

GENERAL CHEMISTRY, CHEM-1C, SPRING 2016
INSTRUCTOR: DR. RAM SUBRAMANIAM

Instructor Contact Information

Dr. Ram Subramaniam
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Office Hours: Monday to Thursday 10:30 to 11:30 a.m.

Class Meeting

Lecture: MLC 103
Lecture time: MW 4:30 to 5:45 p.m.
Lab: SC 2208
Lab time: Section 01- MW 11:30 to 2:20 p.m. and Section 02- TTh 11:30 to 2:20 p.m.

Textbook

Lecture- Chemistry - The Molecular Nature of Matter & Change, Silberberg, M., 6th or 7th edition, McGraw Hill
Lab- <http://deanza.edu/chemistry/Chem1C.html>

Course Content

General Chemistry at De Anza College is presented as a three-part class. This is the third and final quarter in the yearlong General Chemistry sequence. The class will begin with a discussion of colligative properties and other aspects of solutions. In this class, advanced equilibrium concepts pertaining to solubility and buffers will be discussed. This will be followed with an introduction to electrochemistry, the chemistry of transition metals, and nuclear chemistry.

Student Learning Outcomes

1. Apply the principles of equilibrium and thermodynamics to electrochemical systems.
2. Apply the principles of transition metal chemistry to predict outcomes of chemical reactions and physical properties.
3. Evaluate isotopic decay pathways.
4. Demonstrate a knowledge of intermolecular forces.

Academic Integrity

All graded assignments must be completed without any consultation (people, books, internet) unless otherwise permitted by the instructor. Any student that violates this policy will receive a failing grade (F) in the class and reported to appropriate administrative authorities such as the Dean. Please refer to the Student Handbook for detailed information: <http://www.deanza.edu/studenthandbook/academic-integrity.html>

Attendance Policy

Failure to attend any of the lectures or laboratory classes during the first two weeks will result in you being dropped from the class. You are expected to attend all lecture and laboratory classes. Strong evidences exist that indicate that student success is directly related to class participation. You will be given an “F” grade for unexcused absences in TWO or more lecture and/or laboratory periods.

Excused Absence: If you know in advance that you will need to miss a class, please notify the instructor and provide proof of the excuse. If you have already missed a class, please follow up with the instructor as soon as possible and provide a proof of a valid excuse. Valid excuses are: birth/death in the family, work-related travel, illness/medical emergencies, conference travels, jury duty, accidents, legal issues, or traveling to represent De Anza College at meetings/other events. Other excuses will be considered on a case-by-case basis. Please note that verifiable documented proof of the excuse is essential in order to grant a make-up.

Cell Phone Policy

Use of cell phones is strictly prohibited during class. There is to be no text messaging, browsing the Internet, or voice conversations. Violation of this policy will bar you from attending office hours and may result in failure in the class.

Evaluation

The lecture portion of the class is weighted at 75% and the laboratory portion is 25%. You must complete all the lab experiments and pass the lab in order to pass the class. The evaluation for the laboratory part will consist of lab reports, lab exams, attendance, and notebook.

Lecture Schedule

The following is a tentative schedule for the lecture portion of the class. It is highly recommended that you read the relevant sections in the book prior to the lecture. Periodically, the instructor may assign certain sections of the book to be read on your own and these will not be covered in the lecture. You will receive appropriate instruction for such readings during the lecture. Some laboratory periods may be used for lectures.

Week	Dates	Topic	Chapter
1	April 4	Solutions	13
1	April 6	Solutions	13
2	April 11	Buffers and Solubility	19
2	April 13	Exam 1	13
3	April 18	Buffers and Solubility	19
3	April 20	Buffers and Solubility	19
4	April 25	Buffers and Solubility	19
4	April 27	Exam 2	19
5	May 2	Electrochemistry	21
5	May 4	Electrochemistry	21
6	May 9	Electrochemistry	21
6	May 11	Exam 3	21
7	May 16	Transition Metals	23
7	May 18	Transition Metals	23
8	May 23	Transition Metals	23
8	May 25	Exam 4	23
9	May 30	Nuclear Chemistry	24
9	June 1	Nuclear Chemistry	24
10	June 6	Nuclear Chemistry	24
10	June 8	Exam 5	24
11	June 13	Review	
11	June 15	Lab Exam	
12	June 22	Final Exam: 4 to 6 p.m.	

Important Dates

Date	Activity
April 16	Last day to add quarter-length classes
April 17	Last day to drop for a full refund or credit
April 17	Last day to drop a class with no record of grade
May 27	Last day to drop with a "W."

Grading

<i>Lecture: 750 points</i>	
<i>Exams</i>	$5 \times 100 = 500$ points
<i>Homework</i>	$5 \times 20 = 100$ points
<i>Paper</i>	$1 \times 50 = 50$ points
<i>Final Exam</i>	$1 \times 100 = 100$ points

<i>Lab: 250 points</i>	
<i>Lab report</i>	$5 \times 10 = 50$ points
<i>Pre-Lab</i>	$5 \times 5 = 25$ points
<i>Cations (PL)</i>	$1 \times 25 = 25$ points
<i>Cations</i>	$1 \times 50 = 50$ points
<i>Lab exam</i>	$1 \times 100 = 100$ points

Grading Scale

In order to obtain the final letter grade for the class, your total lecture score will be added to your lab score and a percentage score will be computed based on the total. This percentage score will be rounded to the nearest whole number and a letter grade will be assigned as per the following table. Grades will not be based on a curve. Please note that regardless of your overall score, if you do not complete all the lab assignments you will receive an F grade in the class.

