CHEMISTRY 142A (SLN 11934), WINTER 2014
SYLLABUS

Lectures: M, W, and F 9:30 AM – 10:20 AM in GUG 220

Course Web Site: https://canvas.uw.edu/

Add or Drop: Go to Bagley 303 (Chemistry Department’s undergraduate services).

Course & Lab Instructor:

Dr. Andrea Carroll
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Office hours: Mon 10:30-11:20, Wed 11:30-12:20, also by appointment

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MATERIALS

Except where indicated, all items are required and available from the University Bookstore:

• UW General Chemistry 142 Laboratory Manual, Autumn 2013-Summer 2014 (Hayden McNeil)
• UW Chemistry Laboratory Notebook with numbered pages and carbonless duplicate pages. (Hayden McNeil)
• Lab coat and safety goggles (NO safety glasses or any other type of goggles).
• Scientific calculator. A simple calculator that handles scientific notation, logarithms, etc. is sufficient.
• ALEKS access. Purchase online: www.aleks.com (see ALEKS info on the course website for more information).
• Standard (purple) Scantron forms for exams.
LEARNING OBJECTIVES

The central focus of this course is to develop quantitative problem solving skills. You will:

1. Learn to clearly define a problem and develop solutions for that problem including the use of central and auxiliary equations and conversion factors.
2. Learn to acquire and analyze data and correctly report experimental results (e.g., using an appropriate number of significant figures) in solutions to problems.
3. Develop a detailed understanding of the following fundamental chemistry topics:
   - The atomic nature of matter
   - Introduction to bonding
   - Stoichiometry
   - Gases
   - Chemical equilibrium
   - Applications of aqueous equilibria to acid/base and solubility chemistry
4. Conduct laboratory exercises that:
   - Explore the concepts introduced in lectures.
   - Develop laboratory, data analysis, and scientific communication skills.

COURSE COMPONENTS AND GRADING

The course consists of:

- 3 lectures per week
- 1 discussion section per week
- 1 three-hour laboratory session certain weeks of the quarter (6 labs total – see the Labs document for details.)
- Daily work in the ALEKS online learning environment
- Online prelab and paper-based post-lab assignments

GRADING

The point distribution for the evaluative components of the course is as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm exams</td>
<td>38%</td>
</tr>
<tr>
<td>Final exam</td>
<td>30%</td>
</tr>
<tr>
<td>Discussion section participation</td>
<td>6%</td>
</tr>
<tr>
<td>ALEKS Objectives &amp; Last Assessment</td>
<td>10%</td>
</tr>
<tr>
<td>Laboratory</td>
<td>16%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>100%</strong></td>
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</tbody>
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Grade Distribution. The final mean GPA in Chemistry 142 generally falls within the range 2.6 +/- 0.2. It is the Chemistry Department’s policy not to make grade changes of 0.1 after final class grades are submitted to the UW Registrar.

Your scores for the various assignments, reports, and exams will be recorded using the online Gradebook that is part of UW’s Catalyst Web Tools. This can be accessed through your “MyUW” account or by logging in at https://catalyst.uw.edu.
ACADEMIC ETHICS

Original work performed in good faith is assumed on all assignments and course components. The Student Conduct Code (see http://www.washington.edu/students/handbook/conduct.html) outlines the following forms of academic misconduct:

- Intentional misrepresentation of credentials
- Falsification of data
- Plagiarism

Failure to adhere to this code of ethics will result in referral for possible disciplinary action as described in the Student Conduct Code. In short, if you have not done something yourself, do not attempt to pass it off as original work. If you have questions about what might cross the line, please do not hesitate to ask your lab or class instructor. It is presumed that the data you record and report in laboratory is your work. In addition, all data analysis and writing you submit should be yours alone, even if you collected data with a laboratory partner. We often find examples of plagiarism in which lab reports are copied from someone else, or from an earlier quarter.

LECTURES

Lecture Schedule. An approximate schedule for the chapters to be covered each week is at the end of this document. You are responsible for material covered in class AND in the textbook (whether or not it was covered in lecture). Lectures will cover only highlights of the textbook material.

Lecture and Discussion Section Etiquette. Out of respect for your classmates, please observe the following rules:

- Arrive on time. If an emergency causes you to arrive late, please enter quietly through the rear doors of the lecture hall/classroom.
- Do not pack up your belongings before the end of class.
- Keep side conversations to a minimum.
- Keep your cell phone or pager on silent, and refrain from sending or reading text messages.
- Do not browse or read materials that are unrelated to the lecture. This includes – but is not limited to – newspapers, books, magazines, and the internet.

DISCUSSION SECTION

In the discussion section you will explore the concepts presented in the course. Specifically, you will collaborate with your colleagues on problems that will help you synthesize the material covered in the previous week’s lectures. These problems will be graded on participation only.

Punctuality. You must arrive to discussion section within the first five minutes of the class period to obtain participation points. If you arrive later than that, you will still be able to complete a worksheet with your group, but the worksheet will not be accepted for participation credit.

ONLINE LEARNING (ALEKS)

This course will use the internet-based learning program ALEKS (Assessment and LEarning in Knowledge Spaces). In ALEKS, you will complete learning objectives rather than traditional homework assignments. An ALEKS Objective contains topics relevant to the lecture discussions. ALEKS will present you with a series of problems that explore a particular topic. The problems will have enough variability that you will only be able to get them consistently correct by understanding the core principle or skill defining the topic. Once you consistently answer
the problems for a given topic correctly, ALEKS will conclude that you have learned the topic, and you will then be allowed to choose another topic to learn (refer to the ALEKS handout posted on the course website for more details). Your daily/weekly work on ALEKS will be on your own schedule outside of class, although there are specific deadlines by which you must complete various Objectives.

