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CHMY 371.01: Physical Chemistry - Quantum Chemistry & Spectroscopy

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Chemistry 371 Physical Chemistry II: Quantum Chemistry and Spectroscopy

Spring 2018

The University of Montana

(Dated: January 22, 2018)

| | |
|---------------|--|
| Instructor | Xi Chu |
| Office | CHEM 008A |
| Telephone | 243-4407 |
| Email | xi.chu@mso.umt.edu |
| Class meeting | MF 12:00 pm-12:50 pm LA 243, R 1:00 pm-1:50 pm LA 336 |
| Quizzes | R 2:00-2:50 LA 336 |
| Exams | R 1:00-2:50 LA 336 |
| Office hours | MTW 1:00-2:00 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 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 MRF classes. Lecture notes will be posted prior to the class and modified afterward to be consistent with the actual progress. 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. 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 exams. Dates are on the calendar. 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:

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|---------------------|-----|
| Midterm test | 100 |
| ACS test | 100 |
| Final exam | 200 |
| Quizzes 20 pts each | 100 |
| Total | 500 |

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

Policy on attendance

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

Important dates regarding add/drop

Important dates and deadlines for spring semester 2017 can be found at <http://www.umt.edu/registrar/PDF/OfficialDatesDeadlinesSpring2017.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 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

https://www.umt.edu/vpsa/policies/student_conduct.php