Course Syllabus
CH3521: Physical Chemistry Laboratory II
College of Science and Arts
Spring 2016

Instructor Information
Instructor: Kelley M. Smith, M.S., Laboratory Supervisor
Office Location: Room 706C, Chemical Science and Engineering Building
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E-mail: kmsmith@mtu.edu
Office Hours: T/R 9:00 – 11:00 a.m. & T 2:00– 4:00 p.m, or by appointment

Course Identification
Course Number: CH3521
Course Name: Physical Chemistry Laboratory II
Course Location: 706 Chemical Science and Engineering Building
Class Times: T/R 4:05 - 6:05pm
Co-requisite: CH3520 Physical Chemistry II

Course Description/Overview
This laboratory course is designed to supplement and enhance the materials taught in CH3520. In this course, students will develop skills in quantum chemistry using experiment and computational methods as well as continued development of their written communication via formal laboratory reports.

Learning Objectives
The exercises in this course are designed to:
1. Give students experience in theoretical methods used to compute and ultimately predict experimental values important in chemistry.
2. Practice in the preparation of a procedure for carrying out a quantum mechanical experiment.
3. Expose students to computational software and methods used to computer both geometry and physical properties of simple molecules.
4. Expose students to modern experimental equipment, instruments, and techniques.
5. Develop the ability to use mathematical analysis to correctly interpret and describe the numerical significance of experimental results.
6. Teach students to work successfully in groups.
7. Have students successfully communicate results in written reports.
Course Resources

Course Website(s)
- <http://www.courses.mtu.edu/>

Required Course Text

Course Fees
- $205/semester

Course Supplies
- A bound laboratory notebook

Grading Scheme

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Percentage</th>
<th>Grade points/credit</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93% &amp; above</td>
<td>4.00</td>
<td>Excellent</td>
</tr>
<tr>
<td>AB</td>
<td>88% – 92%</td>
<td>3.50</td>
<td>Very good</td>
</tr>
<tr>
<td>B</td>
<td>82% – 86%</td>
<td>3.00</td>
<td>Good</td>
</tr>
<tr>
<td>BC</td>
<td>76% – 81%</td>
<td>2.50</td>
<td>Above average</td>
</tr>
<tr>
<td>C</td>
<td>70% – 75%</td>
<td>2.00</td>
<td>Average</td>
</tr>
<tr>
<td>CD</td>
<td>65% – 69%</td>
<td>1.50</td>
<td>Below average</td>
</tr>
<tr>
<td>D</td>
<td>60% - 64%</td>
<td>1.00</td>
<td>Inferior</td>
</tr>
<tr>
<td>F</td>
<td>59% and below</td>
<td>0.00</td>
<td>Failure</td>
</tr>
<tr>
<td>I</td>
<td>Incomplete; given only when a student is unable to complete a segment of the course because of circumstances beyond the student’s control. A grade of incomplete may be given only when approved in writing by the department chair or school dean.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>Conditional, with no grade points per credit; given only when the student is at fault in failing to complete a minor segment of a course, but in the judgment of the instructor does not need to repeat the course. It must be made up within the next semester in residence or the grade becomes a failure (F). A (X) grade is computed into the grade point average as a (F) grade.</td>
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</tbody>
</table>

Grading Policy

Grades will be based on the following:
Pre-Lab Report for PIB (Indiv./Group) | 25/25 (50 Total)  
Pre-Lab Report for Dev. Of an Expt. (Indiv.) | 100  
Final Lab Report for PIB (Indiv./Group) | 25/25 (50 Total)  
Final Reports for HyperChem (Indiv.) | 200  
Final Report for Vibrational Expt. (Group) | 100  
**Total Points** | **500**

**Note:** 40% of your grade will be based on group work

**Late Assignments**
There may be a deduction for each class day that a report is late after the due date. Preliminary lab reports are due before the experiment begins, unless otherwise noted. Final reports are due within 1 week of the scheduled completion of the experiment. The last final report due date is *no later than 5p the Friday before finals’ week.*

**Course Policies**
A portion of your final score will be based on group performance:
- Divide time and effort as equally as possible.
- Notify your group of upcoming absences *in advance*.
- Your group has the option of *not* including your name on any report.

The names of all students contributing to a report must be included on the title page of group-submitted reports. If your name is not included on the title page, you may not receive credit unless you submit your own (individual and possibly *entire*) report.

Students are responsible for conducting themselves in a safe manner, becoming aware of and informed about special hazards of technique, apparatus or chemicals in the chemical laboratory. They are expected to conform to any safety instructions presented orally or in writing by the instructor or contained in posted instructions or safety memoranda that are distributed. The MTU Department of Chemistry laboratory safety rules are available on the Canvas web site: [http://www.courses.mtu.edu/](http://www.courses.mtu.edu/)

**Collaboration/Plagiarism Rules**
The following are prohibited in this course and violate the Academic Integrity Code of Michigan Tech. Turnitin.com will be used to identify plagiarism.

- Written or digital information exchanges that are *inter*-group or *inter*-section. (Most forms of *intra*-group communication are acceptable.)
- Use or possession of “scoop” materials for any of the laboratory assignments
- Plagiarism: This includes anything copied or even loosely copied from another source (person, institution, web site, etc). *If you use a source, place it in quotations and cite it within the text.*
University Policies

Academic regulations and procedures are governed by University policy. Academic dishonesty cases will be handled in accordance with the University's policies.

If you have a disability that could affect your performance in this class or that requires an accommodation under the Americans with Disabilities Act, please see me as soon as possible so that we can make appropriate arrangements. The Affirmative Action Office has asked that you be made aware of the following:

*Michigan Technological University complies with all federal and state laws and regulations regarding discrimination, including the Americans with Disabilities Act of 1990. If you have a disability and need a reasonable accommodation for equal access to education or services at Michigan Tech, please call the Dean of Students Office at 487-2212. For other concerns about discrimination, you may contact your advisor, Chair/Dean of your academic unit, or the Affirmative Programs Office at 487-3310.*

Academic Integrity:
http://www.studentaffairs.mtu.edu/dean/judicial/policies/academic_integrity.html

Affirmative Action:
http://www.admin.mtu.edu/aaio/

Disability Services:
http://www.mtu.edu/dean/disability/services/

Equal Opportunity Statement:
http://www.admin.mtu.edu/admin/boc/policy/ch5

Course Schedule

The experiment schedule may also be accessed from the Canvas CH3521 Course pages.