

Chem -107C: Preparation for General Chemistry

(CRN: 22482)

Instructor: Dominique Ingato

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Office Hours: Tuesdays 5:00 pm – 6:00 pm -or- by appointment

*Meeting Times &
Locations*

Lab TTh 12:30 pm – 2:05 pm SEM – 322

Lecture TTh 2:45 pm – 4:50 pm SEM – 215

Course Prerequisite

Completion of MATH 040C, MATH 41C or equivalent

Required Textbooks

**Introduction to Chemistry: (4th Edition) By R. C. Bauer, J. P. Birk, P. S. Marks 2013 by

McGraw Hill or Cypress College Custom Version (Loose Leaf format) ISBN 9781308543031

cannot be returned if open from Bauer's Introduction to Chemistry (4th edition)
McGraw Hill, ISBN 9780073523002

**Hein, M., *Custom Laboratory Manual Version A for CHEM107C*, John Wiley & Sons, 14th
Edition. ISBN-9781118975817

Required Materials

Scientific Calculator with Exponential and Log functions (non-graphing / non-programmable)

Scantron Form 882-E, Goggles must have protective shields on the side and at the bottom to protect student's eyes from chemical (available at the bookstore or hardware stores).

COURSE DESCRIPTION: This course provides a general introduction to the basic concepts, principles and laws of modern chemistry. Topics include a study of atomic theory, molecular structure, chemical reactivity, and the properties of the various phases of matter. Laboratory experiments include both qualitative and quantitative analysis, with an emphasis on proper laboratory techniques. This course applies to the physical science requirement for general education and is not acceptable for credit for students majoring in physical science. CHEM 107 C is a recommended preparatory course for students planning to take CHEM 111AC AND CHEM 111BC. No credit if taken after CHEM 111AC. Pass/No Pass/Letter Grade Option

EXPECTATIONS: Class should be a collaborative effort. I will aim to teach you, but you must also strive to learn. Note that there is a major difference between the word “study” (passively recalling facts) and the word “learn” (actively understanding the material). I will strive to help you to understand course material in a broader context and apply it in different situations, but you must also strive to learn.

What I expect from you:

- Independently and thoroughly complete all assignments
- Actively participate in class
- Clarify your doubts in class and/or office hours
- Complete the surveys and evaluations I send out to the class – I take your feedback seriously

What you can expect from me:

- I will challenge you to learn chemistry and think scientifically
- I will try to be approachable; please come talk to me at office hours or after class
- I will create an inclusive learning environment to foster diversity
- I will take your feedback seriously so that you can have the best possible experience

INSTRUCTIONAL OBJECTIVES: Upon Completion of this course, the student will be able to:

1. Demonstrate understanding of the metric system of units in length, mass and volume and be able to solve problems requiring conversion of units.
2. Demonstrate ability to recognize and use chemical glassware basic to a general chemistry laboratory.
3. Demonstrate knowledge of the names and symbols of 40 common elements, and to provide formulas and names of basic inorganic compounds.
4. Compare and contrast physical and chemical properties, physical and chemical changes.
5. Discuss the subatomic particles of an atom and demonstrate their impact on chemical bonding and reactivity.
6. Classify and balance chemistry reactions.
7. Solve chemical stoichiometric problems using the mole concept and dimensional analysis.
8. Demonstrate knowledge of concentration units and behavior of compounds in solution chemistry.
9. Demonstrate understanding of various phases of matter and their corresponding properties.
10. Demonstrate comprehension of the concept of equilibrium and its effect upon the rate of a reaction.
11. Analyze and interpret experimental data.

STUDENT LEARNING OUTCOMES:

- I. Outcome: On a short quiz, successfully solve quantitative problems with a 65% accuracy.
- II. Outcome: Given the names of fundamental compounds and elements, write the symbols and formulas accurately and vice versa with a 65% accuracy.
- III. Outcome: Successfully apply chemical principles to predict properties and reactivities with a 65% accuracy.
- IV. Outcome: Students will understand proper chemistry laboratory techniques and safety procedures with a 65% accuracy.

Assessment: Assessment within laboratory practicum.

