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, Wednesday 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), 5 online pre-chapter quizzes given on D2L (10 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. The ALEKS component of your grade 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, DO IT NOW! The remainder of the ALEKS portion of your course grade will be based on two numbers between 0 and 100 in equal measure (half comes from one, half from the other): 1) your highest Assessment score (so please take the assessments seriously! Do not enter your answers carelessly or abuse the button marked “I haven’t learned This Yet) and 2) your performance on the Objectives (the column labeled “Total Grade,” which is simply the average of all the objective grades (In other words, you didn’t procrastinate, so I'll give you points for that). Once an objective grade has been recorded, it will never change, even if you later forget some of the material and are forced by ALEKS to go back and
relearn it (but the mastery grade goes up and down as the assessments measure your true mastery and retention over the entire semester).

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, 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>
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<tbody>
<tr>
<td>Score</td>
<td>≥ 90%</td>
<td>≥ 80%</td>
<td>≥ 65%</td>
<td>≥ 55%</td>
<td>&lt; 55%</td>
</tr>
</tbody>
</table>

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.
An Introduction to ALEKS for CH199 (Fall 2012) at PSU

In your CHEM 199 course this fall you will use an innovative approach to facilitating the study of chemistry called ALEKS (Assessment and LEarning in Knowledge Spaces). ALEKS addresses many of the deficiencies in traditional online homework systems where the instructor chooses a list of problems from the textbook in initiate thoughtful study on the part of the student. Under this model, every student receives the same set of problems, regardless of his or her background preparation. Some students may not feel sufficiently challenged by the homework problems, while other students may feel overwhelmed. Further, students who complete the assignments without reflecting on conceptual underpinnings of the problems can be lulled into a false sense of security in their knowledge. Simple mastery of the mechanics of a particular kind of problem does not necessarily imply mastery of the concept, or that the concept will be retained long-term.

ALEKS, in contrast, is an instruction tool based on artificial intelligence, rather than a static set of homework problems. The first time you log in, ALEKS will ask you a series of math and chemistry questions designed to assess exactly what you do and do not know about the content in CHEM 201 and your proficiency with basic algebra and mathematical skills. After this initial assessment ALEKS will begin to teach you items that meet both of the following criteria:

- You don't already know how to do an item, and
- You are ready to learn the item, based on what you know already.

Note that ALEKS will tailor its approach to the unique needs of each student in the class. ALEKS will rarely force you to "learn" material you already know – ensuring that more students are sufficiently challenged, nor will it try to teach you things for which your foundational skills make you unlikely to succeed – ensuring that fewer students will feel overwhelmed by the problems. Further, you will periodically have your mastery of the material assessed by ALEKS – ensuring that you are retaining the concepts you have learned.

How does ALEKS work?

There are two “modes” in ALEKS: the Assessment Mode and the Learning Mode. In the Assessment Mode, ALEKS will ask you questions designed to determine what you know and what skills you have. This means you will not receive any feedback from ALEKS during an assessment. The first time you log into ALEKS you will be automatically placed in the assessment mode to complete an Initial Assessment of you knowledge of chemistry and math (see below).

In the Learning Mode, you will complete “Objectives” designed by your instructor, rather than “homework assignments.” An ALEKS Objective will contain a list of topics relevant to the current lecture discussions and assigned reading. When you choose a particular topic to learn, ALEKS will present you with a series of practice problems on that topic. The problems will have enough variability that you will only be able to get them consistently correct by understanding the core principle defining the topic. Once you can consistently get the problems for a given topic correct, ALEKS considers that you have learned the topic, and you may then choose another topic to learn.

Periodically, ALEKS will ask you to complete an Objective Completion Assessment. These are intended to gauge how well you are retaining the material you have learned. If ALEKS determines that you are shaky in some areas that you covered in a previous topic or Objective, you will be required to relearn that material before you can move on to topics that build on those concepts.
The Initial Assessment

The first time you log in, ALEKS will automatically place you in the Assessment Mode, where it will ask you a series of math and chemistry questions designed to assess exactly what you do and do not know in chemistry and basic math. The Initial Assessment is meant to be a snapshot of what you understand about chemistry at the start of this course. You will encounter questions that you will not know how to do...don't take this personally. This is just ALEKS trying to determine the edges of your understanding so that it will know where to begin teaching you.

