

Chemistry 373 Physical Chemistry I: Thermodynamics and Kinetics

Autumn 2017

The University of Montana

(Dated: August 24, 2017)

Instructor Prof. Xi Chu
Office Chemistry 008 A
Telephone 243-4407
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Class meeting MWF 12:00 pm-12:50 pm Chemistry 102
Quizzes Thursday 2:00-2:50 Chemistry 102
Exams Thursday 2:00-3:50 Chemistry 102
Office hours MW 1:30-2:30 CHEM 008A.

Other time can be arranged on individual basis by appointment.

Textbook Physical Chemistry, third edition, by Engel and Reid.

Note: The third edition is preferred, because the page and problem numbers in homework assignments will be according to this edition. If you get other editions for some reason, it may work, although you will have to make extra effort to compare the examples and problems with the third edition.

Course description

Chemistry 373, thermodynamics and kinetics, is the first semester of a two-semester series in physical chemistry. Students are expected to learn the basic principles and methodologies of equilibrium thermodynamics and kinetics, which are necessary for studies and employment in chemistry.

Learning outcomes

The following topics are covered in this course:

1. Four basic laws of thermodynamics
2. Basic thermochemistry
3. Phase equilibrium
4. Elementary reaction kinetics
5. Rate law
6. Boltzmann distribution

You are expected to be familiar with the basic principles of all topics listed above upon successfully finishing the class.

Course structure

I will lecture during MWF classes. Attending lectures is crucial for success in this class.

Thursdays are for quizzes, exams, discussions of homework problems, and occasional lecturing. We have 10 quizzes scheduled for the semester.

Homework

Every week you will be assigned 5 to 10 exercises, which will not be graded. Selected problems will be discussed in the Thursday section. You are strongly encouraged to ask questions in the discussions or see me for help.

Quizzes

The quizzes will be about 30 minutes long. Calculators are allowed. If needed, constants and conversion factors will be provided.

Exams

In addition to the final, there will be two hour-long exams. Dates are on the calendar. Please be familiar with the University of Montana student conduct code that will govern behavior in Chemistry 373.

Grading

Your course grade will be based on the total points of the exams and quizzes:

Hour exams 100 pts each	200
Final exam	300
Quizzes 20 pts each	100
Total	600

Note that out of the ten quizzes, five of your best scored ones will be counted towards the total.

In addition, there will be 6 unannounced pop quizzes throughout the semester. Only those who turns in all of them will have 6 bonus points added to their grades.

Policy on attendance

Attendance is crucial to the success of this class. It will be checked by 6 unannounced pop quizzes. Those with full attendance will be awarded extra credits.

Important dates

Important dates and deadlines for autumn semester 2016 can be found at <http://www.umt.edu/registrar/PDF/OfficialDatesandDeadlinesfall2016.pdf>

Policy for accommodating disabilities

This course is accessible to and usable by otherwise qualified students with disabilities. To request reasonable program modifications, please consult with the instructor. Disability Services for Students will assist the instructor and student in the modification process. For more information, visit the Disability Services website at <http://www.umt.edu/dss/>.

Policy on 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 academic honesty states, which are available on line at

<http://www.business.umt.edu/ethics/academic-honesty.php>