

CHEM 111L

Traditional Face-to-Face Course
General Chemistry I Laboratory
Fall 2021

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Academic Bulletin Description

Introduction to the principles and techniques of experimental chemistry with emphasis on formula investigations, equations, elementary statistics, and chemical reactivity.

Full Course Description

The purpose of general chemistry lab is for students to understand the molecular nature of all phases of matter, to understand the various ways of depicting chemical compounds and chemical reactions, to develop an ability to solve basic quantitative problems regarding the properties of molecules, chemical equilibria, and chemical kinetics, and to develop the ability to appropriately apply this knowledge to general scientific problems in various fields of science and engineering.

Prerequisites

Corequisite: CHEM 111

Learning Outcomes

Upon successful completion of CHEM 111L, students should be able to:

1. Assemble basic laboratory glassware.
2. Perform fundamental laboratory techniques.
3. Make and record relevant experimental observations.
4. Interpret experimental results.
5. Quantitatively describe the properties of atoms and molecules in the various phases of pure matter and in mixtures.
6. Use dimensional analysis with proper attention to units and significant figures.
7. Name and classify inorganic compounds.
8. Determine empirical and molecular formulas from empirical data.
9. Balance chemical equations and use stoichiometric relationships and the mole concept to calculate product and reactant amounts.

10. Identify different types of reactions (precipitation, neutralization, oxidation-reduction) and predict the outcome of these reactions.
11. Explain the first law of thermodynamics and the role of energy and enthalpy in chemical reactions and perform thermochemical calculations.
12. Explain the basic concepts of quantum theory, determining the electron configurations of atoms, and using periodic trends to make predictions about atomic properties.
13. Explain theories of chemical bonding and determine the molecular geometry of molecules using VSEPR theory.
14. Apply gas laws and kinetic molecular theory to processes involving gases.
15. Explain the intermolecular attractive forces that determine the properties of the states of matter and phase behavior.

Course Materials

Required textbook: Taylor-Perry, A., Reger, D., Goode, S. & Freeman, D. (2018). *Chemistry 111 Laboratory Manual General Chemistry Laboratory Experience with Supplemental Lecture Slides*. Montgomery, AL: QDE Press. ISBN 9781938535338

Required textbook or e-book: Reger, D., Goode, S. & Ball, D. (2010). *Chemistry Principles and Practice*. 3rd edition. Belmont, CA: Cengage Learning. ISBN 9780534420123

Required material: A scientific calculator

Required material: Safety glasses or safety goggles

All course materials comply with copyright/fair use policies.

Course Requirements

Course Format

This is a traditional course. There are scheduled face-to-face meeting times.

Course Communication

Your teaching assistant is an important source of information for this course. Please contact your teaching assistant when you have a question about the course or the grades you are assigned in this course.

Your teaching assistant and I will be communicating with you regarding grades and assignments. If you need to get in touch with us, the best method is via email. Generally, we will reply to emails within one business day and will provide feedback on assignments within three business days. Please do not email shortly before a due date

and expect to get a reply before the due date. You are responsible for attempting assignments in adequate time to get assistance if you need it.

If you are having trouble with this course or its material, you should contact me or your teaching assistant via email to discuss the issues.

Announcements will be posted to this course whenever necessary. If there is any other information I think is important, I will send it to your email address you have in Blackboard. It is your responsibility to ensure that your email account works properly in order to receive email.

Below is how you check your email address in Blackboard:

- Access blackboard.sc.edu
- Click your name on the main Blackboard navigation panel on the left
- Review your email address. By default, Blackboard uses your university-issued email address

Your email address in Blackboard coincides with your preferred university email. If you are unsure of your preferred email, [check your account \(myaccount.sc.edu\)](https://myaccount.sc.edu). For more information on setting your preferred university email, please see the [How To Change Your Primary University Email Address](https://scprod.service-now.com/sp?id=kb_article_view&sysparm_article=KB0011464) (https://scprod.service-now.com/sp?id=kb_article_view&sysparm_article=KB0011464) Knowledge Base article.

Module Schedule

This course is broken into modules to help with organization. While this class meets in-person, many assignments will be completed and/or submitted online.

All course deadlines are listed in Eastern Time Zone. Blackboard will record all deadlines in this time zone. If you are in a different time zone, plan accordingly.

Technology Requirements

Online videos will be provided through Blackboard either as web links to Blackboard Collaborate Ultra Recordings or movie files. Therefore, you must have access to the Internet to view/hear videos. No special software is required.

The links to videos, assignments, and quizzes are located on the Blackboard site for the course. To participate in learning activities and complete assignments, you will need:

- Access to a working computer that has a current operating system with updates installed, plus speakers or headphones to hear lecture presentations (transcripts provided);
- Reliable Internet access and a USC email account;
- A current Internet browser that is compatible with Blackboard (Google Chrome is the recommended browser for Blackboard);

- Microsoft Word as your word processing program; and
- Reliable data storage for your work, such as a USB drive or Office365 OneDrive cloud storage.

