CHEM V20L: Elementary Chemistry Laboratory (CRN: 31102), Spring 2020

Essential Course Information

Class Meetings: Tuesdays at 10am-12:50pm in SCI-213
Course Units: 1.0 (3 hours of lab + 1-4 hours outside of class per week)
Prerequisites: CHEM 20 (Elementary Chemistry) or concurrent enrollment
Course Description: This course is designed to work with its lecture component, CHEM V20, to be an introduction to laboratory techniques. The experiments illustrate typical chemical reactions and the principles covered in lecture.
Who should take this course? The purpose of this course is to prepare students for laboratory work in scientific fields with the core chemical skills in lab, introduction to common laboratory equipment and techniques, and preparation and analysis of data. This course is preparation for later courses in chemistry, biology, physics, engineering, and other disciplines as well as many chemistry, biology, and health care fields. This course is a very large time commitment–be prepared to give it your all and take advantage of the many resources available to help you succeed!

About the Instructor

Instructor: Malia Rose-Seisa (preferred: Malia or Professor Rose)
E-mail/iMessage: mrose1@vcccd.edu (preferred, will usually reply within 24 hours)
When e-mailing/texting: please include your name and class. Be as specific as possible about your question (screenshots or photos are great!)
Phone: (805) 289.6242 (voicemail); **Office:** SCI-330 (third floor facing the parking lot)
Office Hours: MW 2-2:30pm in SCI-216, TWTh at 9-10am in SCI-330, W 1-2pm in STEM Harbor (SCI-223)
Please feel free to stop by my office at any time, even if it's not office hours, as I am more than happy to help whenever I can. If the door is closed, just knock; if I'm not there, I will be right back. Let me know if you wish to set up an appointment for additional help. Use me as a resource to help you with this course, whether it's the material, grading, policy, or other questions like majors, transferring, etc. I want to help!
Website: http://mrosechemistry.weebly.com (handouts/course information, also on Canvas)

Other Resources

STEM Harbor: In SCI-223. Visit for a schedule of drop-in hours.
Tutoring: In the Learning Resources Center (LRC), first floor of the library. Visit for a schedule of tutor hours, drop-in and by appointment
BEACH: Open, free computer and Internet access for students
Online: There are many resources online, including lecture videos on YouTube, practice worksheets from other courses, and even notes on the same topics we cover.

Course Materials

Required Materials: ChemV20 Laboratory Manual (purchase new at the VC bookstore)
Safety Googles or Glasses and Nitrile gloves in your size
Scientific Calculator

Classroom Policy

Attendance Policy: Due to the nature of a laboratory course requiring your presence and work to be done in class to collect data, run experiments, and analyze results, attendance at every class meeting is mandatory. Students who miss **three or more** class meetings will be dropped from the course. All experiments must be performed during class time on the scheduled date; **there are no make-up labs for any reason**. Lab lectures that go over the information in the experiment as well as safety considerations are given at the start of each class. Students that are tardy beyond 15 minutes late **will be sent home and not be able to complete the lab.** This includes missing one day of a multi-day experiment. These experiments are quite long and science doesn't always go as planned, requiring extra repeated trials. Students who leave the lab early **will not be able to make up any missed work.** Always expect to attend every class meeting for the entire assigned time; all experiments are designed to go the full three hours.

Equipment Policy: All students are accountable for keeping equipment in the lab and the lab space clean and in good working condition every lab as we share with the many other class sections that use the room. Any chemicals, equipment, or lab space not properly cleaned, returned, and/or handled with care will cause a deduction in your individual grade and that of the entire class. You are responsible for returning the equipment in your locker at the end of the semester and anything else checked-out from the classroom at the lab period in the same condition you received it. After the first class meeting, any damaged or unreturned equipment will be charged to your student account. Please make sure you return all of your equipment that you used to your drawer at the end of every lab period. Any missing or returned dirty checked-out equipment will result in a deduction to your lab grade for that experiment.

A Note on Safety: Although all experiments have been tested and the laboratory equipped and managed for your safety, accidents can and do happen due to the danger inherent in experimentation. For your own safety, you should come to class prepared with pre-reading done in the appropriate attire and pay attention to all instructions, verbal and written, when in the laboratory. **Any accidents, no matter how small, must be reported to me immediately**. That includes chemical spills, fires, electrical issues, fume inhalation, or anything else that looks suspicious, off, dangerous, or otherwise unexpected.