It is extremely important that you complete the initial assessment carefully and honestly! This is how ALEKS finds out about YOU, how it determines what you already know, and what you are therefore ready to learn! Other online homework systems will make you solve problems whether or not you already know how to do it, or whether or not you are ready to learn them.

Always read and follow the onscreen instructions very carefully. IT IS A WASTE OF TIME to play games with the ALEKS assessments. For example:

- If you complete the Initial Assessment carelessly or answer randomly, you will give ALEKS the impression that you do not have a solid background in the skills necessary to be successful in Chem 201. This means you will waste time later because ALEKS will force you to work through material you already know and don’t really need to review. Therefore, it will take you much longer than necessary to complete the Objectives and earn your points.

- Conversely, if you consult outside resources – such as a textbook, the internet, or a friend – while working through the Initial Assessment, then you will be give ALEKS the impression that you have a very strong background in math and chemistry. This means that when you enter the Learning Mode, ALEKS will try to teach you things you are not really ready to learn. The Objective Completion Assessments will discover this, and you’ll end up spending far more time in the Learning Mode than necessary. Again, this means it will take you much longer than necessary to complete the Objectives and earn your points.

- NEVER click the “I don’t know” button during any ALEKS assessment unless you truly have no idea how to do the problem. Otherwise, ALEKS will think you don't know a bunch of things you actually do know and take you way back and make you "learn" them.

The Initial Assessment should take about an hour. Your professor will be able to see how long it took to complete your assessment. If your time to complete the assessment is significantly longer than an hour, your instructor will start you over with a brand new initial assessment.
Getting Started with ALEKS

You must complete your Initial Assessment by **11:00 pm on September 27** (but it’s great to start now to get ahead!)

**ALEKS is very unfriendly to procrastinators.** ALEKS was designed by psychologists who specialize in learning, who know that procrastinating until the night before an assignment is due and then cramming until the wee hours is not a good way to learn. You can’t do ALEKS that way. You must put in some time every day, or else you will fall so far behind on basic topics that you won’t have time to complete the Objectives. It is impossible to earn a good score in ALEKS by cramming all night right before the due date.

To register as an ALEKS user: (Please note: When registering, ALEKS will charge a $30 fee).

2. Click on the link marked “SIGN UP NOW” (upper left corner of the screen).
3. On the next screen provide the following **course code**: **YXFHT-MHG3H**
4. The next screen will ask for your **full name**, your **email address**, and your **ODIN student ID**. **Please provide all the information requested, even the information that is listed as optional.** Remember, your ODIN is not a 9 digit ID, it is your username on your email address. **You must enter your ODIN ID number to receive credit for your work.**
5. On the next screen you will receive your **ALEKS login name** and a **temporary password**, and you will have the chance to change your temporary password. **We recommend that you change your temporary password.**
6. After you change your password, ALEKS will check your computer to see if you have the latest version of the ALEKS Java plug-in installed (see below). The plug-in will be installed automatically if it is not already installed. **NOTE: The internet browsers Internet Explorer and Safari are fully supported by ALEKS, so they should run ALEKS with no problems. The plug-in for Google’s Chrome browser has a few bugs, but appears to run most features with no trouble. The first thing to try if you have trouble is another browser and another machine if possible.**
7. After the plug-in has been installed, you will learn how to input mathematical and chemical answers into ALEKS. This should take approximately 10 minutes.
8. Once you have completed the input tutorial, ALEKS will prompt you to complete the Initial Assessment. You may choose to complete the Initial Assessment later.
Installing the ALEKS Java Plug-in

Installation of the ALEKS plug-in is automatic. When you access ALEKS, it will automatically check to see if the current plug-in is installed on your computer. If it isn't, the plug-in will be downloaded, and you will be asked for your permission to install the plug-in on your system. This is a safe operation for your computer. Your browser uses the ALEKS plug-in when you are logged on to ALEKS. It is inactive at other times, and does not do anything except provide functionality for ALEKS.

If you need to access ALEKS in the library, a computer lab, or another place where you don’t have authorization to install software, use the ALEKS "streaming" plug-in. To use the "streaming" plug-in, follow these steps:

- Go to http://www.aleks.com/plugin and simply log in to or register with ALEKS as you normally would.