If your computer does not have Microsoft Word, Office 365 ProPlus package is available to you free of charge and allows you to install Word, Excel, PowerPoint, Outlook, OneNote, Publisher, and Access on up to 5 PCs or Macs and Office apps on other mobile devices including tablets. Office 365 also includes unlimited cloud storage on OneDrive. To download Office 365 ProPlus, log into your student (University) email through a web browser, choose Settings (top right corner), and select software. If you have further questions or need help with the software, please contact the [Service Desk \(https://www.sc.edu/about/offices_and_divisions/university_technology_services/support/servicedesk.php\)](https://www.sc.edu/about/offices_and_divisions/university_technology_services/support/servicedesk.php).

Minimal Technical Skills Needed

Minimal technical skills are needed in this course. All work in this course must be completed and submitted online through Blackboard. Therefore, you must have consistent and reliable access to a computer and the Internet. The minimal technical skills you have include the ability to:

- Organize and save electronic files;
- Use USC email and attached files;
- Check email and Blackboard daily;
- Download and upload documents;
- Locate information with a browser; and
- Use Blackboard.

Technical Support

If you have problems with your computer, technology, IT-related questions, support, including Blackboard, please contact the Division of Information Technology (DoIT) Service Desk at (803) 777-1800 or submit an online request through the [Self-Service Portal \(https://scprod.service-now.com/sp\)](https://scprod.service-now.com/sp) or visit the [Carolina Tech Zone \(https://www.sc.edu/about/offices_and_divisions/university_technology_services/support/ctz.php\)](https://www.sc.edu/about/offices_and_divisions/university_technology_services/support/ctz.php). The Service Desk is open Monday – Friday from 8:00 AM – 6:00 PM (Eastern Daylight Time). If you are located in the Columbia, SC area, the Thomas Cooper Library at USC has computers for you to use in case you encounter computer issues/problems. If you are not located in the Columbia, SC area, most regional campuses and public libraries have computers for public use.

Important Reminders about Lab

- Come to lab on time, with shoes that cover the entire foot. If your toes are showing, you will NOT be able to complete your lab!

- If you do not have goggles, you will lose 10 points off each lab when you borrow a pair!! NO EXCEPTIONS!!!
- Wear your goggles during the entire lab. The first reminder will result in the lab instructor deducting 10 points from your grade for the experiment. The second reminder will result in dismissal from lab and a grade of 0 for that day.
- No food, drink, candy (including gum), cosmetics or cell phones out in lab. Food, candy and drinks will be discarded if out in lab. Cell phones will be confiscated until the end of the lab period.

Laboratory Safety

Goal

The University strives to make your laboratory experience as safe as possible. All laboratories have inherent hazards, but the requirements listed below will minimize the risks associated with these hazards.

Basic Laboratory Safety and Personal Protective Equipment

Students must wear appropriate clothing to lab including **full-length pants or skirt, shoes that completely enclose the foot, and long hair tied back**. Unprepared students will be turned away with a grade of zero for the experiment. Students enter the laboratory through a vestibule with coat hooks and lockers in which they can place their valuables. In the vestibule, students must don approved splash-proof safety goggles (supplied by the student), a buttoned lab coat and gloves (both supplied by the College of Arts and Sciences).

Fall 2021 Considerations

- Face coverings: UofSC Policy [UNIV 3.04](#) requires the use of face coverings in classrooms. The combination of face coverings with safety glasses/goggles may result in fogging of the protective eyewear. If fogging becomes an issue, this policy allows for face shields in place of traditional face coverings based on instructional need, and the teaching assistant will supply the student with a face shield to be used in place of a face covering in lab. Safety glasses/goggles must be used in conjunction with the face shield. The student is responsible for bringing the face shield to lab each week. Replacement and loaner face shields are not available. Replacement face shields must be purchased by the student. Due to high demand, there may be a delay in initially receiving face shields. If fogging is an issue before the face shields are received, students should clear their safety glasses/goggles in the vestibule area of the lab before continuing to work.
- Gloves: Gloves are required in lab and clean gloves should be worn at all times, particularly when handling any shared materials/equipment. Avoid touching your bare skin and face with gloved hands.

- Lab coats: With the decreased enrollment per section, College-provided lab coats will be used. Summer enrollment allows us to assign a specific lab coat to each student. Lab coats will also be laundered at various times during the semester. If a student is uncomfortable with a shared lab coat, the student may purchase their own lab coat and bring it to lab each period. Lab coats should only be used for lab. Refrain from using them for personal activities. If a personal lab coat becomes soiled, it must be discarded before leaving lab. Transporting and storing your lab coat away from personal belongings is recommended. For laundering lab coats at home, soak the lab coat in hot soapy water for at least 15 minutes and then wash by hand.
- Disinfecting lab benches and shared equipment: Disinfecting supplies will be available in the labs. Students are expected to clean their glassware, station, and common spaces/equipment as normal and then disinfect the areas with the provided supplies.

