CH1100 General Chemistry Course Syllabus
Fall Semester, 2006

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General Chemistry, CH1100, covers the fundamentals of modern chemistry at the college level. Along with the chemistry itself, a major objective of this course is to develop your problem solving skills; this chemistry and these problem solving skills underlie all science and engineering disciplines. Thus, a large component of this course is problem oriented, beginning in your pre-lecture reading of your text (note the Worked Examples and Understanding Key Concepts problems) and in lecture. Lecture will guide you through the important material, help with difficult concepts, and apply principles in the problems solved. This is aided with your participation through the use of the iClicker transmitters and in-class questions. Your problem solving skills are further exercised and perfected as you work the Online Problem Sets using WebCT and as you work the recommended End-of-Chapter problems. Finally, these skills are tested on the mid-term exams and the final.

Course Schedule: This schedule outlines various due-dates and your class responsibilities:

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Monday</th>
<th>Tuesday *</th>
<th>Wednesday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sept 6-8</td>
<td>-</td>
<td>-</td>
<td>Chap 1&amp;2 Review &amp; Chap 3</td>
<td>Chap 3</td>
</tr>
<tr>
<td>2</td>
<td>Sept 11-15</td>
<td>Chap 3</td>
<td>3</td>
<td>Chap 5</td>
<td>Chap 5</td>
</tr>
<tr>
<td>3</td>
<td>Sept 18-22</td>
<td>Chap 5</td>
<td>5</td>
<td>Chap 7</td>
<td>Chap 7</td>
</tr>
<tr>
<td>4</td>
<td>Sept 25-29</td>
<td>Chap 7/8</td>
<td>7</td>
<td>Chap 8</td>
<td>Chap 8</td>
</tr>
<tr>
<td>5</td>
<td>Oct 2-6</td>
<td>Chap 8</td>
<td>8</td>
<td>In-class Review Exam I-6pm</td>
<td>No Class</td>
</tr>
<tr>
<td>6</td>
<td>Oct 9-13</td>
<td>Chap 9</td>
<td></td>
<td>Chap 9</td>
<td>Chap 9</td>
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<tr>
<td>7</td>
<td>Oct 16-20</td>
<td>Chap 9</td>
<td>9</td>
<td>Chap 10</td>
<td>Chap 10</td>
</tr>
<tr>
<td>8</td>
<td>Oct 23-27</td>
<td>Chap 10</td>
<td>10</td>
<td>Chap 11</td>
<td>Chap 11</td>
</tr>
<tr>
<td>9</td>
<td>Oct 30-Nov 3</td>
<td>Chap 11/12</td>
<td>11</td>
<td>In-class Review Exam II-6pm</td>
<td>No Class</td>
</tr>
<tr>
<td>10</td>
<td>Nov 6-10</td>
<td>Chap 12</td>
<td></td>
<td>Chap 12</td>
<td>Chap 12/13</td>
</tr>
<tr>
<td>11</td>
<td>Nov 13-17</td>
<td>Chap 13</td>
<td>12</td>
<td>Chap 13</td>
<td>Chap 13</td>
</tr>
<tr>
<td></td>
<td>Nov 18-26</td>
<td></td>
<td></td>
<td>Thanksgiving Break</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Nov 27-Dec 1</td>
<td>Chap 15</td>
<td>13</td>
<td>Chap 15</td>
<td>Chap 15</td>
</tr>
<tr>
<td>13</td>
<td>Dec 4-8</td>
<td>Chap 15/18</td>
<td>15</td>
<td>In-class Review Exam III-6pm</td>
<td>No Class</td>
</tr>
<tr>
<td>14</td>
<td>Dec 11-15</td>
<td>Chap 18</td>
<td></td>
<td>Chap 18</td>
<td>Chap 18</td>
</tr>
<tr>
<td></td>
<td>Dec 17</td>
<td>Online problem set for chapter 18 due 11:00 p.m. on Sunday, 12/17</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Finals</td>
<td>Dec 18-22</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

*The Online Problem Set (using WebCT) for each chapter must be submitted by 11:00 p.m. on each designated Tuesday. Online problem sets may be started at any time but must be completed by these deadlines. We encourage you to begin them early as each chapter is started.
These responsibilities include the following:
- Read the relevant sections prior to each class.
- Prepare to have your knowledge tested with i-Clicker questions at the beginning of each lecture.

