CHEMISTRY 104 SYLLABUS
CHMY 104 PREPARATION FOR CHEMISTRY
AUTUMN 2010

Changes to this Syllabus
Changes to this syllabus are possible. Any changes to the syllabus will be announced in class.

Instructor
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Office Hours
One hour before class or by appointment

Electronic Reserve
The syllabus, the lecture notes, and the keys for quizzes and midterm exams can be found at http://eres.lib.umt.edu.

Prerequisite
The ability to use algebra: rearrange equations, work with fractions, be able to calculate logs and exponents. If your algebra skills are weak, please master them prior to attempting CHMY 104. You should be eligible to enroll in MATH 117 or higher to satisfy the math prerequisites for this course.

Course Description
An introduction to chemistry specifically designed to prepare you for CHMY 141. A major theme of the course is to introduce you to looking at the Universe at the atomic level.

There are two goals with respect to your intellectual development:

- Development of your procedural knowledge. Chemists often use skills such as mathematical pattern recognition, and the creation and manipulation of physical/mental models of atomic-level phenomena. You will develop your thinking patterns commonly used by chemists/scientists through linking algebra and general chemistry.

- Development of your content knowledge. This is knowledge of facts, theories, laws, and other information associated with chemistry.
**Required**


- A non-programmable, single-line display scientific calculator. You may NOT use a programmable calculator for quizzes or exams in this course. However, your calculator needs to be able to handle logs and exponents. *Go greener - get a solar-powered calculator!*  

**Optional**

- Molecular Model Set for General Chemistry  
  A model set will be useful to learn how to visualize molecules in three dimensions. It will not be needed until Chapter 12. You will need the kit if you take CHMY 141.

  A supplementary book with yet another perspective on the course material with extensive review of mathematics necessary for general chemistry.

**Lecture**

MWF 12:10 PM – 1:00 PM, Liberal Arts 11. Each lecture *begins* with a seven-minute quiz based on the most recent previous lecture. The remainder of the period is used to introduce new material AND to work on problems in *peer-led* groups. Active students learn much more efficiently than passive students. A traditional lecture is a passive activity. To overcome that, we will use a portion of the lecture time to solve problems related to the material that is being covered.

**Quizzes**

At the beginning of each lecture, a seven-minute quiz is given with questions drawn from *homework questions* assigned from the textbook. When a lesson focuses on numerically oriented concepts, the quiz questions will be a homework question with the compounds and/or numbers changed. When the lesson is more conceptually oriented, the quiz questions will be derived to test your grasp of the learning objectives. Each quiz is graded on a 12-point scale. To allow for illness, emergencies, and other legitimate reasons to miss class, only the best 25 quizzes are used in the calculation of your final grade, for a total of 300 points.

**Midterm Exams**
Four midterm exams are given during class on dates specified on the calendar. Each midterm will cover all material in the course to that date. Exams will be administered during lecture times; therefore, students will not be allowed to take exams at alternate times.

**Midterm Exam Grading Procedure**
Midterm exams are graded on a 100-point scale.

The typical grading criteria for a calculation question are:
- 100% of the possible credit: Solution clearly and correctly shown, correct answer and sig figs
- 75% of the possible credit: Correct setup, but sig fig and/or calculation error(s)
- 50% of the possible credit: One significant error in the calculation setup (e.g., incorrect conversion)
- 0% of the possible credit: Two or more errors. Or only the answer (correct or not) with no work

**Make-up Quizzes and Midterms**
No make-ups are allowed.
Students who miss exams for legitimate emergencies or illnesses will be allowed to replace ONE midterm score with the final exam score on that section.

7 of the 32 quizzes are not used in the calculation of the course grade to account for special circumstances such as emergencies and illnesses.

**Final Exam**
The final exam is given on the date and time specified by the Registrar.
The final exam is a comprehensive exam that will cover all of the material addressed in class.
The final is mandatory; you will be assigned a grade of F for the course if you do not take the final exam, regardless of your point total prior to the exam.