Academic Integrity: Cheating or plagiarizing on any assignment, quiz, or exam is strictly prohibited and will result in an automatic zero. Though most experiments in this class require sharing of equipment and data, simply copying another student's work is cheating and will be grounds for disciplinary action. Your assignments should always be completed and turned in on an individual basis, especially as these are where your quiz questions come from!

Grading Policy

Grades: All assignments' grades will be posted on Canvas throughout the year so you can keep track of your current progress. Each type of assignment carries a different weight in your final course grade to represent the effort required. Your final letter grade will be assigned based on your final overall percentage. **Final grades are final and will not be rounded. No further credit will be offered or can be earned after final grades are posted at the end of the term.**

Grading Categories: A (100% - 90%), **B** (89% - 80%), **C** (79% - 70%), **D** (69% - 60%), **F** (59% -0%)

Pre-Lab Assignments (lowest dropped)	10%
Post-Lab Assignments (lowest dropped)	40%
Quizzes and Lab Final (lowest quiz dropped)	50%

Students with Disabilities: Students who need additional accommodations in the class should contact the EAC (805-289-6300) as soon as possible. Verification and documentation from the EAC is required before any accommodation can be provided.

Late Work: All assignments must be turned in at the start of class on the due dates listed on the schedule. Anything turned in beyond that time will be considered late and subject to a 20% penalty. Assignments except pre-labs will be accepted up to one week past the original due date; anything later will not be accepted. The majority of your course grade is based on your weekly assignments. Don't fall behind! Always endeavor to turn them in on time, but if you really can't for whatever reason, try to get them in for late credit so that you can earn points. **Exception:** no late pre-lab assignments will be accepted.

Assignments

Pre-Lab Assignments: The more prepared you are before coming to class, the smoother each lab will go. To further prepare you, pre-lab assignments are a set of questions found at the end of each experiment in the lab manual that will ask you to refer to the lab reading about to be performed, your lecture notes, and/or outside resources. These must be completed before attending that lab meeting and are due at the beginning of class when the experiment is about to start. **No late pre-lab assignments will be accepted.** These assignments work best when done before class and will stretch you by asking about things you have not yet learned. **Your lowest pre-lab score will be dropped.**

Data Sheets: During the lab, you will often need to record data including amounts of chemicals used, temperatures, pH's, physical observations, pressures, and others. You will also need to perform calculations with these data to determine the lab's objectives. These data and calculations will be recorded on sheets from your laboratory manual entitled "Data" and once complete and accurate, must be shown to and signed off by your instructor before you leave lab each day. These are then turned in the *next* class period as part of your post-lab assignment.

Post-Lab Assignments: Post-lab assignments are a set of questions found in your lab manual after the experiment text which ask you to reflect on what you did as well as additional reactions and mechanisms using the theory from the experiment. These questions will be stapled with your already-signed data sheets from in-class and turned in at the start of the next class period. Your grade will be based on the correctness of your answers to the post-lab questions. **Your lowest post-lab score will be dropped before final grades are determined.**

Quizzes: Your course grade is primarily based on your individual performance, especially on quizzes. Quizzes will be given the first 15 minutes of class on the dates listed on the schedule covering material from the previous experiment(s). If you arrive late, you will not be allowed any extra time to complete the quiz. The questions will resemble those included on the previous experiments' post-lab assignment. You are required to have your own calculator for use on every quiz. **Your lowest quiz score will be dropped.**

Lab Final: Your lab final is cumulative. It will be a written examination consisting of questions

seen previously on the in-class quizzes throughout the semester and will be worth **three** regular lab quizzes. It will be given on the last class meeting on **Tuesday, May 5th.**

About the Class

Student Learning Outcomes: This course will prepare you to do the following "big picture" concepts:

1. Perform laboratory techniques correctly following written protocols and using appropriate safety procedures.
2. Evaluate sources of error, and their effect on experiment results.
3. Perform careful and accurate laboratory measurements and correlate these measurements with scientific laws, and the properties of substances.