This schedule also:
- Defines your general reading assignments. Specific section numbers will be given at the end of each lecture for the next class.
- Defines the Online Problem Set schedule. These assignments must be completed by 11 pm on the designated Tuesdays for grading via WebCT.
- Recommends End-of-Chapter problems (these are not submitted or graded).

### Grading

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
<th>Exam Schedule for Fall 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam I</td>
<td>100</td>
<td>Wednesday October 4 6:00 P.M.</td>
</tr>
<tr>
<td>Exam II</td>
<td>100</td>
<td>Wednesday November 1 6:00 P.M.</td>
</tr>
<tr>
<td>Exam III</td>
<td>100</td>
<td>Wednesday December 6 6:00 P.M.</td>
</tr>
<tr>
<td>Comprehensive Final Exam</td>
<td>200</td>
<td>Date and time to be defined</td>
</tr>
<tr>
<td>iClicker In-class</td>
<td>150 (30 x 5pts. ea.)</td>
<td></td>
</tr>
<tr>
<td>Online Problem Sets (WebCT)</td>
<td>100 (10 x 10 pts. ea.)</td>
<td></td>
</tr>
<tr>
<td>Laboratory</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td></td>
</tr>
</tbody>
</table>

On exam weeks, there will be class the day of the exam, but no class on Friday after the exam.

Three midterm exams and a comprehensive final exam make up a total of 500 points, or 50% of your grade. The laboratory comprises 25%. The other 250 points come from Online Problem Sets and in-class participation points measured using the "iClicker" transmitters.

**Online Problem Sets** are multiple choice homework questions based upon each chapter, and are due the Tuesday after each chapter is finished (at 11pm Tues., except for the last set due before finals week). These will be conducted using WebCT. There are 11 of these sets. Your 10 highest will be counted at 10 points each, to give the total 100 points. Your lowest grade of the eleven will be dropped; this is equivalent to one excused, missed problem set. You are encouraged to begin these problem sets as we begin each chapter; don't wait until the deadline. These will be set-up so that you will have multiple chances to take each problem set, and your maximum score will be counted. The details will be forthcoming.

The iClicker In-class component is designed to facilitate and measure your active participation in the lectures. You will respond to questions during lecture using the iClicker transmitters. Initial questions will be asked to measure your understanding of the assigned material. These are intended to encourage you to read the relevant assignment prior to attending lecture. Then, additional iClicker questions will allow measurement of your understanding of the lecture topics. iClicker questions will be scored for 33 lectures, and your best 30 will be summed to give the 150 points for this component of your grade. This is equivalent to your having 3 excused absences. (There are 33 lectures remaining after subtracting the 3 review sessions, the 3 exam days, and the two lectures of week 1.) Questions will be scored in terms of your participation as well as your knowledge. That is, the scoring has a heavy "participation" component. Again, the details will be forthcoming.
The laboratory portion of CH1100 is 25% of the course grade. Anyone failing the lab portion of CH1100 fails the course regardless of exam scores. This is automatic and not at the discretion of the instructor. YOU MUST PASS THE LAB PORTION OF CH1100.

Finally, the following End-of-Chapter Problems are recommended.

<table>
<thead>
<tr>
<th>Chapter No.</th>
<th>Recommended End-of-Chapter Problem Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 3: Formulas, Equations &amp; Moles</td>
<td>3.30-37, 38, 40, 42-44, 46, 48, 52, 56, 60, 68, 78, 92</td>
</tr>
<tr>
<td>Chapter 5: Periodicity and Atomic Structure</td>
<td>5. 24-26, 28, 32, 34, 36, 42, 44, 48, 50, 54, 56, 58, 62, 66, 70-72, 78, 79, 82-86</td>
</tr>
<tr>
<td>Chapter 7: Covalent Bonds and Mol. Struct.</td>
<td>7. 32-36, 38, 40, 42-44, 46-48, 50-54, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78</td>
</tr>
<tr>
<td>Chapter 8: Thermochemistry</td>
<td>8.28, 32, 34, even problems in 40-52, 56-70, 78-98 plus 61 and 97</td>
</tr>
<tr>
<td>Chapter 9: Gases, Properties &amp; Behavior</td>
<td>9.26-32, even 34-74 (omit 42, 54, 70), even 82-90, 102, and 106</td>
</tr>
<tr>
<td>Chapter 10: Liquids, Solids, &amp; Phase Changes</td>
<td>even: 10.22-58, 66-74, 82-86, plus 98, 100, 112, 114</td>
</tr>
<tr>
<td>Chapter 11: Solutions &amp; their Properties</td>
<td>11.29, 30, even 34-70, and even 74-92</td>
</tr>
<tr>
<td>Chapter 12: Chemical Kinetics</td>
<td>12: even 22-64, even 78-86, 88-92, 98, 102, 104</td>
</tr>
<tr>
<td>Chapter 13: Chemical Equilibrium</td>
<td>even 13.28-86 / sections covered in lecture</td>
</tr>
<tr>
<td>Chapter 15: Aqueous Acids and Bases</td>
<td>even 15.32-104 / sections covered in lecture</td>
</tr>
<tr>
<td>Chap. 18: Electrochem.</td>
<td>even 18.24-79 / sections covered in lecture</td>
</tr>
</tbody>
</table>

