



Chem&139 Section 01 (item #1840), Spring Quarter '18 SYLLABUS:

8:30–9:55 AM M, W, F in CC2-360.

Unless pre-approved, you are required to attend the class / section that you are registered for.

Description:

This course is designed for students who need to enroll in the general chemistry sequence who have little or no prior experience in chemistry. Students will learn the symbolism and language of chemistry, quantitative relationships that are practiced in general chemistry, and techniques of quantitative and collaborative problem solving. Satisfies the chemistry prerequisite for CHEM&161. Although laboratory concepts are introduced, this course does not satisfy a laboratory science requirement. Note: This course is intended for students planning to enroll in the CHEM&161, CHEM&162, CHEM&163 sequence.

Prerequisites:

Completion of MATH 095 with a grade of 2.0 or better.

Instructor:

Dr. David Reichgott (CC2-389)

Office Phone/Voice Mail 425-352-8165

email: dreichgott@cascadia.edu

Office Hours: M, F 7:45 – 8:30 am; Tu, W, Th 2:30 – 3:20 pm (W may be in CC1-330).

Appointments and “drop-ins” are welcome; stop in any time my door is open.

[Cascadia Faculty Web page](http://faculty.cascadia.edu/dreichgott/): (<http://faculty.cascadia.edu/dreichgott/> which contains link to CHEM&139 web page). This optional page is intended for persons not enrolled in our course. It will contain all course information and assignments.

Textbook:

Mark S. Cracolice, “Introductory Chemistry: An Active Learning Approach,” 6th ed., Cengage Learning, ISBN13: 9781305079250, as hard-copy text or as eBook. On-line homework or other web-based features are not required.

Also Required:

A calculator that is not a telephone.

Access to Canvas.

Canvas (REQUIRED):

Course documents, including Unit Outcomes, daily Power Point slides, assignments and the laboratory manual are available on Canvas; content is located under “Files.” When printing Power Point content be sure to select “Print What ...Handouts...6 per page”. Please also see expectations for appropriate use under “Course Websites”, below.

In case of college closure or instructor’s absence:

In the event of a campus closure, please log into [CANVAS](http://cascadia.instructure.com) at <http://cascadia.instructure.com> for announcements and instructions. On each “out” day a set of instructions, including options for lab and document delivery, will be posted under Files, in a document titled “Instructions for (date)”. All assignments that must be turned in must be done in Microsoft Word (or .txt) format or scanned to a png or pdf format, and delivered by email to dreichgott@cascadia.edu. Photographic or low-quality scans may not be accepted. All aspects of academic honesty must be followed (see below). CANVAS instructions, including technical support information, are available on [Cascadia’s elearning page](#).

Reserve Items, available at Library (optional):

Our text: “Introductory Chemistry,” M. S. Cracolice & E. I. Peters;

Course content, topics and themes:

Chapters 1 through 3, 5 through 13, and 16 of Cracolice, including:

- Elements, compounds, and nomenclature
- Development and use of the periodic table
- Measurement and uncertainty
- Proportional functions and conversion factors
- Linear functions and graphical analysis
- Ionic and covalent bonding
- The shapes and polarity of molecules
- The mole and Avogadro's number
- Reactions
- Stoichiometry
- Solutions and dilution

Two laboratory sessions illustrating selected topics from the above.

Outcomes:

Daily outcomes are also listed in each "Unit Syllabus". At the end of this course you should be able to:

Learn Actively

- Learn and use the language of chemistry, including symbols, formulas and equations
- Derive and use fundamental information from the periodic table
- Describe the organization of atoms into molecules and factors determining this organization
- Use quantitative measurements, their units, and their results to solve problems
- Gain proficiency in using scientific notation, significant figures, and conversion factors
- Use the connection between numbers and masses of chemical substances to solve problems
- Learn the relationships among electrons, bonding, molecular geometry, and polarity
- Use the properties and concentrations of solutions to solve problems of chemical reactions.
- Deepen conceptual understanding of chemical concepts through group discussion and problem solving

Think Critically, Creatively, and Reflectively

- Develop strategies to approach and solve problems using dimensional analysis
- Use co-workers approaches to problem solving to enhance your own skills
- Use measurement-based uncertainties to evaluate meaningfulness of answers
- Construct and interpret scientific graphs with functions and with data

