CHEM 122H Honors General Chemistry
Course Syllabus
Spring 2023

Contents

CHEM 122H Honors General Chemistry 9:05 AM MWF
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Section 1: General Information
Instructor: Prof. <PROF_FULL_NAME>
Email: <PROF_EMAIL>
Office: 745 Lederle Graduate Research Tower
Preferred communication using email, or the "Send message" tool in OWL.

Section 2: Lecture Schedule
Monday, Wednesday, Friday 9:05 – 9:55 AM ISB 321 in-person.
Pre-recorded lectures will post online each week. All lectures and slides will be posted on the Moodle page of the course.

Section 3: In-Person Activities
We will meet in-person for lecture/problem-solving/discussion each week. The attendance at those sessions is mandatory. You can also work on the problem sets in small groups during these sessions, as I circulate to answer questions and offer assistance.

Section 4: Office Hours
I will hold regular office hours (Wednesday and Thursday 1:00 – 2:00 PM) in 745 LGRT

Section 5: Course Description
A continuation of CHEM121H. Basic Principles of chemistry. Topics include solids, liquids, solutions, equilibrium, kinetics, thermodynamics, electrochemistry, acids & bases, precipitation, and descriptive chemistry. More extensive lecture treatment of advanced topics and laboratory work than CHEM 112.

Section 6: Course Prerequisite
Secondary school chemistry; Chem 121H and Math 131.

Section 7: Disability Accommodation and Inclusive Learning Statement
The University of Massachusetts Amherst is committed to making reasonable, effective and appropriate accommodations to meet students' needs with disabilities and help create a barrier-free campus. If you have a disability and require accommodations, please register with Disability Services (161 Whitmore Administration building; phone <PHONE>) to have an accommodation letter sent to your faculty. Information on services and materials for registering is also available on their website www.umass.edu/disability

Your success in this class is essential to me. We all learn differently and bring different strengths and needs to the class. If there are aspects of the course that prevent you from learning or make you feel excluded, please let me know as soon as possible. Together we will develop strategies to meet both your needs and the requirements of the course.

Section 8: Required Materials

Textbook and course material required:

1) *Chemistry: Atoms First*, 2nd edition. William R. Robinson, et al., Open Stax – get the **FREE** electronic copy. The student resources would be helpful, too! https://openstax.org/details/books/chemistry-atoms-first-2e
2) Chemistry Molecular Model, Student Set (with 2 Sulfur atoms, 6-hole). Available online. Examples include: Molymod MMS-009; Duluth MM-003; Hilitchi 125Pcs; Diwenhouse 240 pc. ~ $25
3) Scientific Calculator, 2 pencils with erasers (for exams)
4) The lab requires American Optical Safety Glasses #484A, Student Lab Notebook

Section 9: What will you learn in this course?

In this class, you are not simply memorizing things, nor appreciating atoms. You will apply concepts of energy and structure to atoms, building up toward larger structures; along the way, you'll develop transferable skills that are key to your success in your career. Learning chemistry is like learning a new language or sport; you play a significant role in your success in this class by practicing the new concepts or skills. This course's long-term goal is to grow analytical reasoning, critical thinking, complex problem solving, logical argument, and other life skills. In this class, we work on these skills using the language and chemistry concepts; these skills are transferable to any field.

Section 10: Academic Assessment (Grading)

Your performance in my class is as important to me as it is to you. We will use Exams, homework, labs, engagement, and in-person problem solving sessions.

Lecture surveys **Problem Sets** **OWL Homework**	250 400 250	 10 % of the grade
Midterm Exams **Final Exam**	600 500	 final class meeting and Date posted on SPIRE (TBD)
Lab	500	20 % of the grade
Total	**2500**	

- Help from others is not permitted for the exams.

Evaluation and Assessment:

Mark your calendar for the following:

	Total Points	Date	Chapters (approx.)
Midterm 1	200	Fri. Mar 3	11-13
Midterm 2	200	Fri. Apr 7	13-15
Midterm 3	200	Fri. May 12	15-17
*Final exam	500 pts	TBD	Cumulative.

OWL Electronic Homework System http://owl.oit.umass.edu/

1. Assignments typically due on Sunday and Thursday nights. 24-hour grace period for each assignment date (an extra 24 hours will be added to each due date at end of semester)
2. User name = 8-digit student number, Password = last name. Use "Login Help" if you have trouble.
3. Repeat each assignment as often as desired. You will get new questions each time.
4. Use the message system to ask for help. Bring questions to class if you get stuck.
5. The best score, completed before the deadline, counts.
6. Be sure that you are in the correct OWL section and that you use your UMass email address.

The following is the approximate grade scale (this is subject to changes depending on the class's average and other statistics). I am going to use A, A-, B+, B….. scale for the letter grade.
A/A- 90-100%
B/B+/B- 80-89%
C/C+/C- 60-79%
D 50-59%

Section 11: What is the expected time commitment for this course?

Plan to spend approximately 9-12 hours a week

The following table shows roughly the tasks and the expected weekly time commitments. You might need less or more tim on a certain task depending on your learning style.

