CHEM 312
Physical Chemistry
Professor Michelle Foster
Spring 2008
S – 02 - 062
M W F 11:30 – 12:30 - lecture
F 12:30 – 1:30 – discussion
http://www.chem.umb.edu/chemistry/ch312/

Text: Atkins’ Physical Chemistry by P.W. Atkins and J. de Paula, 8th edition

Some other books that may be helpful (and are available in the bookstore) include:

Applied Mathematics for Physical Chemistry by James R. Berrante

Professor Foster: Office – S / 1 / 87
Phone – 617-287-6096
Email – michelle.foster@umb.edu
Office Hours – Tuesday 3:00 – 4:00 pm
                 Wednesday 10:00 - 11:00 am
                 Friday 10:00 – 11:00 am
or by appointment

Outline:

• Properties of Gases (Chapter 1)
• Laws of Thermodynamics (Chapters 2-3)
• Physical Transformations of Pure Substances (Chapter 4)
• Simple Mixtures (Chapter 5)
• Phase Diagrams (Chapter 6)
• Chemical Equilibrium (Chapter 7)
• Molecules in Motion (Chapter 21)
• The Rates of Chemical Reactions (Chapter 22)
• The Kinetics of Complex Reactions (Chapter 23)
• Processes at Solid Surfaces (Chapter 25)

Grades:

Grades follow the typical scale, 90-100 = A, 80-89 = B, etc. The scales might be lowered, but they will not be raised. Your final score will be calculated in the following manner:

Exams 80%
Homework and Participation 20%
Examinations:

There will be three in-class exams and a cumulative final exam. The best 3 out of 4 exams will count for 80% of your grade (30% for your strongest exam, and 25% for each for your next two strongest exams and 0% for your weakest exam.)

The schedule for exams is as follows:

<table>
<thead>
<tr>
<th>Exam</th>
<th>Date</th>
<th>Chapters</th>
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</thead>
<tbody>
<tr>
<td>Exam 1</td>
<td>Friday</td>
<td>February 29</td>
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<tr>
<td>Exam 2</td>
<td>Friday</td>
<td>April 4</td>
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<tr>
<td>Exam 3</td>
<td>Friday</td>
<td>May 9</td>
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<tr>
<td>Final</td>
<td>TBA</td>
<td>TBA</td>
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Discussion Sections:

Friday 12:30 pm. All exams will take place on Fridays with the understanding that the extra hour of discussion may be employed to complete your test.

Homework and Participation:

For those Fridays with no exam scheduled we will be going over homework problems on the board. New homework assignments will be distributed every Friday.

During the discussion section, I will be calling randomly on students to go to the board to solve select homework problems. This will be the basis for your homework and participation grade (20% of your total grade). If you are not ready to solve the problem on the board or not present when your name is called, you lose your opportunity to participate until all other students have had their chance.

Homework solutions will be posted on the class website on Friday afternoon, immediately following the discussion section. Homework will not be handed in.

Quizzes:

Pop quizzes may occur at any time and will count towards your participation grade.

Term Paper:

You may earn up to 10 points of extra credit to be applied to your final grade by writing a term paper on a person of historical interest in the field of physical chemistry. I would like you to limit your choices to people covered this semester in PChem, namely from Chapters 1-7, 21-23 & 25 in Atkins.

The term paper should describe the life and science of your chosen scientist and explain how the area of physical chemistry the person helped to develop is still relevant in the 21st century.

This term paper must be five pages long with a minimum of five references including one research article written by the person of interest. Internet sources must be limited to a single reference. The remaining references can be traditional books, magazine or journal articles.

Be sure to use a consistent format and style in your paper which is appropriate for a scientific presentation. Consult the ACS Style Guide or other reference sources as required.

May 14 Term Paper Due