Communicate with Clarity and Originality

- Communicate chemical concepts through peer interaction
- Use the language of Chemistry to communicate chemical concepts with other scientifically trained individuals
- Use graphs for communication of scientific information
- Communicate a problem-solving strategy to an audience of peers

Interact in Diverse and Complex Environments

- Work with peers to solve problems drawing on multiple approaches
- Gain confidence in use and interpretation of data
- Understand the ethical boundaries between collaboration and scientific integrity
- In all group work, listen and contribute with respect and honesty

Assignments:

A "Unit Syllabus" for each of four units will be distributed with daily outcomes, reading, "prepared problems", graded homework assignments and due dates. Late assignments will be accepted, less 10 % if within 24 hours, less 20 % until the assignment is returned to the class. Assignments are expected to be submitted in person. If this is impossible, any assignment transmitted electronically must be in .doc, .docx, .pdf, .jpg or .png file format, and of a file size that does not inhibit transmission. Having a document rejected by an email system does not relieve you of the need to submit it on time. If scanned, the readability of the document is the responsibility of the sender.

"Prepared problems" are to be prepared in writing before each class except as noted in the Unit Syllabus. They are reviewed by peer groups, and scored for completeness at the start of class only. You are encouraged to compare solutions, and question each other on unclear areas. I will collect one group's problems at random each class to give me feedback, check scoring and revise if warranted. You must be present to receive credit; there are no makeups.

There are also three required, in-class, graded Group Sheets and daily ungraded worksheets.

Group presentation of assigned content. A 25% (5 pt.) deduction will be made if participation is not complete.

Exams:

Three exams during class. The examinations are cumulative to the extent that concepts and skills introduced in earlier units are applied in later units. There is no comprehensive final exam.

Exams can be made up only for unusual circumstances and **only** if I am notified in advance.

Laboratory Exercises:

While Chemistry 139 is not a laboratory course, one of its specific purposes is to prepare you for Chemistry 161 lab. There will be two lab sessions during normal class hours on 4/9 and 5/7/18 in lab CC1-331. Laboratory report due dates will be printed in each unit syllabus. Labs cannot be made up. Copies of experiments will be available on Canvas. A laboratory notebook is not required. A safety protocol must be read and an affirmation signed; safety goggles will be provided for you and must be worn at all times in the laboratory.

Class-time focus and student responsibility:

This course is heavy with content, and it is elected by students with diverse future pathways, some of which require all the content to be covered. Our class-time will be focused on those areas that are best learned through collaborative activities, or are those where instructor support is most needed. For us to be successful, there is a need for you to be responsible for your own learning of content not covered in class, and to use the study skills of an independent learner. The "Unit Syllabus" is one of the ways to support you in your efforts.

Cascadia's expectations for classroom behavior conform to the Washington Administrative Code (WAC). These may be found in the [Student Handbook](#). Cell phones and other communication devices are not to be used in the classroom or laboratory.

Study technique recommendations:

- Check the outcomes on the Unit Syllabus for the class ahead of time.
- Skim the text sections before class, learning bold-face vocabulary terms.
- Read the assigned text sections as soon as possible after class.
- Compare the outcomes to your class notes, taking care to review material not covered in class.
- Complete the in-chapter Exercises, selected chapter-end exercises and the assigned Prepared Problems.
- Learn actively by explaining concepts and relationships to someone else.
- Learn collaboratively by solving recommended exercises in a study group.
- Review Worksheets, their answers from Canvas, and key concepts from lab.

Grading:

Prepared Problems	16 at 2 points each	32 points
Hour Exams	55, 50, 45 points	150 points
Group Sheets	10, 10, 8 points	28 points
Laboratory exercises	2 at 20 points each	40 points
Graded Homework	3 at 10 points each	30 points
Presentation		20 points
Total		300 points

Grades are assigned in proportion to your percent score (you do not compete with each other):

4.0:	90%-100%
3.5 - 3.9:	85%-89%
3.0 - 3.4:	80%-84%
2.5 - 2.9:	75% -79%
2.0 - 2.4:	65% - 74%
1.0 - 1.9:	55%-64%
0.0:	Below 55%

Other grades (I, N, P/NC, V, W) may be assigned in compliance with the College academic policies, which can be found at the Cascadia web site [Academic Policies](#).

