CHEM 031 - *Section C*

GENERAL CHEMISTRY 1

Fall 2020

Instructor Information

Instructor:	Professor Joel M. Goldberg *(Pronouns: he/him)*
Office:	E356 Innovation Hall
Phone:	(802) 656-4394
Email:	Joel.Goldberg@uvm.edu
"Office" Hours:	Tuesday, 2:00 - 3:30 p.m. MS Teams Link: http://go.uvm.edu/hqs5a Wednesday, 3:30 - 5:00 p.m. MS Teams Link: http://go.uvm.edu/bnpfz My "office" hours will be held online on MS Teams - these are OPEN hours and so any discussions, questions, will be addressed in front of whomever has logged onto Teams for the office hour meeting. To "attend", just click on the link indicated above. If you would prefer to meet with me individually on MS Teams, email me to setup an appointment for a meeting - be sure to include "CHEM 031" in the subject line and suggest some days/times that you are available to meet; I can then email you to confirm an appointment. If you have a question and cannot make it to one of my office hours, the faculty teaching the other CHEM 031 sections are also holding open office hours on MSTeams at other days/times. Links to ALL of these "Office Hour" sessions on MSTeams can be found in the "Meeting Times" section of the syllabus.

Last Updated: September 1, 2020

Meeting Times

Course Information	CHEM 031 (Section C): General Chemistry 1 • 4 credits - lecture plus lab
Class Meetings:	MWF, 12:00-12:50 pm ***MS Teams*** (online) - Link: http://go.uvm.edu/dm-oy
Weekly Problem Session:	Monday, 6:40 - 8:00 pm ***MS Teams*** (online) - Link: http://go.uvm.edu/7mv03 • Problem sessions will be held *every week*, except on the three evenings that mid-semester exams are scheduled You are also welcome to attend Professor Ruggles' weekly problem session: • Monday, 6:45-7:45 pm - Link: http://go.uvm.edu/q8y53
Mid-Semester Exams:*	Monday, 6:40-9:40** pm Blackboard (online) *There are three mid-semester exams scheduled on: Sept. 21, Oct. 19, and Nov. 16 **Exams will start at 6:40 pm - they are designed to take no more than 1.5 hours, but you can take as much time as you need within this 3-hour time-window
Exam Review Sessions:	On the Sunday before each of the three mid-semester exams, I will hold a review session to answer questions and work problems related to the exam material. These will be held on ***MS Teams*** (3:30-5:30 pm) on the following Sundays: Sept. 20, Oct. 18, and Nov. 15. You can access these sessions directly using the following links: • Sunday, Sept 20, 3:30-5:30 pm - http://go.uvm.edu/5aoyc • Sunday, Oct 18, 3:30-5:30 pm - http://go.uvm.edu/j1fkv • Sunday, Nov 15, 3:30-5:30 pm - http://go.uvm.edu/8a79s You are also welcome to attend the exam review sessions offered by the other CHEM 031 instructors: • **Professor Ruggles:** ◦ Sunday, Sept 20, 9:00-10:30 am - http://go.uvm.edu/0q-ts ◦ Sunday, Oct 18, 9:00-10:30 am - http://go.uvm.edu/adszf ◦ Sunday, Nov 15, 9:00-10:30 am - http://go.uvm.edu/bd8ij • **Professor Hoeltge:** ◦ Sunday, Sept 20, noon-2:00 pm - http://go.uvm.edu/1gqw4 ◦ Sunday, Oct 18, noon-2:00 pm - http://go.uvm.edu/pflgy ◦ Sunday, Nov 15, noon-2:00 pm - http://go.uvm.edu/yuh8f
Final Exam:	*Day/Time:* Thursday, December 10th, 10:30 am - 1:15 pm *Where?* ***Blackboard*** (online) Note that the final exam is scheduled by the Registrar at a day and time when you will

