

COURSE SYLLABUS

Course Information:

Course: Chemistry 120
Sections: 4059
Lecture: MW 9:30–10:45 am Room 38B-342
Lab: T 11:00 am – 1:50 pm Room 30-242
Prerequisites: Math 110 or equivalent with a grade of “C” or better

Instructor: Diana Vance
E-mail: diana.vance@gcccd.edu
Phone: 619-644-7047
URLs: <http://www.grossmont.edu/dianavance>
<http://gcccd.instructure.com>

Student Registration URL:

<https://www.cengage.com/dashboard/#/course-confirmation/E-26R68SSFSHYZ5/initial-course-confirmation>

Office: 30-214
Office Hours: M 12:30-1:50 pm
W 11:00-12:00 pm
Th 11:00am–1:50 pm in office or Chemistry computer lab 30-252
Other times by appointment

Textbook: *Introductory Chemistry: An Active Learning Approach* Custom edition, Cracolice/Peters
(4th, 5th, or 6th)
OWLv2

Lab book: *Chemistry 120, Lab Manual*
Other: Approved Safety Goggles or Glasses
Scientific Calculator non-programmable: bring to all class meetings.
Small bottle of dish soap (suggested)

Course Description:

This is a one semester preparatory course for general chemistry (Chem 141). The four-unit course has three hours of lecture and laboratory per week. Plan to spend two hours per lecture hour and one hour per lab hour per week for studying, *minimum*.

Student Learning Outcomes:

This course is both a lecture and a laboratory course. The major goals for the semester are to become fluent in the language of chemistry and to utilize the tools of chemistry to analyze a variety of chemical phenomena. The behavior of materials will be explored in the laboratory and use your knowledge of chemistry to explain the behavior. In particular, each student should be able to do the following upon completion of this course:

1. Demonstrate a working knowledge of the language of chemistry.
2. Apply quantitative reasoning to chemical problems.
3. Apply laws and theories to explain and predict the properties of atoms and molecules.
4. Employ laboratory equipment and techniques to collect, organize, and evaluate experimental data.

Course Objectives:

Upon successful completion of the class the student should be able to:

1. Solve a wide variety of problems using dimensional analysis.
2. Use proper conventions with regard to significant figures.
3. Apply the basic terms of science and chemistry.
4. Write the correct chemical formula from a name and the correct IUPAC name from a formula for simple inorganic compounds.
5. Relate the position of an element on the periodic table to the electronic structure of that atom at its ion.
6. Diagram Lewis Dot structures for atoms, simple inorganic ions, and simple compounds.
7. Prepare three dimensional drawings showing polarity of molecules by applying VSEPR theory.
8. Solve a wide range of stoichiometry problems involving percent yield, limiting reagents, and impure reactants.

9. Use both the Arrhenius and Brønsted concepts in describing acid-base behavior.
10. Compute pH and pOH of a solution from its hydrogen or hydroxide ion molarity.
11. Write conventional, total, and net ionic equations for reactions in aqueous solutions.
12. Inventory ion and molecular concentrations in aqueous solutions.
13. Use standard laboratory equipment such as milligram balances, volumetric glassware, pipets and burets.
14. Observe a change and determine if it involves a physical change, a chemical change, or both.
15. Make a good quality graph from data and from a linear plot determine the equation of the line.

Grading:

Your final grade will be approximately 75% from the lecture and 25% from the laboratory portion of the course. Less than a 55% average on the exams (including final) and/or the labs will earn a grade of F in the course. Your final grade will not be more than one letter grade above your average exam grade. In order to be considered for credit when determining the final grade all work must be submitted to the instructor no later than the start of the final exam.

The approximate grade break down is:

Exams (4 exams @ 10% each)	40%
Final Exam	15%
Quizzes	10%
Homework	10%
Lab Experiments	25%

Those students enrolled in the course at the end of the semester must receive a letter grade unless they have chosen the CR/NC option.

The grading scale that will be used is:

90-100% A; 80-89% B; 70-79% C; 60-69% D; < 60% F

All grades may be subject to a (+/-) 1-2% based on instructor evaluation of the student. Evaluations may include, but are not limited to, homework, class participation, attendance, and timeliness.

Exams and Quizzes:

There are four exams and one cumulative final exam that will be given as stated on the schedule. They will cover materials covered in lecture and lab. *Make-up exams will only be given with an acceptable and verifiable excuse within one week of the scheduled exam.* It is the student's responsibility to arrange a make-up exam within one week of the original test date. Please notify the instructor before the missed exam or within two school days preferably via email, so that accommodations can be made. **The final is Tuesday, May 28, 2019 at 11:35am-1:35 pm.** No make-up final will be given, please set your schedule accordingly.

