

Chemistry 1071H, Honors Chemistry I

Fall Semester, 2015, MWF 9:05a – 9:55a, Bruininks Hall 230

Prof. Aaron Massari, 245 Smith Hall, massari@umn.edu

Office Hrs: **Massari: T 3-4, Th 1-3**, Penn (Smith 225): M4-5:30, F 1:30-3:00, & by appointment

This course is an advanced introduction to atomic theory; periodic properties of the elements; behavior of gases, liquids, and solids; the first law of thermodynamics; molecular/ionic structure and bonding; aspects of organic chemistry, spectroscopy, polymers and energy sources.

Prerequisite: You must be an honors student or have the permission of the Honors Office. Since this is an honors course, a certain amount of prior knowledge is assumed, and the lecture material will begin with Chapter 5 in Silberberg & Amateis. You should be familiar with the material covered in Chapters 1–4, and you are encouraged to read these chapters and do practice problems to test your readiness and refresh your memories; this material is fundamental to any continued study of chemistry and will be incorporated into the exams.

Textbook: *Chemistry: The Molecular Nature of Matter and Change, Seventh Edition* by Martin S. Silberberg and Patricia I. Amateis, McGraw-Hill, packaged with ALEKS. Note that the publisher's online homework system is required. This semester – we get ALEKS for free! If you plan to take 1072H, hold on to the code associated with your textbook.

Course Moodle page:

Moodle: <https://www.myu.umn.edu/> → login → My Courses tab → CHEM 1071H section 002

This site will be used for the posting of important announcements, instructions for iClicker and ALEKS registration, course related materials, and grades.

Grading: The final course grade will be determined by the combined performance on in-class response, the online homework, these will be weighted with the in-class quizzes, the 3 midterm exams, and the final exam. Each of following percentages in the determination of the final grade:

4%	In-class participation, iClickers, group discussion and work		
10%	Unannounced in-class Quizzes (iClickers, graded)		
10%	Homework, online ALEKS		
17%	Midterm Exam 1:	September 30,	9:05a – 9:55a, Bruininks 230
17%	Midterm Exam 2:	October 30,	9:05a – 9:55a, Bruininks 230
17%	Midterm Exam 3:	December 4,	9:05a – 9:55a, Bruininks 230
25%	Final Exam:	December 19,	10:30a – 12:30p, location TBA

No grade *lower* than the following will be given for the **total percentage-based letter grade:**

90% and higher	→ A-
80% and higher	→ B-
70% and higher	→ C-
60% and higher	→ D

However, the grades may be curved *upward* if warranted by the course distribution.

Examinations:

You must bring your student I.D. to every exam, it may be checked at any time during the exam.

All exams will be multiple choice and will use standard “bubble” or scantron answer forms. Pencils are recommended (for ease of making changes) but not necessary.

Graphing and programmable calculators are **forbidden** on exams. Their use will be considered an act of scholastic dishonesty (see section on scholastic dishonesty below). Any one-line display calculator is allowed. The TI-30X is the suggested calculator for this and most introductory chemistry and physics courses. It is available in the bookstore for about \$10. If you have any questions about your particular calculator, see the instructor immediately. Calculators may NOT be shared during exams.

Exams, including the final exam, can only be taken at the scheduled time. There are no exceptions.

Missed exams: A student can be excused from one midterm exam for a true emergency, serious illness, or University sponsored activity. The student should contact the instructor as soon as circumstances allow and appropriate documentation must be provided. If the circumstances are deemed as appropriate for missing the exam, the unweighted average score of all other midterm exams and of the final exam in the course will be used in place of the missed exam. If circumstances lead to a student missing more than one midterm exam, the student should immediately schedule a meeting with the instructor to discuss any available options.

In the case of University sponsored activities that require the student to be out of town, it may be possible to take the exam with the coach or another instructor as the proctor. Please see the instructor about such conflicts *as soon as possible* so arrangements can be made.

Exam regrades: A request for a re-grade must be made in writing to the instructor via email *by the end of the week following the posting of the exam results*. It is possible, although very unlikely, that the machine scored exam was misread. Note that you are responsible for properly recording (and fully erasing) the answer on the answer form when taking the exam.

Homework: Graded homework will be given using the online ALEKS homework system and will count as 10% of your course grade. Homeworks must be completed by 11:59 pm on the date they are due. Objectives associated with chapters 1-4 are due by 11:59 pm on Sunday, 13 September 2015!

Your final grade in the category of homework will be calculated as follows: 5% for meeting the **objective deadlines** and 5% for total pie mastery.

Group work is acceptable, although students need to ensure that they can complete problems independently in preparation for exams.

You must set up your ALEKS account correctly to get credit for your online homework.

What is ALEKS?

