Chemistry 199: Preparatory Chemistry
Fall 2011

Instructor: Dr. Eric Sheagley
Office: Science Building II, Room 316
Email: sheagley@pdx.edu (this should be the primary means of contact). Also, D2L has a Discussion List feature that allows communication with your classmates. I will be making a point to regularly check the Discussion Board.

Office Hours: Monday 2:00 - 3:00 and Tuesday, Thursday 4:00 – 5:00


General Info: You are responsible for all information given during class times. This includes homework assignments and any special announcements or schedule changes. Deadlines and course information will frequently be posted on the class D2L page.

Exams: There will be two one-hour in class midterms (100 pts each), five short quizzes done on ALEKS (5 pts each), 5 online pre-chapter quizzes (5 pts each), and a two-hour final (150 pts) (see schedule). The final exam will be cumulative. The material to be covered during each exam is shown on the schedule.

Homework: Homework is designed to help you develop basic skills and to understand and apply concepts presented in class and in the textbook readings. Doing all assigned problems is essential to success in this course. If you have questions about the homework you can raise them during office hours, and seek help in the Resource Room.

The assignments consist of ALEKS objectives and problems from the textbook. There will be no extension of deadlines or make-ups allowed for any homework assignment due to built-in nature of the assignments. Do not put these off until the last minute.

Assigned problems from the book will not be collected for grade. However, knowing how to solve these problems is necessary for mastery of the materials. The answers to these problems are provided in the back of the text and in the solutions manual. Success in this course is strongly correlated with time spent working problems.

ALEKS is a artificial-intelligence based teaching tool that we will be using this semester to help you learn chemistry. Completion of ALEKS is worth 100 points, 20% of your final grade. These points are earned through the completion of various tasks. The primary assessment is worth 10 points, the final assessment is worth 15 points and mastery of the objectives is worth 7.5 points for each objective. To earn the 7.5 points for each objective you must complete 85% of the topics in each objective.

Quizzes: ALEKS Mastery Quizzes. There will be five 5 point quizzes given at the end of selected objectives on ALEKS (see schedule). There will be a window of two days in which you are able to take the quiz while logged in to ALEKS. THERE WILL BE NO MAKE-UP QUIZZES.
D2L Pre-Chapter Quizzes. At the beginning of five selected chapters, see the class schedule, there will be an online pre-quiz due at the beginning of class the first day that we begin covering the material. The quiz will be taken on D2L and there will be a window of two days in which you are able to take the quiz while logged in to D2L. **THERE WILL BE NO MAKE-UP PRE-QUIZZES.**

Grading: There will be a total of 500 points possible for this class (100 points for ALEKS, 50 points for quizzes, including pre-chapter quizzes, 200 points for the midterms and 150 points for the final). Your grade will be assigned based on the percentage of total points scored in the class approximating the following scale (**Note: this scale may change based on class performance**):

<table>
<thead>
<tr>
<th>Grade</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>≥ 90%</td>
<td>≥ 80%</td>
<td>≥ 65%</td>
<td>≥ 55%</td>
<td>&lt; 55%</td>
</tr>
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Outside Assistance:

**CHEMISTRY DEPARTMENT TUTOR ROOM SCHEDULE IN SB1 ROOM 221**

- MON-THURS 10am-6pm;
- FRI 11-2

**CHEMISTRY TUTORING IN SMSU 439:** The schedule is forthcoming (usually daily)

Policies:

1. **Missing an Exam:** If you miss an exam, please contact me within 24 hours. I will allow you to reschedule your exam only if your absence was excused, EXCEPT in the following cases, where you will need to take the exam ahead of time:
   
   a) Previously scheduled work or family commitments
   
   b) School-sponsored field trips or athletic events

   Illness, work conflicts and family emergencies are considered excused absences. Other instances will be evaluated on a case by case basis. All exams must be made up before the exams are passed back in class. Failure to notify me of the reason for your absence, as well as unacceptable excuses, will result in a score of zero for that exam.

2. **Professional Demeanor:** It is expected that you will act with professional demeanor and attitude at all times. This includes, but is not limited to, being respectful at all times to the instructor and to your colleagues. It **also expected that you refrain excessive talking, cell phone use, or disruptive internet use in class.**

3. Mistakes are sometimes made while grading exams; the good news is that they are usually addition errors, which I will happily fix. Exam scores have a margin of error. If you believe there has been a serious mistake on grading your exam, you may ask me, **IN WRITING,** to regrade exam. Indicate on the face of the exam, quiz or laboratory report the questions you wish
re-graded and your reasons for believing that they were mis-graded. **The entire work will be re-graded.** Be sure you have made no alterations in your work. We occasionally photocopy your graded work as a check. Please note that the penalties for academic misconduct are severe. A request for a regrade must be made within 2 days of returning the exams.