Policy on Incomplete (I) and Withdrawal (W) grades:

An Incomplete, as described in the College Catalog, is arranged for ahead of time with the instructor through an Incomplete Contract, and only in the case where the majority of the instruction has been completed. I will interpret this as having missed no more than three class sessions and one laboratory (unless a makeup is possible). A grade will be assigned when the contract is completed. A Withdrawal may be made without instructor approval through May 7th; after that date an application and approval must be made through Student Services – Kodiak Corner.

Credit, Transfer, and Advising Issues

Chem 139 satisfies five Cascadia Physical Science credits, but does not qualify as a laboratory science.

It satisfies the Chemistry prerequisite for Chem 161. The University of Washington accepts Chem 139 credits. Three credits transfer as UW Chem 110 and two credits transfer as “Chem 1xx” Natural World credits.

Chem 139 is intended for students continuing to the Chem&161-162-163 series who have not had high school Chemistry, or who have had high school Chemistry several years ago and feel in need of a refresher. (Note that Chem&161 also has a Math&141 prerequisite.) Chem&139 is a preparatory course and not a comprehensive Chemistry course. It is not intended for students in a pre-Nursing curriculum.

Students in Engineering disciplines will need one, two, or all three of the Chem&161-162-163 series, and it is essential to understand the different requirements of different transfer schools and their specialties.

Cascadia College Syllabus Learning Agreement

Pluralism and Diversity

Cascadia believes in pluralism, an intentional culture where everyone's history contributes to the collective success of our community. Cascadia is committed to creating a supportive environment for a diverse student, faculty, and staff population. Individual differences are celebrated in a pluralistic community of learners. Cascadia does not discriminate on the basis of race, color, religion, gender and/or sex, sexual orientation, national origin, citizenship status, age, marital or veteran status, or the presence of any sensory, mental or physical disability, or genetic information, and is prohibited from discrimination in such a manner by college policy and state and federal law. The following office has been designated to handle inquiries regarding non-discrimination policies and can direct inquiries to the appropriate office for ADA-related requests: Director of Human Resources, Office CC2-280, 425-352-8880.

Title IX

Title IX of the Education Amendments of 1972 prohibits discrimination on the basis of sex in education programs or activities that receive Federal financial assistance. In compliance with Title IX, Cascadia is committed to providing an educational environment free from sexual harassment, including acts of sexual violence or sexual assault. The College is equally committed to ensuring that those who raise complaints or participate in the investigation and resolution of complaints are free from retaliation. To raise a complaint or voice a concern with Cascadia's compliance with Title IX, contact Martin Logan, Executive Director of Human Resources, at mlogan@cascadia.edu or 425-352-8262.

Academic Honesty

The College regards acts of academic dishonesty, including such activities as plagiarism, cheating and/or violations of integrity in information technology, as very serious offenses. In the event that cheating, plagiarism or other forms of academic dishonesty are discovered, each incident will be handled as deemed appropriate. Care will be taken that students' rights are not violated and that disciplinary procedures are instituted only in cases where documentation or other evidence of the offense(s) exists. A description of all such incidents shall be forwarded to the Student Conduct Officer, where a file of such occurrences is maintained. The Student Conduct Officer may institute action against a student according to the college's disciplinary policies and procedures. [Click here to see the policies and procedures in the Student Handbook.](#) *In this class, any work found to involve academic dishonesty will be given a grade of 0.* Guidelines specific to this course: The following are situations where I expect you to get help, share ideas, and work cooperatively:

1. Group sheets and worksheets.
2. Prepared Problems and graded homework when you are stuck (but please see below).
3. Preparing for lab (except what you actually write on your pre-laboratory assignment).
4. All aspects of in-laboratory activities.
5. Working-up laboratory data for your report and brainstorming ideas about report questions.

The following are examples of situations where I expect that your work will be **entirely** your own:

1. All aspects of examinations.
2. All written aspects of graded homework assignments.
3. All written aspects of pre-laboratory assignments.
4. All written aspects of laboratory reports.

The key distinction is *when you write something down*, it represents your own communication of your understanding. It is inappropriate to copy anyone's work or provide your answers to others, except where you are sharing data.

