

CHEM 31A (90319): General Chemistry Fall 2012

I. Lecture

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Office Hours: M T W Th F 11:30 am-1:30 pm
or by appointment

Lecture Time: M W F 9:35-10:25 am

Location: Angell B106

Lecture: The lecture each week will be used primarily to cover new material. Included in the syllabus is a tentative schedule covering the topics and timing of the lecture, reading material, and problem sets. Attendance of the lecture is not mandatory, but most will find it difficult to do well in this class if they do not attend the lecture. My class lecture notes for the entire semester are posted on Blackboard.

Textbook: "Chemistry, A Molecular Approach" 2nd Ed., by Nivaldo Tro can be purchased at the UVM bookstore. The solutions manual comes with the text and has the complete solutions to all the assigned problems. The study guide while not required can be a great help during problem solving.

Problems: Answers to problem sets and exercises are in the solutions manual. I will cover assigned problem sets during scheduled review sessions. I strongly encourage you to do as many problems as possible. The problems combine mathematics with scientific concepts and are challenging, so the more you practice the better you will get. Blank old exams from my 2010 and 2011 General Chemistry classes as well as their answer key will be posted on Blackboard. These are a great way to evaluate what you understand and what you do not as the test questions will change but the format and concepts will remain the same.

Problem Sessions: Throughout the semester I will hold optional meetings on Tuesdays evenings from 7:00-8:30 pm in Angell B106 to better clarify topics and/or do problem solving. Also the Sunday before a mid-semester exam I will hold an extra review session from 7:00-9:00 pm in Marsh Life Sciences 235. Also, the class before the exam a review session will be held instead of the standard lecture.

Exams: The exams are scheduled to be **Tuesday evenings from 7:00-9:45 pm in Angel B106 (Last Name: A—P) or Rowell 103 (Last Name: R—Z)**. There are no scheduled make up dates. While taking the exams only non-programmable non-graphing calculators are permitted. No other electronic devices are allowed (i.e. no cell phones, mp3 players, ipods, etc.). It is the responsibility of the student to bring a non-programmable non-graphing calculator to the exams, since there will be no extras provided. **Students caught using any other electronic device other than a non-programmable non-graphing calculator will receive a zero for the exam.**

Exam Dates:

September 18	Chapters 1, 2, 3, 4 (sections 1-6), electronegativity
October 9	Chapters 5, 6
November 6	Chapters 7, 8, 9 (sections 1, 3-10), 10 (sections 1-7)
November 27	Chapters 10 (sections 8), 11, 9 (sections 4)
December 14	Final Exam (comprehensive) 1:30pm-4:15pm Angel B106

II. Laboratory

Lab Manuals: “Chemistry 31, Experiments”, which is sold in the first floor stockroom in Cook (A143) for \$10.00. “Working Safely with Chemicals” 2nd Ed., and a carbon-less copy lab notebook are both sold at UVM’s bookstore.

Lab Notebook: A notebook with carbon-less copies is required for recording lab data. All data is to be recorded in ink (not pencil).

Attendance: Students must attend the lab section they are assigned to. If more than two labs are missed you will receive an **F** for the course. Only the academic dean of your college may grant an incomplete. An unexcused absence will result in a **ZERO** grade for the laboratory experiment. Official documentation of sickness or a family crisis is required for an excused absence. If there is a need to reschedule your lab time to one that is not your assigned time you must obtain permission from me a week in advance.

Lab Videos: Prior to attending your lab it is mandatory to view the video that accompanies the lab. These videos demonstrate the proper use of new equipment and the safe handling of chemicals. Videos can be found at <http://www.uvm.edu/~chem/courses/?Page=31Videos.html>.

Safety Eye Wear: Everyone in the lab must wear OSHA approved (EZ87stamped) safety glasses or goggles once any experimentation has been started. Students not observing this rule will receive a **ZERO** for the experiment, warnings will not be given. Safety eyewear can be purchased at the UVM bookstore. **Contact Lenses are a potential health hazard and can be worn in the laboratory only if no other types of corrective lenses are available. If you have to wear contact lenses then you must wear goggles and please let your TA know.**

Footwear: Only shoes that cover the toes are permitted in lab. Sandals, flip-flops and any other open toed shoes are not permitted. You will be asked to change your shoes or receive a **ZERO** for the experiment.

Breakage Card: A breakage card (\$40.00) must be purchased prior to your first lab from the first floor stockroom in Cook A143. It is advisable to purchase this as soon as possible to avoid waiting in yet another line. The \$40.00 is refundable and if you avoid breaking your equipment you will get all of it back. Remember to not leave home without it, as you must have it with you to be admitted into the lab.

III. Course Grade

Percent Ranges for Grades:

A+ ≥ 96	A ≥ 90	A- ≥ 88	B+ ≥ 85	B ≥ 80	B- ≥ 77	C+ ≥ 72
C ≥ 65	C- ≥ 63	D+ ≥ 60	D ≥ 56	D- ≥ 53	F ≤ 51	

How to Calculate Your Points:

1) Class = 500 points

Four Hour Exams = 4 grades

+ One Final Exam = 2 grades

6 grades

6 grades – 1 grade = 5 grades = **500 class points**

Only five grades are counted for your class points. If your final is your lowest grade it will count only as one unit. If one of the hour exams is your lowest grade then your final will count as two units. The lowest hour exam grade will be replaced by the grade on the final. The tests being only worth 100 points each, would only give you 500 obtainable exam points. If you are absent from an exam official documentation of sickness or family crisis is required or you will receive a **ZERO** for the exam. Students with legitimate excuses will be permitted to take the exam early. Except in very unusual circumstances makeup exams will not be administered after the scheduled exam time.