4. **Dishonesty:** I expect that the work you do in this course is your own. Academic dishonesty, which includes a variety of actions, will not be tolerated in this course. Cheating during any examination will be reported and the student(s) will receive an “F” for the exam.

5. **Accommodation:** If you have a physical or learning disability and you need extra accommodation, please be certain you are registered with Disability Services and make appropriate arrangements with me.

What is ALEKS?

ALEKS is a web-based, artificially intelligent assessment and learning system. ALEKS uses adaptive questioning to quickly and accurately determine exactly what you know and don't know in General Chemistry, then instructs you on the topics **you are most ready to learn.** ALEKS will periodically assess you to determine what topics you have mastered and what you have forgotten.

ALEKS 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. ALEKS is a modern, powerful assessment and learning tool that can make your chances of doing well in this course significantly higher.

Purchase

Because this is a trial period, ALEKS is available free of charge this term.

Registration

Here is what you need to do to begin using ALEKS.

1. Go to [http://www.aleks.com](http://www.aleks.com)
2. Click on "SIGN UP NOW"
3. In the box provided, enter the code **UE6QW-Q4P4A.**
4. Register, following the instructions. **Be sure to correctly enter your PSU nine-character student ID number,** so that you can receive credit for your work.

That's it. When you log in you will receive a brief tutorial on how to enter answers in ALEKS before taking an initial assessment to determine your current knowledge of the selected content.

**ALEKS mastery and objectives**

ALEKS determines your “mastery” of a topic, not your time spent or how many problems you have completed. This means it will ask you how to do a problem in a few different ways and will periodically assess you to make sure you are retaining this information. Trying to cheat the system by having a friend help do the
work for you will only hurt you later because when ALEKS assesses you and finds you don't really understand how to do something, it will remove that topic from your mastered list and teach it to you again.

Your CH199 ALEKS work will be broken down into weekly objectives that follow along with the material being covered in lecture. You can always see your current mastery of all topics - and how close you are to completing the current objective - by viewing your pie chart, which is on the first ALEKS page when you log in.

You will always be able to see, right below your ALEKS topics pie …

- what you need to be doing,
- when it is due, and
- the number of topics needed to complete an objective.

Also shown is the number of topics you are learning per hour, so you can always estimate the time it will take to complete your work (factoring in some extra time for assessment).

ALEKS will always try to get you to complete the current objective first. When you complete the weekly objective the pie will unlock. This means you can work on any ALEKS topic you would like, either getting ahead or going back and relearning topics you have forgotten

ALEKS grading

ALEKS will constitute 20% of your course score, broken down as follows.

- **Primary Assessment, 2%**: The first thing ALEKS will do when you log in is assess your current background and ability. The preliminary assessment will take between one and two hours, will include 20-30 questions. Don't worry about doing well or poorly, just take the assessment as honestly as possible, you want ALEKS to adapt itself to you. Do not consult outside sources (e.g. Wikipedia, friends, textbook, etc). NEVER click “I don’t know” unless you really have no idea what the question is asking. Even your wrong answers tell ALEKS something. Not taking this assessment honestly will lead to a LOT of work later. Taking this assessment (no matter your score) is worth 2% of your course grade.

- **Mastery Goals, 10 goals, 1.5% each**: There will be 10 times during the year we when will see how much course mastery you have obtained. This part of your grade is completely based on your ability to master topics. It is NOT based on time spent or number of problems answered. The first mastery goal will be at the start of the class based on your ability to complete the Objective 1: Math and Algebra topics due at 11:00 pm on October 5th. The schedule of the other mastery goals are available on the included schedule.

- **Final Assessment, 3%**: At the end of the semester, ALEKS will ask you to take a final assessment. Completion of the final assessment. You will receive this credit based upon how well you improved upon the initial assessment.

Getting the most out of ALEKS

ALEKS follows along with the course and book and can be a great help if used correctly. We expect most students to a minimum of 4 hours every week working on it. If you put this work off, then it will require much more time. If you have others do the work for you, it will take you MUCH more time because ALEKS will reteach topics to you. Never work on ALEKS more than 1 - 2 hours in a sitting.
Because ALEKS is tailored to you, you might find you are a bit ahead or behind the lecture. This is fine, just keep spending your time with it. Do not allow yourself to fall too far behind the course because then you may find you have too many topics to learn before you are graded on your mastery goal. ALEKS only goes as fast as you are able to learn topics, which historically is between 2-7 topics an hour. *No concessions will be made for incomplete work when objectives are due.*

**ALEKS technical support**

If you are working at a computer that does not allow downloads, then use [http://www.aleks.com/plugin](http://www.aleks.com/plugin) instead.