	have no conflicts from other courses. I have no flexibility in the scheduling of this exam and - unless you have four or more final exams scheduled within a 36-hour period - you are expected to take the final exam during this time. See the current catalogue for more information, here: http://catalogue.uvm.edu/undergraduate/academicinfo/examsandgrading/
Supplemental Instruction (SI):	**S.I. Leader:** Julia Williamson **Schedule** (starts Sept 14th)**:** **Session 1:** Monday, 5:00-6:00 pm (MS Teams Link: https://tinyurl.com/juliachemsi) **Session 2:** Sunday, noon-1:00 pm (MS Teams Link: https://tinyurl.com/juliachemsi)
Lab:	Various times - you must attend the lab section for which you have registered.
"Office" Hours (on MS Teams):	Tuesday: 2:00-3:30 pm - MS Teams Link: http://go.uvm.edu/hqs5a Wednesday: 3:30-5:00 pm - MS Teams Link: http://go.uvm.edu/bnpfz You are also welcome to attend the office hours of any of the other CHEM 031 instructors: Mon: 11:00 am - 1:00 pm (Professor Hoeltge) - MS Teams Link: http://go.uvm.edu/ntg4s Mon: 10:00 am - noon (Professor Pratt) - MS Teams Link: http://go.uvm.edu/wdx17 Tue: 11:00 am - 1:00 pm (Professor Ruggles) - MS Teams Link: http://go.uvm.edu/hdoig Tue: 11:00 am - 1:00 pm (Professor Pratt) - MS Teams Link: http://go.uvm.edu/ze37c Wed: 10:00 am - noon (Professor Ruggles) - MS Teams Link: http://go.uvm.edu/s8lt4 Wed: 10:00 am - noon (Professor Pratt) - MS Teams Link: http://go.uvm.edu/wdx17 Wed: 11:00 am - 1:00 pm (Professor Hoeltge) - MS Teams Link: http://go.uvm.edu/ntg4s Thu: 11:00 am - 1:00 pm (Professor Ruggles) - MS Teams Link: http://go.uvm.edu/hdoig Thu: 11:00 am - 1:00 pm (Professor Pratt) - MS Teams Link: http://go.uvm.edu/ze37c Fri: 10:00 am - noon (Professor Pratt) - MS Teams Link: http://go.uvm.edu/wdx17 Fri: 10:00 am - noon (Professor Ruggles) - MS Teams Link: http://go.uvm.edu/s8lt4
T.A. Office Hours:	T.A.s for all of the lecture sections staff office hours (usually Monday-Thursday between 8:30 am and 6:30 pm and on Friday until 4:30 pm). When the schedule is available, I will post a link to it here.

Last Updated: August 30, 2020

Course Materials

Text and Online Materials ***(REQUIRED):***	Nivaldo J. Tro's *Chemistry: Structure and Properties, 2nd Edition* *Mastering Chemistry* (Pearson HigherEd) Every student enrolled in CHEM 031 *must* be able to access Pearson HigherEd's *Mastering Chemistry* site in order to complete and get credit for the required online quizzes (worth 12.5% of your total course grade). There are many options for gaining access to this online site but, ultimately, it is up to you - the student - to decide what is best for your learning style and financial situation. There are two options that I feel are worthy of your consideration: • **Online Access/Print-Copy Bundle -** This is the package that is available at the UVM Bookstore (for about $160) and provides complete online access to all published materials (the eText version of Tro's textbook, assigned problems and online quizzes via *Mastering Chemistry*, etc.) plus a loose-leaf (i.e., unbound) print copy of Tro and a print copy of the Solutions Manual. For about $40 more than online-only access to the textbook and to *Mastering Chemistry*, this is the best way to go if you want to have *some* kind of hardcopy of the text and/or solutions to the assigned problems. • **Online Access Only** (with etext) **-** This provides you with complete online access to all of the published materials needed for the course. This is available only through the Pearson HigherEd website (when you first access *Mastering Chemistry* through the link on the CHEM 031 Blackboard site) and will provide you with the access code needed to log onto Pearson's online *Mastering Chemistry* site. If you only want or need electronic access to the text, assigned problems, quizzes, solutions manual, etc., this is the way to go (for about $120). Please note, however, that you will need to be online in order to access any of these materials. • ***Mastering Chemistry* online access only** (no etext) **-** Don't need/want the textbook in either electronic or physical form (found a cheap used copy? sharing a hardcopy with a friend? found a used copy while hiking the Long Trail this summer?)? This is available for about $75 through the Pearson HigherEd website (when you first access *Mastering Chemistry* through the link on the CHEM 031 Blackboard site) and will provide you with the access code needed to log onto Pearson's online *Mastering Chemistry* site (without access to the etext). Note that there will be assigned reading in the textbook as well as assigned homework problems and chapter quizzes. ***You must have online access to Mastering Chemistry in order to do the quizzes that are completed online for credit. There is not an option to complete the required online quizzes without paying for online access***, so you are not able to share access with a classmate without purchasing your own online access code. The good news, however, is that the cost of the online access package is far far lower than what it used to cost to purchase the hardcopy version of the textbook in years past, and the online homework and quizzes are designed to help guide you as you gain mastery of the material. The same materials are used in CHEM 032 and your

