

**CHM 1045C Course Syllabus**  
**General Chemistry with Qualitative Analysis I**  
**Fall Session 2024**  
**CRN 13188 (4 Credit Hours)**

Instructor: [Patrick Fowler](#)

Email: All email contact involving personal or grade information must be through your [Canvas](#) Inbox or through your [Atlas email account](#).

Office Hours: The east campus science department can be contacted by email at [easciencedept@valenciacollege.edu](mailto:easciencedept@valenciacollege.edu) and by phone at 407-582-2311

Web Pages: All of the necessary class notes, homework, lab handouts, exam review sheets, and supplemental links for this class are in both [Course Materials](#) and [Canvas](#).

### **Prerequisites**

The chemistry requirement must be met with a minimum grade of C in either CHM 1025C (**strongly** recommended) or one year of high school chemistry.

The math requirement must be met with a minimum grade of C in either MAC 1105 or honors high school algebra II.

### **Course Description**

This course is the first of two courses designed to provide the student with an understanding of the fundamental concepts of chemistry. This course is a study of the basic principles of chemistry, including chemical reactivity, atomic structure, chemical bonding, molecular geometry, periodicity, stoichiometry, and kinetic-molecular treatment of gases. Laboratory illustrates principles discussed in classroom.

## Student Learning Outcomes

The basic learning outcome for this general chemistry course will be to develop an ability to solve basic quantitative problems involving chemistry, so that you can apply this knowledge to general scientific problems in various fields of science, medicine, and engineering.

Specifically, the student should learn how to qualitatively and quantitatively describe:

1. calculations involving physical measurements
2. basic chemical nomenclature and chemical formulas
3. chemical equations and stoichiometry
4. types of chemical reactions
5. behavior of gases
6. heats of chemical reactions
7. atomic structure and quantum theory
8. electron configurations and the periodic table
9. ionic and covalent bonding
10. molecular geometry

Also, upon completion of the laboratory portion, the student should be able to:

1. perform fundamental chemical laboratory techniques
2. make and record relevant experimental observations
3. qualitatively and quantitatively interpret the results

## Required Texts

[Chemistry 2e from openstax.org](https://openstax.org/books/chemistry-2e)

The digital version (ISBN-13: 978-1-947172-61-6) can be viewed for free online, as a phone app, or as a pdf download. Hardcover (978-1-947172-62-3) and paperback (978-1-59399-578-2) versions are available by purchase through [Amazon](https://www.amazon.com).

Laboratory Manual for Principles of General Chemistry – CHM 1045

J. A. Beran, ISBN 9781394236015

Paperback and digital versions of the full, unabridged 10<sup>th</sup> edition lab manual are also acceptable.

## Other Materials

Graph paper or graphing software is required for most lab experiments.

A scientific calculator is required at every classroom and laboratory session, as examples are worked through during regular classes, and labs generally require calculations as well.

## Evaluation

Four one-hour exams will be given online.

The tests will be on paper, open-note, open-book, and submitted in Canvas.

A homework assignment will be given for each of the ten chapters covered.

There will be ten laboratory experiments, each worth 20 points.

Except for the dry lab, the grade for each lab will include the pre-lab exercise (5 pts) and the post-lab exercise (15 pts).

There is also a two-part [college success skills assignment](#) (20 pts and 5 pts).

Your grade will be calculated based upon points earned:

4 One-Hour Exams at 100 points each	400
10 Lab Reports at 20 points each	200
1 Success Skills Assignment	25
10 Home Works at 10 points each	100
<b>Total Points</b>	<b>725</b>

Passing grades are assigned according to the percentage of total points:

A > 90%, B > 80%, C > 70%, D > 60%

A curve to the grading system is not normally needed or given. Do not expect a higher grade if your performance is less than indicated for that grade. No assignment grades are dropped and every assignment grade is included in your total. Extra credit is not offered.

## Lab Reports

Except for dry labs, which are also worth 20 points total, each lab experiment will have a pre-lab, worth 5 points, and a lab report sheet, worth 15 points. The report sheet will normally include five lab questions, worth 1 point each. The answers to the questions need to be in original, well-reasoned, complete sentences, and submitted on a separate sheet of paper.

**The pre-lab will be due at the beginning of the experiment, while the report sheet or dry lab will be due one week after the experiment. Calculations for all numerical results must always be included and must be attached on a separate sheet of paper. No pre-lab or report sheet will ever be accepted for any credit if the calculation sheet is not included. Submit all lab assignments together with your partner(s) and always include all names.**

## Homework

A homework exercise, worth 10 points, is assigned for every chapter. **Homework assignments are due one week after the respective chapter lecture has been completed.** Also, each student is expected to read the chapters in the notes and/or text and to work through examples and exercises in the text sufficiently enough to understand the material. Preparation for classes and exams is essential in order to perform well in this class.