At any time that you feel your answer to be correct and ALEKS to be incorrect, please follow the following procedure exactly.

1. **While** working on the problem in question, select "Inbox."
2. Compose a message to ALEKS customer support.
3. Be certain to check the box near the bottom of the compose screen that says "Attach Page ... (Question)"

For all other technical problems using ALEKS, please contact ALEKS technical support at [http://support.aleks.com/](http://support.aleks.com/). You can also visit [http://www.aleks.com/support](http://www.aleks.com/support) to find answers to all common questions. You may also speak with technical support at (714) 619-7090.

**Suggestions for success**

Success in this class comes from within. **I do not give you a grade, you earn the grade.** Before beginning this class, decide what you hope to accomplish in this class. Actively participate in the class. It is necessary to challenge yourself with as many problems as you can from many resources. Ask for help, use your classmates, use D2L use the Chem Commons and use my office hours. Make every attempt to be an active learner because chemistry does not *just come* to the vast majority, most have to work to understand it. Finally, make sure you are doing everything you can to figure out what works for you by reflecting on how you learn the material.

Learning chemistry requires persistence, diligence and hard work. We suggest that you plan to spend at least **10 hours per week** on this course over and above the scheduled contact hours. If you are willing to devote this time, and you spend it wisely and effectively, you will be able to perform your best. In an effort to provide some more specific guidance, we offer the following ideas. Please do not confuse spending time performing busy work with studying. A challenge for each of you is to adjust to the new expectations and to develop new, more efficient study approaches and to develop the long-term intellectual discipline and work ethic necessary to succeed.

One of our overall goals is to help develop your critical thinking and reasoning skills beyond the scope of chemistry concepts. The ability to skillfully utilize both quantitative and qualitative reasoning is essential in our modern society and requires training. y and how to teach yourself in order to master the various nuances of general chemistry. You may have not yet experienced how to understand material. Understanding is different than simply memorizing facts and mechanically using them to solve equations or address questions similar to those that you have already seen. One of the challenges in this course is that you learn how to use the materials in different, new contexts and to fully understand their implications. Here are several items that may help
yourself do your best in this course. If you put each of these parts into practice, you will give yourself great advantage. These items initially appeared on http://quantum.bu.edu/courses/ch101.

1. **Attend all lectures.**

2. **Lecture preparation (BEFORE you come to Lecture):** You will get the most out of lecture if you have prepared the material to be discussed beforehand. A particularly effective way to prepare is to first read through several pages of the material in the course texts. Next, when you think you have understood what you have read, set the texts aside and then make a written summary of what you have understood. Finally, compare what you have written with the material in the texts, to identify those parts that are unclear or where your understanding is incomplete. If you follow this procedure, you will have a quite detailed idea of what will be covered in each lecture, and, most importantly, you can be particularly alert to those parts that are unclear for you. You may even want to collect your summaries in a journal that you can then update and refine throughout the semester... this would make an excellent set of notes for review prior to the final exam.

3. **ALEKS and the End of the Chapter problems** in your text. It is imperative that you stay up-to-date with these items! You will find that ALEKS provides guidance and hints/suggestions as you work along. This is on purpose; the hope is that they provide you with the tools you need to answer the problems you try at the end of the chapter. An essential skill in learning is knowing what you do not understand, and one of the best ways to do so is to solve chapter problems (perhaps 6 to 8) on a daily basis. **Simply reading the text is insufficient.**

4. **When you come to office hours, bring your work** (get a simple notebook for your problem solving efforts) so I can more easily identify which step(s) gave you difficulty in the problem solving process. By the time an exam comes around, not only will you have solved over a hundred extra problems, you will have identified and filled in most gaps in your initial understanding of the material.

5. **Do not try to cram a large number of problems in a few days before the exam.** Numerous controlled studies have shown that you cannot gain the necessary in-depth understanding of the material required for the class in several days before an exam.

6. **DURING lecture:** If you have appropriately prepared, very little you hear in lecture will be "brand new" to you. That is not to say you'll understand all you hear, but nothing will sound like it's in another language entirely. If the lecture still doesn't clarify things, you should **ask questions right in lecture.** There are absolutely NO bad questions. If you don't know it, at least half of the rest of the class doesn't either.

7. **AFTER each lecture, you should work through your lecture notes** to be sure you understand everything that was covered. You may even want to rewrite your notes, verifying problems done in lecture and doing others suggested during lecture and that occur to you. This will also **test your understanding.** If material is still unclear, then be sure to ask for specific help with it.

8. Get together with two or three other CH199 students to form a study group. This is one of the best ways to learn in almost any course. If you don't know anyone introduce yourself to the people sitting near you in lecture or recitation.

