**Chemistry 120 Course Syllabus (8 week course)**

**General Information**

This a beginning general chemistry course for students with little or no background in chemistry. This course will be an intensive study in areas of problem solving, basic atomic theory, chemical nomenclature, stoichiometry, gas laws, solutions, acid-base chemistry and redox and more. The laboratory will be an introduction to quantitative techniques, descriptive chemistry, and data treatment.

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

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| **Instructor**: Martin Larter, M.S. | **Section:** CHEM-120-1674 |
| **Office Number**: 30-220 | **Phone Number**: 619-644-7346 |
| **Email:** [Martin.Larter@gcccd.edu](mailto:Martin.Larter@gcccd.edu) | **Website**: <https://www.grossmont.edu/people/martin-larter/chem-120/default.aspx>  <https://www.cengage.com/owlv2/> |
| **Lecture Room:** Bldg. 36, Room 354 | **Lab Room:** Bldg. 30, Room 242 |
| **Class Time Lecture**:  Mon and Wed : 2:00 PM - 4:50 PM | **Class Time lab**:  Mon and Wed : 11:00 AM - 1:50 PM |
| **Lecture: Text / materials**   * Introductory Chemistry: An Active Learning Approach Custom edition, Cracolice/Peters (4th, 5th, or 6th) * OWL Version 2 assignments (online homework), (If purchasing a used book, the OWL Version 2 assignments code can be purchased directly from the publisher.) * Scientific Calculator non-programmable: bring to ***all*** class meetings | **Lab:**   * *Chemistry 120, Lab Manual* * Approved Safety Goggles or Glasses * Sharpie (permanent) * Optional: Gloves (school will not provide this resource) |
| Prerequisites: Math 110 or equivalent with a grade of “C” or better | |
| **Office Hours:**  Tues, Thurs and Fri 3:00 pm to 5:00 pm  Other office hours may be scheduled by appointment. | |

**IPods, mp3 players, cell phones…or the like will not be allowed during lecture or lab! Turn these items off and put them away before class begins.**

**Accommodations for Students with Disabilities:**

Students with disabilities who may need accommodations in this class are encouraged to notify the instructor and contact 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 room 60-120 or by phone at (619) 644-7112 (voice) or (619) 644-7119 (TTY for deaf).

**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.

**Important Information:**

1. 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, 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. The instructor may drop any student who misses over (4) classes. (BUT this is not a guarantee!) If you wish to drop, you should turn in the forms and get a receipt.
2. Those enrolled at the end of the semester must receive a letter grade unless they have chosen the CR/NC option. Withdrawal or CR/NC grading is available through Admissions and records.
3. The use of videotape or other recording devices is only permitted with the express written consent of the instructor.
4. Registration should be completed before checking into lab. If registered late, bring your validated receipt to lab. You will be charged for all breakage or loss of laboratory equipment, in addition you will be assessed a $10 minimum fee if you fail to check out of the laboratory before the end of the semester. To make an appointment to check out call the Stockroom at 619-644-7339.

**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 following grading scale will be used:

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| A+ (98-100%) | A (90-98%) | A- (88%-89%) |
| B+ (87%) | B (80-86%) | B- (79%-78%) |
| C+ (77%) | C (67-76%) | D (55-66%) |

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| Exams (4) | 50% |
| Homework | 10% |
| Laboratory Reports | 25% |
| Final exam (cumulative) | 15% |
| Total | 100% |

**Exams:**

There will be five exams this semester in addition to a cumulative final exam. These exams are not optional and are given as per the schedule. There will be no make-up exams. The term moves very quickly! It is very important for the student to stay current and seek assistance when needed. If you have any question, **ask. There will be no make-up exams.**

**The final is Wednesday, May 23rd, 2018.** No make-up final will be given, please set your schedule accordingly.

During Exams your cell phones will be placed in your bag or brought up to the front of the class. During the duration of the quiz or exam no cell is permitted to be out. If cell phones are seen during quizzes or exams you will receive a zero grade on that work. I also reserve the right to place student in a seating chart during quizzes and exams.

**Homework:**

Homework is considered to be, but not limited to, OWL 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, it is highly recommended 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.

**OWL assignments are posted online with open and close dates and will be counted towards your final grade.**

The register for the on-line computer assignments can be done using the code you received at the bookstore. You may also purchase a code online. This will be discussed the first day of class.

**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 accomplished in the experiment (objective). Complete the pre-lab assignment before coming to the lab period. Both the objective 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.**

Most labs that I will ask you to paraphrase the procedure (DO NOT WRITE WORD FOR WORD) you will then be expected to do the experiment based on what you wrote without aid of the lab manual. This activity is to prepare you for Chemistry 141 where you are expected to write a running log of your work in such a manner that if given to another student they can reproduce the work done with similar results.

