CHEM 23/25: OUTLINE OF GENERAL CHEMISTRY

Spring 2017

LECTURE: CHEM 23/25 (10104), M,W,F 8:30AM-9:20AM, Lafayette Hall (L207)

GENERAL INFORMATION: (see also the CHEM23 BlackBoard page)

Instructor: Alan Chant **Email**: achant@uvm.edu

Office: Hills 106 **Office Hours**: M W F 9:30 AM - 11:30 AM & 1:00 PM – 2:00 PM

Lecture: The lecture will primarily be used to cover new material. Included in this syllabus is a tentative schedule covering the text material and the corresponding problems to be worked from each chapter (these problems will not be graded).

Exams: Three 2-hour exams are given on Tuesday nights from 6:00-8:00 PM.

	Lecture (M,W,F; 8:30-9:20 AM)
Exam 1	Tuesday, Feb. 28; L207 Lafayette Hall
Exam 2	Tuesday, Mar. 28; L207 Lafayette Hall
Exam 3	Tuesday, Apr. 25; L207 Lafayette Hall
Final Exam	Monday, May 8; 7:30-10:15AM; Lafayette Hall (L207)

Exams: Mid-term exams are scheduled for Tuesday nights from 6:00 - 8:00 PM in Lafayette Hall (L207). 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 then a non-programmable calculator will receive a zero for the exam.

Students with legitimate excuses (ie: a UVM-related conflict) may be permitted to take an exam sometime during the day that it is given to the rest of the class that evening. This must be cleared with the instructor first, however. **Makeup exams will only be administered after the scheduled exam time if a medical or family** emergency precludes taking the exam at the scheduled time.

Help Sessions: I will NOT be holding Exam Review Sessions. Instead, I have increased my availability via office hours so that I can address any issues on an individual basis. I will also be available by appointment. 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.

Problems: Exam questions will be modeled very closely to the type of problems you will encounter on class exams and quizzes. Solutions to most of these problems are in the back of the text. While it is strongly suggested that you do as many problems as possible, the problems are not collected and do not count towards your grade. We will be using the online program "Mastering Chemistry" for 'end of chapter quizzes' and homework assignments (**homework will be extra credit and be worth one quiz grade**). The homework extra credit assignment is graded based on effort and not absolute percent values for your attempts. You are encouraged to attempt problems from the back of the book **(these will be ungraded)** and the problems provided by "Mastering Chemistry".

Quizzes: After a chapter has been covered in lecture, there will be an online quiz that is specific to the material covered in that chapter. The due dates will be announced in class and posted in an announcement on Blackboard. These quizzes are open-book, but must be completed independently. A skipped or a missed quiz is given a zero.

Accessing Mastering Chemistry: See the last page of this syllabus for guidelines.

ACADEMIC INTEGRITY: Offenses against the Code of Academic Integrity (ie: 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 & Standards for further investigation.

REQUIRED TEXTBOOKS and MATERIALS:

Text: "Introductory Chemistry" 5th edition, by Nivaldo J. Tro sold at the UVM bookstore.

Online Homework and Quizzes: You will need to register for 'Mastering Chemistry' (see last page of the syllabus).

Scientific Calculator: A standard scientific calculator is a requirement for the exams.
Note: Graphing or programmable calculators are not allowed.

Lab Manual: Available for download from the class' BlackBoard site.

Bound Laboratory Notebook: Available at the UVM Bookstore. Required for recording data.

(Note: the last two items are not required for CHEM 25 students).

LABORATORY: (labs start 2 weeks after classes begin)

Time and Room: See your class course schedule as to your assignments.

Contact Info. for lab : All matters concerning the Lab should be directed to Christine Cardillo: **Christine.Cardillo@uvm.edu**

Attendance: Students must attend the lab section they are assigned to. Official documentation of sickness or family crisis is required if a lab is missed. **If more than 2 labs are missed, this results in a failure for the course.** In order to take a lab at a time other than your assigned time one must obtain the permission of the TA and instructor.

Online Lab Safety Quiz: Prior to the lab sessions beginning, students must read through Lab Safety documentation and take a one-time online quiz before being allowed into their lab session. Just click the "Lab Safety" link on the left hand side of the CHEM23 BlackBoard page and follow the instructions. Students must score an 80 or better on the quiz to be admitted to lab. If you choose, you may take the Lab Safety quiz as many times as you want in order to maximize this score, as it will also count as your first lab quiz grade.