Assessment and LEarning in Knowledge Spaces is a Web-based, artificially intelligent assessment and learning system. ALEKS uses adaptive questioning to quickly and accurately determine exactly what a student knows and doesn't know in a course. ALEKS then instructs the student on the topics she is most ready to learn. As a student works through a course, ALEKS periodically reassesses the student to ensure that topics learned are also retained. ALEKS courses are very complete in their topic coverage and ALEKS avoids multiple-choice questions. A student who shows a high level of mastery of an ALEKS course will be successful in the actual course she is taking.

ALEKS also provides the advantages of one-on-one instruction, 24/7, from virtually any Web-based computer for a fraction of the cost of a human tutor. Your instructor has arranged usage of this powerful software for you at no charge!

Get Signed Up

1. Go to www.aleks.com
2. Click on SIGN UP NOW!
3. Enter Course Code: MFQDW-CU6XV
4. Confirm you're in the right course (Chem 1071 – Fall 2015, Prof. Massari)
5. Fill out student information webpage. Enter your U of M email address in the "Student ID" field. **YOU MUST DO THIS TO GET CREDIT.**
6. Take the Initial Assessment

You will be asked to solve about 20-30 problems (this will take you anywhere from 30 to 90 minutes –you can logout at any time and log back on, it will keep your place).

You will get no help at all, nor should you try to find any. The idea is to find out where you should start learning, and you want ALEKS to get that just right. If you get your friend the chem grad student to help you, or do a lot of Googling, you'll just end up with learning that is way too hard and frustrating, because you'll be missing important pre-requisites. If you don't take the assessment seriously, you'll just end up wasting time on material you already know.

The assessment is over the entire first-year material, so you can expect to get problems you have no idea how to solve. Don't worry about that. This is a placement test, not a final exam. You're not going to be graded on it, and there's no reward for doing better or penalty for doing worse.

7. Learning Mode

After the assessment, you will see your ALEKS “pie.” This shows you what you already know, what you're ready to learn, and what topics you'll eventually need to learn.

You can begin working on topics by scrolling over your pie slices, available topics will be hyperlinked and you can begin! The goal is to fill your pie chart.

Have a question about ALEKS? Contact the support team at ALEKS, they are very helpful, accessible and prompt!

Phone: (714) 619-7090

Email: contact us at <http://support.aleks.com>

Hours (Eastern Standard)

Sunday, 4:00 PM to 1:00 AM

Monday - Thursday, 7:00 AM to 1:00 AM

i>Clickers: Clickers will be used for in-class responses. The required device is the i>Clicker2, and it is sold at the campus bookstore. At the end of the semester, if your clicker is in good condition, the bookstore will buy back your used i>Clicker.

You must properly register your clicker to receive credit!

Registration is done through the course Moodle site. For complete, step-by-step directions to register your clicker go to <http://z.umn.edu/iclickerstudent>. This site includes answers to frequently asked questions and technical help via both a web link and a phone number.

In-Class Quizzes: Throughout the semester there will be unannounced short quizzes in class that will be graded using the clickers. The quizzes will count as 10% of your course grade. There will be no makeup quizzes. If a quiz is missed for a documented true emergency, serious illness, or University sponsored activity, that quiz will be dropped, but you need to inform the instructor of this immediately after the event.

In-class responses using the clickers will count as 4% of your course grade. This will be graded for participation only. There will be responses requested throughout the course and you should bring the clicker to all lectures.

Free Tutoring: For students in the honors program, there will be weekly hours for chemistry specific tutoring available in Middlebrook Hall, Room 139 every Tuesday, 7–9 pm. In addition, room 124 Smith Hall is the site of regular Chem 1061/1071 drop-in tutorial sessions conducted by general chemistry TAs. See the TA web link for additional details, <http://www.chem.umn.edu/ta/current/1061tutor.htm>

Overlapping & Back-to-Back Courses: Enrolling in overlapping or back-to-back courses that do not allow enough travel time to arrive at our class meetings on time is prohibited. For more information, please see:

<http://policy.umn.edu/Policies/Education/Education/OVERLAPPINGCLASSES.html>

Teaching & Learning: The materials provided in this course are intended only for the students officially enrolled in this section and are to be used to learn and practice the course material. Disseminating class notes, videos, exams, etc... beyond the classroom community or accepting compensation (in the form of cash or in trade, such as access to a study website) undermines instructor interests in their intellectual property while not substantially furthering instructor and

student interests in effective learning. Such actions violate shared norms and standards of the academic community and are not allowed. For additional information, please see: <http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html>

Student Conduct Code: As a student at the University you are expected to adhere to Board of Regents Policy: Student Conduct Code. To review the Student Conduct Code, please see: http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf.

Scholastic Dishonesty: The Board of Regents Student Conduct Code states (see link above):

Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis.