**EXAM POLICIES**

Preparing for the Exam
- NO MAKE-UPS for missed exams. Plan on taking the exam at the assigned times.
- Unexcused absences result in a 0.
- Excused absences result in the average of your other exams being awarded for the missed exam.

Excused/Unexcused Absences:
- Granted by the Office of Student Affairs. If you know that you will have an official university excused absence on exam day (university athletic event or religious holiday), you are required to make arrangements as early as possible in advance of the exam date.
- Examples of excused absences granted in the past: serious illness (medical excuse required), death in the family (contact Office of Student Affairs, NOT the instructor).
- Examples that are NOT excused: travel home or to attend a social event.
Allowed Exam Items:
- Non-programmable calculator only.
- Two #2 pencils. Note: fine point mechanical pencils cannot be used to record your answers; the computer will not pick up the marks.
- One 3x5 equation card (on Final - two 3x5 equation cards)

Taking the Exam:
- Room assignments are posted on the bulletin board across from the Chemistry Learning Center (ChemSci 206).
- Come on-time and seat yourself promptly in proper test seating arrangement.
- Bring only allowed items. Do NOT bring cell phones, CD players/earphones, or bookbags.

After Exam - Tracking Your Score
- Answer Keys will be emailed within a few hours of the exam and posted in the CLC (Rm 206, ChemSci).
- Exam Scores (individual and cumulative) will be posted on WebCT a day or two after each exam.

Academic Dishonesty
Academic integrity is expected. Any violations will result in a 0 for the course and a recommendation of expulsion from MTU. Policies and procedures are in "Academic Integrity at MTU - A Guide for Students and Faculty." Specific violations: copying from another's work or exam, allowing copying from your work or exam, giving someone else your iClicker transmitter, or facilitation of any academic dishonesty.

MTU ADA Statement
MTU complies with all federal and state laws and regulations regarding discrimination, including the Americans with Disabilities Act of 1990 (ADA). If you have a disability and need a reasonable accommodation for equal access to education or services at MTU, please call Dr. Gloria Melton, Dean of Students, at 7-2212. For other concerns about discrimination, you may contact your advisor, department head/chair, or the Affirmative Action Office.

WebCT Information:

WebCT Site for CH1100: This web site can be accessed at http://courses.mtu.edu/
Enter your WebCT User ID and WebCT password and click on "login". You will see the list of courses for which you are enrolled. Click on CH1100. Your first assignment is to register your iClicker serial number prior to the first lecture on Wed. Sept. 6 as described in the following.
Be sure to register iClicker code before the first lecture on Wed., 9/6/06!

iClickers: iClicker transmitters are required and available for purchase at the Bookstore. Prior to the first class you must register your "iClicker" using WebCT, on the CH1100 website.

In the Course Menu or on the Homepage, go to "iClicker REGISTRATION"

You will see a window with the following instructions:

This link takes you to a Survey Question which we use to record and enter your iClicker serial number into our database. You will:

- Insert the transmitter serial number from the back of your transmitter.
- Place a "pound sign" (#) first, followed by the numbers and letters in your serial number. Omit the first two zeros. Use capital letters.

Be sure that your browser pop-up blocker is turned off. If "BEGIN QUIZ", in the next window, does nothing, your blocker is probably "on".