**Calculations for all numerical results must always be shown with all applicable equations, units, conversion factors, and significant figures included correctly. No lab or homework assignment will ever be accepted for any credit if the calculations are not complete.**

## Make-Up Policy

You and your lab partners are each still **responsible** for the pre-lab and post-lab exercises even if there is an absence. This means that the partners that are present will have to obtain the data in the lab, so that all partners can still work on the post-lab exercise together. Even if your lab partner drops the class or stops attending labs, you are still responsible for all of the assignments.

Late lab reports and homework assignments will **only** be accepted at the instructor's discretion. No lab report will be accepted **more than one week past its due date.** No homework assignment will be accepted **after the exam covering its respective chapter.**

## Attendance Policy

Participation in every assignment and every lab is mandatory. It is your responsibility. If you are not going to participate for a full week, then you must communicate with your professor to determine if a successful completion is still possible.

## Withdrawal Policy

Per Valencia Policy 4-07 (Academic Progress, Course Attendance and Grades, and Withdrawals), a student that withdraws from class before the established deadline for a particular term will receive a grade of "W." A student is not permitted to withdraw after the withdrawal deadline. The instructor will not withdraw any student because faculty-initiated withdrawal can have negative effects on the student's financial aid and immigration status, as well as because the student would then no longer be allowed to attend the class. Any student who withdraws from a class during a third or subsequent attempt in the same course will be assigned a grade of "F." Please refer to the [Valencia College Attendance Policy](#) for further information.

## **Laboratory Safety Information**

The safety of you and your fellow students in the laboratory is critical, and you are required to follow the lab safety rules at all times in the lab. You need to be aware of your situation, your surroundings, and your fellow students at all times as well. Students must submit a signed Laboratory Safety Rules and Agreement prior to participating in any laboratory activities. The form is available in Canvas, and only the signature section needs to be submitted.

## **Academic Honesty**

Copying someone else's work always results in you repeating the source's mistakes and never results in real learning or increased problem-solving skills for you. Therefore, the policy in this class is that everything submitted must be your individual or lab group's work. Study groups are acceptable and encouraged, working with lab partners is necessary, but do not cheat, copy, or obtain answers that are not your own on any exam, quiz, assignment, or lab report. Copying anyone else's work is unacceptable and will not be tolerated.

Plagiarism is also prohibited. Plagiarism is defined as claiming as your own a paper, report, article, or speech which in whole or in part was prepared by someone other than yourself. Cheating on an exam or copying someone else's laboratory report is also a violation of this policy.

A violation of this policy can result in failure of an assignment, the entire course, or your current status as an active student. The instructor can and will give you an F for the class if flagrant cheating is clearly evident. Each student is expected to be informed and compliant with the [college policy on academic dishonesty](#).

## **Inclusion and Accessibility Statement**

Valencia College and I are committed to supporting a very diverse body of students, including those with disabilities. If you have or believe that you may have a disability, you are encouraged to contact the [Office for Students with Disabilities](#) (OSD) as soon as possible and learn about the support that is available to you. Students with disabilities who qualify for academic accommodations must provide the instructor with a letter (NTI) from OSD and discuss their specific needs with the instructor, preferably during the first two weeks of class. OSD determines those accommodations based on appropriate documentation of disabilities.

All students are encouraged to make use of [general tutoring](#) and [online tutoring](#) at Valencia College. Also, if you feel that you would be better served by an alternative delivery mode or means of assessment for course content, please contact the instructor to voice your concerns, as I strive to create a learning environment that is inclusive of as many different types of learners as possible.

## **Student Assistance Program**

Valencia College wants all our students have a rewarding and successful college experience. To that purpose, Valencia students can get immediate help with issues dealing with stress, anxiety, depression, adjustment difficulties, substance abuse, time management as well as relationship problems dealing with school, home or work. [BayCare](#) Behavioral Health Student Assistance Program (SAP) services are free to all Valencia students and available 24 hours a day by calling (800) 878-5470. Free face-to-face counseling is also available.

Any student who has difficulty accessing sufficient food to eat, or who lacks a safe and stable place to live, and believes this may affect his or her performance in the course, is urged to meet with a Counselor in the [Advising Center](#) for information about resources that may be available from the college or community.

## **Valencia Core Competencies addressed in this course**

Valencia faculty has defined four interrelated competencies (Think, Value, Communicate, and Act) that prepare students to succeed in the world community. These competencies are outlined in the college catalog. In this course, through lecture and discussion, group work, and other learning activities, you will further develop your mastery of those competencies.