- Upon first login, ALEKS will automatically retrieve the ALEKS plug-in from the server and store it in the browser's "cache" memory. You don't need to grant any special user rights or privileges on a computer for this installation to occur.

- The plug-in will be available in the browser's cache until an updated version is available on the ALEKS server or until the browser's cache is cleared. **Important: When you restart the browser and return to ALEKS, you must go to http://www.aleks.com/plugin.** If you do not add "/plugin" to the end of the URL, ALEKS will attempt to install the standard ALEKS plug-in on the computer instead of using the streaming version of the plug-in.

Technical Support

*No one in the department of chemistry at PSU can provide you with competent technical support for ALEKS.* Do not write to your teacher with operational questions about ALEKS...he will not be able to help you. Instead, try the following resources on the ALEKS website:

- **Frequently Asked Questions:** http://www.aleks.com/faqs
- **User's Guide:** http://www.aleks.com/user_guides/learners-gchem
- **Troubleshooting:** http://www.aleks.com/support/troubleshooting
- **Email the Support Team:** http://support.aleks.com
## Chemistry 199 Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
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<tbody>
<tr>
<td>9/24</td>
<td>Intro, Chapter 1</td>
</tr>
<tr>
<td>9/26</td>
<td><strong>Assessment 1</strong> on ALEKS (9/27), Chapter 1</td>
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<tr>
<td>9/28</td>
<td>Chapter 2</td>
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<tr>
<td>10/01</td>
<td>Chapter 2</td>
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<td>10/03</td>
<td>Chapter 2</td>
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<tr>
<td>10/05</td>
<td><strong>Pre Quiz Ch 3</strong> on D2L, <strong>Objective 1 and 2</strong> on ALEKS, Chapter 3</td>
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<td>10/08</td>
<td>Chapter 3</td>
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<td>10/10</td>
<td>Chapter 3</td>
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<tr>
<td>10/12</td>
<td>Chapter 3</td>
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<tr>
<td>10/15</td>
<td><strong>Exam1</strong> (chapters 1-3), <strong>Objective 3</strong> on ALEKS</td>
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<td>10/17</td>
<td><strong>Pre Quiz Ch 4</strong> on D2L, Chapter 4,</td>
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<td>10/19</td>
<td>Chapter 4</td>
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<td>10/22</td>
<td><strong>Objective 4</strong> on ALEKS, Chapter 5</td>
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<td>10/24</td>
<td>Chapter 5</td>
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<tr>
<td>10/26</td>
<td><strong>Pre Quiz Ch 6</strong> on D2L, <strong>Objective 5</strong> on ALEKS, Chapter 6</td>
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<tr>
<td>10/29</td>
<td>Chapter 6</td>
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<tr>
<td>11/02</td>
<td>Chapter 7 <strong>Pre Quiz Ch 7</strong> on D2L</td>
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<tr>
<td>11/05</td>
<td>Chapter 7, <strong>Objective 6</strong> on ALEKS</td>
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<td>11/07</td>
<td>Chapter 8</td>
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<td>11/09</td>
<td>Vacation, <strong>Objective 7</strong> on ALEKS (11/11)</td>
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<tr>
<td>11/12</td>
<td><strong>Pre Quiz Ch 9</strong> on D2L, Chapter 9, <strong>Objective 8</strong> on ALEKS (11/13)</td>
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<tr>
<td>11/14</td>
<td><strong>Exam 2 Chapters 4-7</strong></td>
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<td>11/16</td>
<td>Chapter 9</td>
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<td>11/19</td>
<td>Chapter 9</td>
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<tr>
<td>11/21</td>
<td>Chapter 10</td>
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<tr>
<td>11/23</td>
<td>Vacation, <strong>Objective 9</strong> on ALEKS (11/25),</td>
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<tr>
<td>11/26</td>
<td>Chapter 10</td>
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<tr>
<td>11/28</td>
<td>Chapter 10</td>
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<tr>
<td>11/30</td>
<td><strong>Objective 10</strong> on ALEKS (12/02)</td>
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<tr>
<td></td>
<td><strong>Final Exam, Mon., December 3, 12:30- 14:20</strong></td>
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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.