

**PREPARATORY COURSE FOR GENERAL CHEMISTRY CHEM-50, FALL 2011**  
**INSTRUCTOR: DR. RAM SUBRAMANIAM, SECTION: 05**

**Instructor Contact Information**

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**Class Meeting**

Lecture: S-15  
Lecture time: Monday, Tuesday, Wednesday, and Thursday: 10:30 a.m. to 11:20 a.m.

Lab lecture and Lab: SC 2208  
Lab lecture and Lab time: Section 5- Tuesday, 11:30 a.m. to 2:10 p.m.

**Textbook**

Lecture- Introductory Chemistry, Concepts and Connections, Charles H. Corwin, ISBN 13: 978-0-13-232148-8, ISBN 10: 0-13-232148-3  
Lab- Laboratory Manual for Introductory Chemistry, 4<sup>th</sup> Edition, C.H. Corwin

**Course Content**

This class will serve as a preparation for the General Chemistry sequence. Following a brief review of scientific measurements, we will discuss various simple chemical concepts such as model of an atom and the periodic table. We will learn to write some simple chemical reactions as well as perform calculations based on these reactions. We will then study some basic properties of solids, liquids, and gases, and finally conclude with a discussion of acids and bases. Several sections from chapters 1-15 of your text will be covered during this quarter.

**Learning Outcomes**

1. Assess the fundamental concepts of modern atomic and molecular theory.
2. Evaluate the standard classes of chemical reactions.
3. Demonstrate a fundamental understanding of mathematical concepts pertaining to chemical experimentation and calculations.

## **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.

## **Attendance Policy**

If you miss any of the class meetings (lecture or laboratory) during the first two weeks, you will be dropped from the class. You will be given an “F” grade for unexcused absences in THREE or more subsequent lectures.

*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%. There will be seven mid term exams total during the quarter, six of which will be multiple choice. Please bring a SCANTRON (Form No. 882-E) form that you purchase from the bookstore to each of the exams. Each mid-term exam is worth 100 points and the lowest scores will be dropped for the final grade calculation. The final exam is worth 150 points. There are a total of nine laboratory experiments. You must complete all the lab experiments 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. On the days of the exams, the full lecture period will be used for the exam. 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.

<b>Class Period</b>	<b>Topics</b>	<b>Sections</b>
9/26 M	Introduction, syllabus	
9/27 T	Scientific measurements	Chapter 2
9/28 W	Metric System	Chapter 3
9/29 R	Practice problems	Chapters 2 & 3
10/3 M	Matter and Energy	4.1 to 4.4
10/4 T	Matter and Energy	4.5 to 4.10
10/5 W	Models of an Atom	5.1 to 5.4
10/6 R	Models of an Atom	5.5 to 5.8
10/10 M	Exam 1	Chapters 2, 3, 4
10/11 T	Models of an Atom	5.9 to 5.11
10/12 W	The Periodic Table	6.1 to 6.7
10/13 R	The Periodic Table	6.8 to 6.10
10/17 M	Language of Chemistry	7.1 to 7.4
10/18 T	Language of Chemistry	7.5 to 7.7
10/19 W	Language of Chemistry	7.8 to 7.9
10/20 R	Chemical Reactions	8.1 to 8.5
10/24 M	Exam 2	Chapters 5, 6, 7
10/25 T	Chemical Reactions	8.6 to 8.9
10/26 W	Chemical Reactions	8.10 to 8.11
10/27 R	The Mole Concept	9.1 to 9.2
10/31 M	The Mole Concept	9.3 to 9.4
11/1 T	The Mole Concept	9.5 to 9.6
11/2 W	The Mole Concept	9.7 to 9.9
11/3 R	Chemical Equation Calculations	10.1 to 10.3
11/7 M	Exam 3	Chapters 8, 9
11/8 T	Chemical Equation Calculations	10.4 to 10.6
11/9 W	Chemical Equation Calculations	10.7 to 10.9
11/10 R	The Gaseous State	11.1 to 11.6
11/14 M	Exam 4*	Chapter 10
11/15 T	The Gaseous State	11.7 to 11.11
11/16 W	The Gaseous State	Class Notes
11/17 R	Chemical Bonding	12.4 to 12.7
11/21 M	Exam 5	Chapter 11
11/22 T	Chemical Bonding	12.8 to 12.10
11/23 W	Liquids and Solids	13.7 to 13.10
11/24 R	<i>Thanksgiving Holiday</i>	
11/28 M	No Class	
11/29 T	Liquids and Solids	13.7 to 13.10
11/30 W	Solutions	14.8 to 14.10
12/1 R	Solutions	14.11
12/5 M	Exam 6	Chapters 12, 13, 14
12/6 T	Acids and Bases	15.1 to 15.4
12/7 W	Acids and Bases	15.5 to 15.8
12/8 R	Acids and Bases	15.9 to 15.11
12/12 M	Exam 7	Chapter 15