Important Dates:	Start of Instruction	January 30, 2017
	Last day to drop for a refund	February 12, 2017
	Last day to drop classes WITHOUT a W grade	February 12, 2017
	Last day to add a course	February 12, 2017
	Disaster Drill	February 15
	President's Day Holiday	February 17 – 20, 2017
	Spring Recess	April 10-14, 2017
	Last day to drop classes with a W grade	April 30, 2017
	Lab Practicum (Lab Final Exam)	May 15, 2017
	Lecture Final Exam	May 24, 2017

Attendance Policy:

Attendance of all lectures, problem solving sessions and laboratory sessions is *required*. If a student accumulates more than three absences in lectures, labs or problem solving sessions, your instructor may drop you from the course for lack of attendance or participation. Excused absences accompanied by documented verification (i.e., doctor's note, accident report, etc.) must be reported to the instructor immediately (preferably within 24 hours by phone, e-mail or in person) or need to be pre-approved by the instructor before the day of the event. Students are expected to be in the laboratory for the full time of each laboratory session. *** 1 point will be deducted for every 15 minutes of class time missed. Late arrivals, early departures or otherwise lack of productive behavior in class in excess of 45 minutes will be counted as a full class absence.*

Homework Assignment Policy:

For each chapter of the textbook, students are assigned to work on the assigned problems from the end of chapter. Please submit your *HANDWRITTEN* responses to these problems on notebook paper. *Note that stating an answer (whether it's correct or not) without showing any work, such as calculation, description or statement of assumptions made will be considered "incomplete work" and no points will be awarded.* Also note that the required problems represent a minimum set of problems that student should attempt. It is the student responsibility to work on additional problems from the textbook to master the concepts covered in each chapter.

GRADING POLICY:POINTS

MIDTERM EXAMS	Three exams will be given, each worth 100 points. Each exam will consist of a combination of short answer and word problems. There are NO make-up exams.	300
QUIZZES	Ten quizzes will be given over the course of the semester. Quizzes will include questions from lecture, lab, and assigned readings. Quizzes will be administered at the beginning of class. If you are late to class, you will receive a zero on that quiz. Quizzes are worth 15 points each. There are NO make-up quizzes.	150
HOMEWORK	You will be expected to complete all assigned homework problems and worksheets. Since exam questions will be based on homework problems and worksheets, it is in your best interest to diligently complete all assignments. Homework will be due at the beginning of class.	100
LABORATORY	The lab will be graded on the quality and accuracy of your write-ups, and should reflect appropriate preparedness, technique, safety, and cleanliness for each lab assignment. 15 Laboratory Reports and/or Handouts and Review (10 points each) Lab Practicum (50 points) One point will be deducted for every item broken or misplaced. Points will be deducted for leaving a messy lab drawer. Points will be deducted for not wearing goggles. There are NO make-up labs. No late labs will be accepted.	200
PARTICIPATION	You will be expected to participate during class, this includes; answering questions, working on assigned problems, working in groups, coming to class, being attentive, and bringing your textbook.	50
FINAL EXAM	A comprehensive final based on the lecture portion of the class will be administered during finals week (200 points).	200
TOTAL	<i>For all late assignments, 3 pts will be deducted for every 24 hours past the original due date/time.</i>	1000

Letter grades will be assigned as follows:

A: 90-100% B: 80-89% C: 70-79% D: 60-69% F: 0-59%

**Students must have no more than 2 unexcused absences for lecture, lab or problem solving and must earn a C or better in the lab to earn an overall pass grade in the course.

Student Behavior

Class disruptions including, but not limited to, the use of cell phone and other electronic devices will not be acceptable. Late arrivals are disruptive to the class environment. Students who arrive late are expected to enter the room quietly and politely to minimize the distractions that may result. All forms of academic dishonesty will be handled according to Cypress College policy. Cheating will result in a zero for the assignment and may result in an F for the course.

Laboratory Regulations:

Laboratory safety rules (see the handout titled "safety precautions and general laboratory procedures" which will be given to students during laboratory safety lecture) must be followed at all times. Students must wear approved type of safety glasses or goggles, and a pair of closed-toe shoes (no open-toe shoes, such as flip flops and sandals, and barefoot allowed) at all times in the laboratory. It is highly recommended to wear a lab apron or lab coat, and to tie long hair in the back for additional safety of students. Each student is responsible for the glassware in his/her assigned drawer; therefore the glassware shouldn't be shared among students to avoid possible confusion. Students are expected to perform experiments independently unless otherwise instructed. There will be absolutely NO MAKEUPS for any missed laboratory experiments.

Sexual Harassment / Discrimination Policy:

It is the policy of the North Orange County Community College District to provide an educational, employment, and business environment in which no person shall be unlawfully subjected to discrimination or sexual harassment, nor unlawfully denied full and equal access to the benefits of District programs or activities on the basis of ethnic group identification, national origin, religion, age, gender, race, color, ancestry, sexual orientation, marital status, or physical or mental disability as defined and prohibited by state and federal statutes. Any student who engages in unlawful discrimination or sexual harassment in violation of this policy will be subject to disciplinary action, which may include suspension or expulsion. Further details may be found at www.cypresscollege.edu.