Task	Reading	Problem Sets/OWL	Pre-recorded Lecture	In Class
Hr / wk	2 – 4	3– 4	1	3
Description	Actively reading the text; working through the example problems *by hand*, is a great way to construct new knowledge in a way that makes sense to you.	"Walk the dog." You need to do this regularly. Plan to dedicate about 30-40 min daily to solve HW/ OWL. It is in your best interest to solve the assigned H.W. in smaller chunks and not in one setting	Typical weeks will include a pre-recorded lecture to provide more detail over concepts.	It is critical that you attend these in-person sessions for lecture content and problem solving. It is your opportunity to interact with your peers and me. It is also a great opportunity to have your questions answered.

To help you keep track, I will provide you with a weekly checklist on Moodle.

You should also check your UMass email account daily.

Section 12: Time conflict and Make-up Exams

If you have a conflict with an exam time due to military service, religious observance, varsity sports, living in a different time zone, or another legitimate, documented reason, I will work with you to find time to take the make-up exam. It is your responsibility to contact me if you miss an exam.

If you are registered with Disability Services, you should contact the D.S. office at least three weeks before an exam to make arrangements to take it.

Section 13: Illness and Emergencies

It is your responsibility to know the policies and to keep up with the lectures and homework. In the case of severe illness or emergency, contact the Dean of Students' office. They will get in touch with all of your instructors and help you determine how to complete the semester.
If an illness or emergency arises that causes you to miss an exam: Send me an email as soon as reasonably possible explaining the situation. Plan to take the make-up exam.

Section 14: Academic Honesty

We want our learning environment to be honest and fair. UMass Amherst has an Academic Honesty Policy that includes but is not limited to: cheating, fabrication, plagiarism, and facilitating dishonesty. You are expected to know and abide by the Academic Honesty Policy of the campus.
Unauthorized sharing/collaboration on examinations using any means, including social medial like GroupMe, constitutes academic dishonesty. Knowing about such sharing and not reporting it also constitutes academic dishonesty and will be reported as such.
Please remember that there is no statute of limitations on academic dishonesty, so if it turns out after grades are reported that there was cheating or knowledge of cheating that was unreported, grades be changed after the fact.

Section 15: OWL electronic Homework system

Types of homework:

There are two types of homework in this class.

(A) Problem sets are assigned for each chapter. Those include questions that will help you apply the concepts to problem, and are great practice for examinations. You'll do much of these during scheduled class time. Working with others is highly encouraged!

(B) On-Line Web-based Learning (OWL) are assigned for each chapter. These are challenging and require connecting the dots and critical thinking, but they tend to be more narrowly focused on the specific learning section. The OWL deadline will be Thursday and Sunday night, with a 24 hour grace period – these deadlines will all be incremented by 24 hours for the purpose of end-of-semester grading. Working with others is encouraged!

How does OWL homework work?

a) You may repeat each assignment as often as you like, and the top score is retained.
c) For effective practice, make sure to work out the problem on paper, and check the answer. It is ineffective to check the answer without you working out the problem yourself. Learning

chemistry is like learning to swim, or drive, or play guitar: you have to do the activity yourself instead of just watching and nodding along.

Section 16: How to get help?

In-Class Problem Solving: These are opportunities to ask questions, and to practice applying concepts to new problem.
Office Hours: I am happy to answer all your questions during my office hours
Chemistry tutors in the Learning Resource Center (LRC) can assist you free of charge:
https://www.umass.edu/lrc/tutoring.html

Section 17: How to be successful in CHEM 122H?

If you do not understand something, seek help immediately, do not let it go. Come to my office hours and ask any questions that you have during or after any lecture. Do not let yourself go through cycles of confusion day after day during lectures crossing your fingers that it may magically happen. Help can be obtained from the instructor during office hours and other resources (check "How to get help?" section)

Find a study group. One of the best ways of learning is to discuss chemistry concepts or problem solving with a peer. For example, meet with your peers and discuss the course content and work on the H.W. together.

Read the chapter that will be discussed in the lecture before the lecture.
Keep up with the work. Do your homework. A good sign that you are ready for the exam is when you can work the assigned problems without help from the book, friend, and feedback.
When you do not know, ask.

Section 18: Course Content and Timeline

The following is a *tentative* lecture schedule of how the class is to proceed. It is to give you an idea of the course pace and plan accordingly.

M	W	F			
6-Feb	8-Feb	10-Feb		Solutions	Ch 11
13-Feb	15-Feb	17-Feb		Thermodyn	Ch 12
20-Feb	22-Feb	24-Feb		Thermodyn	Ch 12
27-Feb	1-Mar	3-Mar	EXAM Fri	Equilib	Ch 13
6-Mar	8-Mar	10-Mar		Equilib	Ch 13
13-Mar	15-Mar	17-Mar	Spring Break		
20-Mar	22-Mar	24-Mar		Acids	Ch 14
27-Mar	29-Mar	31-Mar		Acids	Ch 14
3-Apr	5-Apr	7-Apr	EXAM Fri	Equilib	Ch 15
10-Apr	12-Apr	14-Apr		atmospheric chem	
17-Apr	19-Apr	21-Apr		Electrochem	Ch 16
24-Apr	26-Apr	28-Apr		Electrochem	Ch 16
1-May	3-May	5-May		Kinetics	Ch 17
8-May	10-May	12-May	EXAM Fri	Kinetics	Ch 17/19
15-May	17-May			Coord Chem	Ch 19