	online access code is valid for 24 months, so you will not need to pay for online access if you need to take CHEM 032 and enroll by the Spring 2022 semester.
Lab Materials ***(REQUIRED):***	• Written instructions and videos for each of the experiments for the laboratory component of the course are available online on the Blackboard site for your lab section. • You must purchase, in advance of showing up to the very first laboratory session: ◦ a spiral-bound laboratory notebook with carbon-less copies, and ◦ a pair of OSHA-approved safety glasses or goggles. Both of these are available for purchase in the UVM Bookstore and *you will not be allowed in the lab without them*. Note that contact lenses should NOT be worn in the laboratory (they are a safety hazard) but, if you have no other type of corrective lenses, you must wear safety goggles (not safety glasses) and you must inform your laboratory instructor. It is recommended (although not required) that you purchase and wear a labcoat (they are cool and VERY stylish and will protect you and your clothing) when you are in the laboratory (also available at the UVM Bookstore). If you do not wear a labcoat, please do not wear clothes that you care about to lab!

Last Updated: August 18, 2020

Grading

Your grade for the course will be determined from your point total:

Quizzes (online):	125 points
Exam #1 (Sept 21st):	125 points
Exam #2 (Oct 19th):	125 points
Exam #3 (Nov 16th):	125 points
Final Exam (Dec 10th):	250 points
Laboratory:	250 points
TOTAL:	***1000 points***

Course Grade:	The letter grade that you receive for the course will be determined by the point total that you accrue throughout the semester. Note that ***points are points***, so opting not to complete any of the online quizzes is equivalent to opting to skip an exam: both will result in a loss of 125 points (12.5% of your final score). Looking at this a different way: 10 points from a chapter quiz is equivalent to answering a 10-point question correctly on an exam. I cannot say in advance which point ranges correspond to which letter grades, but I will give approximate correlations throughout the semester following each of the exams. Please note that you are not competing with each other for grades in this course: if everyone scores in the A-range, I will give everyone A's for the course (really!). I encourage you all to work together as you study, to help each other learn the material - but do also recognize that all graded work must be solely your own, so be prepared to work independently to demonstrate your mastery of the material.
Exams:	There will be three mid-semester exams (worth 125 points each) and one comprehensive final exam (worth 250 points). The three mid-semester exams are tentatively scheduled for September 21st, October 19th, and November 16th, beginning at 6:40 p.m. ***There are no scheduled makeup dates.*** Only non-programmable non-graphing calculators are allowed to be used during the exams. No other electronic devices are allowed with you in the exam - this includes cell phones, music players, game devices, etc. **It is the responsibility of each student to have a non-programmable non-graphing calculator when taking exams. Students found using any other electronic devices will receive a grade of ZERO for the exam.** Exams are designed to be completed within about 1.5 hours; you will, however, be allowed to spend as much time as you need within the scheduled 3-hour time-slot. The Final Exam is scheduled by the Registrar (Thursday, December 10th, 10:30 am-1:15 pm) and will cover material from the entire semester. *Note that all exams will be delivered online through Blackboard. Exams will be*

