Physical Chemistry II **Chem 3070** **Spring, 2022**

MWF, 9:30-10:20, ESLC 053

Instructor: Steve Scheiner, Maeser 273
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Office Hours: by appointment, due to COVID restrictions

Text: " *Physical Chemistry* " I. N. Levine, 6th Ed

Content: The course will cover topics presented in Chapters 17-23 of the text. Students are encouraged to read the chapters and work the practice problems in the text.

Lectures will be recorded and available afterwards through Zoom on the Canvas Website. Those who are unable to attend the lecture in person on a given day may directly participate over Zoom using the link:

https://usu-edu.zoom.us/j/86947463080?pwd=YXcxakpnSmVhUFFwSGkzTG1sdnlLdz09

If passcode is required it is 583461

This same link will be used for some classes that may be held entirely over Zoom, due to Covid concerns.

Again, due to uncertainties as to how Covid may affect the University, the following remains tentative:

Grading: Students will be evaluated in a number of ways.

In-Class Exams: 300 points.

There will be four 50-min exams. Each student may drop the lowest of their four grades. Students who take only 3 exams will have all three grades count. Students missing more than 1 exam will receive a grade of 0 on any missed in excess of 1.

Quizzes: ~100 points

Some lecture classes will end with a short quiz. These quizzes will not be announced in advance, so students should come prepared to take a quiz each day (please bring a calculator). There will be roughly 11 such quizzes during the semester, each worth 10 points. Each student taking all quizzes will be able to drop their lowest grade.

Problem Sets: ~220 points

Students will be required to turn in problem sets during the semester, approximately 11 such sets. Each will be worth 20 points. No grades will be dropped.

Final Exam: 200 points. This exam will be comprehensive, covering material from the entire course. It is scheduled for **Weds, May 4, 9:30 - 11:20 AM**.

Learning Objectives Students will learn to do the following:

Apply the Schrodinger equation to simple systems
Explain the significance of quantum numbers
Apply valence bond and molecular orbital methods to chemical bonds
State the electron configuration of atoms
Apply principles of electronic, rotational, and vibrational spectra
Use the partition functions of simple systems to explain properties
Derive the properties of crystalline solids from their molecular properties
Analyze the properties of liquids in terms of intermolecular forces

Assessment Assessment of student learning will be performed via gain-score exams.

Exam dates for in-class exams: Feb 2, Feb 25, March 25, April 18

For University regulations regarding academic integrity, plagiarism, sexual harassment, students with disabilities, withdrawal policy, no-test days, risk, and mental health, please visit:
https://www.usu.edu/provost/faculty-life/syllabus

and for COVID information and updates:
https://www.usu.edu/covid-19/index