*Make-up labs are normally not permitted*. 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 20% per week late and will not be accepted if the lab is more than two weeks late. Lab reports must include:

1. Data recorded in permanent blue or black ink **DIRECTLY ON THE LABORATORY DATA SHEETS**.

**(If noted by the instructor that you are writing the data in pencil with the intention of erasing and writing in ink later there will be a minimum of a 10% reduction on your lab grade. If instructor notes that you are writing data in a location other than your laboratory sheets a minimum of minus 15% will be taken off your lab grade)**

1. Instructor initialed completed data before you leave class **(no signing of lab books will occur until the scales and common chemical areas are cleaned along with your personal lab space)**
2. Calculations and calculation set-up, and all problems and questions given at the end of the report sheets.
3. 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.

**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 Chemistry Assistance:**

* 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.
* 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.

**Important Dates**

* + Last to drop without receiving a “W” Friday, April 6th , 2018
  + Last day to apply for P/NP Friday, April 13th , 2018
  + Last day to drop a class Friday, May 11th , 2018

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

**Chemistry 120 Tentative Schedule-spring 2018 (I reserve the right to make changes.)**

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| **Week Of** | **Lecture Chapter/Topic** | **Lab** |
| 4/2/18 | Roll call, Chapter 1 – Introduction  Ch. 3- Measurement, Calculations, DA  Ch. 2- Matter and Energy | Mon -Check-in, Exp 1: Safety, Periodic table |
| Wed - Exp 2: Measuring, SF, and Glass |
| 4/9/18 | Ch 5 –Early Atomic Theory  Ch 11 – Modern Atomic Theory | Mon – Exp 3: Density |
| Wed – Exp 4: Physical Properties of Substances |
| 4/16/18 | Exam 1: chapters 1-3,5  Ch 6 –Nomenclature  Ch 12 – Chemical Bonding | Mon – Exp 4 – con’t |
| Wed –and Exp 5: Nomenclature |
| 4/23/18 | Ch 13 – Molecular Geometry, structure and shape  Ch 7 – Chemical formulas and relationships | Mon – Exp 6: Molecular Models |
| Wed – Exp 7: Avogadro’s Number |
| 4/30/18 | Exam 2: chapters 6,11,12,13  Ch 8 and Ch 9 Chemical Rxns  Ch 10 – Stoichiometry and chemical quantities | Mon - Exp 8: Double Displacement |
| Wed - Exp 9: Chemical Reactions |
| 5/07/18 | Exam 3: chapters 7-10  Ch 4, 14 – Gas Laws and KMT  Ch 15 – Solids, Liquids and Gases | Mon – Exp 10: Limiting Reagent |
| Wed – Exp 11: Gas Laws |
| 5/14/18 | Chapter 15 cont  Ch 16 – continued | Mon – Ch 16 – Solutions and Solution Inventory  Exp 12: Solution Prep (1.5 hr) |
| Wed - Exp 12: Titration |
| 5/21/18 | Exam 4: chapters 4,14,15,16  Ch 17 –Acids and Bases  Final exam cumulative | Mon – Exp 12: continued (1.5 hrs)  Ch 17 –cont. |
| Wed – Check out and Review |

**Student Registration Information**

**How to access your OWLv2 course**

**Chemistry 120 - Spring 2018 (8 weeks)**

Instructor(s): Martin Larter

Start Date: 04/02/2018

**What is OWLv2?**

OWLv2 is the most trusted online learning solution for chemistry, proven to help you get a better grade.

**Registration**

1. Connect to <https://login.cengagebrain.com/course/E-23E33LCQ6FLXL>
2. Follow the prompts to register your OWLv2 course.

**Payment**

After registering for your course, you will need to pay for access using one of the options below

Online: You can pay online using a credit or debit card, or PayPal.

Bookstore: You may be able to purchase access to OWLv2 at your bookstore. Check with the bookstore to find out what they offer for your course.

Free Trial: If you are unable to pay at the start of the semester you may choose to access OWLv2 during your free trial. After the free trial ends you will be required to pay for access.

Please note: At the end of the free trial period, your course access will be suspended until your payment has been made. All your scores and course activity will be saved and will be available to you after you pay for access.

If you already registered an access code or bought OWLv2 online, connect to <https://login.cengagebrain.com/course/E-23E33LCQ6FLXL> to access your course.

If you have any difficulties please contact Customer Support at www.cengage.com/support