There are generally ten quizzes during the semester. Quizzes will be given once a week in lab, except during an exam week. *Make-up quizzes will not be given, however the lowest quiz may be dropped.* Quizzes will generally cover material discussed during the previous week; however they may also cover topics from reading for the day's laboratory experiment and concepts from previous weeks.

Homework:

Homework is considered to be, but not limited to, OWLv2 assignments (online homework), and textbook problems (all even problems). Homework must be turned in on time to receive full credit. ***Be sure to show all of your work for full credit*** when applicable. At this time the instructor does not intend to collect textbook homework problems. However, you should complete all of the assigned homework problems on your own. Remember that **practice makes progress**, so any additional work that you do will only benefit you in the long run. In order to learn chemistry you should do as many problems as possible. Ideally you will complete the entire end of chapter exercises. However, you are required to do all even problems. No points will be given for the textbook homework.

You are expected to be up to date on any homework assignments and/or changes to the schedule that occur whether you are present during lecture/lab for the announced changes or not. If you miss class, be sure to get any notes/handouts/changes to the schedule/etc. from another student.

Laboratory Experiments:

Before coming to lab you are expected to read the experiment and explain in writing in your own words what you will be doing in lab (with respect to the experiment). Be clear and thorough, but do not copy the procedure from the lab manual. This will allow you to be familiar with the procedures. Complete the pre-lab assignment before coming to the lab period. Both the procedure write-up and pre-lab will be collected and checked for completeness at the start of each new lab. If they are not complete you will be asked to leave lab until such time as they have been completed.

You are expected to attend **your regularly scheduled laboratory course**, however if you miss a lab you may schedule a make-up with your instructor's permission within one week of the missed experiment. You are to work independently in lab unless otherwise noted by your instructor. The skills and knowledge gained in the laboratory part of this course are essential. Lab reports are due one week after they are completed. Late reports will receive a penalty of minus 10% per week late. Lab reports must include:

1. Data recorded in permanent blue or black ink **DIRECTLY ON THE LABORATORY DATA SHEETS**.
2. Instructor initialed completed data before you leave class.
3. Calculations and calculation set-up, and all problems and questions given at the end of the report sheets.
4. All of the problems and questions in the lab and at the end of the report sheet are to be completed when the report is turned in.

Please plan to attend the entire laboratory period. Eating is never allowed in the laboratory, this includes chewing gum. If you drop the course or are dropped by the instructor you are still expected to check out of your laboratory locker. Failure to do so will result in an assessed minimum \$10 fee in addition to a charge for any broken or missing laboratory equipment. To check out of your locker call the Stockroom at 619-644-7339 to make an appointment.

Academic Integrity:

This class will be conducted in accordance with the college student code of conduct and basic standards of academic honesty. Cheating, plagiarism (using as one's own ideas, writings or materials of someone else without acknowledgement or permission), or other forms of academic dishonesty can result in any one of a variety of sanctions. Examples include, but are not limited to, using unauthorized materials copying or allowing another student to copy your work during an exam, quiz, or homework assignment, using a programmable calculator, cell phone, or PDA during an exam or quiz. Penalties may range from an adjusted grade on the particular exam, paper, project, or assignment to a failing grade in the course. The instructor may also summarily suspend the student for the class meeting when the infraction occurs, as well as the following class meeting. For further clarification and information on these issues, please consult with your instructor or contact the office of the Assistant Dean of Student Affairs. Violations will be reported to the school dean for appropriate action.

Attendance:

Regular attendance is expected and necessary to receive a passing grade. Coming to class late or leaving without the instructor's permission will be considered an absence. A student may be dropped from the class due to poor attendance when, in the judgment of the instructor, the student cannot benefit from further instruction. A student, who, has been absent due to illness or medical treatment should inform the instructor as to the cause of the absence prior to the absence or within one day after. You may be asked to provide written information regarding your absence. However, if you wish to drop the course it is your responsibility to do so. Do not assume that the instructor will do it for you.

Classroom Behavior and Student Code of Conduct:

Students are responsible for defining and making progress toward their education goals leading to a certificate degree or transfer to a four-year institution. Students are expected to respect and obey standards of student conduct while in class and on campus. The Student Code of Conduct, disciplinary procedures, and student due process can be found in the college catalog and at the office of the Dean of Student Affairs. Charges of misconduct and disciplinary sanctions may be imposed upon students who violate these standards of conduct or provisions of college regulations. The following are expectations of your behavior in the class:

1. Please treat other students and the instructor with respect. This included, but is not limited to the use to appropriate language, being on time to class, not being disruptive during lecture or lab, keeping the classrooms clean and organized, and turning cell phones and pagers off during class. If you have to be "on call" please notify the instructor.
2. Recognize everyone's opportunity to contribute information.
3. **SAFETY IS THE SINGLE MOST IMPORTANT ASPECT OF WORKING A LABORATORY!** Due to safety issues in the laboratory environment everyone is required to wear proper shoes (closed toed) and clothing

(the general rule is from the shoulders to the knees) in addition to safety glasses. We will discuss safety and proper laboratory techniques extensively.

