

CHEM 31A (90247) : General Chemistry Fall 2015

I. Lecture

Lecturer: Alan Chant, Ph.D.

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Office Hours: 11:00 AM – noon
(Mon/Wed/Fri)

Phone: 802-656-0283

or by appointment

Lecture Time:

9:40 – 10:30 AM

(Mon/Wed/Fri)

Location: MLS 235

Lecture: The lecture each week will primarily involve covering material from the assigned textbook and will include going over numerical problems. Included in this syllabus is a tentative schedule outlining lecture dates/times, text material and suggested problems sets. After each lecture, I will post my lecture notes on Blackboard. You are expected to come prepared and on time and to stay until the lecture has finished.

Textbook: *“Chemistry, A Molecular Approach”, 3rd Ed., by Nivaldo Tro (2nd Custom Edition).* A Solutions manual comes with the textbook. A complete set of answers to assigned problems can be found in the solutions manual. You can purchase these books from the UVM bookstore.

Problem Sets: We will be using the online program “Sapling Learning” for homework assignments (**homework is ungraded**) and weekly quizzes. To sign up for an account, click on or type into your browser the following link: <http://bit.ly/saplinginstructions>

Select problems from the back of the book will be assigned after each lecture but will not be graded. Two sets of past exams and answer keys will be available on Blackboard before each exam to help with your exam preparation.

Recitations: I will hold recitations every Thursday night from 8 – 9 PM in MLS 235. I will be going over specific problem sets that I will make available to students prior to recitations. You are encouraged to try the problems before coming to the recitation session and are expected to bring problems with you to review.

Communications: I will be using Blackboard to e-mail and post important announcements. I will also be using this platform to post additional course resources and grades.

Teaching Assistants' Office Hours: TAs will be conducting office hours in Cook A-302 at various times throughout the week. The schedule will be posted in Cook A-302 or will be available from your TA. You can approach any of the TAs for help, not just your lab TA. You may utilize this time to get help with both lab- and lecture-related questions.

Exams: Exams are scheduled for Thursday nights from 7:35 - 10:35 PM in MLS 235. There are no make-up dates. A zero grade as a result of the missed exam will be used as the dropped grade when appropriate when determining final grades. Only non-programmable calculators are permitted during exams. It is the responsibility of each student to bring their own non-programmable calculator to the exam. Calculators may not be shared. No other electronic devices, including laptops, cell phones, MP3 players, iPods, etc., are allowed. Students caught using any electronic device other than a non-programmable calculator will receive a zero for the exam.

Exam Dates:

Thur, 24th Sep: Chapters 1, 2, 3, 4

Thur, 15th Oct: Chapters 5, 6

Thur, 5th Nov: Chapters 7, 8, 9

Thur, 3rd Dec: Chapters 10, 11.

Fri, 11 Dec (Final Exam: 1:30 – 4:15 PM) in MLS 235 (comprehensive).

II. Laboratory

Lab Notebook: A spiral-bound laboratory notebook with carbonless copies, available at the UVM Bookstore, is required.

Safety Eye Wear: Everyone in the lab must wear OSHA-approved (EZ87 stamped) safety glasses or goggles once any experiment has been started. Students not observing this rule will receive a **ZERO** for the experiment. Warning will not be given. Safety eyewear can be purchased at the UVM Bookstore or in Cook A143. ***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. Please let your TA know if this is the case.***

Footwear: Only shoes that fully 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 A-143. It is advisable to purchase this as soon as possible to avoid waiting in line. The \$40.00 is refundable; if you do not break any of 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.

Prior to Start of Lab: Purchase your lab manual, lab notebook, breakage card, and safety glasses. Also, sign up for Sapling Learning Labs and complete the required quizzes. ***If you have not purchased or completed these items you will not be able to begin the lab portion of the course.***

Attendance: Students must attend the lab section to which they are assigned. If more than two labs are missed, you will receive an **F** in the course. Only the Academic Dean of your college may grant an incomplete grade for a course. 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.

Lab Videos: Prior to attending each 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>

Laboratory Schedule: The table below shows the dates for each lab experiment and recitations. A more detailed Laboratory Syllabus will be provided by your lab TA and can also be accessed from Sapling.

Week	Dates	Recitations	Experiments
1	Aug 31 – Sept 4		NO LABS
2	Sept 7 – Sep 11		NO LABS
3	Sept 14 – Sept 18	1	Exp. 1: <i>Determination of Acid Content</i>
4	Sept 21 – Sept 25		Exp. 2: <i>Chemical Reactions of Copper</i>
5	Sept 28 – Oct 2	2	Exp. 3: <i>Gas Law Determination of Mol. WT</i>
6	Oct 5 – Oct 9	3	Exp. 4: <i>Heat of Formation of MgO</i>
7	Oct 12 – Oct 16		Exp. 5: <i>Determination of Heat Capacity</i>

8	Oct 19 – Oct 23	4	Exp. 6: <i>Flame Emission Spectra of Metals</i>
9	Oct 26 – Oct 30	5	Exp. 7: <i>Qualitative Analysis (Week 1)</i>
10	Nov 2 – Nov 6	6	Exp. 7: <i>Qualitative Analysis (Week 2)</i>
11	Nov 9 – Nov 13	7	Exp. 8: <i>Molecular Models</i>
12	Nov 16 – Nov 20	8	Exp. 9: <i>Evaporation and Intermolecular forces</i>
13	Nov 23 – Nov 27		<i>FALL BREAK</i>
14	Nov 30 – Dec 4	9	CLEAN-UP LAB and CHECK-OUT of DRAWERS
15	Dec 7 – Dec 9		NO LABS
16	Dec 11 – Dec 18		<i>FINAL EXAMS</i>