Begin registration now by clicking the link below, which leads to the Survey Question, "Enter iClicker Serial Number":

This will take you to the Quiz and Survey section of WebCT in which you will find the question title:

Enter iClicker Serial Number

Click on this title to "take" the survey, and follow these instructions to insert your serial number.

Enter a pound sign (#) and the digits (numbers and letters) of the serial number on the back of your iClicker. Omit the first two zeros. Be sure to use capital letters.

Other Helpful WebCT Features to aid your studies are placed under "Course Content" and "Student Learning Resources" in the "Course Menu":

- When you click on each chapter number under Course Content, you are led to an extensive set of study aids, which include: Chapter Objectives, Activities, a Molecule Gallery (with rotating images of structures), Web Destinations, a Reference Center, a Problem Solving Center, and an Interactive Student Tutorial. In the Problem Solving Center, there are two "Self Quizzes" which I encourage you to use to test your knowledge of each chapter.

The Student Learning Resources include:

- A periodic table opens in a separate window and thus can be left open while navigating anywhere throughout the site.
- A calculator opens in a separate window and thus can be left open while navigating anywhere throughout the site.
- Access a Math Tutorial that covers math skills that are needed to succeed in a general chemistry course.
- Student Study Tips: Learning the ABC's of effective studying and test-taking techniques can be the most important thing you ever do in college. It can save you time, help you organize your day, and even provide you with skills you'll need in the job market! Take some advice from old pros as past student share the tips that helped them succeed in college.

There is also a course Gradebook within WebCT, where you may track your grades. Periodically examine this gradebook for accuracy, and report any discrepancies to me.
The Chemistry Learning Center (CLC) will help meet your needs by providing assistance in problem solving and understanding complex concepts. The CLC is available to aid your study of chemistry in three ways, depending on your needs, and at no additional cost.

1. **Walk-In Hours** - You are encouraged to make us of the Chemistry Learning Center for individual assistance during walk-in hours. Beginning on Tuesday, September 6th (closed Monday, September 5th for Labor Day), the CLC walk-in hours for Fall Semester are:
   - Sunday: 7:00 - 9:00 p.m.
   - Monday, Tuesday, Wednesday: 10:00 a.m. - 4:00 p.m. and 7:00 - 9:00 p.m.
   - Thursday: 10:00 a.m. - 4:00 p.m.

The Center is staffed by friendly, upper level undergraduate students who have a good background in chemistry and are familiar with the courses. The CLC is a relaxed, comfortable place to get help or to use as a study place. There are additional books and other resources available.

2. **Supplemental Instruction** - The CLC will be offering Supplemental Instruction (SI) for CH1100, General Chemistry this semester. SI sessions are regularly scheduled, informal review sessions which provide a chance for you to get together with people in your class to compare notes, discuss important concepts, develop strategies for studying the subject, and to test yourselves.

The sessions are facilitated by trained student SI leaders who are undergraduates who have previously mastered the material. They are prepared to share with you what they have learned about how to study effectively for this course. They will also be in class with you every day, taking notes and following the lecture.

SI is provided for all students who want to improve their understanding of course material and improve their grades. Research indicates that students who attend the SI sessions regularly do better than those students who attend periodically or not at all. Participation in SI is voluntary, free-of-charge, and open to all students in this course. The sessions are offered in the evening at convenient times in the dorms. Students who are interested in participating in SI do not need to enroll in CH0011.

3. **CH0011, Development of Chemistry Skills** - CH0011 is associated with the Chemistry Learning Center. Students who would like an individual, weekly appointment with a coach are encouraged to enroll in CH0011. Stop by the CLC between 8:00 a.m. - 5:00 p.m. during the first week of class to sign up for an appointment time. You must attend your first weekly appointment which begins the second week of class. Grades in CH0011 are satisfactory/unsatisfactory based on attendance. You are expected to attend every appointment. However, you are allowed to miss 1 appointment in case of an emergency and still receive a satisfactory grade. Note: there is no tuition charge for CH0011 as it is a zero credit course.

Additional information is available on the CLC web site: [www.chemistry.mtu.edu/pages/clc/index.php](http://www.chemistry.mtu.edu/pages/clc/index.php)

If you have questions about the CLC, SI or CH0011, contact Lois Blau, Coordinator of the Chemistry Learning Center at 487-2297 or labla@mtu.edu