Locks and lockers

We advise students to bring a lock to secure their possessions in the vestibule locker but warn that any locks remaining before the next class enters will be removed.

Cell phones

Cell phone use is strictly prohibited in lab. A ringing cell phone has been defined as a classroom disturbance by the College of Arts and Sciences, but more importantly, a safety hazard in the laboratory.

Leaving the laboratory prior to the end of the class

You may find yourself with a need to leave. Inform your teaching assistant then remove and discard gloves. Do not contaminate yourself while removing gloves – this video provides a good explanation. <https://www.wikihow.com/Properly-Remove-Nitrile-Gloves>. Hang up your lab coat before exiting the vestibule.

Penalties for safety violations

Penalties range from a 10-point experiment deduction for the first offense, a zero for the experiment on the second offense, and a final grade of F recorded for the lab course on the third offense.

FOOD AND DRINK:

Food and drink are prohibited in lab. Any food or drink brought into the lab will be thrown out. Gum and candy are prohibited as well.

Face Coverings

Face coverings protect you and your classmates in case the wearer is unknowingly infected but does not have symptoms. Faculty, students and staff are required to wear an appropriate face covering in all classrooms and in other designated areas on campus. Face coverings should cover your nose and mouth in a community setting. Students with conditions that prohibit them from wearing a face covering must register with the Student Disabilities Resource Center (SDRC); appropriate accommodations will be approved by the SDRC, and I will be notified. Failure or refusal to wear the required face coverings in designated areas may result in your immediate removal from the classroom and corrective action, including referral to the Office of Student Conduct, in accordance with University policies and procedures (UNIV 3.04).

Important Links:

- [Proper use, removal, and washing of cloth face coverings](#)
- [CDC Recommendation Regarding the Use of Face Coverings](#)

Hand and Surface Hygiene

Please use hand sanitizer upon entering the classroom and wipe down your desk/table and chair at the beginning of class. All wipes should be disposed of in the trash can and not left on the desk or floor.

Student Well-Being

Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live and believes this may affect their performance in the course, is urged to contact the [Division of Student Affairs and Academic Support](#). If you are comfortable doing so, please notify me as the professor so that we can find resources that may be helpful.

Students do not learn when they do not feel safe. If you feel unsafe on campus at any time in any place, please contact Police Dispatch at 803-777-4215 (in an emergency, please call 911) and reach out to the Division of Student Affairs and Academic Support. Again, if you are comfortable doing so, please notify me as the professor, and I will do my best to make appropriate accommodations.

Students may experience situations or challenges that can interfere with learning and interpersonal functioning including stress, anxiety, depression, substance use, concern for a family/friend, or feelings of hopelessness. Pay attention to what is happening in the classroom and in the lives of your fellow students. There are numerous campus resources available to students including University Counseling & Psychiatry Service and University Student Health Services. Help is available 24/7. Students who need immediate help should call 803-777-5223. An outside resource is the National Suicide Prevention Lifeline (800-273-8255).

Course Assignments and Grading

General Assignment Information

- All coursework (exercises, surveys, etc.) is secured in Blackboard with a username and password.
- All assignments are due by 11:59:00 pm (Eastern Daylight Time) on the day indicated on the course schedule.

Safety Quiz

Students will watch American Chemical Society safety videos and complete a Safety Quiz worth 100 points. The Safety Quiz will be automatically evaluated. Safety Quiz questions may be multiple choice and/or multiple answer. You will have 2 opportunities to complete the Safety Quiz. The highest score will be recorded. The Safety Quiz is found in Blackboard. A score of 80 is necessary for admission to the first lab meeting.

Significant Figures Exercise

Students will complete a Significant Figures Exercise worth 100 class points based on readings from the textbook and a demonstration video. The Significant Figures Exercise will be automatically evaluated. Significant Figures Exercise questions may be calculated values, multiple choice, and/or multiple answer. You will have 2 opportunities to complete the Significant Figures Exercise. The highest score will be recorded. The Significant Figures Exercise is found in Blackboard.

Traditional Experiments 1, 2, 3, 4, 4.5, 5, 6, 9, 8, and 10

Ten traditional experiments will be offered in CHEM 111L: 1, 2, 3, 4, 4.5, 5, 6, 9, 8, and 10. Each experiment is worth 100 class points and will consist of five equally-weighted components (20 class points each): Pre-Lab Exercise, Data Collection, Calculations, Post-Lab Exercise, and Participation.