Special Needs:

I have made every effort to make this course accessible to all students, including students with disabilities. If you encounter a problem accessing anything in this course, please contact me immediately by email and also contact Disability Support Services (DSS) at (714) 484-7104. Any student who feels she/he may need an academic accommodation based on the impact of a disability should discuss this with her/his instructor and contact Disability Support Services (DSS) or visit the DSS office in CCCPLX 100. To ensure the health and safety of all students, those who feel they may need evacuation assistance in the event of an emergency should speak with their instructor as soon as possible.

Student Services:

Please see the Cypress College 2015-2016 Catalog or the following websites for more information about various services available for students at Cypress College: Quick Reference to Cypress College Services
<http://www.cypresscollege.edu/services/azServices>

Student Services Home Page [<http://www.cypresscollege.edu/services>]

Cypress College Library & Learning Resources Center Home Page

[<http://www.cypresscollege.edu/academics/academicPrograms/LibraryLearningResourceCenter/Library>]

Extra Credit:

Two extra credit assignments will be offered during the semester. The assignments will be *OPTIONAL*, mini projects meant to supplement and support the material we cover in class, in problem solving, lab and homework. Each assignment should take no more than 2 hours and will add 15 points of extra credit to your grade. You are *NOT* required to complete them *BUT* this will be the *ONLY* extra credit that will be offered for the course.

ACADEMIC HONESTY

Cypress College Catalog (2015-2016) – Page 10

Students are expected to abide by ethical standards in preparing and presenting material which demonstrates their level of knowledge and which is used to determine grades. Such standards are founded on basic concepts of integrity and honesty. These include, but are not limited to the following areas:

- 1) Students shall not plagiarize, which is defined as stealing or passing off as one's own ideas or words of another and as using a creative production without crediting the source. The following cases are examples of what constitutes plagiarism:
 - a. paraphrasing published material without acknowledging the source
 - b. making significant use of an idea or a particular arrangement of ideas, e.g., outlines.
 - c. writing a paper after consulting with persons who provide suitable ideas and incorporating these ideas into the paper without acknowledging the debt
 - d. submitting under one's own name, term papers or other reports which have been prepared by others.
- 2) Students shall not cheat, which is defined as using notes, aids, or the help of other students on tests or exams in ways other than those expressly permitted by the instructor; and as misreporting or altering the data in laboratory or research projects involving the collection of data.
- 3) Students shall not submit an original paper or project to more than one class without approval from the second instructor. Instructors who do not accept previously submitted papers should so inform the students in the course syllabus.
- 4) Students shall not furnish materials or information in order to enable another student to plagiarize or cheat.

Plagiarism Prevention and Detection: In its commitment to academic honesty, Cypress College uses Turnitin.com software to prevent and detect plagiarism.

The instructor reserves the right to submit student assignments to Turnitin.com to check for textural similarities between those assignments, Internet sources and the Turnitin.com assignment database. Students will be required to electronically submit their written work for plagiarism checking. Assignments submitted to Turnitin.com will become part of their database and will be used only for plagiarism prevention and detection.

Students agree that by enrolling in a course, assignments may be subject to the above plagiarism prevention and detection processes.

An instructor who has evidence that an act of academic dishonesty has occurred, after speaking with the student, is obligated to take the following steps:

- 1) Assign an appropriate academic penalty such as an oral reprimand (as in cases where there is reasonable doubt that the student knew that the action violated the standards of honesty); or assign an "F" on all or part of a particular paper, project, or exam (for example, where there was proof that it was a one-time occurrence). In cases where an "F" was assigned, report the incident to all appropriate personnel. (See Step 3.)
- 2) In cases where the dishonesty was serious, premeditated, or part of an ongoing scheme, request an ad hoc review board made up of at least three faculty from the department or division of the instructor involved. This review board is to be appointed by the Academic Senate President or his/her delegate in consultation with the department coordinator, or if none is in place, with the members of the department. Supply to the review board the documents which are suspect and any other documents completed by the student which might help determine if academic dishonesty occurred. It would then be the responsibility of the review board to determine academic penalties as appropriate.
- 3) Report to the student involved, to the department coordinator, to the Division Dean, and to the Dean of Counseling and Student Development, the alleged incident of academic dishonesty, including relevant documentation, and recommendations for action that he or she deems appropriate.
- 4) The appropriate Division Dean shall maintain an academic dishonesty file of all cases of academic dishonesty with the appropriate documentation.
- 5) Students shall be informed when their names are inserted into the file and provided with copies of any appeals or disciplinary procedures in which they may become involved. The appropriate Division Dean may initiate disciplinary proceedings under Education Code, Article 3, Section 76030-76037; when two or more incidents involving the same student occur, he/she shall do so.
- 6) Students charged with violations resulting in disciplinary action have the right to appeal the findings to the Petitions Committee under the Rules and Procedures of Due Process.