	time-limited (as indicated above) and you will only be permitted to access a formula sheet (provided for each exam) and the non-programmable non-graphing calculator (as indicated above). For these exams you will be required to do all of the work for your exam by yourself without assistance from anyone else. ***By taking the exam, you agree to abide by these and any other restrictions communicated on the exam and that, if found in violation of any of these restrictions, you will receive a grade of zero for the exam.***
Quizzes:	There will be short quizzes available online (via the *Mastering Chemistry* application) for each of the twelve chapters. These are summative assessments of your knowledge of some of the important material from each chapter and will be worth up to 12.5 points for each quiz, for up to ten quizzes. Note that ***these will be available only for a limited time following our coverage of the material in class***. Your quiz point total will be the sum of the ten highest quiz scores you receive - you can earn, then, up to 125 points (ten quizzes at 12.5 points per quiz) by completing these online quizzes.
Labs:	You can earn up to 250 points from the laboratory component of the course. A detailed breakdown of how these points are awarded (e.g., lab reports, prelab preparation, etc.) is provided in the laboratory syllabus on the Blackboard site for your lab section.
Absences:	You are expected to attend and participate fully in all classes, labs, and exams - they are on your schedule and, so, there should be no conflicts with any other scheduled obligations. That said, should you be unable to take one of the exams at the scheduled day/time for a valid, documented reason (e.g., illness, death in the family, etc.), you must contact me prior to the scheduled exam day/time to see if it is possible to schedule an alternate exam time. Only in extraordinarily unusual circumstances will an alternate exam time be provided at a day/time *after* the originally scheduled exam time. If you miss an exam without a valid, documented reason, you will receive a grade of **ZERO** for the exam. Since the laboratories operate on an extremely tight schedule, it is expected that every student will attend their regularly scheduled lab section unless it is absolutely impossible for them to do so (e.g., due to a documented illness). Oversleeping, studying for an exam, or just plain not being prepared are not valid excuses. If you must miss a lab for a valid reason, you must notify the Laboratory Coordinator, Christine Cardillo (Christine.Cardillo@uvm.edu) - follow the procedure detailed in the lab syllabus to see if it is possible to attend another lab section the same week that you must miss your scheduled lab. You may not make-up an unexcused lab! You will receive a grade of **ZERO** for each unexcused lab. ***If you accrue more than two unexcused labs, you will not receive a passing grade for the course!***
Additional Considerations:	You might find that - for any number of reasons - you receive a lower than hoped for score on an exam or quiz or homework assignment. All is not lost! If

	you focus on mastery of the material, you will do better on subsequent exams and other assignments. In addition, if your score (as a %) is higher on the final exam than your scores (as a %) on any of the mid-semester exams, *the lowest mid-semester exam score will be replaced by the equivalent score from your final exam*. For example: if you received mid-semester exam scores (remember, each is out of 125 points) of 105, 88, and 95 and a final exam score (out of 250) of 230, the lowest exam score (88) will be replaced by 115 (the same %-equivalent score from the final exam). In this way, the actual exam point total of 518 (105+***88***+95+230 = 518) would be increased to 545 (105+***115***+95+230 = 545). Conversely, should you do worse on the final exam than on any of the mid-semester exams, an adjustment would not be made - only if an adjustment improves your exam total would it be used. Note that while there are twelve chapters (each with assigned problems and quizzes), you will only receive points for up to ten online chapter quizzes. Only the top ten quiz scores will be counted towards the quiz total. So, if you do all twelve of the quizzes (one for each chapter), the ten best quiz scores will be used to calculate the total points awarded for quizzes. The more you practice by doing homework assignments (in a timely manner), the better you will get and the higher the scores will be that you receive on the quizzes as well as exams. Also, remember that number of points possible from the quizzes account for 12.5% of your final point total.

Last Updated: August 23, 2020

Laboratory Information

There is a comprehensive and detailed syllabus just for the laboratory component of the course - this is only a small part of the many, varied, and essential resources you will find on your laboratory section's Blackboard site for CHEM 031.