- 1) Think critically and make reasoned choices by acquiring, analyzing, synthesizing, and evaluating knowledge.
- 2) Make reasoned value judgments and responsible commitments.
- 3) Communicate by reading, listening, writing, and speaking effectively.
- 4) Act purposefully, reflectively, and responsibly by understanding and using both quantitative and qualitative information.

## **Expected Student Conduct**

Valencia College is dedicated not only to the advancement of knowledge and learning but is concerned with the development of responsible personal and social conduct. By enrolling at Valencia College, a student assumes the responsibility for becoming familiar with and abiding the [Student Code of Conduct](#). The primary responsibility for managing the classroom environment rests with the faculty. Students who engage in any prohibited or unlawful acts that result in disruption of a class may be directed by the faculty to leave the class. Violation of any classroom or Valencia's rules may lead to disciplinary action up to and including expulsion from Valencia. Disciplinary action could include being withdrawn from class, disciplinary warning, probation, suspension, expulsion, or other appropriate and authorized actions.

## **Recording Device Policy**

Valencia College and I are committed to giving you as many opportunities and resources to support your learning as possible. Therefore, you may record class lectures to review later. However, you do not have your peers' permission to record them, and they have a right to privacy. Therefore, your peers should not be in your recordings. You may not record class discussions, student presentations, labs, group work, and private conversations. Also, recordings are permitted for your own personal use only, and you would need to contact me first if you need any sharing options. Finally, these recordings are useful for review, but they are not substitutes for class participation and attendance. You still need to attend every class session. If you have any concerns or questions, please feel free to contact me.

## **Grievance Procedure**

Being proactive in your education is more crucial than anything else. Please speak with your instructor when you have significant academic concerns. If you feel a reasonable resolution cannot be achieved by discussion with your instructor, then you may submit a [grievance report](#). Once the report is filed, the dean will reach out to schedule an appointment with you to discuss the issues.

## **Deadlines**

The refund deadline is 11:59 P.M. on **August 26, 2024**.

The withdrawal (W) deadline is 11:59 P.M. on **October 25, 2024**.

## **Disclaimer**

Changes in the syllabus and/or schedule may be made at any time during the semester by announcement of the instructor. A revised syllabus may be issued if necessary.

The grading policy and any elements fixed by the college policies, however, will not be changed.

## Course Schedule

<b>Date</b>	<b>Classroom Session</b>	<b>Laboratory Session</b>
August 19	Chapter 1 Chemistry and Measurement	
August 21	Chapter 1 (continued)	Lab Orientation
August 26	Chapter 1 (continued)	
August 28	Chapter 2 Atoms, Molecules, and Ions	Experiment 1: Basic Laboratory Operations
September 2	No Class or Lab	Labor Day
September 4	Chapter 2 (continued)	Dry Lab: Inorganic Nomenclature
September 9	Chapter 3 Chemical Formulas and Equations	
September 11	Chapter 3 (continued)	Experiment 5: Percent Water (and Formula) of a Hydrate
September 16	Chapter 3 (continued) Exam 1 (Chapters 1 - 3)	
September 18	Chapter 4 Chemical Reactions	Experiment 2: Identification of a Compound (Chemical Properties)
September 23	Chapter 4 (continued)	
September 25	Chapter 4 (continued)	No Lab Scheduled
September 30	Chapter 5 Gases	
October 2	Chapter 5 (continued)	Experiment 8: Limiting Reactant
October 7	Chapter 5 (continued) Exam 2 (Chapters 4 - 5)	
October 9	Chapter 6 Thermochemistry	Experiment 9: Volumetric Analysis



### Course Schedule (continued)

<b>Date</b>	<b>Classroom Session</b>	<b>Laboratory Session</b>
October 14	Chapter 6 (continued)	
October 16	Chapter 6 (continued)	Experiment 10: Vinegar Analysis
October 21	Chapter 7 Quantum Theory	
October 23	Chapter 7 (continued) Exam 3 (Chapters 6 - 7)	Experiment 13: Calcium Carbonate / Carbon Dioxide
October 28	Chapter 8 Electronic Configurations and Periodicity	
October 30	Chapter 8 (continued)	No Lab Scheduled
November 4	Chapter 8 (continued)	
November 6	Chapter 9 Ionic and Covalent Bonding	Experiment 25: Calorimetry
November 11	No Class or Lab	Veteran's Day
November 13	Chapter 9 (continued)	No Lab Scheduled
November 18	Chapter 9 (continued)	
November 20	Sections 10.1 – 10.4 Molecular Geometry	No Lab Scheduled
November 25	Chapter 10 (continued)	
November 27	No Class or Lab	Thanksgiving
December 2	Chapter 10 (continued)	
December 4	Exam 4 (Ch 8 - 10)	Dry Lab: Molecular Geometry