

CHEM 312

Physical Chemistry

Professor Michelle Foster

Spring 2005

M W F 11:30 – 12:30 - lecture

F 12:30 – 1:30 – discussion

S / 02 / 0065

<http://www.chem.umb.edu/chemistry/ch312/>

Text: Physical Chemistry by P.W. Atkins and J. de Paula, 7th edition

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

Applied Mathematics for Physical Chemistry by James R. Barrante

Mathematics for Physical Chemistry by Robert G. Mortimer

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Office Hours – Wednesday – 2:00 – 3:00 pm

Friday – 10:00 – 11:00 am

Outline:

- Properties of Gases (Chapter 1)
- Laws of Thermodynamics (Chapters 2-5)
- Phase Transitions and Phase Diagrams (Chapters 6-8)
- Chemical Equilibrium (Chapter 9)
- Chemical Kinetics (Chapters 25 and 26)

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 one-hour exams and a final. 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:

Exam 1	Friday	March 4	Chapters 1-3
Exam 2	Friday	April 8	Chapters 4-7
Exam 3	Friday	May 6	Chapters 8-9, 25
Final	TBA	TBA	Chapters 1- 9, 25 & 26

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. Typically they are open book and open notes. They count as extra credit 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- 9, 25 & 26 in Atkins. This term paper must be at least 5 pages long (12 point font, double spaced, 1 inch margins) with references including at least one research article published by the person of interest. Internet sources must be limited to two references. The remaining references (at least 5 references need to be used to write your paper) can be traditional books or articles. 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. 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 11 Term Paper Due