If you have a question about the lab or need materials for the lab, check the lab section Blackboard site and you will find what you need. If you cannot find what you need, email the Laboratory Coordinator, Christine Cardillo (Christine.Cardillo@uvm.edu), and she can address your question.

Last Updated: August 18, 2020

Study Guide

General Comments:	CHEM 31 consists of a series of lectures covering the basic principles of elementary chemistry. The course is divided into three sections and, at the end of each, there will be an examination to evaluate each student's understanding of the material. While some problem solving will be done during the lecture hour, weekly sessions will be held (during the Monday evening "exam time") in order to focus on problem solving. The lectures are coordinated with a laboratory sequence which relates, in part, to the lecture material. The assigned problems and the reading assignments in the text are summarized in the Course Schedule. Solutions to all of the problems are available online on the Blackboard site for the course. Pay close attention to the Course Schedule and try to read ahead and understand the material relevant to each lecture ahead of time. This will facilitate your understanding and increase your ability to follow closely the development of each topic. If you do not do this, you may find that you cannot assimilate the material properly during the lecture period. Also, I will post on Blackboard the PowerPoint presentation slides that I use in class - you may also find it helpful to look at the slides for a particular subject area prior to attending the associated lecture. There are many ways of learning chemistry. One of the best is problem solving and, ***while the assigned homework problems are not collected or graded, I strongly recommend that they be done***. Examination questions may come from lecture slide material, assigned problems, lab experiments and a variety of miscellaneous sources. **DO NOT FALL BEHIND!** The course is carefully structured so that you should have no difficulty with the material if you follow the recommended study schedule, attend lectures, do all the assigned problems, *and make sure that those problems initially not done correctly are eventually understood* . . . before the examination. Please do not hesitate to see me if you are having difficulties or have questions which were not answered during the lecture hour. I have reserved and posted specific office hours for individual and small group discussions. If you cannot come at those times, I will be pleased to make an appointment for a more convenient time. I also appreciate any anonymous comments, questions, etc., regarding anything related to the material we will cover in this course. On the course Blackboard site, you will find an "electronic BOX" that will allow you to submit your anonymous comments electromagically.
Assigned Homework Problems:	The assigned problems are for your benefit and are not to be handed in. You are strongly encouraged to do not only the assigned problems, but also any additional problems in the text that you desire. Chemistry is not a spectator sport. **Do not be fooled into believing that passive activities (e.g., reading the text and listening to the lectures) are sufficient to learning chemistry - *they are not!*** The best way to learn chemistry is to reinforce conceptual material introduced in class and in the textbook with engaged problem-solving. There are assigned questions associated with most every chapter section in the text. Try to find a time *every day* (***really, every day, including weekends!***) to read one or two sections (a few pages) and then work on the associated homework problems (a few problems per section). These problems will draw on the material you

