Required Materials:
*Chemistry The Molecular Science 4th edition* by Olmsted & Williams
Image Notebook (shrink-wrapped with your textbook)
Response-card keypad (available at the bookstore)

Schedule & Professors:

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<tr>
<th>Section</th>
<th>Professor</th>
<th>SC Office</th>
<th>Phone 395-</th>
<th>Lecture</th>
<th>Email</th>
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<tbody>
<tr>
<td>01</td>
<td>Dr. Krueger</td>
<td>2120</td>
<td>7629</td>
<td>8:30 MWF SC1000</td>
<td><a href="mailto:kruegerb@hope.edu">kruegerb@hope.edu</a></td>
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<tr>
<td>02</td>
<td>Dr. Brown</td>
<td>2116</td>
<td>7117</td>
<td>12:00 MWF SC1000</td>
<td><a href="mailto:brownk@hope.edu">brownk@hope.edu</a></td>
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<tr>
<td>03</td>
<td>Dr. Peaslee</td>
<td>2106</td>
<td>7173</td>
<td>1:00 MWF SC1000</td>
<td><a href="mailto:peaslee@hope.edu">peaslee@hope.edu</a></td>
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Objectives:
In the second semester of this year-long course we will continue to study the properties and interactions of matter from a molecular viewpoint, an important approach. The key role of chemistry in the many fields of science will be emphasized, and we will actively try to enhance your problem solving ability and chemistry vocabulary. We will strive to meet the departmental directive that our general chemistry students, collectively, do above average on an American Chemical Society standardized exam at the end of this semester.

Grading:
The points that comprise your grade will be distributed as follows:
- Homework: 20%
- First hour exam: 20%
- Second hour exam: 20%
- Quizzes & in-class assignments: 20%
- Comprehensive final exam: 20%

Achieving 90% or more of the available points will earn you some sort of an A. Scoring in the 80%’s will merit a grade in the B range, 70’s get you C, and 60’s a D. A total score of less than 60% will constitute failing the course. Note that there is no limit on the number of A’s that can be earned – grading is not done on a curve.

Extra Credit:
Additional points may be earned toward the Quizzes & in-class assignments portion of your grade. Details of opportunities that exist and the point-value of each will be different for each section and are left to your lecture instructor. However, all sections will award points for attending regular Chemistry Department Seminars (usually Fridays at 4:00 in SC1000) and submitting a word-processed, one-page (maximum) report on what you learned from the presentation and your overall impression of the seminar. The expected report format is described fully on the Chemboard website. The report is due at the beginning of your particular lecture period immediately following the
seminar. Include your name, section, name of the speaker, affiliation of the speaker, title of the presentation and date of the seminar. You may receive extra credit for attending up to six seminars this semester. Note that extra credit points will allow you to make up for deficiencies in your Quizzes & in-class assignments score, but will not allow you to earn more than the maximum of 20% of the total course points.

**Homework:**
Homework is very important as an active way to learn chemistry; you practice explaining chemical concepts and solving chemical problems. Those who conscientiously complete all homework assignments generally do the best in the class. Homework is assigned and completed primarily using the CAPA system (Computer Assisted Problem Assignments). Generally, CAPA sets will be distributed in the lecture room several times during the semester. However, only two personalized CAPA assignments will be due each week unless otherwise announced by the professors. You may log onto the CAPA network from any web browser and answer all the questions that don’t require a drawing or a narrative answer. You may answer several times as necessary without penalty (up to a limit, usually of 12). There will be over 200 homework points possible this semester, and we will base the homework portion of your grade on ~95% of the maximum number of points available — this means you do not have to get every homework problem correct to achieve full credit. Since everybody will have their own personalized assignment, you are encouraged to work together on solving homework problems, and the possibility for 12 attempts at each answer will allow most students to achieve a high homework percentage if they try.

Problems requiring a drawing or narrative answer will be handed in to one of the labeled boxes in SC 3067. It is near these boxes that graded homework is returned and where CAPA assignments and other materials that have not been picked up in lecture can be found. (There also may be other hand-in-mail-boxes nearby for the lab course. Pick the correct box, your lecture section box.) Hand in any written material on 8×11-inch paper that has NOT been torn out of a spiral bound notebook. Put your name, section number (121-01, etc.), and CAPA set number (e.g. CAPA-4) in the upper right-hand corner of every page used.

More details about using campus or personal computers and how to log on to the CAPA system will be given in class. One way to get to the chemistry CAPA homepage is to go directly to: [http://arrhenius.chem.hope.edu/capa/](http://arrhenius.chem.hope.edu/capa/). On each of your personal assignment sheets is the PIN, Personal Identification Number, or CAPA ID for that particular set. That number and your student ID number will let you try the current set, summarize scores to date, view the answers to old sets or get help. All homework assignments are due by the time listed on the assignment near the ID number. These will generally be 11:00 pm on Mondays and Thursdays except near exams and holidays.

