

## Chem 441 syllabus

Physical Chemistry

Spring 2016

Instructor: Lee Sunderlin Office Hours: MWF 10-11 in LaT 327 or 331

Phone: 753-6870 e-mail: sunder@niu.edu

Text: Physical Chemistry, 10<sup>th</sup> Edition (Atkins)

Chem 440 and 441 cover physical chemistry: Chem 440 concentrates on thermodynamics, while Chem 441 covers kinetics and quantum mechanics. Chem 441 will cover Chapters 19 and 20 and some of 21 (kinetics), and chapters 7-11 and parts of 12 and 13 (quantum).

There will be four tests, each covering 2-3 chapters. The exact cutoff for the test material will be noted on Tuesday before each test.

Test 1	Feb 12	100 pts	
Test 2	Mar 11	100 pts	
Test 3	Apr 15	100 pts	
Final	May 11 (Wed 10 AM)	100 pts	plus 100 pts cumulative

In addition, there will be homework assignments for each chapter. The tests are worth 100 points (the final is counted as two 100 point tests). The HW is counted for 100 points, and the HW grade can be used to replace the lowest test score. This gives a class total of 500 points. Students must do their own work on the tests, under penalty of receiving a zero on the test. Students may use only a calculator, a (double sided) sheet of notes/equations, and any data sheets given with the test. Students may work together on homework, and a solutions manual is available. Students should use these resources as occasional rather than constant aids.

*Diligence on the HW assignments is the key to success in this class.* Except in unusual circumstances, there will be no makeup exams. Grades will be assigned on 93 = A, 90=A-, 87=B+, 83 = B, 80=B-, 77=C+, 70 = C, 60 = D basis.

The ACS standardized exam for physical chemistry will be used near the end of the semester, primarily to assess the program content. This test will be treated as an extra credit assignment, with scoring details to be decided later.

This class meets MTThF 11:00 to 11:50. The MTTh meetings will be regular lectures. The Friday meetings will be either tests or HW recitations, or in some cases discussion of material from the associated lab class.

Physical chemistry textbooks vary substantially in style and students are encouraged to read other books if the text is not effective. The Levine, Laidler, Raff, and Reid texts and others will be on reserve in the library or available from the Professor for your use. You are also encouraged to stop by for office hours. If the scheduled office hours are not convenient, appointments at other times can be made.

**Academic Integrity:**

Good academic work must be based on honesty. The attempt of any student to present as his or her own work that which he or she has not produced is regarded by the faculty and administration as a serious offense. Students are considered to have cheated if they copy the work of another during an examination or turn in a paper or an assignment written, in whole or in part, by someone else. Students are responsible for plagiarism, intentional or not, if they copy material from books, magazines, or other sources without identifying and acknowledging those sources or if they paraphrase ideas from such sources without acknowledging them. Students responsible for, or assisting others in, either cheating or plagiarism on an assignment, quiz, or examination may receive a grade of F for the course involved and may be suspended or dismissed from the university. (Note that working *together* on homework is not considered plagiarism in this class; *copying* another's homework is.)

**Accommodations for Students with Disabilities:**

If you need an accommodation for this class, please contact the Disability Resource Center as soon as possible. The DRC coordinates accommodations for students with disabilities. It is located on the 4th floor of the Health Services Building, and can be reached at 815-753-1303 (V) or [drc@niu.edu](mailto:drc@niu.edu). Also, please contact me privately as soon as possible so we can discuss your accommodations. The sooner you let us know your needs, the sooner we can assist you in achieving your learning goals in this course.

CHEM 441 HW assignments (all problems are Atkins “exercises” unless otherwise noted)

Kinetics HW (you may have already done these in CHEM 440)

Chapter 19

19A 1a, 2ai, 3a, 8b, 11b

19B 1a, 2a, 3a, 6b

19C 1a

Chapter 20

Exercises 20A 2a, 4a

Problems 20A1, 2, 4

Exercises 20B 1a, 2a, 3b

Problems 20B 3, 9

Exercise 20C 1a

Exercises 20D 1a, 2a

Exercises 20E 1a, 1b

Exercises 20F 1a, 20G 1a, 20H 1a, 2a

Quantum HW

Chapter 7

7A.1a, 2a, 5a, 6b, 8a, 11b(i)

7B.3a, 3b

7C.2a, 2b, 3a, 6a, 9a

Chapter 8

8A.1a, 5a (assume length = L), 6a (assume length = L), 8a, 11b, 12a

8B.1a, 3a, 4a

8C.2a

Chapter 9

9A.1a, 3a, 5a, 7a, 9a

9B.1a

9C.1a, 3a, 4a, 5a, 7a, 8a, 9a

Chapter 10

10A.1a, 4a, 6a

10B.1a, 2a

10C.1a, 1b, 3a, 3b

10D.1a, 4a

Chapter 11

11A.1a, 3a, 4a, 6a

11B.1a, 2a

11C.1a, 2a, 6a, 7a(i)