University policy, any student with a documented disability interested in utilizing accommodations should contact ACCESS, the office of Disability Services on campus. ACCESS works with students to create reasonable and appropriate accommodations via an accommodation letter to their professors as early as possible each semester." Contact ACCESS: A170 Living/Learning Center - 802-656-7753

Academic Integrity: This policy addresses plagiarism, fabrication, cheating, and collusion.

http://www.uvm.edu/policies/student/acaintegrity.pdf

Fall 2020 Tentative Class Schedule

Dates	Chapter	Practice Homework
Aug 31-Sep 4	E and 1	**Ch E:** 19,21,23,25,27,29,33,37,39,41,45,47,49,51,53,55,59,61,65,71,73,75,79,81,87,89,91,95,99 **Ch 1:** 35,39,43,45,49,53,55,57,59,61,63,65,67,71,75,77,79,83,85,87,89,91,93,97,103,105,107,109,117
Sep 7	**LABOR DAY NO CLASS**	
Sep 7-11	1 and 2	**Ch 2:** 35,37,39,41,43,51,53,55,57,59,61,63,65,67,69,71,73,79,85,89,91
Sep 14	**LAST DAY TO ADD/DROP**	
Sep 14-18	2	
Sep 21	**EXAM 1**	**Ch E, 1, and 2**
Sep 21-25	3	**Ch 3:** 41,43,45,47,49,51,53,55,57,59,61,63,65,67,69,71,73,75,77,79,81,83,87,89,91,93,95,97, 101,103,109,115,127,135
Sep 28-Oct 2	4	**Ch 4:** 29,31,33,35,37,39,43,45,47,49,51,53,55,57,61,63,65,67,69,71,75,77,79,83,87,93,95,97, 101,103,105,109,111,117,119,121,123,125,127,137
Oct 5-9	4 and 5	
Oct 12-16	5	**Ch 5:** 23,25,27,29,31,35,37,41,43,45,47,49,51,53,55, 57,59,61,63,65,69,71,73,75,79,81,83,85,91,95,97,99, 101
Oct 19	**EXAM 2**	**Ch 3, 4, and 5**
Oct 19-23	11.1-11.5	**Ch 11:** 35,37,39,41,43,45,47,49,51
Oct 26-30	6	**Ch 6:** 25,29,31,33,35,39,41,43,45,49,51,53,55,57,59,61
Nov 2-6	7 and 8	**Ch 7:** 15,17,19,21,23,25,27,29,31,33,35,37,39,41,43, 45,47,49,53,55,57,61,63,65,67,69,71,75,81,85
Nov 9	**LAST DAY TO WITHDRAW**	

Nov 9-13	8 and 9	**Ch 8:** 21,23,25,27,29,31,33,35,37,39,41,43,45,47,49, 51,53,55,57,59,61,63,65,67,69,71,73,75,77,79,81,87, 91,93,99
Nov 16	**EXAM 3**	**Ch 6, 7, 8, 9, 11**
Nov 16-20	9	**Ch 9:** 31,33,35,37,39,41,43,45,47,49,51,53,57,59,61, 63,65,67,69,71,73,75,77,79,81,83,85,87,89,91,93,95, 99,101,107,111,113,117,119,123
Nov 23 and 24	10	**Ch 10:** 25,29,31,33,35,37,39,41,43,45,47,49,51,53,55, 57,59,61,63,67,69,71,73,77,79,81,83,85,87,89,91,93, 95,99,101,105,107,113,123,125,127
Nov 25-27	**THANKSGIVING BREAK**	
Nov 30-Dec 4	10 and 11	**Ch 11:** 53,57,59,61,63,65,67,69,71,73,77,81,85,87,93
TBD	**FINAL EXAM**	**ONLINE (Blackboard)**

Fall 2020 Lab Schedule

Week	Dates	ONLINE ONLY Section	MIXED Lab Group A	MIXED Lab Group B
1	Aug 31 – Sep 4	ONLINE Introduction to lab	ONLINE Introduction to lab	ONLINE Introduction to lab
2	Sep 7 – Sep 11	ONLINE Lab Safety	ONLINE Lab Safety	ONLINE Lab Safety
3	Sep 14 – Sep 18	ONLINE Experiment 1 Measurement and Density	IN-PERSON Experiment 1: Measurement and Density	ONLINE Experiment 2: Flame Emission
4	Sep 21 – Sep 25	ONLINE Experiment 2 Flame Emission	ONLINE Experiment 2: Flame Emission	IN-PERSON Experiment 1: Measurement and Density
5	Sep 28 – Oct 2	ONLINE Experiment 3: Qualitative Analysis of Group I Cations	ONLINE Experiment 3: Qualitative Analysis of Group I Cations	IN-PERSON Experiment 4: Determination of a Chemical Formula
6	Oct 5 – Oct 9	ONLINE Experiment 4: Determination of a Chemical Formula	IN-PERSON Experiment 4: Determination of a Chemical Formula	ONLINE Experiment 3: Qualitative Analysis of Group I Cations
7	Oct 12 – Oct 16	ONLINE Experiment 5: Molecular Models	ONLINE Experiment 5: Molecular Models	IN-PERSON Experiment 6: Separating a Mixture of Compounds
8	Oct 19 – Oct 23	ONLINE Experiment 6: Separating a Mixture of Compounds	IN-PERSON Experiment 6: Separating a Mixture of Compounds	ONLINE Experiment 5: Molecular Models
9	Oct 26 – Oct 30	ONLINE Experiment 7: Chemical Reactions	IN-PERSON Experiment 7: Chemical Reactions	ONLINE Experiment 8: Limiting Reactant and Excess Reactant
10	Nov 2 – Nov 6	ONLINE Experiment 8: Limiting Reactant and Excess Reactant	ONLINE Experiment 8: Limiting Reactant and Excess Reactant	IN-PERSON Experiment 7: Chemical Reactions
11	Nov 9 – Nov 13	ONLINE Experiment 9: Acid-Base Titrations	IN-PERSON Experiment 9: Acid-Base Titrations	ONLINE Experiment 10: Heat Capacity and Enthalpy
12	Nov 16 – Nov 20	ONLINE Experiment 10: Heat Capacity and Enthalpy	ONLINE Experiment 10: Heat Capacity and Enthalpy	IN-PERSON Experiment 9: Acid-Base Titrations
13	Nov 23 – Nov 27	*Fall Break (No Labs)*	*Fall Break (No Labs)*	*Fall Break (No Labs)*
14	Nov 30 – Dec 4	ONLINE Conclusion of lab	ONLINE Conclusion of lab	ONLINE Conclusion of lab
15	Dec 7 – Dec 11	*Final Exams Week* *Good Luck!*	*Final Exams Week* *Good Luck!*	*Final Exams Week* *Good Luck!*