	have just read and will help reinforce that material. Often, the assigned problems draw on example problems in the text (that you have just read), helping you think through and solve the assigned problems. By breaking up your studying into daily, short (30-60 minutes), reading/problem-solving sessions, you won't feel as pressured (or discouraged!) as you would had you saved this for a weekly marathon session (and, educational research shows, you will learn and retain more of the material this way). **Get into a habit of doing some chemistry every day -** then, when time comes to prepare for one of the exams (or quizzes), you will be reviewing and reinforcing the material, instead of grappling with it for the first time. **WARNING:** Procrastination may be hazardous to your health! There are A LOT of assigned problems! While we provide solutions to the assigned problems, don't confuse your *familiarity* with how the problems are solved in the solutions manual (or in class, or in a review session) with your *understanding* and ability to solve the problems yourself (particularly on a quiz or exam!).
The E-Box:	Because of the size of CHEM 31, active discussion during lectures is quite difficult. This is compounded further with the class meetings being held online on MS Teams. If you do have a question or comment, use the "raise hand" function in Teams and then, when I call on you, please un-mute your mic and then clearly ask your question or make your comment. After speaking, please remember to mute your mic. You can also ask questions in Teams using the "Chat" function (but I might miss them during the hubbub of class). There is also an "E-Box" for submission within Blackboard of course comments (for those suggestions or questions that may pop up outside of or during class). I will try to answer or comment on these on Blackboard and/or at the beginning of the next class. Comments on any aspect of the course (lab, lecture, etc.) or Chemistry are welcome.
The Laboratory:	Laboratories will begin the week of September 14th. In order to create a safer environment, this fall we will be splitting labs in half - in any given week, only half of each laboratory section will be meeting in-person in the lab, while the other half do a different experiment using an online simulation. The laboratory is a necessary adjunct of this course, designed to both introduce you to some new material, reinforce other material, and give you some idea of the distinction between reading about and actually doing chemistry. More details can be found in the laboratory syllabus on the Blackboard site for your lab section.
Review/ Problem-Solving Sessions:	***Every Monday evening from 6:40-8:00 pm on MS Teams I will hold a review/problem-solving session.*** The purpose of these sessions is two-fold: 1) to engage you in the art of problem-solving, focusing on assigned (and other) problems from the current lecture material, and 2) to address specific details of the lecture material and assigned problems based on questions from those attending. While I will not specifically introduce new material in these sessions, what we will cover is critical to your success in the course and ***your attendance and participation is both encouraged and expected***. Learning how to successfully approach and solve the assigned problems will be the focus of these sessions - only by grappling with the material in this manner can you truly begin to understand the Chemistry covered in this course. In addition, ***the Sunday prior to each of the mid-semester exams, I will hold a review session to address any questions you might have on the material to be covered in the upcoming exam.*** These sessions will be held in MS Teams (times TBA).

The Course Website:	This course will make extensive use of electronic and web-based materials (we will, after all, be meeting online using MS Teams!). ALL course materials (lecture presentation slides, assignments, lecture and lab schedules, handouts, old exams and answer keys, grades, etc.) will be available online at the course Blackboard site. In addition, there are direct links to the Pearson *Mastering Chemistry* site where you can access the online textbook and all homework problems as well as the Chapter quizzes. All class meetings will be held online on MS Teams and will be recorded and posted there, as well, for your reference (either to go back to when studying or should you miss a class due to illness). If you are looking for ANY information regarding this course, please look on the Blackboard site first; if it is important, it will probably be there!
Quizzes:	"***Did he say online quizzes?***" Yes! On the Pearson *Mastering Chemistry* site, you will be able to access the Chapter quizzes which, in aggregate, are worth 12.5% of your course grade. These quizzes count for a total of 125 points throughout the semester (10 quizzes at 12.5 points apiece). Their purpose, however, is mostly diagnostic; i.e., they are a mechanism by which you and I can track what material you understand and what material you need to work on. They are a motivational tool to encourage you to keep up with the material covered by the class and *they are available only around the time when we are covering the Chapter material in class*. They are NOT a substitute for studying and working problems; ***it is entirely possible to ace every quiz and still FAIL the exams***. **You must practice doing chemistry problems if you are to be able to do well on the exams. Keep up with the class material and do the readings and the problems and you will likely do well on both the quizzes and the exams.** I hope that these quizzes will serve as a motivational reminder to work on the assigned problems *every day*, regularly, instead of procrastinating and waiting until just before the exam. Please note that each quiz will not be available throughout the entire semester to take for points but, rather, will be available (for points) only until a few days following our coverage of the material in class. **There will be no extensions of the access time nor will there be an option to take a quiz (for points) at a later day/time.** Remember that your quiz total will be the sum of the ten highest quiz scores, so if you forget or are ill or are otherwise unable to take a quiz while it is still available, you will not be penalized (unless you miss more than 2 quizzes, of course). You will still be able to access the quizzes after they are no longer active for earning points, so that you can use them to help review for exams and to serve as a diagnostic for the material covered in each chapter.