- Pre-Lab Exercises: Each Pre-Lab Exercise will be based on the text reading, lab manual reading, and pre-lab video for the module. Pre-Lab Exercises will be automatically evaluated. Pre-Lab Exercise questions may be calculations, multiple choice, and/or multiple answer. You will have 2 opportunities to complete Pre-Lab Exercises. The highest score will be recorded. All Pre-Lab Exercises are found in Blackboard. Your lowest Pre-Lab Exercise score of the semester will be dropped.
- Data Collection: A Data Collection score will be based on safe behavior in the lab during data collection. Examples of safe behavior include wearing appropriate PPE at all times, abiding by safety regulations, etc. Deductions will be made for improper or missing PPE, food and drink violations, gum and candy, etc. Data Collection scores must be manually entered. Your lowest Data Collection score of the semester will be dropped.
- Calculations/Data Sheet: An assignment link in Blackboard will be used for uploading a picture or scan of the Data Sheet from the lab manual neatly showing all work and calculations. Calculations scores must be manually entered and are NOT automatically evaluated. You will have 2 opportunities to upload Calculations. The highest score will be recorded. All Data Sheets for completing

handwritten Calculations work are found in the lab manual; all Calculations upload links are found in Blackboard. Your lowest Calculations/Data Sheet score of the semester will be dropped.

- Post-Lab Exercises: Each Post-Lab Exercise will be based on conclusions, experimental error, and/or additional calculations from the experiment. Post-Lab Exercises will be automatically evaluated. Post-Lab Exercise questions may be calculations, multiple choice, and/or multiple answer. You will have 2 opportunities to complete Post-Lab Exercises. The highest score will be recorded. All Post-Lab Exercises are found in Blackboard. Your lowest Post-Lab Exercise score of the semester will be dropped.
- Participation: A participation score is earned by showing up on time, completing the lab experiment, keeping your area tidy, closing all reagent bottles, etc. Participation scores must be manually entered. Your lowest Participation score of the semester will be dropped.

Experiment 12: Shapes of Molecules

Experiment 12 is a set of worksheets that is completed based on Valence-Shell Electron-Pair Repulsion Theory and is worth 100 class points. After watching a Pre-Lab Discussion video and Experiment video, students will complete drawings and work by hand on the lab manual pages. Experiment 12 scores must be manually entered and are NOT automatically evaluated. You will have 2 opportunities to upload Experiment 12 work – but only your last submission will be evaluated. The multiple attempts is in case of upload errors on the first attempt. All worksheets for completing handwritten Experiment 12 work are found in the lab manual; the Experiment 12 upload link is found in Blackboard.

Evaluation and Grading Scale

All grades will be posted on Blackboard. You are strongly encouraged to check your scores in Blackboard regularly. A final letter grade will be assigned based on class points.

Significant Figures Exercise (1 @ 100 points) – 100 points
 Safety Quiz (1 @ 100 points) – 100 points
 Pre-Lab Exercises (Best 9 @ 20 points each) – 180 points
 Data Collection (Best 9 @ 20 points each) – 180 points
 Calculations/Data Sheet (Best 9 @ 20 points each) – 180 points
 Post-Lab Exercises (Best 9 @ 20 points each) – 180 points
 Participation (Best 9 @ 20 points each) – 180 points
 Experiment 12 (1 @ 100 points) – 100 points

Total Points - 1200 points

1073 – 1200 points = A
 1013 – 1072 points = B+

953 – 1012 points = B
 893 – 952 points = C
 833 – 892 points = C
 773 – 832 points = D+
 713 – 772 points = D
 0 – 712 points = F

Academic Success

Successful learners:

1. Do not procrastinate;
2. Are open to sharing experiences;
3. Enhance discussions;
4. Have good written communication skills;
5. Use proactive communication;
6. Are self-motivated and self-disciplined;
7. Have a commitment to learning;
8. Have critical thinking and decision-making skills;
9. Believe quality learning can take place; and
10. Have good time management skills.

Disability Services

[Student Disability Resource Center \(http://www.sa.sc.edu/sds/\)](http://www.sa.sc.edu/sds/): The Student Disability Resource Center (SDRC) empowers students to manage challenges and limitations imposed by disabilities. Students with disabilities are encouraged to contact me to discuss the logistics of any accommodations needed to fulfill course requirements (within the first week of the semester). In order to receive reasonable accommodations from me, you must be registered with the Student Disability Resource Center (1705 College Street, Close-Hipp Suite 102, Columbia, SC 29208, 803-777-6142). Any student with a documented disability should contact the SDRC to make arrangements for appropriate accommodations.

Student Success Center

In partnership with USC faculty, the Student Success Center (SSC) offers a number of programs to assist you in better understanding your course material and to aid you on your path to success. SSC programs are facilitated by professional staff, graduate students, and trained undergraduate peer leaders who have previously excelled in their courses. Resources available to you in this course may include:

- **Peer Tutoring:** You can make a one-on-one appointment with a [Peer Tutor \(www.sc.edu/success\)](http://www.sc.edu/success). Drop-in Tutoring and Online Tutoring may also be available for this course. Visit their website for a full schedule of times, locations, and courses.

