SYLLABUS

Course: CHEM 352 (Quantum Chemistry, 4 units)
Prerequisites: CHEM 351; PHYS 226 or 220B
Lecturer: Dr. Jussi Eloranta
E-mail: Jussi.Eloranta@csun.edu
Office: Eucalyptus Hall 2025
Office hours: Fri 12:00 – 1:00 pm.
Lectures: Tue, Thu 7:30 am – 9:15 am. 4 hours / week of lectures
Exams: One midterm (weight 50 %) and a final (weight 50 %)
Content: Quantum mechanics, quantum chemistry, optical spectroscopy,
magnetic resonance spectroscopy
Course material: http://www.csun.edu/~jeloranta/CHEM352/
Optional material: Physical Chemistry by P. W. Atkins and J. de Paula,
Physical Chemistry by Silbey, Alberty and Bawendi

1. Table of contents

1. Introduction to quantum mechanics
2. Quantum mechanics of atoms
3. Quantum mechanics of molecules
4. Group theory
5. Optical spectroscopy
6. Electronic spectroscopy (optical spectroscopy continued)
7. Magnetic resonance spectroscopy

2. Tentative schedule (spring 2019)

<table>
<thead>
<tr>
<th>Chapters</th>
<th>Examination</th>
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<tbody>
<tr>
<td>1 – 3</td>
<td>Midterm (April 4, 7:30 - 9:15 am)</td>
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<tr>
<td>4 – 7</td>
<td>Final examination (May 9, 7:30 - 9:15 am)</td>
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Note: the final exam date is different from the official date.

3. Homework

Additional examples/homework for each chapter can be downloaded from the course web page.

4. Examinations

Additional material is allowed in the examinations (including lecture notes, textbooks, programmable calculators, etc.). A tentative grading scale is as follows:
<table>
<thead>
<tr>
<th>Grade</th>
<th>Examination score</th>
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<tbody>
<tr>
<td>A</td>
<td>90 – 100 points</td>
</tr>
<tr>
<td>B</td>
<td>75 – 90 points</td>
</tr>
<tr>
<td>C</td>
<td>65 – 75 points</td>
</tr>
<tr>
<td>D</td>
<td>50 – 65 points</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 50 points</td>
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The overall grade is taken as a weighted average of the examination scores.

5. **Suggested reference material**

The following reference material will be helpful during the course:


6. **Practical hints**

1. Read the corresponding textbook section and the notes before the lectures. The notes are available at the course web page. Ask questions!
2. The best way to learn physical chemistry is through exercises. This is the reason for the homework being mandatory.
3. Always try to understand the whole concept first and the work out the details.
4. Try to understand the material instead of just memorizing it. The latter approach will not work in physical chemistry.

7. **Academic dishonesty**

By enrolling in this class, you agree to abide by all California State University, Northridge policies of academic honesty and integrity. Students violating these standards will receive a zero for the work in question and will have their case referred to the Student Affairs Office for appropriate disciplinary action. See the California State University catalog for details of the University policies.