SCHEDULE:

Date	Laboratory Experiment	Lecture Chapter	Homework
Tues 01/31	Safety, Video & Safety Quiz	Chapter 1 Matter and Energy	3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 31, 32, 46, 51, 71, 77, 81, 85, 91 (Due 2/7)
Thurs 02/02	Math Tool Boxes	Chapter 2 Atoms, Ions, and the Periodic Table	
Tues* 02/07	Check-in	Chapter 2 Atoms, Ions, and the Periodic Table Quiz #1	21, 22, 29, 33, 35, 37, 49, 51, 65, 77, 85, 105 (Due 2/14)
Thurs 02/09	Laboratory Techniques	Chapter 3 Chemical Compounds	7, 9, 11, 23, 27, 29, 39, 43, 49, 51, 61, 63, 67, 75 (Due 2/21)
Tues* 02/14	Measurements	Chapter 3 Chemical Compounds Quiz #2	
Thurs 02/16		Chapter 4 Chemical Composition	3, 7, 17, 19, 21, 27, 37, 39, 43, 45, 51, 55, 67, 73, 75, 77, 85, 87, 93, 101, 103, 105, 107, 113 (Due 2/28)
Tues* 02/21	Midterm Exam Review	Chapter 4 Chemical Composition	
Thurs 02/23	Nomenclature (exercises 3, 4, 5)	Chapter 5 Chemical Reactions and Equations Quiz #3	
Tues* 02/28	Water in Hydrates	<i>Midterm Exam #1</i> <i>Chapters 1 - 4</i>	
Thurs 03/02		Chapter 5 Chemical Reactions and Equations	
Tues 03/07	Identification of Selected Anions	Chapter 5 Chemical Reactions and Equations	3, 27, 37, 39, 51, 55, 59, 65, 67, 77, 79, 81, 85, 103 (Due 3/14)
Thurs 03/09		Chapter 5 Chemical Reactions and Equations	
Tues* 03/14	Double Displacement Reactions Single Displacement Reactions	Chapter 6 Quantities in Chemical Reactions Quiz #4	11, 21, 29, 31, 35, 41, 43, 55, 67, 79, 81, 85, 89, 99 (Due 3/21)
Thurs 03/16		Chapter 6 Quantities in Chemical Reactions	
Tues* 03/21	Quantitative Preparation of Potassium Chloride	Chapter 7 Electron Structure of the Atom Quiz #5	13, 17, 35, 45, 47, 61, 77, 81, 89, 101, 107 (Due 3/28)
Thurs 03/23		Chapter 7 Electron Structure of the Atom	
Tues* 03/28	Electromagnetic Energy and Spectroscopy	Chapter 8 Chemical Bonding Quiz #6	9, 23, 29, 31, 51, 53, 63, 81, 89, 91, 111 (Due 4/4)
Thurs 03/30		Chapter 8 Chemical Bonding	

Date	Laboratory Experiment	Lecture Chapter	Homework
Tues* 04/04	Lewis Structures	Midterm Exam #2 Chapters 5 - 8	
Thurs 04/06		Chapter 9 The Gaseous State	29, 35, 37, 47, 49, 61, 63, 73, 79, 83, 93, 97, 117, 119 (Due 4/20)
Tues 04/18	Boyle's Law	Chapter 9 The Gaseous State Quiz #7	
Thurs* 04/20		Chapter 10 The Liquid and Solid States	13, 17, 31, 37, 45, 47, 53, 63, 67, 75, 77, 83, 85, 101, 115 (Due 4/25)
Tues* 04/25	Freezing Points	Chapter 11 Solutions Quiz #8	13, 15, 49, 57, 59, 61, 63, 71, 79, 93, 95 (Due 5/2)
Thurs 04/27		Chapter 11 Solutions	
Tues* 05/02	Electrolytes	Chapter 12 Reaction Rates and Chemical Equilibrium Quiz #9	19, 21, 27, 29, 43, 71, 79, 85, 93, 97, 101, 109 (Due 5/9)
Thurs 05/04		Chapter 12 Reaction Rates and Chemical Equilibrium	
Tues* 05/09	Titrations	Midterm Exam #3 Chapters 9 - 12	
Thurs 05/11		Chapter 13 Acids and Bases	15, 17, 25, 55, 57, 71, 73 (Due 5/18)
Tues 05/16	Laboratory Practicum	Chapter 13 Acids and Bases	
Thurs* 05/18	Final Exam Review	Chapter 14 Oxidation-Reduction Reactions Quiz #10	9, 10, 14, 19, 29 (Due 5/23)
Tues* 05/23		Chapter 14 Oxidation-Reduction Reactions	
Thurs 05/25	Check-out and Lecture Final Review	Final Exam	

* = homework assignment due this day

Note that this schedule is tentative and subject to change.