| | **FCH 361 Spring 2020** | |
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| | Reading assigments from the **8th Edition** of Atkins and de Paula | |
| **Monday** | **Wednesday** | **Friday** |
| 1/13 INTRODUCTION | 1/15 22.2-4<br>Basics of Rate Laws | 1/17 21.5<br>Basics of Rate Laws, Arrhenius |
| NO CLASS | 1/22 22.6-7<br>Elementary Reactions | 1/24 22.2.d, 22.7<br>Pseudo-First Order and Steady State |
| 1/27<br>Pseudo-First Order and Steady State | 1/29 **Homework #1** 24.5<br>Arrhenius and Thermodynamics | 1/31 24.1-2<br>Collision Theory & Diffusion Control |
| 2/3 **Homework #2**<br>REVIEW | 2/5 **EXAM I** | 2/7 8.1-2<br>Failures of Classical Mechanics |
| 2/10 8.3-5<br>The Wavefunction and Probability | 2/12 8.6-7<br>The Wavefunction and Probability | 2/14 9.1<br>Basics of Particle in a Box |
| 2/17 **Homework #3** 8.5-7, 9.2<br>Meaning of Particle in a Box | 2/19<br>Meaning of Particle in a Box | 2/21 9.4-5<br>Basics of Simple Harmonic Oscillator (SHO) |
| 2/24 13.9-11<br>Meaning of SHO | 2/26<br>Meaning of SHO | 2/28 **Homework #4**<br>REVIEW |
| 3/2 **EXAM II** | 3/4 9.3<br>Classical versus Quantum Mechanics | 3/6 9.3 13.2b, 13.9-11, 13.13<br>Tunneling, Selection Rules |
| 3/9 13.2c<br>Origin of selection rules for SHO and 1-D box | 3/11 13.14-16<br>Vibrations of Polyatomic Molecules | 3/13 **Homework #5** 12.4-6<br>Basics of Rotational Spectra |
| **Enjoy** | **Spring** | **Break!** |
| 3/23 13.12<br>Rotational Transitions | 3/25 11.3<br>Molecular Orbital (MO) Theory: $H_2^+$ | 3/27 11.4<br>MOs for Homonuclear Diatomics |
| 3/30<br>MOs for Homonuclear Diatomics | **4/1 Homework #6**<br>**REVIEW** | 4/3 **EXAM III** |
| 4/6 11.5<br>Heteronuclear Diatomics | 4/8<br>MOs from quantum calculations | 4/10 14.1c-d, 14.2-5<br>Electronic Spectroscopy |
| 4/13 **Homework #7** 16.1-2<br>Statistical Mechanics - Prob. & populations | 4/15 17.1-2<br>Statistical Mechanics for molecules | 4/17 17.3<br>Statistical Mechanics - some theory |
| 4/20 24.4-5<br>Transition State Theory | 4/22<br>Transition State Theory | **4/24 Homework #8**<br>**REVIEW** |
| 4/27 **EXAM IV** | | |
| | (tentative) Thursday 4/30 | **FINAL EXAM** 3:00 - 5:00 p.m. |