Syllabus for: CHEM001 – CRN# 10531 – SCC Spring 2025

Welcome to chemistry! This will be difficult and require a lot of time and effort but I'm here to help along the way. If you made it this far, you do belong here and I'm excited for the opportunity to be your professor and looking forward to meeting and working with all of you. Let's have a great semester!

1. Quick Info:

- Lecture – meets in Vallejo room 242 from 9:30 - 10:45 am Mon/Wed starting Mon, Jan 12
- Lab - meets in Vallejo room 211 from 11:00 am - 1:50 pm Mon/Wed starting Mon, Jan 12
- Student Help Hours (see https://www.comstgermain.com/courses):
    - Fairfield:
        - Tue – 8:00-9:30 am room 1525 (MESA), 1:50-3:00 pm room 1525 (MESA)
        - Thu – 1:50-4:00 pm room 1525 (MESA)
    - Vallejo:
        - Mon – 8:00-9:30 am room 242, 1:50-2:30 pm room 211
        - Wed – 8:00-9:30 am room 242, 1:50-2:30 pm VJO SCC Library (until 4:00 after 1st 6 weeks)
    - Online using Discord (various times) and by Zoom by appointment
- Personal questions/issues: email me commodore.st.germain@solano.edu or text/call at (707) 386-9588
- Class questions should be posted on the same Discord (Discord room link in our Canvas shell)
- I usually respond within a couple of hours. If I don't respond after 24 hours please contact me again as I just forgot.
- You will need the class materials on the first day of class (see below)
- This syllabus is only a guideline and adjustments may be made as needed throughout the semester.

2. How to Be Successful:

- Come to every class prepared and on time and actively participate in all lecture and lab activities.
- Complete all assignments and tasks on time (early is better).
- After completing the take-home quizzes the first time, do the take-home quizzes multiple times without notes.

3. Student Learning Outcomes:

As a result of successful completion of this course, a student will be able to:

- Solve problems related to chemical stoichiometry.
- Relate atomic and molecular structure to the periodic table and chemical properties.
- Show proficiency in one or more lab techniques (titration, melting point apparatus, distilling, filtering, etc.).

Additional information can be found at https://solano.elumenapp.com/public/ -> Chemistry -> This Class

4. Class Materials:

- Device(s) and connection that can access and upload documents to Canvas and Discord.
- Calculator – non phone
- Text Book - Chemistry: A Molecular Approach, **6th Edition**, Pearson Publisher, Tro – regular (used or loose leaf are both okay) or eText (link - $9.99/mo). ISBN-13: 9780137832217
- 4 x scantron forms – 882-E compatible
- Lab Manual – Solano College Laboratory Manual for CHEM 001. Free in our Canvas shell.
- Lab Notebook – Bound Composition Notebook - 8.5x11" size would be the easiest for you (can get these for <$5).
- Safety goggles
- Safety gloves
- Lab coat (optional)

5. How the class will be run:

In general, this standard grading scheme will be used to determine the final grade: 90.00-100.00% A; 80.00-89.99% B; 70.00-79.99% C; 60.00-69.99% D (not passing); 59.99% or less F (not passing). I do not round and I do not give out free points because you are expected to earn your grade.

- Lecture is ~1 hour and 15 minutes long and will be a combination of traditional lectures and in-class activities. Here we will discuss concepts, work through practice problems, and have question and answer sessions. You are also encouraged to ask questions about things that you don't understand. You are expected to attend lectures and actively participate in class discussions and activities. I will attempt to record lectures and post links on Canvas but the lecture recordings are not guaranteed. If you miss something it is up to you to make up what you missed.
- Lab is ~3 hours will consist of in-class lab activities, wet experiments, computer simulations, worksheets, and/or group activities. Labs are mandatory and if you miss more than 2 labs, you can be dropped from the class or have your grade lowered. You will not receive full points for the day if you arrive late or leave early. Arriving 10 minutes past the lab start time or leaving 10 minutes before the class end time counts as being late. Two times being late counts as one absence.