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

Points needed to obtain a specific *final* grade:

A+ ≥ 960 A ≥ 900 A- ≥ 880 B+ ≥ 850 B ≥ 800 B- ≥ 770 C+ ≥ 720

C ≥ 650 C- ≥ 630 D+ ≥ 600 D ≥ 560 D- ≥ 530 F ≤ 510

How to Calculate Your Points:

Class = **800 total points** (80% of grade; Exams and quizzes)

Exams = **500 points** (5 Exams) x 1.44 = **720 weighted points**

Quizzes = **80 points**

Each exam is worth 100 points, with the exception of the final, which is worth 200 points. Therefore, the final exam counts as two midsemester exams. If your final is your lowest grade, then it will count as only one exam worth 100 points. If any one of the four midsemester exams is your lowest grade, then it will be replaced by the final, which will count as two exams (graded out of 200 points).

Example 1:

	Exam 1	Exam 2	Exam 3	Exam 4	Final X2	Quizzes
Actual	85	45	78	77	[80 80]	70
Counted	85	80	78	77	80	70

Example 2:

	Exam 1	Exam 2	Exam 3	Exam 4	Final X2	Quizzes
Actual	67	78	76	69	[62 62]	68
Counted	67	78	76	69	62	68

The laboratory portion of the course accounts for 20% of the course and is worth a total of 200 points. Grades are obtained from the lab coordinator after final grade adjustments are made. The average grade for the lab section is normally 80% or 160 points.

IV. Tentative Lecture schedule

Date	Chapter	Suggested Problems
Aug 31 – Sept 4 [Chap. 1 quiz]	1	Chapter 1: 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 7 – Sep 11 [Chap. 2 quiz]	2 3	Chapter 2: 6, 10, 13 -24, 31, 39, 41, 47, 50, 53, 57, 61, 69, 72, 77, 81, 85, 98, 106, 111. Chapter 3: 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.
Sept 14 – Sept 18 [Chap. 3 quiz]	3cont. 4	Chapter 4: 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 21 – Sept 25 [EXAM 1] [Chap. 4 quiz]	5	Chapter 5: 1, 9, 12, 15, 17, 21, 24, 32, 34, 36, 38, 42, 45, 47, 49, 52, 58, 63, 66, 71, 77, 80, 82, 83, 86, 89, 95, 98, 101, 104, 106, 111, 115, 121, 127, 129.
Sept 28 – Oct 2 [Chap. 5 quiz]	5 cont. 6	Chapter 6: 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 5 – Oct 9 [Chap. 6 quiz]	6 cont.	
Oct 12 – Oct 16 [EXAM 2] [NO QUIZ THIS WEEK!]	7	Chapter 7: 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 19 – Oct 23 [Chap. 7 quiz]	7 cont. 8	Chapter 8: 7, 11, 15, 16, 23, 25, 28, 32, 35, 37, 42, 43, 47, 48, 51, 55, 58, 61, 64, 65, 68, 72, 78, 80, 83, 85, 89, 91, 93, 99, 105, 110.
Oct 26 – Oct 30 [Chap. 8 quiz]	8 cont. 9	Chapter 9: 3, 9, 11, 15, 19, 21, 26, 28, 32, 33, 37, 40, 46, 48, 51, 55, 60, 65, 70, 72, 73, 76, 79, 81, 84, 87, 89, 95, 98, 105, 110, 112, 114.

Nov 2 – Nov 6 [EXAM 3] [Chap. 9 quiz]	9 cont.	
Nov 9 – Nov 13 [Chap. 10 quiz]	10	Chapter 10: 1, 5, 9, 14, 16, 23, 25, 28, 31, 34, 36, 39, 42, 46, 50, 53, 57, 63, 71, 75, 77, 86, 92, 95.
Nov 16 – Nov 20 [Chap. 11 quiz]	11	Chapter 11: 5, 9-35, 46, 48, 50, 53, 56, 55, 61, 66, 68, 71, 74, 78, 81, 84, 86, 89, 104, 109, 114, 117, 119, 122, 125, 128, 137.
Nov 23 – Nov 27		VACATION: Thanksgiving
Nov 30 – Dec 4 [EXAM 4]		Buffer week/ Review Sessions
Dec 7 – Dec 10		Review Sessions
Dec 11 - FINAL EXAM	Last week of classes and finals	GOOD LUCK!

V. ACCESS Accommodations and Religious Holidays

Student Learning Accommodations Statement

In keeping with University policy, any student with a documented disability interested in utilizing accommodations should contact ACCESS, the Office of Disability Services on campus. ACCESS works with students to create reasonable and appropriate accommodations via an accommodation letter to their professors as early as possible each semester.

ACCESS Office: <http://www.uvm.edu/~access/>

Policy on disability certification and student support:

<http://www.uvm.edu/~uvmppg/ppg/student/disability.pdf>

Religious Holiday Policy Statement

Students have the right to practice the religion of their choice. If you need to miss class to observe a religious holiday, please submit the dates of your absence to me in writing

by the end of the second full week of classes. You will be permitted to make up work within a mutually agreed-upon time.

Academic Integrity

As UVM students, you are expected to conduct yourself in accordance with the Codes of Academic Integrity and Student Rights and Responsibilities. Offenses against these codes are deemed serious and insult the integrity of the entire academic community. Any suspected violations of these codes are taken very seriously and will be forwarded to the Center for Student Ethics and Standards for further intervention.