There is also a WWW Page for CHEM 121 with announcements (and changes in assignments). It is also available from the KnowHope Home Page via any internet browser. Click on Discussion Board, then ChemBoard, (or try the URL directly: [http://www.chem.hope.edu/chemboard](http://www.chem.hope.edu/chemboard)). The ChemBoard page will pop up. Select General Chemistry for material about this class. The PowerPoint lecture-slides that are sometimes used in some lectures will be available to all on ChemBoard. There is also a discussion room in ChemBoard for students and faculty to work on homework. This syllabus and the course schedule are also there.
Quizzes & Exams:
The two one-hour exams are scheduled for Friday 2/16, and Wednesday 3/28. Each exam will count 20% toward your final grade. There will be a cumulative final exam given during finals week that is a standardized, multiple-choice exam published by the American Chemical Society and it will cover material from the entire year (Chemistry 111 and Chemistry 121)! This final exam will be worth 20% of your final grade.

There are no make-up exams or excused absences. Medical reasons for taking the exam at a different time will require a doctor’s note. In case of a poor performance on one of the hour exams, we are willing to weight the final exam more heavily (25%) and reduce the weight of one of the hour exams to 15%, if it is to your advantage to do so. The final exam times, which are scheduled by the registrar’s office, are as follows:

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There will be several quizzes, often unannounced, or quiz-like in-class activities. Depending on the number of quizzes given, some low scores will be dropped. The quiz scores will count as 20% of the semester grade. There are no make-up quizzes since some will be dropped. The number and nature of quiz activities will vary in each lecture section. The best way to succeed on these quizzes is to stay ahead of the material assigned in the class, and to attend each class! The reading assignments for each class are listed on the schedule attached as the last page of this handout.

On all quizzes and exams, full credit requires using units in the answer, showing all of the intermediate steps and observing reasonable rules of significant figures.

This semester we will be using interactive technology in the classroom (response card keypads or “clickers”) to ask short questions of our audience. In general, these scores will not count toward the quiz (or homework) portion of the course.

Discussion (Help) Sessions and Extra Help:
One or another of the CHEM 121 professors will conduct the two discussion sessions each week, Monday 4:00-4:50 p.m. and Thursday 11:00-11:50 a.m. All of these sessions will be held in SC 1000. All discussion sessions are open to all CHEM 111 students. In these sessions, difficult concepts may be reviewed and students might solve problems in small groups. During the first two weeks of class, attendance at a session is strongly encouraged. These discussion sessions should be used before visiting one of the professors individually for help. Every opportunity will be given for students to ask all their questions at these discussion sessions.

Students who teach others clearly learn the chemistry best. ChemBoard is one place for that to occur. The “Discussion Board” on-line message board allows students to ask, and to answer one another’s science questions of all sorts. This semester we will also offer extra credit toward the
Homework portion of the course by offering good advice on-line to your peers. In general, any posting that is correct and helps answer another student’s question online will be worth a point. A maximum of 15 points may be earned this way during the semester. Make good use of these resources to get help and to give help, and to learn your chemistry more quickly. All three professors will also be available to all CHEM 121 students. One can attempt to "seek and find" any general chemistry lecture or lab professor but an appointment will guarantee a meeting. Try calling or emailing in advance.

The Academic Support Center on the second floor of Van Zoeren (x7830) can help to arrange for a CHEM 121 tutor. There is a charge for this service but it is adjusted if you have financial need. The tutors are students who have taken the course, done well and seek to help others. Our advice: Use discussion sessions or one of the professors first. Students have often succeeded by forming their own study groups or CAPA work groups, teaching and helping one another. Most folks learn best by sharing and testing what they have learned with someone else. Ultimately the student learns the material individually but often a friend or a tutor can help with the details.

**Philosophical and Practical Suggestions:**
Much of the material to be learned is theoretical or calls for a vivid imagination. Understanding chemistry involves "seeing" an atomic world that rationalizes the macroscopic one around us. Work at developing this approach. Please keep an open mind to new theories and a positive attitude. Try hard to apply principles to the macroscopic world. At this stage, it may seem that we are emphasizing the current language and paradigm so that there is little room for creativity. This is mostly true but there is ample room for unique ways to associate material in new and memorable ways.

The sooner a homework assignment is started, the sooner any misunderstandings will become evident and can be clarified with questions in lecture. So try assignments shortly after receiving them. Read the text (especially the chapter summaries) before class so you don't have to guess where the lecture may be going. How have you learned other material? Was it by helping others, using the material, explaining it to a friend or rephrasing your notes into your own words? Whatever it was, use it right from the start. The material may start out with much that seems like review but new vocabulary will constantly be accumulating, so one must keep up.

**Academic integrity:**
Cheating on exams, quizzes, or homework will not be tolerated. One is never to misrepresent the origin of one’s work. To do so is to risk a zero for the assignment and/or failure for the course. The college has a clear statement on plagiarism and Academic Integrity in the Catalog, pages 86-88. Cooperation and the sharing of insights is encouraged on homework assignments (which are mostly "individualized" anyway), but simply copying someone else’s homework is not allowed. New technology brings new sources of concern which include (but are not limited to) the following:

- You may not use any type of interactive device during quizzes or exams, including pagers, text messaging devices, or cell phones (even if you plan to only use it as your “calculator.”)
- You may not use pre-programmed calculator programs or memory storage devices during an exam. Please erase your calculator’s memory before each exam.
- You may not share calculators during quizzes or exams.