Grading:

Grading Scheme	
Grading / Exams	Percent of Final Grade
4 Exams	40.00%
Final	20.00%
Lab Activities	20.00%
Take Home Quizzes	10.00%
In Class Quizzes	5.00%
Mandatory Assignments	1.00%
Optional Assignments	4.00%

Homework/Assignments:

We will cover 1 chapter every 1-2 weeks. For each chapter there will be assignments as follows:

- Key Term definitions (mostly optional) - define the assigned (see below) key terms at the end of the chapter - due the day before we start a chapter.
- Review Questions (mostly optional) - answer the assigned (see below) review questions at the end of the chapter - due ~1 week after we start a chapter.
- Key Concept Videos (mostly optional) - watch the assigned (see below) key concept videos and copy the problem and provide 1-3 sentences on why you chose your answer - due ~1 week after we start a chapter. Videos can be found at: https://media.pearsoncmg.com/ph/esm/esm_tro_chemistry_5/media/index.html.
- Miscellaneous Activities (mostly mandatory) – activities/assignments to help you learn chemistry, Canvas, or other concepts.

Lab Activities:

Labs will be mostly from the lab manual (see Class Materials) but there will be other provided lab activities. Lab grades will be from the successful completion of in-class lab activities, using safe lab practices, accuracy of lab results, and keeping a complete, legible, and accurate lab notebook.

Quizzes:

There will be 4 take-home quizzes throughout the semester (25 points each). You will do the problems and submit pictures of your work through canvas. All work must be shown. Quizzes 1, 2, and 3 are usually due a few days before the

exams (see due date calendar on Canvas). It is strongly recommended to do the quizzes 2-3 times to make sure you understand the material well enough to be successful on the exams. There will also be in class quizzes at the beginning of the lecture that will be on problems from the previous lecture. There may also be 2 additional SLO in-class quizzes that are timed (5 points each). I will give you advanced notice if we are having these 2 additional SLO in-class quizzes.

Exams:

There will be 1 exam for each section. The first 3 exams will be taken during normal lecture/lab time and are multiple choice and will have a time limit of ~1.5 hours unless you have arranged additional time through ASC. It will consist of ~10 true/false questions, ~10 short multiple choice questions, and ~10 long/work/draw multiple choice problems. You are required to show all of your work and your work must submitted at the end of the exam. The last exam will be 45 minutes long, will be about half the amount of questions and consists of short multiple choice questions, and work/draw multiple choice problems. Most of the exam questions will be on the in-class questions, take-home quiz questions, assignments, or very similar. On some tests you may be able to use some notes but you will not have enough time to complete the test if you do not readily know the material. We will discuss details in class together. There are no make-up exams. If you miss an exam AND you have a confirmed medical excuse, your missed exam grade can be determined by your next exam grade. This replacement policy applies only to missing one exam.

Final:

There will be 1 cumulative final that covers sections #1-4 (mostly exams 1-3) in the same format as the midterms.

6. Who I am:

My name is Commodore St. Germain (he/him). I did the bay area community college circuit as a student (NVC, SCC, DVC, Chabot, Merritt), earned my BS biochemistry/BA chemistry from SFSU 2014, and my PhD in Biochemistry, Molecular, Cellular, and Developmental Biology from UC Davis in 2020. I've been teaching since 2019 (chemistry, biology, and biotechnology). I spend a lot of my time: with my family/friends/dogs, exercising, watching true crime shows/anime, and talking (dreaming) about food. See more at https://www.comstgermain.com.

7. Resources:

- If you are having problems, please email me or come to my office hours as soon as possible.
- Admissions and Records important dates: https://welcome.solano.edu/ar-dates/
- Distance Education Resources: http://www.solano.edu/online_classes/
- Canvas Help Desk: Click on the "Help?" question mark in the lower left corner of your Canvas screen for current help desk hours, phone numbers, and Canvas tutorials. (Links to an external site: https://community.canvaslms.com/t5/Student-Guide/tkb-p/student) is a great resource for how-to information and tutorials.
- Student Services: http://www.solano.edu/online_student_services/
- Library: https://libguides.solano.edu/libraryresources
- Financial Aid: http://www.solano.edu/financial_aid/
- Discrimination and Sexual Harassment: http://www.solano.edu/student_service/grievances.php
- Tutoring: If you want tutoring and/or suspect you will need tutoring contact Solano College Academic Success and Tutoring Center as soon as possible - http://www.solano.edu/academic_success_center/. Sign up here: https://solano.instructure.com/enroll/EKEA7Y
- If you have a disability or think you have a disability please contact Solano College Accessibility Services Program as soon as possible so they can help acquire resources for you - https://welcome.solano.edu/asc/