9. Don't fall behind.

10. **Make use of office hours:** The weekly schedule of office hours is listed above. Office hours are sessions that are set aside for your benefit and you are encouraged to make productive use of them.
## Chemistry 199 Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
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</thead>
<tbody>
<tr>
<td>9/26</td>
<td>Intro, Chapter 1</td>
</tr>
<tr>
<td>9/28</td>
<td>Chapter 2</td>
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<tr>
<td>9/30</td>
<td>Chapter 2</td>
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<tr>
<td>10/03</td>
<td>Chapter 2</td>
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<tr>
<td>10/05</td>
<td>Pre Quiz Ch 3 on D2L, Chapter 3, Objective 1 on ALEKS</td>
</tr>
<tr>
<td>10/07</td>
<td>Chapter 3, Objective 2 on ALEKS, Quiz 1 on ALEKS (10/09)</td>
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<tr>
<td>10/10</td>
<td>Chapter 3</td>
</tr>
<tr>
<td>10/12</td>
<td>Objective 3 on ALEKS</td>
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<tr>
<td>10/14</td>
<td>Exam 1</td>
</tr>
<tr>
<td>10/17</td>
<td>Pre Quiz Ch 4 on D2L, Chapter 4, Quiz 2 on ALEKS (10/18)</td>
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<tr>
<td>10/19</td>
<td>Chapter 4</td>
</tr>
<tr>
<td>10/21</td>
<td>Chapter 5 Objective 4 on ALEKS</td>
</tr>
<tr>
<td>10/24</td>
<td>Chapter 5</td>
</tr>
<tr>
<td>10/26</td>
<td>Pre Quiz Ch 6 on D2L, Chapter 6, Objective 5 on ALEKS</td>
</tr>
<tr>
<td>10/28</td>
<td>Chapter 6, Quiz 3 on ALEKS (10/30)</td>
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<tr>
<td>10/31</td>
<td>Chapter 7, Objective 6 on ALEKS</td>
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<tr>
<td>11/02</td>
<td>Chapter 7</td>
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<td>11/04</td>
<td>Pre Quiz Ch 8 on D2L, Chapter 8</td>
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<tr>
<td>11/07</td>
<td>Chapter 8, Objective 7 on ALEKS, Quiz 4 on ALEKS</td>
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<td>11/09</td>
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<tr>
<td>11/11</td>
<td>Vacation, Objective 8 on ALEKS (11/13)</td>
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<tr>
<td>11/14</td>
<td>Exam 2</td>
</tr>
<tr>
<td>11/16</td>
<td>Pre Quiz Ch 9 on D2L, Chapter 9</td>
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<td>11/18</td>
<td>Chapter 9</td>
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<tr>
<td>11/21</td>
<td>Chapter 9</td>
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<tr>
<td>11/23</td>
<td>Chapter 10</td>
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<tr>
<td>11/25</td>
<td>Vacation, Objective 9 on ALEKS (11/27), Quiz 5 on ALEKS (11/27)</td>
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<tr>
<td>11/28</td>
<td>Chapter 10,</td>
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<tr>
<td>11/30</td>
<td>Chapter 10</td>
</tr>
<tr>
<td>12/02</td>
<td>Objective 10 on ALEKS (12/04), Final Assessment (12/04)</td>
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<tr>
<td></td>
<td>Final Exam, Mon., December 5, 12:30- 14:20</td>
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</tbody>
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**Note:** Dates marked in parentheses are the actual due dates.

**Disclaimer:** As the instructor of this course, I reserve the right to change the tentative schedule of topics, number and length of examinations, point distribution, course requirements, and percentages required for letter grades in order to better facilitate the learning process.
Text Homework:

*For each chapter you should complete the “Practice Exercise” and “Concept Exercise” problems*

Chapter 1: End of Chapter Problems: Key terms, Exercises 1-16 and Self Test.
Chapter 2: End of Chapter Problems: Key terms, Exercises 1-95 and Self Test.
Chapter 3: End of Chapter Problems: Key terms, Exercises 1-97 and Self Test.
Chapter 4: End of Chapter Problems: Key terms, Exercises 1-98 and Self Test.
Chapter 5: End of Chapter Problems: Key terms, Exercises 1-100 and Self Test.
Chapter 6: End of Chapter Problems: Key terms, Exercises 1-92 and Self Test.
Chapter 7: End of Chapter Problems: Key terms, Exercises 1-78 and Self Test.
Chapter 8: End of Chapter Problems: Key terms, Exercises 1-90 and Self Test.
Chapter 9: End of Chapter Problems: Key terms, Exercises 1-84 and Self Test.
Chapter 10: End of Chapter Problems: Key terms, Exercises 1-91 and Self Test.