Student Rights and Responsibilities

Cascadia is a student-centered college, operated to provide knowledge and skills for the achievement of learners' academic, professional and personal goals. Inherent in the college's mission are certain rights and freedoms needed for learning and personal development. Admission to Cascadia provides these rights to students, and also assumes that students accept the responsibility to conduct themselves in ways that do not interfere with the purposes of the college in providing education for all of its learners. For the complete policy, see [the Student Code of Conduct in the Student Handbook.](#)

Course Websites

Nearly every course at Cascadia has one or more dedicated websites. The most common course website is the college Learning Management System, [CANVAS](#); nearly all mathematics courses use [WAMAP](#). Access to course websites is through Internet browsers, and students will use personal user IDs and passwords to log in.

- Students may not share their user IDs and passwords with anyone else or allow anyone else to participate in course sites on their behalf.
- Students need reliable access to the Internet. Some devices, such as smartphones, cannot access all aspects of CANVAS and most other course websites. Cascadia does not recommend that students attempt to complete a course using only a smartphone. Computers are available in many locations on campus.

Students who enroll in courses that make use of a course website are expected to check that site frequently with their own devices and campus computers. Technical support for accessing learning management systems is available at the Cascadia Bock Learning Center.

John and Margaret Bock Learning Center Services

To support student success, Cascadia offers a variety of support services through its John and Margaret Bock Learning Center (The Bock Center). The Bock Center, located in CC2-060 and CC2-080, provides tutoring in a range of subjects, space for students to work individually or in small groups, computer and printing resources, technology support, and graphing calculators available for checkout. [Click here for hours and contact information for the Bock Center](#).

Online Tutoring and Writing Assistance

Cascadia provides online access to live tutors in a variety of subjects through the Western e-Tutoring Consortium. This service includes live, interactive sessions and asynchronous feedback through an Essay Center. Many subjects have convenient tutoring hours late into the evening and seven days a week, depending on tutor availability; schedules are available online. To learn more or get started, visit the Bock Learning Center's [tutoring webpage](#).

Disability Support Services

Cascadia provides services to help students with disabilities successfully adapt to college life. Students who meet specific criteria may qualify for reasonable academic accommodations. If you have or suspect you have a disability and need an accommodation please contact the DSS Office at 425-352-8128 to make an appointment, or email us at disabilities@cascadia.edu. Services and Accommodations through DSS are not retroactive. It is the student's responsibility to approach the faculty member with the accommodation letter as soon as it is issued from DSS.

Counseling Services

If you have a personal problem or stress that is affecting you and would like to talk with someone, please contact [UWB's Mental Health Counseling Center](#). Counseling at Cascadia (provided through UWB) is confidential, professional and free (six sessions). Visit the Counseling Center front desk Monday through Friday, 8:30 a.m. to 5 p.m. or call 425-352-3183 for an appointment. The number for a 24-hour Crisis Line is 206-461-3222.

Advising

Students should schedule an appointment to meet with an advisor to consult about classes and degrees, and to create a tentative education plan. They can call 425-352-8860 or come to the Kodiak Corner to make an appointment. Appointments are not made via email. At the time of the appointment, they need to indicate which degree they are pursuing. See the Cascadia website for information about Drop-In Advising hours.

Online Advising

Email advising is available at advising@cascadia.edu. Our distance advisor can answer most questions via email, but we don't schedule advising appointments via email.

Campus Closures and Inclement Weather

In the event of inclement weather affecting morning classes, there will be notification on the local media by 5:30 a.m. You may also call the main campus number: 425-352-8000 to hear a message that will be updated with the latest Cascadia closure information. Should the weather deteriorate during the day, you may check online, listen to the main campus message, check email or the media to hear news about closures or class schedule changes.

Find information about and sign up for alerts and notifications at [Emergency Notifications Cascadia FlashAlert](#). The site includes instructions for subscribing to alerts. In the event of a campus closure, instruction for this class will continue in the following way:

Please log into [CANVAS](#) for announcements and instructions. On each "out" day a set of instructions, including options for lab and document delivery, will be posted under Files, in a document titled "Instructions for (date)". All assignments that must be turned in must be done in Microsoft Word (or .txt) format or scanned to a png or pdf format, and delivered by email to dreichgott@cascadia.edu. Photographic or low-quality scans may not be accepted. All aspects of academic honesty must be followed (see below). CANVAS instructions, including technical support information, are available on [Cascadia's elearning page](#).

