

CHEM 031, GENERAL CHEMISTRY
Section A (90155), MWF 1:10-2:00 Innovation E102
University of Vermont
Fall Semester 2022

GENERAL INFORMATION

INSTRUCTOR: Amy Hoeltge, Ph.D.

EMAIL: Amy.Hoeltge@uvm.edu

OFFICE: Innovation E337

OFFICE HOURS: drop in or by appointment

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.

A digital copy of the solutions manual will be provided free of charge on BlackBoard.

SUGGESTED WAYS TO OBTAIN YOUR COURSE MATERIALS

- 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
- Borrow a text and purchase the online Mastering code separately for approximately \$75

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.

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

LECTURE

We will meet in person on MWF from 1:10-2:00pm, in Innovation E102. This time will be used to introduce new content and to answer questions. In addition to live lectures, which will not be recorded, you will be provided with PowerPoint lecture 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, for free, as an additional resource. Our lecture notes will be saved as a PDF and uploaded to Blackboard at some point during the day after each class.

EXAMS

Dates for each exam are listed on the lecture schedule. These three exams will be given to all CHEM 031 sections, in person, on Monday evenings from 6:40-9:40pm. 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 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 for the three mid-semester exams. **ACCESS accommodations DO apply, however, for the final exam.**

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. Please see Grading section below for our policy.

EXAM LOCATIONS BASED ON YOUR LAB SECTION

LECTURE HALL FOR EXAM

Innovation E105

Innovation E102

Billings 101

Given E131

Williams 301

Votey 105

Fleming 101

YOUR LAB SECTION

L01-L04 & Z01-Z04 & Z53-Z54

L05-L11 & Z05-Z11

L12-L23 & Z12-Z23

L24-L31 & Z24-Z31

L32-L37 & Z32-Z37

L38-L43 & Z38-Z43

L44-L50 & Z44-Z50

REVIEW SESSIONS

Review sessions will be held on Teams the Sunday immediately before each of the three exams from 12:00-2:00pm. 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 daily, you will be best prepared to benefit from these sessions. Attendance is optional but highly recommended for students having difficulty with the course.

PROBLEM SOLVING SESSIONS

I will host weekly problem solving sessions on Teams, Mondays from 6:45-7:45pm, on the evenings we don't meet for an exam. Links to these meetings will be provided as I will be presenting from only one of my team channels. I will record these meetings and share the link to the video for all my students. These sessions present a great opportunity for us to cover more ground outside of class. Please email me any homework, lecture, or exam questions you have prior to the session, and I will arrange them in a fluid order to maximize time efficiency and to avoid repeats.

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 solutions manual.

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.

- o 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 from lab.

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.	25.0 %
Labs:	10 experiments	250pts.	25.0 %
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Total Course		1,000pts	100.0%

*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. A missing exam will count as your lowest mid-semester exam. If you have more than one missing exam, one of them will count as a zero. Course letter grade cut offs will not be determined until after the final exam but I'm happy to share my ranges from years past for relative reference.

**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 in the course, you may drop in or schedule a specific time to meet with me. I am exceedingly available outside of class time, during evening hours, and on weekends. Drop ins are welcome any time my office door is open. For evenings and weekends, I kindly ask you to email me to arrange an in-person or Teams appointment.

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>

FERPA RIGHTS DISCLOSURE

The purpose of this policy is to communicate the rights of students regarding access to, and privacy of their student educational records as provided for in the Family Educational Rights and Privacy Act (FERPA) of 1974.

<https://catalogue.uvm.edu/undergraduate/academicinfo/ferparightsdisclosure/>

FALL 2022 TENTATIVE LECTURE SCHEDULE

DATES	CHAPTER	PRACTICE HOMEWORK SUGGESTIONS
Aug 29-Sep 2	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
Sep 5		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 LABOR DAY NO CLASS
Sep 6-9	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 12		LAST DAY TO ADD/DROP
Sep 12-16	2	
Sep 19	EXAM 1	
Sep 19-23	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 26-30	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 3-7	4 and 5	
Oct 14		FALL RECESS NO CLASS
Oct 10-14	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 17	EXAM 2	
Oct 17-21	11.1-11.5 and 6	Ch 11: 35,37,39,41,43,45,47,49,51
Oct 24-28	6 and 7	Ch 6: 25,29,31,33,35,39,41,43,45,49,51,53,55,57,59,61
Oct 31		LAST DAY TO WITHDRAW
Oct 31- Nov 4	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 7-11	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 14	EXAM 3	
Nov 14-18	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 21-25		THANKSGIVING BREAK NO CLASSES
Nov 28 – Dec 2	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
Dec 5-9	10 and 11	Ch 11: 53,57,59,61,63,65,67,69,71,73,77,81,85,87,93
Dec 15	FINAL EXAM	Cumulative ; 10:30am -1:15pm ; Innovation E102