Breakage Card: A breakage card ($40.00) must be purchased from the first floor stockroom, A-143 Cook, prior to your first lab. The $40.00 is refundable, and if you are careful you should get most of it back. Remember, you must have it with you to be admitted into lab.

Safety Eyewear: OSHA approved safety glasses or goggles (available from the first floor stockroom or at the UVM Bookstore) must be worn by everyone once any experimentation has started in any area of a lab room.

Foot Wear: Only shoes that cover the toes are permitted in the lab. Sandals and open-toed shoes are not permitted.

COURSE GRADE FOR CHEM 23 STUDENTS:

1. Points needed to obtain a specific grade

920 = A	870 = B+	790 = B-	680 = C	620 = D+	570 = D-
900 = A-	820 = B	760 = C+	650 = C-	590 = D	less than 570 = F

2. How to calculate your points:

a) **Class = 800pts** 3 Exams/1 quiz grade = 4 grades
1 Final = 2 grades
6 grades - 1 grade = 5 grades x 1.6 = class pts

I will drop your lowest score. If the final exam is your lowest grade it will only count once. If your quiz average is your lowest grade, this score will be your drop. The 1.6 factor is because each test was only worth 100 pts, and therefore the maximum number of points obtainable from the tests are 500. In order to raise this to 800 pts you must multiply the 500 x 1.6 = 800.

Example:

	Ex-1	Ex-2	Ex-3	Quiz Av.	Final x 2
Actual Scores	85	45	78	77	75 75
Scores Counted	85	75	78	77	75

Total pts = 390 x 1.6 = 624 pts from class

b) **Laboratory = 200 pts**

Notebook / Prelab	30 pts
Lab reports	80 pts
Quizzes	65 pts
Technique	25 pts
	200 pts

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

Example: 624 class pts + 160 lab pts = 784 total pts = C+

COURSE GRADE FOR CHEM 25 STUDENTS:

Since there is no laboratory component to your grade, you will be graded on your exam/quiz scores exclusively. Your 5 highest scores will be multiplied by 2 (rather than 1.6).

LABORATORY SCHEDULE

Week	Dates	Labs	Work Due
1	Mon Jan 16 – Thu Jan 19	**NO LABS**	
2	Mon Jan 23 – Thu Jan 26	**Syllabus and Safety Review, Laboratory Check-In**	Safety Quiz
3	Mon Jan 30 – Thu Feb 2	**Experiment 1**: Determination of the Densities of Common Substances	Exp 1 Pre-lab Exp 1 Quiz
4	Mon Feb 6 – Thu Feb 9	**Experiment 2**: Determination of Heat Capacity Using Calorimetry	Exp 1 Lab Report Exp 2 Pre-lab Exp 2 Quiz
5	Mon Feb 13 – Thu Feb 16	**Experiment 3**: Qualitative Analysis	Exp 2 Lab Report Exp 3 Pre-lab Exp 3 Quiz
6	Mon Feb 20 – Thu Feb 23	**Presidents' Day Holiday Monday (No labs all week)**	
7	Tue Feb 27 – Mon Mar 2	**Experiment 4**: Alum from Aluminum in a Can	Exp 3 Lab Report Exp 4 Pre-lab Exp 4 Quiz
8	Mon Mar 6 – Thu Mar 9	**Town Meeting Day Recess Tuesday (No labs all week)**	
Spring Break	*Mon Mar 13 – Fri Mar 17*	*Spring Break*	
9	Mon Mar 20 – Thu Mar 23	**Experiment 5**: Determination of a Compound's Empirical Formula	Exp 4 Lab Report Exp 5 Pre-lab Exp 5 Quiz
10	Mon Mar 27 – Thu Mar 30	**Experiment 6**: Reaction Stoichiometry and Equation Balancing	Exp 5 Lab Report Exp 6 Pre-lab Exp 6 Quiz
11	Mon Apr 3 – Thu Apr 6	**Experiment 7**: Determination of Limiting Reactant	Exp 6 Lab Report Exp 7 Pre-lab Exp 7 Quiz
12	Mon Apr 10 – Thu Apr 13	**Experiment 8**: Acid Content in Pickle Juice	Exp 7 Lab Report Exp 8 Pre-lab Exp 8 Quiz
13	Mon Apr 17 – Thu Apr 20	**Experiment 9**: Limestone Content in Soil using the Ideal Gas Law	Exp 8 Lab Report Exp 9 Pre-lab Exp 9 Quiz
14	Mon Apr 24 – Thu Apr 27	**Experiment 10**: Acid-Base Equilibria and Buffers	Exp 9 Lab Report Exp 10 Pre-lab Exp 10 Quiz
15	Mon May 1 – Wed May 4	**Laboratory Clean-up & Laboratory Check-Out**	Exp 10 Lab Report
Finals	Mon May 8	Final Exams *Good Luck!*	