- **Peer Writing:** Improve your college-level writing skills by bringing writing assignments from any of your classes to a Peer Writing Tutor. Similar to Tutoring, you can visit the website to make an appointment, and to view the full schedule of available drop-in hours and locations.
- **Success Consultations:** In Success Consultations, SSC staff assist you in developing study skills, setting goals, and connecting to a variety of campus resources. Throughout the semester, I may communicate with the SSC via Success Connect, an online referral system, regarding your progress in the course. If contacted by the SSC, please schedule a Success Consultation. Success Connect referrals are not punitive and any information shared by me is confidential and subject to FERPA regulations.

SSC services are offered to all USC undergraduates at no additional cost. You are invited to call the Student Success Hotline at (803) 777-1000, visit the [SSC website \(www.sc.edu/success\)](http://www.sc.edu/success), or stop by the SSC in the Thomas Cooper Library on the Mezzanine Level to check schedules and make appointments.

Writing Center

[Writing Center \(http://artsandsciences.sc.edu/write/university-writing-center\)](http://artsandsciences.sc.edu/write/university-writing-center)

The University Writing Center is an important resource you should use! It's open to help any USC student needing assistance with a writing project at any stage of development. The main Writing Center is in Byrnes 703.

University Library Resources

[University Libraries Resources \(sc.edu/libraries\)](http://sc.edu/libraries)

- University Libraries has access to books, articles, subject specific resources, citation help, and more. If you are not sure where to start, please [Ask a Librarian! Assistance is available at sc.edu/libraries/ask](http://sc.edu/libraries/ask).
- Remember that if you use anything that is not your own writing or media (quotes from books, articles, interviews, websites, movies – everything) you must cite the source in MLA (or other appropriate and approved) format.

Blackboard and Technology

[Blackboard and Technology](https://sc.edu/about/offices_and_divisions/division_of_information_technology/end_user_services/available_technology_resources/)

[\(https://sc.edu/about/offices_and_divisions/division_of_information_technology/end_user_services/available_technology_resources/\)](https://sc.edu/about/offices_and_divisions/division_of_information_technology/end_user_services/available_technology_resources/)

As a student in this course, you have access to support from the Division of Information Technology (DoIT) for Blackboard and computer issues. The service desk can be reached at 803-777-1800.

Counseling Services

Counseling Services

(https://sc.edu/about/offices_and_divisions/student_health_services/medical-services/counseling-and-psychiatry/index.php)

The University offers counseling and crisis services as well as outreach services, self-help, and frequently asked questions.

Course Policies and Procedures

Attendance Policy

Success in this course is dependent on your active participation throughout the course – both online and in-person. You are expected to log into Blackboard several times a week and complete course assignments. Even if your work is completed, you still need to login to ensure that you have seen all announcements, etc. It is your responsibility to check updates related to the course.

Students must attend all in-person labs in the format they are offered (For example, students are expected to attend in-person labs in person). Students who miss labs due to COVID quarantine, a diagnosed health condition or registered disability should contact the [Undergraduate Student Ombudsman](#) or [Student Disability Resource Services](#) to document the reason for their absence. Students with documented absences *may be offered* livestreamed or recorded classes, be considered present for participating in class virtually and have the opportunity to reschedule exams or assignments at the instructor's discretion; first utilizing any syllabus statement regarding missed class, assignments or exams.

THERE ARE NO MAKE-UP LABS. A first absence in lab may be dropped using the one drop policy for Data Collection, Data Sheet, and Participation. Pre-labs and Post-Labs for missed labs may still be completed for credit. Any other absences will result in a grade of zero for any missed in-person activities.

Academic Integrity

You are expected to practice the highest possible standards of academic integrity. Any deviation from this expectation will result in a minimum academic penalty of your failing the assignment and will result in additional disciplinary measures. This includes improper citation of sources, using another student's work, and any other form of academic misrepresentation.

The first tenet of the Carolinian Creed is, "I will practice personal and academic integrity."

Below are some websites for you to visit to learn more about University policies:

[Carolinian Creed \(http://www.sa.sc.edu/creed\)](http://www.sa.sc.edu/creed)

[Academic Responsibility \(http://www.sc.edu/policies/staf625.pdf\)](http://www.sc.edu/policies/staf625.pdf)

[Office of Student Conduct and Academic Integrity
\(https://www.sa.sc.edu/academicintegrity/\)](https://www.sa.sc.edu/academicintegrity/)
[Information Security Policy and Standards
\(https://sc.edu/about/offices_and_divisions/division_of_information_technology/security/policy/universitypolicy/\)](https://sc.edu/about/offices_and_divisions/division_of_information_technology/security/policy/universitypolicy/)

Plagiarism

Using the words or ideas of another as if they were one's own is a serious form of academic dishonesty. If another person's complete sentence, syntax, key words, or the specific or unique ideas and information are used, one must give that person credit through proper citation.

Class Conduct/Netiquette

Professionalism will be expected at all times, but most especially with your interactions online. Because the university classroom is a place designed for the free exchange of ideas, we must show respect for one another in all circumstances. We will show respect for one another by exhibiting patience and courtesy in our exchanges. Appropriate language and restraint from verbal attacks upon those whose perspectives differ from your own is a minimum requirement. Courtesy and kindness are the norm for those who participate in my class.