Emergency Procedures

Emergency procedures are posted in each classroom. To reach campus security personnel, dial 425-352-5222. City of Bothell fire and police may be reached by dialing either 9-9-1-1 or 9-1-1 from any campus phone. Campus emergency phones are located on campus walkways and parking lots.

Acceptable Use Policy on Information Technology

In general, the same ethical conduct that applies to the use of all college resources and facilities applies to the use of Cascadia's systems and technology. These systems may only be used for authorized purposes, using only legal versions of copyrighted software, and with consideration and respect for the conservations of resources and the rights of other users. For additional information, see [the online version of the Student Handbook](#) or go to the Bock Learning Center for assistance with any questions.

Family Education Rights and Privacy Act (FERPA)

Cascadia College complies with the Family Education Rights and Privacy Act (FERPA) of 1974 concerning the information that becomes a part of a student's permanent educational record and governing the condition of its disclosure. Under FERPA, students are protected against improper disclosure of their records. [See the student handbook for details.](#)

Laboratory Safety Goggles and Attire:

There are two laboratory exercises as part of this course. As part of laboratory safety you are required to wear the following attire to all labs:

1. Pants or skirts that cover the entire leg, down to the ankle.
2. Shoes that cover the entire foot, including toes, heel, and top of the foot (no "ballet" style shoes or sandals, for example).
3. Shirts that cover the entire torso and shoulders (no tank tops or cropped shirts, for example).
4. Safety goggles (which will be provided for you or may be purchased at the Bookstore) must be worn in the laboratory any time chemicals or glassware are in use by anyone in the lab.
5. Additional protective equipment as advised by your instructor or lab technician.

When you come to lab, if you are not in full compliance with our lab attire protocol, you will automatically lose 10% of the point value for that lab session. You are welcome to participate in lab if we have extra clothing for you to borrow, such as rubber boots, lab coats, and "scrub" pants. These are available on a "first come, first served" basis.

Chem 139-01 Spring '18 Tentative Course Schedule

(A calendar format schedule is on Canvas.)

Mondays, 8:30 – 9:55 in CC2-360	Wednesdays, 8:30 – 9:55 in CC2-360	Fridays, 8:30 – 9:55 in CC2-360
Mar-26: Sections 2.1 to 2.5	Mar-28: Sections 2.6 to 2.9	Mar-30: Sections 3.1 to 3.5 (Prepared Problems #1)
Apr-2: Sections 3.6 to 3.8, Error Analysis supplement (Prepared Problems #2)	Apr-4: Sections 3.9 to 3.11 (Prepared Problems #3)	Apr-6: Sections 5.1 to 5.5 (Prepared Problems #4)
Apr-9: Laboratory Exercise #1 (in CC1-331)	Apr-11: Sections 5.6, 5.7, 6.1 to 6.3 (Prepared Problems #5)	Apr-13: Sections 6.4 to 6.10 (HW #1)
Apr-16: Group Sheet 1 (Prepared Problems #6)	Apr-18: Unit 1 Exam	Apr-20: Sections 7.1 to 7.3
Apr-23: Sections 7.4 to 7.8	Apr-25: Sections 8.1 to 8.5 (Prepared Problems #7)	Apr-27: Sections 8.6 to 8.10 and 9.1 to 9.3
Apr-30: Sections 9.4 to 9.8; skim 9.9 to 9.12 (Prepared Problems #8)	May-2: Sections 10.1 to 10.4 (Prepared Problems #9)	May-4: 10.5 to 10.6, 10.7 for lab (Prepared Problems #10)
May-7: Lab Exercise #2 (in CC1-331)	May-9: Sections 11.1 to 11.3, Group Sheet 2 (HW #2)	May-11: Non-Instructional Day; No classes.
May-14: Unit 2 Exam (Prepared Problems #11)	May-16: Sections 11.3 to 11.6 (Prepared Problems #12)	May-17: Sections 12.1 to 12.8 (Prepared Problems #13)
May-21: Sections 13.1 to 13.4 (Prepared Problems #14)	May-23: Sections 13.3 to 13.5	May-25: Sections 16.1, 16.2, 16.5, 16.6 (Prepared Problems #15)
May-28: Holiday – No Classes	May-30: Sections 16.10 to 16.11 (HW #3)	Jun-1: Group Sheet 3 (Prepared Problems #16)
Jun-4: Unit 3 Exam	Jun-6: Presentations	Jun-8: Presentations

See Unit Syllabi for updates.