## Grading

<i>Lecture: 750 points</i>	
<i>Exams</i>	$6 \times 100 = 600$ points
<i>Final Exam</i>	$1 \times 150 = 150$ points
<b><i>Total</i></b>	<b>750 Points</b>

<i>Lab: 250 points</i>	
<i>Pre-lab</i>	$9 \times 5 = 45$ points
<i>Lab report</i>	$9 \times 10 = 90$ points
<i>Lab exam</i>	$1 \times 100 = 100$ points
<i>Notebook</i>	15 points
<b><i>Total</i></b>	<b>250 points</b>

### *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. **TWO OR MORE UNEXCUSED ABSENCES FROM LAB WILL RESULT IN AN AUTOMATIC "F" FOR THE ENTIRE COURSE REGARDLESS OF WHAT YOUR TOTAL NUMBER OF POINTS MAY BE AT THE END OF THE QUARTER.**

<i>Percentage points</i>	<i>Grade</i>
97-100	A+
93-96	A
89-93	A-
86-88	B+
83-85	B
80-82	B-
76-79	C+
72-75	C
68-71	D+
63-67	D
60-62	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.

## Important Dates

Date	Activity
10/08	Last date to drop for a refund
10/10	Exam 1
10/15	Last day to drop a class with no record of grade
10/24	Exam 2
11/7	Exam 3
11/14	Exam 4 (* Can NOT be dropped)
11/18	Last day to drop with a "W"
11/21	Exam 5
12/5	Exam 6
12/12	Exam 7
12/13	Final Exam (9:15 to 11:15 a.m.)

## Lab

Your lab instructor will provide instructions regarding laboratory attendance policy and laboratory notebook. Please note that attendance is mandatory and only valid excuses listed in the section above titled "Attendance Policy" will be considered for a make-up. You are expected to maintain a laboratory notebook as per instructions provided by your lab instructor.

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
- Notify the instructor immediately in cases of illnesses while in the lab
- Eating and drinking are strictly prohibited inside the lab
- Open-toed shoes and shorts are not permitted inside the lab
- Personal headphones may not be used while in the lab
- Dispose off waste material and broken glassware as per instructions from your instructor
- Safety goggles must be worn at all times

The lab instructor will provide more detailed information regarding the lab reports as well as the lab exams to you. 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.

## Lab Schedule

	Title	Section 5
	Check in	9/27
Lab 1: E2	Metric System	10/4
Lab 2: E3	Density	10/11
Lab 3: E5	Physical & Chemical Properties	10/18
Lab 4: E7	Periodic Table	10/25
Lab 5: E13	Alum	11/1
Lab 6: E10	Penny Analysis	11/8
Lab 7: E14	Baking Soda	11/15
Lab 8: E21	Conductivity	11/22
Lab 9: E20	Vinegar Analysis	11/29
	Check out & Lab Final	12/6

### Laboratory Protocol (Failure to comply with any of the following will result in loss of credit for that particular experiment)

1. The pre-lab exercise for each experiment must be completed prior to coming to lab.
2. Only bound notebooks (such as a composition notebook or bound laboratory notebooks) can be used as lab notebooks. Obtain the instructor's approval for the notebook you will be using.
3. All data collected in lab must be entered in the lab notebook using a pen.
4. You must obtain the signature of the lab instructor in the lab notebook at the end of each lab period.
5. You must be present in the lab for the entire duration of the experiment.
6. All lab reports must be typed.