FALL 2022 LAB SCHEDULE

DATES	ACTIVITY	DESCRIPTION
Aug 29 – Sep 2	NO LAB	Purchase lab manual, breakage card, goggles, etc
Sep 5 – Sep 9	NO LAB	Complete Lab Safety Quiz on Blackboard
Sep 12 – Sep 16	Check In	
Sep 19 – Sep 23	Experiment 1	Measurement and Density
Sep 26 – Sep 30	Experiment 2	Flame Emission Spectra
Oct 3 – Oct 7	Experiment 3	Ionization Energy/Atomic Radius
Oct 10 – Oct 14	Experiment 4	Determination of a Chemical Formula
Oct 17 – Oct 21	Experiment 5	Molecular Models (VSEPR)
Oct 24 – Oct 28	Experiment 6	Intermolecular Forces
Oct 31 – Nov 4	Experiment 7	Chemical Reactions
Nov 7 – Nov 11	Experiment 8	Acid/Base Titration
Nov 14 – Nov 18	Experiment 9	Heat Capacity and Enthalpy
Nov 21 – Nov 25	NO LAB	FALL BREAK
Nov 28 – Dec 2	Experiment 10	Gas Law Determination of Molecular Weight
Dec 5-9	Check Out	

RELIGIOUS HOLIDAYS

Students have the right to practice the religion of their choice. If you need to miss class to observe a religious holiday, please submit the dates of your absence to me in writing by the end of the second full week of classes. You will be permitted to make up work within a mutually agreed-upon time. <https://www.uvm.edu/registrar/religious-holidays>

HEALTH AND SAFETY

The University of Vermont's number one priority is to support a healthy and safe community:

Center for Health and Wellbeing: <https://www.uvm.edu/health>

Counseling & Psychiatry Services (CAPS): (802) 656-3340

C.A.R.E.: If you are concerned about a UVM community member or are concerned about a specific event, we encourage you to contact the Dean of Students Office (802-656-3380). If you would like to remain anonymous, you can report your concerns online by visiting the Dean of Students website at <https://www.uvm.edu/studentaffairs>

DIVERSITY, EQUITY, AND INCLUSION

The Division of Diversity, Equity, and Inclusion believes excellence should be inclusive of the entire University of Vermont (UVM) community and is steadfastly committed to this belief. Every day, our division strives to make our work accessible, affirming, and action-oriented to help ensure excellence is inclusive of everyone. <https://www.uvm.edu/diversity>

INTERFAITH CENTER

Each of us engages those questions differently, perhaps through a religious tradition, philosophy, or spiritual practice. No matter how you make meaning of your life, you are welcome at the Interfaith Center for reflection, spiritual practice, education, and community building. <https://www.uvm.edu/interfaithcenter>

MOSAIC CENTER FOR STUDENTS OF COLOR

MCSC's vision is to create a diverse and rich community of empowered, engaged, and enthusiastic students of color at UVM. We fully support the holistic development of self-identified students of color so that they can obtain their goals for academic achievement, personal growth, identity formation, and cultural development. <https://www.uvm.edu/mcsc>

PRISM CENTER

The Prism Center serves the diverse queer and trans communities at the University of Vermont. We support and empower lesbian, gay, bisexual, transgender and queer students, as well as students whose identities fall in between or expand beyond those categories, and work to create a campus community where people of all sexual and gender identities can thrive. <https://www.uvm.edu/prism>

UVM WOMEN & GENDER EQUITY CENTER

The equity center cultivates joyful community while advancing gender equity across identities. We envision a brave, diverse, and equitable learning environment for all members of the UVM community. We provide advocacy services for those in our community who have experienced sexual or intimate partner violence, and strive to provide programming, education, and events that ask our community to explore the intersections of their gender and other identities. <https://www.uvm.edu/wagecenter>