TENTATIVE LECTURE SCHEDULE

CHAPTER	SUGGESTED PROBLEMS
2 (Measurement & Problem Solving)	5,27,29,31,35,39,43,47,55,59,67a,c,73,79,83,91,93,103,107,115
3 (Matter & Energy)	11,13,15,21,31,33,35,39,47,59,63,71,75,77,81,89,93,103
4 (Atoms & Elements)	35,43,45,47,49,51,53,59,61,77,79,89,93,97,107
9 (Electrons in Atoms & the Periodic Table) (9.4, 9.6-9.9)	25,27,51,53,55 a,c,d,57,59,71,75,77,81,85,91,93,95,99
28 FEB.	**EXAM 1**
10 (Chemical Bonding) (no 10.6)	27,29,33,35,39,43,47,50bcd,61,63,67,69cd,73,79,83,85,87bcd,91,99
5 (Molecules & Compounds: 5.1-5.8, 5.10)	25,33,35,53,55,57,59,61,65,69,71,75,81ab,82a,93,95
6 (Chemical Composition)	7,13,19,25,27,29,30,37,45,49,59,65,73,79,81,85,89,95,97,99,103,115
7 (Chemical Reactions: 7.1-7.4, 7.10)	47,49,50,51,52,53,54,55,91,92,101 a,b,d,102
8 (Quantities in Chemical Reactions)	7,9,17,23,25,31,33,35,41,43,45,55,57,61,63,65,73,75,103
28 MAR.	**EXAM 2**
13 (Solutions)	4,7,19,29,41,45,61,65,69,73,79,85,87,91,95,97,99,101
11 (Gases)	27,33,37,39,43,45,53,59,61,65,69,71,77,83,89,91,93,97,101,105
12 (Liquids, Solids, & Intermolecular Forces)	9,17,19,23,24,25,29,31,33,41,43,47,49,57,59,63,65,69,71,73,75,79,81,83,85,91,95,96
25 APR.	**EXAM 3**
14 (Acids & Bases)	11,17,19,23,31,32,39,59a,61,63,65,67,69,71,73,75,79,81,83,85
15 (Chemical Equilibrium:15.1-15.10, 15.12)	5,7,13,19,21,43,45,47,49,51,53,57,59,61,63,65,71,75

FINAL EXAM (Cumulative)

Mastering Chemistry: Getting Started

First, make sure you have these 3 things…

Email: You'll get some important emails from your instructor at this address.

Course ID: MCCHANT88517

Access code or credit card: An access code card may be packaged with your new book or may be sold by itself at your bookstore. Otherwise, you can buy instant access with a credit card or PayPal account during registration.

Next, get registered and join your course!

1. Go to **www.masteringchemistry.com.**
2. Under Register Now, select **Student**.
3. Confirm you have the information needed, then select **OK! Register now.**
4. Enter your instructor's Course ID: MCCHANT88517, and choose **Continue**.
5. Enter your existing Pearson account **username** and **password** and select **Sign in**.
   You have an account if you have ever used a Pearson MyLab & Mastering product, such as MyMathLab, MyITLab, MySpanishLab, or MasteringPhysics.
   - If you don't have an account, select **Create** and complete the required fields.
6. Select an access option.
   - Enter the access code that came with your textbook or was purchased separately from the bookstore.
   - Buy access using a credit card or PayPal account.
7. From the "You're Done!" page, select **Go to My Courses**.
8. Select **Yes** and enter your Course ID to join your course. Click **Continue**.
9. If asked, enter your Student ID according to the instructions provided and click **Continue**.
   That's it! You should see the Course Home page for the course.

To sign in later:

1. Go to **www.masteringchemisty.com** and select **Sign In**.
2. Enter your Pearson account **username** and **password** from registration, and select **Sign In**.
   If you forgot your username or password, select **Forgot your username or password?**