Last Updated: August 23, 2020

Classroom Policies

Lectures:	I expect that you will attend (online, on MS Teams) each class, unless you are unable to do so due to circumstances beyond your control (e.g., illness, family emergency, etc.). While I do not take attendance (and I do post the lecture slides for each class online in Blackboard), what we do in class and what I say in class is designed to help you learn the material. Of course, *everything* I say or do in class will not necessarily be of immediate value to you, but we are a diverse class and I expect that you will find at least *some* of what we cover in class helpful at some point. While in class, I do expect that you will be respectful of both your fellow students as well as me, your instructor. This means that you will be paying attention, engaging with the material we cover, and participating in any class activities. If I ask the class a question, please do respond if you know (or suspect that you know) the answer. If I have said something that does not make sense to you, ask a question or ask me to clarify what I have said - remember that it is likely that you are not the only one in the room with that very same question, so do not be shy. Please do not plan on working on other things during our class time. ***For 50 minutes, I would like your full attention; when you log onto MS Teams for class, you should plan on focusing your attention on Chemistry.***
Online/MS Teams Class Etiquette:	With more than 150 people online for our class on MS Teams, we need to have some ground-rules so that we can make most effective use of our (limited) class-time together. Here are some policies for our class that will make our class-time more profitable: • Log onto MS Teams and be ready for class to start on time (noon on MWF). • Once class has begun, I will begin sharing my screen and start recording the class - this will create a video recording that will be available to everyone in the class to review throughout the semester. ***If you do not wish to be recorded as part of this video, please keep your camera and mic muted while the class is being recorded.*** • Mute both your camera and mic at the start of class and, in general, plan on keeping them muted for the class period, unless you wish to ask/answer a question or make a comment, • If you have a question or comment of general relevance to the class or wish to answer a question I have posed to the class, use the *hand* function to indicate you would like to speak - when I call on you, *quickly* unmute your mic (and your camera, if you wish), and speak. When you have finished speaking, please mute your mic (and camera, if you unmuted it).
Weekly Problem-Solving Sessions:	As with the lectures scheduled for this course, I also expect that you will attend the weekly problem-solving sessions (also on MS Teams). I will not take attendance, but each week we will focus on problem-solving skills and will cover both assigned and unassigned problems of both my and your choosing. While I will have some specific problems that I will present and work through with you at these sessions, this is also a time for you to suggest problems for us to work together. While not a substitute for working assigned problems independently, my hope is that you will gain some experience and confidence in problem-solving that will help guide your *daily* independent problem-solving efforts. These sessions will also be recorded on MS Teams so you can revisit them as needed - I will also post a pdf of the work done during these sessions (on Blackboard).

UVM Policies

Student Learning Accommodations:	*In keeping with University policy, any student with a documented disability interested in utilizing accommodations should contact the Student Accessibility Services (SAS) office on campus. SAS works with students and faculty in an interactive process to explore reasonable and appropriate accommodations, which are communicated to faculty in an accommodation letter. All students are strongly encouraged to meet with their faculty to discuss the accommodations they plan to use in each course. A student's accommodation letter lists those accommodations that will not be implemented until the student meets with their faculty to create a plan.* Student Accessibility Services A170 Living/Learning Center 802-656-7753. access@uvm.edu http://www.uvm.edu/access
Policy on Disability Certification and Student Support:	http://www.uvm.edu/policies/student/disability.pdf
Religious Holiday Policy Statement:	*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.*
Academic Integrity:	This policy addresses plagiarism, fabrication, collusion, and cheating. http://www.uvm.edu/policies/student/acadintegrity.pdf
Code of Student Rights and Responsibilities:	http://www.uvm.edu/policies/student/studentcode.pdf
Center for Health and Well-Being:	http://www.uvm.edu/~chwb/
Counseling and Psychiatry Services (CAPS):	http://www.uvm.edu/~chwb/psych/ 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/deanofstudents/student_advocacy/care_form