REMEMBER: IMPROPER ATTIRE = NO LAB

Additional Information:

- The semester moves quickly so please keep up with reading and assignments. If you need help do not be afraid to ask me questions in person or via email.
- Important dates to remember:
 - Last day to drop without receiving a W Friday, February 8, 2019
 - Last day to apply for P/NP (CR/NCR) Friday, March 1, 2019
 - Last drop date Friday, April 26, 2019
 - Holidays
 - Presidents' Day Friday-Monday, February 15-18, 2019
 - Spring Break Monday-Saturday, March 25-29, 2019
 - Memorial Day Monday, May 27, 2019
 - Final exam (tentative) Tuesday, May 28, 2019 (11:35 am-1:35 pm)
- Additional Chemistry Assistance is available:
 - Chemistry instructors and/or tutors are available to all students during "open" help times in the chemistry computer room (30-252). The schedule is posted on the door.
 - The Tutoring Center (Room 70-229, 644-7387) offers by appointment tutoring up to two hours per week per subject up to five hours per week.
- Visit me during my office hours the first week of class to discuss the course and introduce yourself for five bonus points on your first exam.
- Students facing food or housing insecurity are encouraged to contact a Grossmont College Basic Needs Liaison (their names are listed in the web link provided below) or you can send an e-mail to Grossmont.BasicNeeds@gcccd.edu to request information or assistance. I also encourage you to speak with me, if you feel comfortable doing so, so that I may provide additional support to ensure your success in this course.
- Additional information on basic needs resources, including Gizmo's Kitchen (Grossmont College's food pantry) is available at: <https://www.grossmont.edu/student-services/offices-and-services/basic-needs>.
- *Students with disabilities who may need accommodations in this class are encouraged to notify the instructor during the first two weeks of class and contact the Accessibility Resource Center (A.R.C.) **early in the semester** so that reasonable accommodations may be implemented as soon as possible. Students may contact A.R.C. in person in building 60 room 120 or by phone at (619) 644-7119 or (619) 644-7119 TTY for deaf.*

I RESERVE THE RIGHT TO MAKE CHANGES TO THIS SYLLABUS AS THE CLASS OR I SEE FIT.

Chemistry 120 – Tentative Schedule – Spring 2019 (I reserve the right to make changes.)

Week Of	Lecture Chapter/Topic	Lab
01-28-19	Roll call, Chapter 1 – Introduction Ch 3- Measurement, Calculations, DA	T – Check-in, Exp 1: Safety, Periodic table
02-04-19	Ch 3 – cont. Ch 2- Matter and Energy <i>F Last Day Drop w/o W</i>	T – Exp 2: Measuring, SF, and Glass
02-11-19	Ch 5 –Early Atomic Theory Ch 11 – Modern Atomic Theory	T – Exp 3: Density Holiday – Friday-Saturday, Feb. 15th & 16th
02-18-19	<i>M Holiday</i> Ch 11 – Modern Atomic Theory	T – Exp 4: Physical Properties and PS I
02-25-19	Exam I (Ch 1,2,3, and 5) Ch 6 – Nomenclature	T – Exp 4 – con't
03-04-19	Ch 12 – Chemical Bonding Ch 13 – Molecular Geometry, structure and shape	T – Exp 5: Nomenclature
03-11-19	Ch 13 – cont. Ch 7 – Chemical formulas and relationships	T – Exp 6: Molecular Models
03-18-19	Ch 7 – cont. EXAM II (Ch 11, 6, 7, 12, and 13)	T – Exp 7: Avogadro's Number and PS II
03-25-19	Spring Break	Spring Break
04-01-19	Ch 8 and Ch 9 Chemical Rxns	T – Exp 8: Double Displacement
04-08-19	Ch 10 – Stoichiometry and chemical quantities	Lecture Catch-Up/TBD
04-15-19	Ch 4, 14 – Gas Laws and KMT	T – Exp 9: Chemical Reactions and PS III
04-22-19	EXAM III (4, 8, 9, 10, and 14) Ch 15 – Solids, Liquids and Gases <i>April 26th: Last day to drop</i>	T – Exp 10: Limiting Reagent
04-29-19	Ch 15 – cont. Ch 16 – Solutions and Solution Inventory	T – Exp 11: Gas Laws
05-06-19	Ch 16 – cont.	T – Exp 12: Solution Prep
05-13-19	Ch 17 –Acids and Bases	T – Exp 12: Titration and PS IV
05-20-19	Ch 17 – cont. EXAM IV (Ch 15, 16, and Ch 17)	T – Check out, PS IV, Final Exam Review
05-27-19	Holiday – Monday, May 27th Final Exam Week Cumulative Final Exam Tuesday, May 28, 2019 at 11:35 am -1:35 pm in 30-242	