<i>Percentage points</i>	<i>Grade</i>
97-100	A+
92-96	A
88-91	A-
85-87	B+
82-85	B
78-81	B-
74-77	C+
70-73	C
66-69	D+
60-65	D-
0-59	F

Other Options

Pass/No Pass: A grade of "C" or higher is considered "Pass" in the course and lower than "D+" is considered "No Pass" in the course.

Audit: If you do not need any credit for this course, you may elect to audit the course.

Note: You are not permitted to attend this class if you are not officially registered.

Lab

The following is a schedule of experiments that will be performed this quarter. Prior to start of a particular lab, you must complete the pre-lab exercise and must have read the lab manual completely. Failure to comply may result in not being able to complete the lab experiment at the assigned time.

Date (section 01)	Date (section 02)	Topic
4/4	4/5	Introduction and Check-in
4/6	4/7	Experiment C1: Freezing Point
4/11	4/12	Experiment C1: Freezing Point
4/13	4/14	No Lab
4/18	4/19	Experiment C2: Common Ion
4/20	4/21	Experiment C2: Common Ion
4/25	4/26	Experiment C3: Electrochemistry
4/27	4/28	Experiment C4: Buffers
5/2	5/3	Experiment C4: Buffers
5/4	5/5	No Lab
5/9	5/10	Experiment C5: Anions
5/11	5/12	Experiment C6: Cations
5/16	5/17	Experiment C6: Cations
5/18	5/19	Experiment C6: Cations
5/23	5/24	Experiment C6: Cations
5/25	5/26	Experiment C6: Cations
5/30	5/31	No Lab
6/1	6/2	Experiment C6: Cations
6/6	6/7	Experiment C6: Cations
6/8	6/9	Experiment C6: Cations
6/13	6/14	Lab Exam
6/15	6/16	Check out

Lab Notebook: You are required to maintain a detailed laboratory notebook. Pre-lab assignments and all data obtained in the lab must be carefully documented in your notebook. All entries in the lab notebook must be in PEN.

Pre-lab Assignment: Prior to coming to lab, you must complete a numbered outline of the procedure for the experiment that will be performed on the particular day. You must also enter a blank data table for the data to be obtained in the laboratory. Failure to complete the pre-lab assignment will result in no credit for that experiment. Additionally, you will not be permitted to be present in lab that day.

Lab report: Complete the calculations and data analysis sections for each experiment and submit them by the due date given below.

Lab Report Due Dates:

	Section 05	Section 06
Experiment C1	4/18	4/19
Experiment C2	4/25	4/26
Experiment C3	4/27	4/28
Experiment C4	5/9	5/10
Experiment C5	5/9	5/10
Experiment C6	6/8	6/9

Items to Purchase

1. Textbook: Silberberg 6th or 7th edition
2. Notebook for lecture notes
3. Laboratory notebook: http://www.amazon.com/Student-Lab-Notebook-Spiral-duplicate/dp/1930882742/ref=sr_1_6?ie=UTF8&qid=1441219297&sr=8-6&keywords=laboratory+notebook
4. Safety goggles: <http://books.deanza.edu/MerchDetail.aspx?MerchID=1341936&num=4&start=49&end=60&type=1&CategoryName=GENERAL%20MDSE&CatID=5322&Name=GENERAL%20MDSE&Catalog=966>
5. Scientific calculator

Paper

1. Identify a chemist, outside FHDA and not related to you, from northern California (academic or industry and not a physician)- someone who inspires you.
2. Gather information about this person: biographical (gender, ethnicity, sexual identity, family, etc.), area of research, your understanding of their work (in scientific terms based on what you have learned in this class), how will their work advance the field of chemistry, current and previous position, their path to the current position, schooling (high school, undergraduate, graduate, post graduate), how do you relate to them, what do you find interesting about this person, publications, why are you inspired by this person, what challenges did they overcome, what are their interests outside their work, etc. In order to gather this information you can do any of the following: a) search the internet b) contact the individual and request an in-person or phone interview (DO NOT SEND THEM AN EMAIL QUESTIONNAIRE) c) read what is written about them in other publications.
3. Write a paper that is a profile of this person. The paper should conform to the following specifications:
 - a. One inch margins on all sides
 - b. 12 point font
 - c. 1.5 spaced
 - d. Minimum two pages and maximum three pages (single side)
4. Title your paper as: "Profile of XYZ by ABC"
5. Have your person of interest approved by the instructor by April 22nd 2016 (either via email or in person (preferred))
6. The final paper is due on June 13th 2016 by 5:00 p.m. Print a hardcopy of the paper and submit it to your instructor.