Course Schedule

Approximate Dates	Chapter/Topic	Problems	Experiment (Week of)	Exam
August 31 Sept 2, 4, 9	Chapt. E: *Essentials - Units, Measurement, and Problem Solving*	#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	*Introduction to Lab/ Lab Safety* (***Online***)	-
Sept. 9, 11, 14	Chapt. 1: *Atoms*	#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	***Group A: Expt. 1 (InPerson):*** *Measurements and Density* ***Group B: Expt. 2 (Online):*** *Flame Emission Spectra of Metals* (Sept. 14)	-
Sept. 14, 16, 18, 21, 23	Chapt. 2: *The Quantum-Mechanical Model of the Atom*	#35, 37, 39, 41, 43, 51, 53, 55, 57, 59,61, 63, 65, 67, 69, 71, 73, 79, 85, 89,91, 99	***Group B: Expt. 1 (InPerson):*** *Measurements and Density* ***Group A: Expt. 2 (Online):*** *Flame Emission Spectra of Metals* (Sept. 21)	**EXAM #1** ***Sept. 21st***
Sept. 23, 25, 28, 30	Chapt. 3: *Periodic Properties of the Elements*	#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, 95, 97, 101, 103, 109, 115, 127, 135	***Group A: Expt. 3 (Online):*** *Qualitative Analysis of Group I Cations* ***Group B: Expt. 4 (InPerson):****Determination of a Chemical Formula* (Sept. 28)	-
Sept. 30 Oct. 2, 5	Chapt. 4: *Molecules and Compounds*	#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	***Group B: Expt. 3 (Online):*** *Qualitative Analysis of Group I Cations* ***Group A: Expt. 4 (InPerson):****Determination of a Chemical Formula* (Oct. 5)	-
Oct. 7, 9, 12	Chapt. 5: *Chemical Bonding I*	#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	***Group A: Expt. 5 (Online):*** *Molecular Models* ***Group B: Expt. 6 (InPerson):*** *Separating a Mixture of Compounds* (Oct. 12)	-
Oct. 14, 16	Chapt. 11: *Liquids, Solids, and Intermolecular Forces (sections 11.1 - 11.5 only)*	# 35, 37, 39, 41, 43, 45, 47, 49, 51	***Group B: Expt. 5 (Online):*** *Molecular Models* ***Group A: Expt. 6 (InPerson):*** *Separating a Mixture of Compounds* (Oct. 19)	-
Oct. 16, 19, 21, 23, 26	Chapt. 6: *Chemical Bonding II*	#25, 29, 31, 33, 35, 39, 41, 43, 45, 49, 51, 53, 55, 57, 59, 61	***Group A: Expt. 7 (InPerson):*** *Chemical Reactions* ***Group B: Expt. 8 (Online):*** *Limiting Reactant and Excess Reactant* (Oct. 26)	**EXAM #2** ***Oct. 19th***
Oct. 26, 28	Chapt. 7: *Chemical Reactions and Chemical Quantities*	#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	***Group B: Expt. 7 (InPerson):*** *Chemical Reactions* ***Group A: Expt. 8 (Online):*** *Limiting Reactant and Excess Reactant* (Nov. 2)	-
Oct. 30 Nov. 2, 4, 6	Chapt. 8: *Introduction to Solutions and Aqueous Reactions*	#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	***Group A: Expt. 9 (InPerson):*** *Acid-Base Titration* ***Group B: Expt. 10 (Online):*** *Heat Capacity and Enthalpy* (Nov. 9)	-
Nov. 9, 11, 13, 16	Chapt. 9: *Thermochemistry*	#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	***Group B: Expt. 9 (InPerson):*** *Acid-Base Titration* ***Group A: Expt. 10 (Online):*** *Heat Capacity and Enthalpy* (Nov. 16)	**EXAM #3** ***Nov. 16th***
Nov. 18, 20, 23, 30	Chapt. 10: *Gases*	#25, 29, 31, 33, 35, 37, 39, 41, 43, 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	***No Labs - Thanksgiving Break!*** *(Nov. 23)*	-
Dec. 2, 4	Chapt. 11: *Liquids, Solids, and Intermolecular Forces* (sections 11.5 - 11.9 only)	#53, 57, 59, 61, 63, 65, 67, 69, 71, 73, 77, 81, 85, 87, 93	*Conclusion of Lab (**Online**)*	-
-	-	-	-	***FINAL EXAM Thursday Dec. 10th 10:30 am***

Last Updated: August 23, 2020