See http://www.venturacollege.edu/faculty_staff/academic_resources/core_competencies/index.shtml

Course Objectives: The specific concepts we will cover are:

A. Safely perform a variety of laboratory procedures.
B. Use mass, volume, and length measuring devices and discuss their relative precision.
C. Experiment with chemicals, including strong acids and bases, safely.
D. Experiment with common laboratory equipment safely.
E. Handle glassware correctly.
F. Perform acid-base testing with litmus paper or other means.
G. Apply the scientific method to chemistry problems; including developing hypothesis, hypothesis testing, and evaluation.

Final Notes

Check-Out: If, for any reason, you drop the course before the end of the semester, you must contact me and arrange a check-out time. Otherwise, all students will check out of their drawers the last assigned class meeting. Students who do not check-out will be subject to a $15 fee to their student account.

The laboratory course requires your attendance and participation in every class meeting as well as your completion of the assignments due each week. Stay on top of our schedule; don't fall behind! Students who regularly attend class, complete the experiments, and turn in their assignments on time do very well! Ask for help early and often; don't wait until just before something is due. Read ahead each week and get prepared for the next. And most importantly, have fun doing some chemistry!

Important Dates to Remember

Jan. 17	Last day to enroll in the course with an add code
Jan. 17	Last day to drop with full refund
Jan. 24	Last day to drop without a "W"
Apr. 17	Last day to drop with a "W"
May 8-14	Final Exams

ChemV20L, Elementary Chemistry Lab (CRN: 31102)				
Tuesdays 10:00am-12:50pm, SCI-213				
Tentative schedule -- subject to change				
Week	**Day**	**Experiment**		**Due**
1 (Jan-7)	T	*	**Check-in;** Lab Safety	
2 (Jan-14)	T	1	Physical and Chemical Changes	Lab Materials/Manual
				Pre-Lab Exp. 1
3 (Jan-21)	T	2	Density	**Quiz #1 (Exp 1)**
				Post-Lab Exp. 1, Pre-Lab Exp. 2
4 (Jan-28)	T	3	Energy and Heat Capacity	Post-Lab Exp. 2, Pre-Lab Exp. 3
5 (Feb-4)	T	4	Elements and the Periodic Table	**Quiz #2 (Exp 2+3)**
				Post-Lab Exp. 3, Pre-Lab Exp. 4
6 (Feb-11)	T	5	Qualitative Analysis of Cations in Solution	Post-Lab Exp. 4, Pre-Lab Exp. 5
7 (Feb-18)	T	6	Determining the Empirical Formulas of Compounds	**Quiz #3 (Exp 4+5)**
				Post-Lab Exp. 5, Pre-Lab Exp. 6
8 (Feb-25)	T	7	Analysis of Hydrates	Post-Lab Exp. 6, Pre-Lab Exp. 7
9 (Mar-3)	T	8	Types of Reactions	**Quiz #4 (Exp 6+7)**
				Post-Lab Exp. 7, Pre-Lab Exp. 8
10 (Mar-10)	T	9	Double Replacement Reactions	Post-Lab Exp. 8, Pre-Lab Exp. 9
11 (Mar-17)	T	10	Stoichiometry--Gravimetric Analysis	**Quiz #5 (Exp 8+9)**
				Post-Lab Exp. 9, Pre-Lab Exp. 10
12 (Mar-24)	T	16	Identification of Food Colors in Candies	**Quiz #6 (Exp 10)**
				Post-Lab Exp. 10, Pre-Lab Exp. 16
13 (Mar-31)	T	11	Lewis Dot Structures and Molecular Geometry	Post-Lab Exp. 16, Pre-Lab Exp. 11
14 (Apr -7)	T	**Spring Break -- No Class**		
15 (Apr-14)	T	13	Molar Mass of a Gas	**Quiz #7 (Exp 11)**
				Post-Lab Exp. 11, Pre-Lab Exp. 13
16 (Apr-21)	T	15	Identify Acids, Bases, and Buffers	Post-Lab Exp. 13, Pre-Lab Exp. 15
17 (Apr-28)	T	14	Titration of Vinegar	**Quiz #8 (Exp 13, 15)**
				Post-Lab Exp. 15, Pre-Lab Exp. 14
18 (May-5)	T	*	**Check-out, Final Exam**	Post-Lab Exp. 14