Our discussion board is a way for you to share your ideas and learning with your colleagues in this class. We do this as colleagues in learning, and the Discussion Board is meant to be a safe and respectful environment for us to conduct these discussions.

Some Netiquette Rules:

- Treat one another with respect. It will be expected that we will not attack one another personally for holding different opinions.
- Do not use all CAPITAL LETTERS in emails or discussion board postings. This is considered "shouting" and is seen as impolite or aggressive.
- Begin emails with a proper salutation (Examples: Dr. Name; Ms. Name; Hello Professor Name; Good afternoon Mr. Name). Starting an email without a salutation or a simple "Hey" is not appropriate.
- When sending an email, please include a detailed subject line. Additionally, make sure you reference the course number (Ex. CHEM 111L) and section number (Ex: 003) in the message and sign the mail with your name.
- Use proper grammar, spelling, punctuation, and capitalization. Text messaging language is not acceptable.
- Use good taste when communicating. Profanity should be avoided.
- Re-Read, think, and edit your message before you click "Send/Submit/Post."

Please remember when posting to be respectful and courteous to your colleagues and limit your posts to discussions of this course and its assignments.

Late Work/Make-up Policy

All assignments, quizzes, and exams are due by the deadline as posted on the course schedule.

Please plan accordingly and complete these assignments in advance of their deadlines to ensure any unanticipated circumstances do not result in a missed assignment. User error does not qualify you for any kind of makeup or retake opportunity.

Completing and submitting the assignments or quizzes by the due date is the sole responsibility of you. If you receive an incomplete score because of failure to submit the assignment by the due date, then a late penalty will be applied. **Late assignments and quizzes will be subject to the following penalty: 50% will be deducted from your grade immediately after the due date/time passes and 100% will be deducted after 11:59:00 pm EST on December 3, 2021.**

You will be allowed to access assignments and quizzes two times each. If you are concerned about missing a deadline, you may want to do any of the following:

- Post your assignment the day before the deadline; or
- Begin quizzes as soon as they are made available online.

Be Careful: The clock on your computer may be different than the clock in Blackboard. If the clock is different by one second, you will be locked out of the assignment or quiz. Plan accordingly. I recommend that you submit your assignments, quizzes, and lab reports well before deadline.

Incomplete Grades

Incompletes will be granted only in accordance with university policy.

Instructional Methods

This course will be taught in a face-to-face traditional format.

Diversity and Inclusion

The university is committed to a campus environment that is inclusive, safe, and respectful for all persons, and one that fully embraces the Carolinian Creed. To that end, all course activities will be conducted in an atmosphere of friendly participation and interaction among colleagues, recognizing and appreciating the unique experiences, background, and point of view each student brings. You are expected at all times to apply the highest academic standards to this course and to treat others with dignity and respect.

Accessibility, Disability, and Triggers [credit to [Dr. David Moscovitz](#)]

I am committed to ensuring course **accessibility** for all students. If you have a documented **disability** and expect reasonable accommodation to complete course requirements, *please notify me at least one week before accommodation is needed*. Please also

provide [SDRC](https://sc.edu/about/offices_and_divisions/student_disability_resource_center/) (https://sc.edu/about/offices_and_divisions/student_disability_resource_center/) documentation to me before requesting accommodation. Likewise, if you are aware of cognitive or emotional **triggers** that could disrupt your intellectual or mental health, please let me know so that I can be aware in terms of course content.

Diversity, Ethics, and the Carolinian Creed [credit to [Dr. David Moscovitz](#)]

This course works to foster a climate free of harassment and discrimination, and it values the contributions of all forms of **diversity**. The decision to enter university and pursue advanced study is a choice that entails commitment to personal **ethics** expressed in the [Carolinian Creed](http://www.sa.sc.edu/creed) (www.sa.sc.edu/creed): “I will discourage bigotry, while striving to learn from differences in people, ideas and opinions.” Likewise, the Student Code of Conduct ([STAF 6.26](http://www.sc.edu/policies/ppm/staf626.pdf) (<http://www.sc.edu/policies/ppm/staf626.pdf>)) stresses, “The University of South Carolina strives to maintain an educational community that fosters the development of students who are ethical, civil and responsible persons.”

Title IX and Gendered Pronouns [credit to [Dr. David Moscovitz](#)]

This course affirms equality and respect for all gendered identities and expressions. Please don't hesitate to correct me regarding your preferred gender pronoun and/or name if different from what is indicated on the official class roster. Likewise, I am committed to nurturing an environment free from discrimination and harassment. Consistent with Title IX policy, please be aware that I as a responsible employee am obligated to report information that you provide to me about a situation involving sexual harassment or assault.

