ELEMENTARY CHEMISTRY LABORATORY

Chem V20L | CRN 70267

Instructor Information

Name: Howard Han

E-mail: hhan@vcccd.edu

Office Hours:

T	02:00 pm – 04:00 pm	@ SCI-320
R	10:00 am – 11:20 am	@ SCI-320
R	02:00 pm – 04:00 pm	@ SCI-320

Contact Hours: Monday-Thursday, you can expect me to respond to email within 3 hours. Messages and submissions posted after 11 pm on Thursday may not reach the instructor until Monday of the following week.

Class Meetings

W 4:00 pm - 6:50 pm
@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

Class Information

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.

Course Required Materials

- VC Chemistry Department (2020). CHEM V20L: CHEMISTRY LAB MANUAL. XANEDU. ISBN: 2818440036552
  - Can be also downloaded from Canvas Page
- Small bottle of soap, a reusable towel, goggles (if you don't want to use the classroom set)
- Scanning device (a scanner or mobile device with camera and scanner app)
- Computer (for Canvas)

On Campus resources:

Counseling	MESA	Library	Educational Assistant Center (EAC)	Extended Opportunity Programs and Services (EOPS)	Veteran's Affairs Office

Course Objectives

Upon successful completion of this course, the student will be able to demonstrate the following measurable skills and abilities:

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.

Student Learning Outcomes

By the end of this class, you will be able to:

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.

Core Competencies for the class can be found at:
See http://www.venturacollege.edu/faculty_staff/academic_resources/core_competencies/index.shtml

Course Format: Web-enhanced

This Chemistry course is a web-enhanced class, designed to integrate in-person sessions with advanced digital features. The curriculum is tailored to provide an immersive educational experience, combining the physical classroom environment with comprehensive online resources through Canvas.

Key Features of the Course:

1. **In-Person Classroom Experience:** This course requires regular attendance on campus. Engage in hands-on experiments, face-to-face discussions, and in-person quizzes that are essential for grasping the practical aspects of chemistry.
2. **Web-Enhanced Learning:** Utilizing the college's learning management system, Canvas, this course offers additional resources and support online. Access digital copies of class materials, submit assignments and stay updated with course communications and grades through Canvas.
3. **Communication and Support:** The instructor will maintain regular communication via email and Canvas. Before the semester starts, expect to receive specific instructions about course participation and resources.

Classroom Policy

Attendance:

Due to the nature of a laboratory course requiring your presence 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 covering experiment information and safety considerations are given at the start of each class. Students who are more than 15 minutes late will be sent home and will not be able to complete the lab. This includes missing one day of a multi-day experiment. These experiments are lengthy, and science doesn't always go as planned, often requiring extra trials. Students who leave the lab early will not be able to make up any missed work. Always plan to attend every class meeting for the entire assigned time; all experiments are designed to take the full three hours.

Equipment Policy:

All students are responsible for keeping lab equipment and the lab space clean and in good working condition, as we share the room with many other class sections. Any chemicals, equipment, or lab space not properly cleaned, returned, or handled with care will result in 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 ensure you return all equipment you used to your drawer at the end of every lab period. Any missing or dirty returned 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 inherent dangers of experimentation. For your own safety, come to class prepared with pre-reading done, in 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. This includes chemical spills, fires, electrical issues, fume inhalation, or anything else that looks suspicious, off, dangerous, or otherwise unexpected.

Academic Integrity:

Cheating on or plagiarizing any assignment or examination is a serious breach of the Student Code of Conduct, is strictly prohibited, and will result in a zero for that assignment and a report sent to the Behavioral Intervention Team and Student Services. Cheating includes, but is not limited to, talking and using notes, references, or prohibited electronic devices during exams or quizzes, or any other advantage not available to all students in the class. Plagiarism includes copying homework assignments from online resources, tutors, or other students. Cheating, whether minor or major, is always unacceptable, no matter the circumstances.

Locker Checkout

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.

Grading Policy

Throughout the semester, the grades for all assignments will be posted on Canvas so that the current progress can be tracked by students. The final letter grade will be assigned based on the final point total of each student. Final grades will be considered conclusive and will not be rounded.

Evaluation of Student Performance:

- **Lab Report (**14 total)
    - Prelab: 10 pts
    - Report Sheet: 30 pts
    - Postlab: 10 pts
    - Participation: 10 pts.
- **Quizzes** (14 total)
    - 20 points
- **Final Exam**
    - 200 points.
- **Week 0 Assignments**
    - Get-to-know-you survey: 10 pts
    - Document Scanning Practice Assignment: 10 pts

Grade Scale:

- A: 90%-100%
- B: 80%-89%
- C: 70%-79%
- D: 60%-69%
- F: 59% or lower

Quizzes:

Quizzes will be given during the first 20 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 in the previous experiments' post-lab assignment.

Tentative Schedule

Week	Date	Experiment
1	8/14	Class Introduction Lab Safety Locker Check-in
2	8/21	**Exp 1:** Physical and Chemical Changes
3	8/28	**Exp 2:** Density
4	9/4	**Exp 3:** Energy and Heat Capacity
5	9/11	**Exp 4:** Elements and the Periodic Table
6	9/18	**Exp 5:** Qualitative Analysis of Cations in Solution
7	9/25	**Exp 6:** Determining the Empirical Formulas of Compounds
8	10/2	**Exp 8:** Types of Reactions
9	10/9	**Exp 9:** Double Replacement Reactions
10	10/16	**Exp 10:** Stoichiometry- Gravimetric Analysis
11	10/23	**Exp 11:** Identification of Food Colors in Candies
12	10/30	**Exp 15:** Identifying Acids, Bases and Buffers
13	11/6	**Exp 12:** Lewis Dot Structures and Molecular Geometry
14	11/13	**Exp 14:** Molar Mass of a Gas
15	11/20	**Exp 16:** Titration of Vinegar
16	11/27	Locker Check-out
17	12/4	Lab Final Exam