Syllabus for Chemistry 562 (Fall 2017)

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Course Objectives: There are three objective for this this course. You will develop the skills that allow you to you apply the the laws of quantum mechanics in order to understand and predict chemical behavior. You will learn the fundamentals of spectroscopies in order to connect experimental observables to atomistic properties. You will connect the atomistic and macroscopic worlds by applying the tools of statistical mechanics. In order to reach these goals you will require honing mathematical, computational, skills so that you can solve complex chemical problems.

Preclass Reading: The lecture material will posted on Canvas. If you would like to follow a text, I recommend the 8^{th}-10^{th} editions of *Physical Chemistry* by Peter Atkins and Julio de Paula or *Quantum Chemistry* by Donald McQuarrie. I was able to find pdf copies on these texts on-line.

Whole Class Periods: There are no lectures in this course. The whole class periods consists of short presentations of background material followed by group work in which you solve and discuss problems that are designed to advance your knowledge and help you understand the assigned reading materials. You will be provided with problems and assigned readings before class. We will be working in groups and using MATLAB to solve problems.

Discussion Sections: You have one discussion section per week. These sessions are used go over the problem sets The TA will work problems on the board and supervise group problem solving sessions.

Problem Sets: There will be several homework assignments each week. You are expected to bring your solutions to class, so that we can discuss them. The homework is an extremely important component of the class. You **may** and should discuss the homework with other students before coming to class. Many problems will require the use of Excel. Homework assignments will be posted about 48 hours before class. Select homework assignments will be turned in to be graded.

Tests, Final Exam and Grades: The final exam is cumulative. There are five in class quiz/tests. These assessments will be similar to problems we work in class. Your lowest quiz/test grade will be dropped. Your final course grade will be based approximately on the following weighting: quiz/tests (60%), problems sets (10%), and final exam (30%). The final will be Tues. Dec. 19 at 5:05 PM.

Learn@UW: This syllabus, problem sets, reading assignments, and a description of the upcoming whole class period can be found on Learn@UW. Always check this site the night before class for updates.