Values [credit to [Dr. David Moscovitz](#)]

Two core values, inquiry and civility, govern our class. **Inquiry** demands that we all cultivate an open forum for exchange and substantiation of ideas. Strive to be creative, to take risks, and to challenge our conventional wisdom when you see the opportunity. **Civility** supports our inquiry by demanding ultimate respect for the voice, rights, and safety of others. Threatening or disruptive conduct may result in course and/or university dismissal. Civility also presumes basic *courtesy*: please be well rested, on time, and prepared for class, which includes time for a restroom stop *before* (not during) class and silencing all personal devices.

My perspective is that we never cease being students of this world, so I believe that attentive, reflective people always have something to learn from others. Good discussions can be energetic and passionate but are neither abusive nor offensive. Vibrant, vigorous inquiry derives from discussions that:

- challenge, defend, and apply different ideas, theories, perspectives, and skills,
- extend a body of knowledge into different arenas and applications, and

result in a synergy that compels us to seek resolution to these discussions.

Expectations of the Instructor

I am expected to facilitate learning, answer questions appropriately, be fair and objective in grading, provide timely and useful feedback on assignments and treat you as I would like to be treated.

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I will cite and/or reference any materials that I use in this course that I do not create. You, as students, are expected to not distribute any of these materials, resources, quizzes, tests, homework assignments, etc. (whether graded or ungraded).

FALL 2021 CHEM 111L IN-PERSON LABORATORY SCHEDULE:

DATE	DESCRIPTION	EXPT #	LECTURE CORRELATION
Experiments will be performed on the dates indicated. Bring your laboratory manual, text, calculator and a pen to the lab. Keep this sheet in your laboratory manual for ready reference.			
Aug 30 – Sep 2	Safety & Laboratory Techniques	1	Chapter 1 The Nature of Science and Chemistry, Measurements and Uncertainty, Measurements and Units
Sep 13 – Sep 16	The Physical Properties of Substances	2	Chapter 1 The Nature of Science and Chemistry, Measurements and Uncertainty, Measurements and Units
Sep 20 – Sep 23	Percent of Copper in Copper(II) Sulfate Pentahydrate	3	Chapter 2 Atomic Comp. & Structure, Atomic Masses, Describing Atoms & Ions, Periodic Table, Phys. Prop. of Ionic & Molecular Comp.
Sep 27 – Sep 30	Limiting Reactant and Percent Yield	4	Chapter 3 Chemical Equations, Limiting Reagents
Oct 11 – Oct 14	Solubility Rules	4.5	Chapter 4 Solubility Rules
Oct 18 – Oct 21	Acid-Base Titration: Determination of the Concentration of a NaOH Solution	5	Chapter 4 Stoichiometry Calculations for Reactions in Solution, Chemical Analysis
Oct 25 – Oct 28	Heats of Formation	6	Chapter 5 Energy, Heat, & Work Enthalpy & Thermochemical Equations Hess's Law, Standard Enthalpy of Formation
Nov 1 – Nov 4	Molar Mass – Vapor Density	8	Chapter 6 Dalton's Law of Partial Press., Kinetic Molec.Theory of Gases, Diff. & Eff., Dev. from Ideal Behavior
Nov 8 – Nov 11	Determination of R , Ideal Gas Constant	9	Chapter 6 Properties & Measurements of Gases Gas Laws The Ideal Gas Law Stoichiometry Calculations Involving Gases
Nov 15 – Nov 18	Paper Chromatography	10	Chapter 8 Electronic Structure and the Periodic Table Electron Configurations of Ions Sizes of Atoms and Ions, Electron Affinity

Course Module Schedule – All due times are 11:59:00 pm EST

Module/Topic	Assignment	Due Date
Module 1: Start Here! Introduction, Safety, and Sig Figs Module	<ol style="list-style-type: none"> 1. Review “Start Here” section in Blackboard 2. Read syllabus 3. Watch Welcome and Facilities Video 4. Read Blackboard Best Practices document 5. Watch Safety Video #1 6. Watch Safety Video #2 7. Watch Safety Video #3 8. Watch Safety Video #4 9. Read the Chemical Hygiene Plan 10. Complete Safety Quiz 11. Upload Safety Sheets 12. Read Reger et al Ch 1.3 13. Watch Significant Figures Video 14. Complete Significant Figures Exercise 	All Module 1 assignments are due 8/27
Module 2: Experiment 1 – Safety and Laboratory Techniques	<ol style="list-style-type: none"> 1. Read Reger et al Ch 1.4 2. Read Experiment 1 3. Watch Lab 1 Pre-Lab Video 4. Complete Lab 1 Pre-Lab Exercise 5. Complete Lab 1 in-person 6. Upload Lab 1 Calculations 7. Complete Lab 1 Post-Lab Exercise 	<p>1.-4. are due 8/29</p> <p>5.-7. are due on your scheduled Expt. 1 day</p>