Example 1:

	Exam 1	Exam 2	Exam 3	Exam 4	Final X2
Actual Scores	85	45	78	77	75 75
Scores Counted	85	75	78	77	75

Total Points = 390 points from class

Example 2:

	Exam 1	Exam 2	Exam 3	Exam 4	Final X2
Actual Scores	67	78	76	69	62 62
Scores Counted	67	78	76	69	62

Total Points = 352 points from class

2) Laboratory = **200 lab points**

Notebook and Prelab	30 points
Lab Reports	80 points
Quizzes	65 points
Technique	<u>25 points</u>
	200 points

(Obtained from the lab TA, the average grade is normally an 80% or 160 points)

3) Course Grade Determination

Add up your points from class and lab and then use the chart at the beginning of this section to determine your course grade.

Example 1:

$$\begin{array}{r} 390 \text{ class points} \\ + \quad \underline{160 \text{ lab points}} \\ \hline 550 \text{ total points} \div 700 \text{ possible points} = 78.6\% \text{ B-} \end{array}$$

Example 2:

$$\begin{array}{r} 352 \text{ class points} \\ + \quad \underline{160 \text{ lab points}} \\ \hline 512 \text{ total points} \div 700 \text{ possible points} = 73.1\% \text{ C+} \end{array}$$

Academic Integrity

Offenses against the Code of Academic Integrity (i.e. cheating) are deemed serious and insult the integrity of the entire academic community. Any suspected violations of the code are taken very seriously and will be forwarded to the Center for Student Ethics and Standards for further investigation.

IV. Tentative Lecture Schedule

<u>Dates</u>	<u>Chapters</u>	<u>Description</u>
Aug. 27-Aug.31	1	Ch1: 9,12,16,21,26,28,30,41,46,53,55,59,67,69,83,87,93,95,98,106,110,117,122,125
Sept. 3	LABOR DAY HOLIDAY	
Sept. 4-Sept. 7	2	Ch2: 6,13 thru 24,6,10,13,15,21,31,39,41,47,50,53,57,61,69,72,77,81,85,98,106,111
	3	Ch3: 2,4,8,14,32,34,37,44,47,49,52,57,61,67,69,72,77,81,85,89,91,97,101,113,117,121,126
	9.6	Ch9: 19
Sept. 10-Sept. 14	3 and 4	Ch4: 2,5,10,11,13,26,27,31,33,37,43,46,50,53,55,57,60,63,65,71,75,98,101,107,111,114,117,120
Sept. 17	REVIEW	
Sept. 18	EXAM 1	Chapters 1, 2, 3, 4.1-4.6, and electronegativity 9.6
Sept. 19-Sept. 21	5	Ch5: 2,5,10,11,13,26,27,31,33,37,43,46,50,53,55,57,60,63,65,71,75,98,101,107,111,114,117,120
Sept. 24-Sept. 28	6	Ch6: 6,10,11,13,15,19,21,25,32,35,39,42,44,46,49,53,56,58,61,64,67,71,74,77,80,83,85,87,91,97,102,106,110,113,
Oct. 1-Oct. 5	6	
Oct. 8	REVIEW	
Oct. 9	EXAM 2	Chapters 5 and 6
Oct. 10-Oct. 12	7	Ch7: 2,5,7,9,12,16,20,26,32,34,39,42,45,52,60,63,68,71,73,76,78,82,86,92,
Oct. 15-Oct. 19	8	Ch8: 7,11,15,16,23,25,28,32,35,37,42,43,47,48,51,55,58,61,64,65,68,72,75,78,80,83,85,89,91,93,99,105,110
Oct. 22-Oct. 26	9.1-9.3,9.5,9.7-9.9	Ch9: 3,15,19,21,26,28,32,37,51,55,60,63,65,70,72,73,76,79,81,84,87,95,98,105,110,112

Oct. 29-Nov. 2	10.1-10.7 9.10	Ch10: 1,5,9,14,16,31,34,36,39,42,46,50,53, 57,63,86,92,95 Ch9: 73,75,78,98
Nov. 5	REVIEW	
Nov. 6	EXAM 3	Chapters 7, 8, 9.1-9.3, 9.5-9.10, 10.1-10.7
Nov. 7-Nov. 9	10.8	Ch10: 23,25,28,71,75,77
Nov. 12-Nov. 16	11 9.4,	Ch11: 5,9 thru 35,46,48,50,53,56,55,61,66,68,71,74, 78,81,84,86,89,102,104,109,114,117,119,122,125, 128,137 Ch9: 9,11,33,40,46,48,89,114
Nov. 19-Nov. 23	THANKSGIVING HOLIDAY	
Nov. 26	REVIEW	
Nov. 27	EXAM 4	Chapters 10.8, 11, 9.4
Nov. 28-Nov. 30	REVIEW	
Dec. 3-Dec. 5	REVIEW	
Dec. 14	FINAL EXAM	Comprehensive (Angell B106; 1:30am-4:15pm)

V. Laboratory Schedule

<u>Date</u>	<u>Experiment</u>	<u>Description</u>
Sept 10-13	1	A. Lab Safety I (I-IV in WSWC) B. Density
Sep 17-20	2	A. Lab Safety II (V-XI in WSWC) B. Hydrated Salt
Sep 24-27	3	Mole Ratio
Oct 1-4	4	Acid Content of a Food Product
Oct 8-11	5	Syn and Ident of Coordination Cmpd
Oct 15-18	6	Gas Law Determination of MW
Oct 22-25	7	Heat Capacity of a Calorimeter
Oct 29-Nov 1	8	ΔH° of MgO
Nov 5-8	9	Flame Emission Spec of Metals
Nov 12-15	9	Qualitative Analysis
Nov 19-22	THANKSGIVING HOLIDAY	
Nov 26-29	10	Qualitative Analysis Checkout