8. Plagiarism/Cheating:

From the SCC Student Handbook:

"An instructor who determines that a student has cheated or plagiarized has the right to give a failing (i.e. "F") grade, or numerical equivalent, for the assignment or examination. Instances of alleged plagiarism or any other form of academic dishonesty may be referred to the Chief Student Services Officer for action in accordance with the established disciplinary procedures as set forth in Solano Community College Board Policy, §5300. Following procedures consonant with due process, a student may be expelled, suspended, or given a lesser sanction if he or she is found to have committed an act of academic dishonesty. The totality of the particular circumstances, the student involved, and any relevant mitigating factors shall be considered in every case."

9. Attendance and Participation:

From the SCC Student Handbook:

"Students must attend the first meeting of their classes to assure verification of their enrollments. Students failing to appear may be dropped from class rolls [Board Policy 5020]. Regular attendance and participation is required of all students enrolled in courses and laboratories at Solano College. This includes regular attendance, completion of examinations, assignments, participation in class activities and discussions. Instructors shall provide students with written statements describing course requirements, grading standards and course prerequisites. Regular attendance is an obligation assumed by every student at the time of registration. Absences per semester should not exceed the number of hours or the number of days that a class meets per week. Absences in excess of the maximum may result in students being dropped from classes or having their grades lowered."

All lab periods are mandatory unless your instructor tells you otherwise. You are allowed to miss two labs but you will not receive points for the labs you missed. Every missed lab after that, your total and final class grade will be lowered by one letter grade.

10. Sick Policy:

If you are sick, stay home! Let me know as soon as possible and we may be able to find you alternative assignments for the time that you are sick. Follow SCC guidelines found here: https://welcome.solano.edu/coronavirus/.

11. Workload:

Be prepared for about 15 hours of work per week in this course to pass. Additional effort may be needed to get higher than average grades. A three unit "lecture" course, by virtue of what is known as the Carnegie Unit, mathematically establishes a standard the amount of work expected from a student (and the instructor) in a 18-week course. California state law upholds this, see California Code of Regulations, Education Code, Title 5, Section 55002.5.

12. Homework/Assignment List (optional after chapter 2):

Reading and Homework for Exam 1

Chapter	Reading Sections	Key Concept Videos	Key Terms	Review Questions
2 (Atoms and Elements)	2.6-2.9	all	2.5-2.9	13-28
9 (Periodic Properties of the Elements)	9.5-9.9, skip magnetic properties for now	Period Trends and Effective Nuclear Charge	9.1, 9.4-9.8	24-38
10 (Chemical Bonding I: The Lewis Model)	10.2-10.4, 10.6, 10.10-10.11, skip electron configurations for now	The Lewis model for Chemical Bonding, Electronegativity and Bond Polarity	10.1-10.10	1-4, 9-14, 19-23, 31-34

11 (Chemical Bonding II: Molecular Shapes and Polarity)	11.2-11.3, 11.5, only go up to tetrahedral/4 electron groups for now	VSEPR Theory, VSEPR Theory: The Effect of Lone Pairs, Molecular Shape and Polarity	11.2-11.3	1-5b, 6-7
12 (Liquids, Solids, and Intermolecular Forces)	all	all	all	all

Reading and Homework for Exam 2

Chapter	Reading Sections	Key Concept Videos	Key Terms	Review Questions
14 (Solutions)	all	all	all	all
3 (Molecules and Compounds)	all	all	all	all
4 (Chemical Reactions and Chemical Quantities)	all	all	all	all
5 (Intro to Solutions and Aqueous Reactions)	all	all	all	all

Reading and Homework for Exam 3

Chapter	Reading Sections	Key Concept Videos	Key Terms	Review Questions
6 (Gases)	all	all	all	all
7 (Thermochemistry)	all	all	all	all
16 (Chemical Equilibrium)	all	all	all	all

Videos can be found at: https://media.pearsoncmg.com/ph/esm/esm_tro_chemistry_5/media/index.html

13. Schedule:

This is the tentative schedule and may (probably will) change. The most up-to-date schedule will be on Canvas:

Day/Date	Wk	Lecture (chapter) (9:30-10:45 am room VJO 242) - 31 days	Lab (11:00-1:50 pm room VJO 211) - 31 days
Mon, Jan 12, 2026	1	Atoms and Elements (2)	Canvas orientation, Safety, schedule, weights, volumes, equipment, scales, glasses, etc
Wed, Jan 14, 2026	1	Atoms/Elements (2) / Periodic Properties (9)	lecture continued, talk, lab notebook
Mon, Jan 19, 2026	2	no class	no class
Wed, Jan 21, 2026	2	Chemical Bonding I: The Lewis Model (10)	Dry Lab II: Practice with Nomenclature; video recording
Mon, Jan 26, 2026	3	Chemical Bonding II: Molecular Shapes and Polarity (11)	Graphing Assignment and Intro to Python

Wed, Jan 28, 2026	3	Liquids, Solids, and Intermolecular Forces (12); Start Periodic Table Assignment	Dry Lab V: Molecular Structures and Theories
Mon, Feb 2, 2026	4	Liquids, Solids, and Intermolecular Forces (12)	Experiment 2: Separation of Components in a Mixture
Wed, Feb 4, 2026	4	Liquids, Solids, and Intermolecular Forces (12)	Dry Lab IV: Atomic Emission Spectra
Mon, Feb 9, 2026	5	Quantum Chem 1	Review
Wed, Feb 11, 2026	5	Review	Midterm 1
Mon, Feb 16, 2026	6	no class	no class
Wed, Feb 18, 2026	6	Solutions (14)	Experiment 16: Freezing Point Depression
Mon, Feb 23, 2026	7	Solutions (14)	Exam Review / Periodic Table (electron configurations)
Wed, Feb 25, 2026	7	Solutions (14)	Experiment 4: Formula of a Hydrate
Mon, Mar 2, 2026	8	Molecules and Compounds (3)	Experiment 5: Chemistry of Magnesium and Empirical Formula
Wed, Mar 4, 2026	8	Molecules and Compounds (3)	Class Data?; Oxidation Numbers, Ox Numbers Lecture
Mon, Mar 9, 2026	9	Chemical Reactions and Chemical Quantities (4)	Quantum Chem 2; Quiz #2 examples
Wed, Mar 11, 2026	9	no class	no class
Mon, Mar 16, 2026	10	Chem Rxns and Quant (4) / Aqueous Reactions (5)	Experiment 3: Chemical Properties of Substances
Wed, Mar 18, 2026	10	Aqueous Reactions (5), conversion sheet	Experiment 7: Volumetric Analysis - Titrations of Acids and Bases
Mon, Mar 23, 2026	11	Quantum Chem 3	Review
Wed, Mar 25, 2026	11	Review	Midterm 2
Mon, Mar 30, 2026	12	no class	no class
Wed, Apr 1, 2026	12	no class	no class
Mon, Apr 6, 2026	13	Gases (6)	Experiment 8: Volumetric Analysis - Antacids Analysis

Wed, Apr 8, 2026	13	Gases (6)	Continue Lecture, Midterm 2 Review, talk
Mon, Apr 13, 2026	14	Thermochemistry (7)	Experiment 11: Ideal Gas Law
Wed, Apr 15, 2026	14	Thermochemistry (7)	Experiment 13: Thermochemistry
Mon, Apr 20, 2026	15	Thermochemistry (7) / Equilibrium (16)	Lab Help/Quantum Review
Wed, Apr 22, 2026	15	Equilibrium (16)	Equilibrium Tutorial and Worksheet (due next week) - see due date calendar for PDF materials
Mon, Apr 27, 2026	16	Equilibrium (16)	Experiment 18: Le Chatlier's Principle
Wed, Apr 29, 2026	16	Quantum Chem 4	Review
Mon, May 4, 2026	17	Review	Midterm 3
Wed, May 6, 2026	17	Quantum Chem 5	Review (recording in lecture)
Mon, May 11, 2026	18	Midterm 4 (all quantum things)	Experiment 7: Volumetric Analysis - Titrations of Acids and Bases, Graded Accuracy, notebook check
Wed, May 13, 2026	18	Review	SLO Assessment and Review
Mon, May 18, 2026	19	Final 8:00-10:00am?? (probably 9:30-11:30)	No Class
Wed, May 20, 2026	19	Final 8:00-10:00am??	No Class