Module/Topic	Assignment	Due Date
Module 3: Experiment 2 – Physical Properties of Substances	<ol style="list-style-type: none"> 1. Read Reger et al Ch 1.2 2. Read Experiment 2 3. Watch Lab 2 Pre-Lab Video 4. Complete Lab 2 Pre-Lab Exercise 5. Complete Lab 2 in-person 6. Upload Lab 2 Calculations 7. Complete Lab 2 Post-Lab Exercise 	<p>1.-4. are due 9/12</p> <p>5.-7. are due on your scheduled Expt. 2 day</p>
Module 4: Experiment 3 – Percent of Copper in Copper(II) Sulfate Pentahydrate	<ol style="list-style-type: none"> 1. Read Reger et al Ch 3.3 2. Read Experiment 3 3. Watch Lab 3 Pre-Lab Video 4. Complete Lab 3 Pre-Lab Exercise 5. Complete Lab 3 in-person 6. Upload Lab 3 Calculations 7. Complete Lab 3 Post-Lab Exercise 	<p>1.-4. are due 9/19</p> <p>5.-7. are due on your scheduled Expt. 3 day</p>
Module 5: Experiment 4 – Limiting Reactant and Percent Yield	<ol style="list-style-type: none"> 1. Read Reger et al Ch 3.4 – 5 2. Read Experiment 4 3. Watch Lab 4 Pre-Lab Video 4. Complete Lab 4 Pre-Lab Exercise 5. Complete Lab 4 in-person 6. Upload Lab 4 Calculations 7. Complete Lab 4 Post-Lab Exercise 	<p>1.-4. are due 9/26</p> <p>5.-7. are due on your scheduled Expt. 4 day</p>
Module 6: Experiment 4.5 – Solubility Rules	<ol style="list-style-type: none"> 1. Read Reger et al Ch 4.1 2. Read Experiment 4.5 3. Watch Lab 4.5 Pre-Lab Video 4. Complete Lab 4.5 Pre-Lab Exercise 5. Complete Lab 4.5 in-person 6. Upload Lab 4.5 Calculations 	<p>1.-4. are due 10/10</p> <p>5.-7. are due on your scheduled Expt. 4.5 day</p>

Module/Topic	Assignment	Due Date
	7. Complete Lab 4.5 Post-Lab Exercise	
Module 7: Experiment 5 – Acid-Base Titration Determination of the Concentration of a NaOH Solution	1. Read Reger et al Ch 4.4 2. Read Experiment 5 3. Watch Lab 5 Pre-Lab Video 4. Complete Lab 5 Pre-Lab Exercise 5. Complete Lab 5 in-person 6. Upload Lab 5 Calculations 7. Complete Lab 5 Post-Lab Exercise	1.-4. are due 10/17 5.-7. are due on your scheduled Expt. 5 day
Module 8: Experiment 6 – Heats of Formation	1. Read Reger et al Ch 5 2. Read Experiment 6 3. Watch Lab 6 Pre-Lab Video 4. Complete Lab 6 Pre-Lab Exercise 5. Complete Lab 6 in-person 6. Upload Lab 6 Calculations 7. Complete Lab 6 Post-Lab Exercise	1.-4. are due 10/24 5.-7. are due on your scheduled Expt. 6 day
Module 9: Experiment 9 – Determination of R, the Ideal Gas Law Constant	1. Read Reger et al Ch 6.3 – 4 2. Read Experiment 9 3. Watch Lab 9 Pre-Lab Video 4. Complete Lab 9 Pre-Lab Exercise 5. Complete Lab 6 in-person 6. Upload Lab 6 Calculations 7. Complete Lab 6 Post-Lab Exercise	1.-4. are due 10/31 5.-7. are due on your scheduled Expt. 9 day
Module 10: Experiment 8 – Molar Mass by Vapor Density	1. Read Reger et al Ch 6.3 2. Read Experiment 8 3. Watch Lab 8 Pre-Lab Video 4. Complete Lab 8 Pre-Lab Exercise 5. Complete Lab 8 in-person	1.-4. are due 11/7 5.-7. are due on your scheduled Expt. 8 day

Module/Topic	Assignment	Due Date
	<ol style="list-style-type: none"> 6. Upload Lab 8 Calculations 7. Complete Lab 8 Post-Lab Exercise 	
Module 11: Experiment 10 – Paper Chromatography	<ol style="list-style-type: none"> 1. Read Experiment 10 2. Watch Lab 10 Pre-Lab Video 3. Complete Lab 10 Pre-Lab Exercise 4. Complete Lab 10 in-person 5. Upload Lab 10 Calculations 6. Complete Lab 10 Post-Lab Exercise 	<p>1.-3. are due 11/14</p> <p>4.-6. are due on your scheduled Expt. 10 day</p>
Module 12: Experiment 12 – Shapes of Molecules	<ol style="list-style-type: none"> 1. Read Reger at al Ch 9.3 – 7 and 10.1 – 4 2. Watch Lab 12 Video 3. Complete and upload Lab 12 worksheets 	<p>1.-3. are due 11/18</p>