INTRODUCTORY CHEMISTRY, CHEM 10, WINTER 2017
INSTRUCTOR: DR. RAM SUBRAMANIAM

Instructor Contact Information

Dr. Ram Subramaniam
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Office Hours: M- 11:30 to 12:30 TTh- 4:30 to 5:30 W- 2:30 to 3:30

Class Meeting

Lecture: S 17
Lecture time: MW- 9:30 to 11:20 a.m.

Lab: SC 2210
Lab time: W 11:30 a.m. to 2:20 p.m.

Textbook

Lecture- Chemistry for Changing Times, 14th edition, Hill and McCreary

Lab- Conceptual Chemistry, Laboratory Manual, Donna Gibson, Fifth Edition

Course Content

This course is an introduction to the discipline of chemistry, including chemical laboratory techniques and methods and a survey of important chemical principles. The course emphasizes chemistry as a subject of scientific inquiry and is designed to give the student a general appreciation for chemistry as a science.

Student Learning Outcomes

1. Develop problem-solving techniques by applying the Scientific Method to chemical data.

2. Evaluate the relationship between molecular structure and chemical properties of compounds.

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 De Anza College's policy on academic integrity: 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 the success of a student is directly related to her/his class attendance. 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.

Date	Chapter	Topic
1/9	1	Introduction, Chemistry
1/11	1	Chemistry
1/16	Martin Luther King day holiday- No class	
1/18	1	Exam 1
1/30	2	Atoms
2/1	2	Atoms
2/6	3	Atomic Structure
2/8	2	Exam 2
2/13	3	Atomic Structure
2/15	4	Chemical Bonds
2/20	President's day holiday- No class	
2/22	3	Exam 3
2/27	4	Chemical Bonds
3/1	5	Chemical Accounting
3/6	5	Chemical Accounting
3/8	4, 5	Exam 4
3/13	7	Acids & Bases
3/15	7	Acids & Bases
3/20	7	Acids & Bases
3/22		Presentations
3/27	Final Exam: 9:15 to 11:15 a.m.	

Grading

Lecture: 750 points	
Exams	3 × 100 = 300 points
Homework	5 × 20 = 100 points
Final Exam	1 × 150 = 150 points
Paper	1 × 100 = 100 points
Presentation	1 × 100 = 100 points

Lab: 250 points	
Pre-lab	9 × 5 = 45 points
Lab report	9 × 10 = 90 points
Lab notebook	1 × 25 = 25 points
Lab quiz	9 × 10 = 90 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.

Percentage points	*Grade*
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

Safe lab practices are of utmost importance. Please read the section in your laboratory on safety issues carefully. The following rules are applicable while in the lab:

- You may not be in the laboratory unless an instructor is present
- Eating and drinking are strictly prohibited inside the lab
- Open-toed shoes and shorts are not permitted inside the lab
- Dispose off waste material and broken glassware as per instructions from your instructor
- Safety goggles must be worn at all times

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.

Date	Topic	Page Number
1/11	Introduction and Check-in	
1/18	Lab 2: Taking Measurements	11
1/25	Lab 4: Percent water in popcorn	27
2/1	Lab 9: Electron dot structure	61
2/8	Lab 10: Molecular shapes	67
2/15	Lab 11: Solutions	75
2/22	Lab 17: Upset stomach	113
3/1	Lab 13: How much fat?	91
3/8	Lab 20: Organic molecules	135
3/15	Lab 21: DNA capture	145
3/22	Presentations and 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**.

Quiz: There will be a quiz at the beginning of each lab period.

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 a loss of a minimum of 5-points. Additionally, the instructor may disallow you from continuing in lab on that day.

Lab report: Complete the data analysis and answer the post lab questions in your lab notebook.

Paper & Presentation

The class will be divided into 10 groups of three students each. Each group of students will be assigned one of the following topics:

1. Department of health and human services: https://www.hhs.gov
2. Environmental protection agency: https://www.epa.gov
3. Department of education: https://www.ed.gov
4. Department of energy: https://energy.gov
5. Office of science and technology policy: https://www.whitehouse.gov/administration/eop/ostp
6. Council on environmental quality: https://www.whitehouse.gov/administration/eop/ceq
7. National aeronautics and space administration: https://www.nasa.gov
8. National science foundation: https://www.nsf.gov
9. National institute of health: https://www.nih.gov
10. US geologic survey: https://www.usgs.gov

Each group will learn about the assigned topic with the following context:

1. What is the major purpose of this organization?
2. When was this organization founded? What were the initial goals and what are its goals now?
3. Who ran this organization under the previous government? What is the profile of this person- education, training, policies, relevant experience, focus areas, policies etc.
4. What were the main contributions of this organization during the last eight years (2008 to 2016)? How has this organization advanced science?
5. Who will run this organization under the new government? What is the profile of this person- education, training, policies, relevant experience, focus areas, policies etc.
6. What policy positions and directions have been outlined for this organization by the current administration?
7. What are the similarities and differences in the direction of this organization under the previous and current administrations?
8. Do you anticipate the changes to be beneficial or detrimental and if so how?

Presentation

Group members will give a 15-minute oral presentation on the topic they have been assigned. Each member of the group must speak for five minutes. The presentation will address the research undertaken by the group and must address at a minimum the questions listed above. In addition, the groups are welcome to add their own emphasis to the topics they have been assigned. Following their presentation, the groups must be prepared to answer questions related to their presentation from classmates.

Paper

Each student will write a letter to the US President which highlights their concerns and hopes for the organization that they have conducted research on. The letter should be based on the research conducted by the group. Based on the research, the letter should address: 1) the primary mission of the organization 2) the background and policy biases of the person heading the organization 3) where you think the organization is headed 4) what you think ought to be the primary direction of the organization 5) what are you most concerned about with regards to the direction of this organization 6) what you hope the organization will achieve in the next four years 7) what are you most hopeful about and what are you most concerned about?

The letter should be no more than three typed pages- 12 point font, one inch margins, double spaced. The letter is due on the day of the final exam.