**Grades**

| 30 Quizzes | @ 12 points each; only 25 best quizzes will be counted |
| 4 Midterm Exams | @ 100 points each |
| 1 Final Exam | @ 300 points |
| **Total** | **1000 points** |

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
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<tbody>
<tr>
<td>A</td>
<td>930 – 1000 points</td>
</tr>
<tr>
<td>A-</td>
<td>900 – 929 points</td>
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</tbody>
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B+  870 – 899 points  B  830 – 869 points
B-  800 – 829 points  C+  770 – 799 points
C  730 – 769 points  C-  700 – 729 points
D+  670 – 699 points  D  630 – 669 points
D-  600 – 629 points  F  0 – 599 points

600 or more points required for CR for those using CR/NCR option
A grade of audit (AUD) is recorded for all students who register in courses as
auditors, intending to listen to the courses without earning credit or being graded.
Any student who initially enrolls as an auditor or changes his or her grade option to
audit (on or before September 21st) may listen to the entire course or any part
thereof at their discretion and will be issued a final grade of AUD.

Midterm Grade Errors
When midterm exams are returned, please check your exam for grading errors
promptly. The answer key is posted the day following the exam on electronic
reserve at http://eres.lib.umt.edu. Barring emergencies, exams are returned at the
end of the lecture following the exam. If you believe a grading error has occurred:

(a) Write-up a request for re-grade clearly indicating the grading error.

(b) Attach the request to the front of your unaltered exam.
Suspected grading errors must be submitted to the instructor in class no later than
one week after the graded exam is returned.
The instructor will return your re-grade request to the original grader, who will
explain why their original assessment was correct or s/he will adjust your grade if
an error did occur.
Graders are allowed to adjust your grade up or down or make no adjustment.

Do not write on any material that has been graded and returned to you.
Keep all graded materials until after final course grades are assigned.

Study Time
A standard formula used in colleges and universities is to allow for two hours
study time for each hour of lecture. Given that this is a three-credit course, there
are three scheduled lecture hours per week and thus six hours per week outside of
class, for a total of nine hours per week devoted to the course. (A standard load of
15 credits therefore results in a 45-hour school week.) This means that an
"average" student should spend nine hours per week working on this course.
Students who expect higher than average grades should expect to spend a higher
than average amount of time studying for the course.

**Drops**
September 21 by 4:30 PM is the last day to drop the class without W on your transcript. Also, this is the last day to switch to Audit. November 2 is the last day to drop with the signatures of your advisor and the instructor with W appearing on your transcript. After November 2, you have made the decision to stay in the course until the end. After this date, you must have documented justification of a circumstance beyond your control to drop the course. This includes accident, illness, family emergency, etc.

**Disabilities**
Any student in this course with disability, which may prevent the student from fully demonstrating his or her abilities, should contact the instructor personally as soon as possible so we can discuss accommodations necessary to ensure full participation.

**Academic Honesty**
All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the university. All students need to be familiar with the Student Conduct Code. The Code is available for review online at [http://life.umt.edu/vpsa/student_conduct.php](http://life.umt.edu/vpsa/student_conduct.php)

**Grading Philosophy**
An “A” student is someone who can solve homework-like problems under exam conditions with near-100% accuracy and can demonstrate that understanding through the correct solution of application questions on exams, and who can successfully solve novel problems on exams.

A “B” student is someone who can solve homework-like problems under exam conditions with near-100% accuracy and can demonstrate that understanding through the correct solution of application questions on exams, but struggles with novel problems on exams.

A “C” student is someone who can solve most homework-like problems under exam conditions and can demonstrate that understanding through the correct solution of most application questions on exams, and has a demonstrable understanding of the major concepts of the course.
A “D” student earns a passing grade. Thus a demonstrated understanding of the major concepts of the course is required. This includes the ability to solve most homework-like problems on exams.

A student who cannot demonstrate an understanding of the major concepts of the course through their performance on exams will not earn a passing grade.