Your first task in ALEKS will be to complete an Initial Assessment of your knowledge of math and chemistry. The assessment will contain 25-30 questions and shouldn’t take more than an hour to complete. You will probably be asked several questions that you don’t know how to answer. Don’t worry…the ALEKS system is only determining your knowledge baseline so that it can be tailored to address your specific needs. Every student will have a different assessment profile and will need to review different topics and skills. When you use ALEKS, you will complete the learning tasks you need and not those somebody else needs. After you complete the Initial Assessment, ALEKS will provide one-on-one instruction tailored specifically to your needs. You must register for ALEKS and complete the Initial Assessment by 11:00 pm Thursday Jan. 9th. ALEKS will not allow you to begin working on course Objectives until you have completed the Initial Assessment.

EXAMS

There are two midterm exams and one final exam in this course. The dates for these exams are provided in the course schedule at the end of this document. Chemistry knowledge is cumulative so questions on exams will often depend on knowledge from earlier chapters.

Exam Protocol
- Bring a few # 2 pencils, a couple Scantron forms, your calculator, and a photo ID to all exams.
- Submitted Scantron forms must be filled out completely. Any identifying information (name, student number, section letters, and test version) that is missing or incomplete will result in a 5-point deduction from your exam score. All answers must be reported on the Scantron form by the end of the exam in order to be graded.
- You must sit according to the seating charts that will be posted on the course website prior to Exam 1.

KEYS TO SUCCESS

1. Attend ALL classes, pay close attention, and take notes.
2. Learning chemistry is a sequential process. You must understand today’s material before you can understand tomorrow’s. As with all courses at UW, your instructors and TAs will assume that you are studying at least two hours for each hour of lecture and one hour for every hour of lab. Find a place that allows for periods of uninterrupted study. Skim through chapter or sections to be covered in the next lecture.
3. Make daily, weekly, and quarterly learning plans and follow those plans.
4. Working in shorter, more frequent sessions in ALEKS will be more efficient than long, marathon sessions.
5. Practice! Work on suggested end-of-the-chapter problems as well as topics in ALEKS - focus on understanding the concepts and general processes, not just memorizing how to solve a specific problem.
6. Talk chemistry with fellow Chem. 142 students. You will not only learn more, but you will probably also enjoy the course more.
# COURSE SCHEDULE

This schedule is tentative and subject to change. Any changes will be announced in class and on the course website.

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture Topics (Prelabs, ALEKS Objectives, and Exams)</th>
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<tbody>
<tr>
<td>1</td>
<td>Intro, App 2, Ch 1, and Ch 2 ALEKS Initial Assessment due Thurs (1/9) @ 11:00pm</td>
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<tr>
<td>2</td>
<td>Ch 2 and 3 Lab Safety Orientations ALEKS Objective #1 due Thurs (1/16) @ 11:00pm</td>
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<tr>
<td>3</td>
<td>Ch 3 (Mon holiday) Prelab #1 and Stockroom Contract due Tues (1/21) @ 9:00am</td>
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<tr>
<td>4</td>
<td>Ch 3 and 4 Prelab #2 due Tues (1/28) @ 9:00am ALEKS Objective #2 due Thurs (1/30) @ 11:00pm; post-Obj 2 assessment avail 9:30am Fri Exam #1, Fri (1/31)</td>
</tr>
<tr>
<td>5</td>
<td>Ch 4 Prelab #3 due Tues (2/4) @ 9:00am</td>
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<tr>
<td>6</td>
<td>Ch 5 Prelab #4 due Tues (2/11) @ 9:00am ALEKS Objective #3 due Thurs (2/13) @ 11:00pm</td>
</tr>
<tr>
<td>7</td>
<td>Ch 5 (Mon holiday) ALEKS Objective #4 due Thurs (2/20) @ 11:00pm; post-Obj 4 assessment avail 9:30am Fri Exam #2, Fri (2/21)</td>
</tr>
<tr>
<td>8</td>
<td>Ch 6 Prelab #5 due Tues (2/25) @ 9:00am</td>
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<tr>
<td>9</td>
<td>Ch 8 (only sections 8 &amp; 9) and Ch 7 Prelab #6 due Tues (3/4) @ 9:00am ALEKS Objective #5 due Thurs (3/6) @ 11:00pm</td>
</tr>
<tr>
<td>10</td>
<td>Ch 7 ALEKS Objective #6 due Fri (3/14) @ 11:00pm</td>
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<tr>
<td>11</td>
<td>Final Exam: 8:30-10:20am on Wednesday, March 19th in GUG 220 All Assessment/Open Pie work in ALEKS must be finished by 8:00am on Wed 3/19</td>
</tr>
</tbody>
</table>

## ACCESS AND ACCOMMODATIONS

Your experience in this class is important to us, and it is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law. Disability Resources for Students (DRS) offers resources and coordinates reasonable accommodations for students with disabilities. If you have not yet established services through DRS, but have a temporary or permanent disability that requires accommodations, you are welcome to contact DRS at 206-543-8924 or uwdrs@uw.edu or visit disability.uw.edu. If you have already established accommodations with DRS, please use the information provided on the website for this course when submitting your Alternative Testing Contract to DRS via their online system. Students with accommodations are solely responsible for submitting the Alternative Testing Contract and scheduling the exams with DRS well in advance of the exam dates. If you require accommodations in the laboratory (including assistants and/or interpreters), please contact the Undergraduate Services Director (Bagley 303D) in person in the first week of the quarter to discuss your accommodations.