The Office for Student Conduct and Academic Integrity has compiled a useful list of Frequently Asked Questions pertaining to scholastic dishonesty:

<http://www1.umn.edu/oscai/integrity/student/index.html>.

The policy in this course is **zero tolerance**. The *minimum* action taken in a case of scholastic dishonesty in any portion of the work in this course will be a grade of F for the course.

The instructor will absolutely make it clear when collaboration with other students is acceptable and even encouraged. Students are permitted and encouraged to work together on homework assignments, but students need to ensure they complete their online homework assignments and that they can work problems independently in preparation for the exams. Students may not collaborate on Exams or in-class quizzes.

Incompletes: Students that have an excused absence from the Final Exam AND are passing the course based on all the work completed prior to the final exam may be eligible to receive a grade of "I" in the course. If these criteria are met, contact the instructor as soon as circumstances allow to discuss the possibility of an incomplete grade and the associated requirements for completion.

Student Mental Health and Stress Management: As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. University of Minnesota services are available to assist you with addressing these and other concerns you may be experiencing. You can learn more about the broad range of confidential mental health services available on campus via <http://www.mentalhealth.umn.edu/>.

Sexual Harassment: The University policy on sexual harassment can be found at:

<http://regents.umn.edu/sites/default/files/policies/SexHarassment.pdf>.

Equity, Diversity, and Equal Opportunity: The University policy on equity, diversity, and equal opportunity can be found at:

<http://regents.umn.edu/sites/default/files/policies/Equity Diversity EO AA.pdf>.

Disability Resource Center (DRC): Students with special needs should contact the DRC, <https://diversity.umn.edu/disability/>, which will arrange with the instructor information on how those needs shall be accommodated.

Issues with your Instructor: On occasion you may have a concern or problem regarding this course. You will find your instructor quite willing to discuss this with you. If, however, you wish to discuss it with someone other than your instructor, please contact Prof. Michelle Driessen, the director of the general chemistry program. You may e-mail to her at mdd@umn.edu, call her directly at (612)624-0062, or meet with her in her office (Smith Hall 113). She will serve as a mediator in helping to resolve the issue.

Tentative Schedule (Exam dates will not change)

WEEK OF	Topic(s)
7 Sept	Chapter 5 – Gases and the Kinetic-Molecular Theory ALEKS Chapters 1-4 due by 11:59 pm SUNDAY 09/13
14 Sept	Finish Chapter 5 ALEKS Chapter 5 due by 11:59 pm FRIDAY 09/18 Start Chapter 6 – Thermochemistry: Energy Flow and Chemical Change
21 Sept	Finish Chapter 6 ALEKS Chapter 6 due by 11:59 pm SUNDAY 09/27
28 Sept	Start Chapter 7 – Quantum Theory and Atomic Structure Midterm Exam 1: September 30 , 9:05a – 9:55a, Bruininks 230
5 Oct	Finish Chapter 7 ALEKS Chapter 7 due by 11:59 pm TUESDAY 10/06 Start Chapter 8 – Electron Configuration and Chemical Periodicity
12 Oct	Finish Chapter 8 ALEKS Chapter 8 due by 11:59 pm THURSDAY 10/15 Start Chapter 9 – Models of Chemical Bonding
19 Oct	Finish Chapter 9 ALEKS Chapter 9 due by 11:59 pm THURSDAY 10/22 Start Chapter 10 – The Shapes of Molecules
26 Oct	Finish Chapter 10 ALEKS Chapter 10 due by 11:59 pm THURSDAY 10/29 Midterm Exam 2: October 30 , 9:05a – 9:55a, Bruininks 230
2 Nov	Start Chapter 11 – Theories of Covalent Bonding
9 Nov	Finish Chapter 11 ALEKS Chapter 11 due by 11:59 pm THURSDAY 11/12 Start Chapter 12 – Intermolecular Forces: Solids, Liquids, and Phase Changes
16 Nov	Finish Chapter 12 ALEKS Chapter 12 due by 11:59 pm SUNDAY 11/22
23 Nov	Start Chapter 13 – The Properties of Mixtures: Solutions and Colloids NO CLASS Friday! Happy Thanksgiving Break!

- 30 Nov Finish Chapter 13
 ALEKS Chapter 13 due by 11:59 pm THURSDAY 12/03
 Midterm Exam 3: **December 4**, 9:05a – 9:55a, Bruininks 230
- 7 Dec Start Chapter 15 – Organic Compounds and the Atomic Properties of Carbon
 Finish Chapter 15
 ALEKS Chapter 15 due by 11:59 pm SUNDAY 12/13
- 14 Dec *Special Topics*
 16 Dec = last day of classes
 Final Exam: Saturday, **December 19**, 10:30a – 12:30p, location TBA