Chemistry 371 Physical Chemistry II: Quantum Chemistry and Spectroscopy

Spring semester 2021

The University of Montana

(Dated: January 10, 2021)

Instructor Xi Chu
Lecture notes, HW, & resource http://tccl.chem.umt.edu/chmy371/
Class meeting MW 12:00 pm-12:50 pm LA 336, R 1:00 pm-1:50 pm LA 336
Zoom lecture Meeting ID: 965 5875 7399
Passcode: 102497
(Please do not share with unregistered students.)
Email xi.chu@mso.umt.edu
Quizzes/recitation Thursday 2:00-2:50 via Zoom,
except for occasional lectures at this time
Exams R 1:00-2:50 Thursday via Zoom
Office hours Zoom time will 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 371 is the second semester of a two-semester series in physical chemistry. Lectures will cover fundamental concepts of quantum mechanics, wave functions, eigenvalues and operators, particle in a box, harmonic oscillator, molecular orbital theory, symmetry, vibrational and rotational spectroscopy. 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 MWR classes. Past lecture notes are posted on line and the lectures involves derivation on board. If you are attending via Zoom, please pay attention to focus on the white board. It is recommended that you check the site frequently for previewing and reviewing and bring a copy of the notes to the classroom. Attending lectures is crucial for success in this class.

Thursdays 2:00-2:50 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. You are strongly encouraged to ask questions in the discussions or see me for help.

Quizzes

The quizzes will be about 30 minutes long. They will be posted at 2:00 pm on Thursdays. Please email your answers back to me by 3:00 pm. You do not need to copy the questions in your email, nor is scanning or copying necessary, but please clearly mark the question you are answering, e.g. 4I., 4III .... You are allowed to use books, notes, and online resources, but discussion with others is prohibited.

Exams

In addition to the final, there will one midterm. The date will be posted when we are on the topic of hydrogen atoms. Please be familiar with the University of Montana student conduct code that will govern behavior in Chmy 371.

Grading

Your course grade will be based on the total points of the exams and quizzes:
Midterm test 100
Final exam 200
Quizzes 20 pts each 100
Total 400

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

Policy on attendance

Attendance is crucial to the success of this class. You are encouraged to ask questions during the lecture as we have a small class.

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 and plagiarism

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