

Spring 2013 CHEM 32A (10123 and 14400)

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Office Hours: M W F 9:00am – 11:00am
T Th 10:00am – 12:00pm
or by appointment

Lecture

Lecture Time: M W F 11:45 am – 12:35 pm

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 homework problem sets. 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.

Homework Problems: Answers to homework problem sets and exercises are in the solutions manual. I will cover assigned homework during scheduled review sessions. I strongly encourage you to do as many homework 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 2011 and 2012 General Chemistry classes as well as their answer keys are 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 Billings Lecture Hall 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 Billings Lecture Hall as well. For continued review, the class before the exam will be a review session instead of the standard lecture.

Exams: The exams are scheduled to be **Tuesday evenings from 7:00-9:45 pm in Marsh Life Sciences 235 (A—O) or Rowell 103 (P—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

February 5	Chapters 4(sect. 4-7), 12, 13
March 12	Chapters 14, 15
April 2	Chapters 16, 17
April 23	Chapters 18, 19
May 7	Final Exam (7:30-10:15 am, Angell B106)

Laboratory

Lab Manuals: "Chemistry 32, A Lab Manual", which is sold in the first floor stockroom in Cook (A143) for \$10.00.

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=32Videos.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.

Course Grade

Percent Ranges for Grades:

A+ ≥ 96	A ≥ 91	A- ≥ 89	B+ ≥ 86	B ≥ 80	B- ≥ 78	C+ ≥ 74
C ≥ 65	C- ≥ 63	D+ ≥ 60	D ≥ 56	D- ≥ 53	F < 53	

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 a total of 500 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. 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/500 possible = 78.0%

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/500 possible = 70.4%

2) Laboratory = 200 points

Notebook and Prelab	30 points
Lab Reports	95 points
Quizzes	56 points
Technique	<u>19 points</u>
	200 points

(Obtained from the lab TA, the average grade is normally an 82.0% or 162 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:

$$\begin{array}{r} 390 \text{ class points} \\ + \quad \underline{162 \text{ lab points}} \\ \hline 552 \text{ total points}/700 \text{ possible} = 78.8\% = \text{B-} \end{array}$$

Example 2:

$$\begin{array}{r} 352 \text{ class points} \\ + \quad \underline{162 \text{ lab points}} \\ \hline 514 \text{ total points}/700 \text{ possible} = 73.8\% = \text{C+} \end{array}$$

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.

Tentative Lecture Schedule and Homework Problems

<u>Date</u>	<u>Chapter</u>	<u>Homework Problems</u>
January 14-18	4.4-4.7 Review 12	Ch12: 6,8,10,12,13,14,18,21,25,31,33,35,39, 42,43,47,49,51,54,57,61,63,70,71,73,75,78,80, 83,86,89,92,93,96,99,101,106,108,115
January 21-25 (1/21 MLK Day)	12 and 13	Ch13: 3,6,9,12,14,19,23,25,27,30,33,39,41,43, 45,47,51,53,55,57,59,61,64,67,72,75,79,81,85, 87,90,94,97,104,108
January 28-February 1	13	
February 4-5	Review	
February 5	First Exam	Chapters 4.4-4.7, 12, 13
February 6-8	14	Ch14: 4,8,12,14,21,23,27,29,31,33,37,40,43, 46, 52,55,58,61,63,69,71,75,77,79,81,84,86,89
February 11-15	14	
February 18-22 (2/18 Pres Day)	14 4.8 Review 15	Ch15: 5,10,15,23,26,35,37,38,41,44,46,47,51, 56,57,59,61,63,65,69,75,77,81,85,87,89,92,95, 97,99,103,107,113,115,117,119,125,136,137
February 25-March 1	15	
March 4-8	SPRING BREAK	
March 11-12	Review	
March 12	Second Exam	Chapters 4.8, 14, 15
March 13-15	16	Ch16: 2,4,6,11,12,14,19,21,29,31,34,41,45, 47,49,51,53,55,57,59,63,65,71,74,76,80,82, 87,89,91,94,97,99,100,103,107,110,111,114 117,120,123,126,130,134
March 18-22	16 17	Ch17: 7,9,12,16,23,26,27,31,33,37,39,41,44, 47,49,51,55,57,59,61,63,65,67,71,73,77,79,82, 85,87,88,93,98
March 25-29	17	

April 1-2	Review		
April 2	Third Exam	Chapters 16,17	
April 3-5	4.9 Review 18	Ch18: 4,5,6,9,13,17,18,19,30,34,39,41,43,45, 47,49,51,53,57,61,63,65,67,71,73, 75,77,79,82 82,86,88,93,96.99,102,103,109,113,117,121, 123	
April 8-12	18		
April 15-19	19	Ch19: 4-11,14,17,21,28,31,33,35,41,43,45,49, 51,53,55,57,63,67,69,71, 77,79,81,88,91,95,98 99,103	
April 22-23	Review		
April 23	Fourth Exam	Chapters 4.9, 18 19	
April 24-May 1	Review		
May 7	Final Exam	Cumulative	7:30-10:15 am, Angell B106

Tentative Laboratory Schedule

<u>DATE</u>	<u>EXPERIMENT</u>	
January 14 - 17	No Lab	
January 21 - 24	No Lab	
January 28 - 31	Molar Mass from Freezing Point Depression	pg 15
February 4 - 7	Iodination of Cyclohexanone	pg 19
February 11 – 14	Keq of FeSCN^{+2}	pg 24
February 18 - 21	Presidents Day - No Lab	
February 25 - 28	Acid Neutralization of Anti-Acids	pg 28
March 4 - 7	Spring Break - No Lab	
March 11 -14	Acid-base Equilibria and Buffers	pg 30
March 18 - 21	K_{sp} of Copper (II) tartrate	pg 37
March 25 - 28	Thermodynamics of the Dissolution of Borax	pg 40
April 1 - 4	Oxidizing Power of Bleaches	pg 44
April 8 - 11	Potentiometric Det. of K_a	pg 47
April 15 - 18	Electrolysis/Electroplating CHECK OUT	pg 51