| Day | Date | Homework | In Class Activities, Topics, Learning goals | Special Notes |
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| **M** | **Jan 30** | | **What is inorganic chemistry? Asking questions in inorganic chemistry, syllabus, Socrative response system** | **Bring computer or device to class** |
| **T** | **Jan 31** | Get lab notebook | **No lab this week** | |
| **W** | **Feb 1** | Read the syllabus, fill out class survey, do the rest of In Class Activity 1 and submit answers online, buy books and lab notebook if you don't have one already, Skim Chapter 1, Read Chapter 2.1-2.3 **Socrative homework questions** | **The periodic table** | |
| **R** | **Feb 2** | Get lab notebook | **No lab this week** | |
| **F** | **Feb 3** | Study element names, read Chapter 4.1, 4.2 Problems in text: Chapter 2: 2.4, 2.5, 2.6, 2.9, 2.11, 2.13, 2.21, 2.23, 2.25, 2.26, 2.27, 2.31, 2.33, 2.34, 2.35, Socrative questions, Finish in class 2 and check answers online | **Classifications of compounds, some chemistry basics, nomenclature of ionic compounds** | |
| **M** | **Feb 6** | Do book problems: Chapter 4: 19, 21, 23, 31, 33, 37, 39, 41, 43, 47, 49, 51, 53, Socrative questions, study for quiz | **Finish nomenclature: nomenclature of covalent compounds, acids, and hydrates** | **Quiz on Element names (see handout, first 5 min of class)** |

| Day | Date | Homework | In Class Activities, Topics, Learning goals | Special Notes |
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| **T** | **Feb 7** | **Read the Lab Syllabus, Lab 1 and do the pre lab assignment** | **Lab 1: An Enigmatic Chemical Conundrum, safety quiz** | **Make sure you have your lab notebook and are dressed appropriately for lab (no sandals and no shorts above the knee).** |
| **W** | **Feb 8** | Read Chapter 7.1, 7.2, 8.3-8.6, Do problems in text book: Chapter 4: 35, 45, finish Quiz 2 from Fall semester | **Introduction to chemical reactions (precipitation), representing chemical equations** | **No Socrative questions but do worksheet for homework instead (will check in class)** |
| **R** | **Feb 9** | **Read the Lab Syllabus, Lab 1 and do the pre lab assignment** | **Lab 1: An Enigmatic Chemical Conundrum, safety quiz** | **Make sure you have your lab notebook and are dressed appropriately for lab (no sandals and no shorts above the knee).** |
| **F** | **Feb 10** | Read Chapter 16.1, 16.2, Book problems, Chapter Chapter 7: 7.3, 7.15, 7.17, 7.21, 7.27, Chapter 8: 8.2, 8.3, 8.59, 8.63, 8.64, 8.65, 8.67, Socrative questions, | **Strong and weak electrolytes, Chemical reactions continued (acid base)** | |
| **M** | **Feb 13** | No New Reading Book problems: Chapter 8: 35, 37, 43, 45, 47, 49, 51, 53, 55, 75, 77 Socrative questions, Study for quiz! | Redox and complexation reactions | **Quiz on nomenclature and the periodic table** |
| **T** | **Feb 14** | **Read Lab 2, do prelab, Turn in Lab 1 post-lab (include the coversheet with your code score, one copy per pair)** | **Lab 2: Alum** | **Safety Quiz at the beginning of lab** |

| Day | Date | Homework | In Class Activities, Topics, Learning goals | Special Notes |
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| **W** | **Feb 15** | **Finish In Class 3**, Book problems, 79, 83, 89, 129, 124bc, 115bc, Chapter 16: 1, 11, 13, 15, 23, 25, Read Chapter 3.1-3.3, Socrative questions | Atomic structure preliminaries, spectroscopy and light | |
| **R** | **Feb 16** | **Read Lab 2, do prelab, Turn in Lab 1 post-lab (include the coversheet with your code score, one copy per pair)** | **Lab 2: Alum** | **Safety Quiz at the beginning of lab** |
| **F** | **Feb 17** | Book Problems: Chapter 3: 13, 15, 17, 19, 21, 25, 29, 33, 35, Socrative questions | Energy and quantization, Bohr model of the atom and energy levels of electrons | |
| **M** | **Feb 20** | Read 3.5, 3.6, Book problems, Chapter 3: 46, 47, 49, 55, 57, 59, Visual problem 3.10, In Class 5 for homework | Quantum Theory | **Quiz on reactions (similar style as In Class 3)** |
| **T** | **Feb 21** | Read Lab 3 and do prelab! Lab 2 is due at the end of lab | **Lab 3: Reactions of Cu and Fe** | |
| **W** | **Feb 22** | Read 3.7, 3.8, Book problems: 71, 73, 75, 77, 79, 81, 83 Socrative questions | More fun with orbitals, electron configurations of atoms, paramagnetic and diamagnetic | |

| Day | Date | Homework | In Class Activities, Topics, Learning goals | Special Notes |
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| **R** | **Feb 23** | Read Lab 3 and do prelab! Lab 2 is due at the end of lab | **Lab 3: Reactions of Cu and Fe** | |
| **F** | **Feb 24** | Spend some time on the website The Orbitron exploring and reading about orbitals and radial probability diagrams, Book Problems, Visual problem 3.1, 85, 87, 89, 91 (non ions), 93 (non ions), 95 (non ions), 97 (non ions), 99, 103, 105, Finish In Class 5, Socrative questions, Study for Quiz | Radial probability diagrams, review for exam | **Bring a computer to class**<br><br>**Extra office hours: 1 pm-3 pm**<br><br>**Q&A Session 3-4:30 pm Julian 374** |
| **Su** | **Feb 26** | **Relevant problems from previous exams: Ex1 S16 All; Ex 1 F16 All; Ex 2 F16: 1c, 7** | **Q&A Session 12:00 pm - 1:30 pm (come and go as you like), Julian 368**<br><br>**Yennie Sawyer will have a Q&A session from 4-5 pm Room TBA**<br><br>**Will also have online office hours via Skype chat 8:30 pm -9:30 pm** | |
| **M** | **Feb 27** | **Study for Exam 1** | **EXAM 1 in class** | **Bring a scientific calculator** |
| **T** | **Feb 28** | **Prelab 4, Lab 3 is due** | **Lab 4: Identification of Soluble Ionic Compounds Week 1** | |

| Day | Date | Homework | In Class Activities, Topics, Learning goals | Special Notes |
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| **W** | **Mar 1** | Read 3.10-11<br><br>Socrative questions | Zeff, charges on ions | |
| **R** | **Mar 2** | **Prelab 4, Lab 3 is due** | **Lab 4: Identification of Soluble Ionic Compounds Week 1** | |
| **F** | **Mar 3** | No new reading, Book problems Chapter 3: Visual 3.5, 3.6, 3.9, Regular problems: 95 (ions), 97 (ions), 101, Socrative questions | Periodic properties con't: Zeff, Sizes of atoms and ions | |
| **M** | **Mar 6** | Read 3.12, Book problems: 107, 109, 124bc, 127, 129<br><br>Print out clean copy of the exam from course website, redo any question that you missed any points on, **it is due in class on Wednesday**<br><br>Socrative questions | Ionization energies, electron affinity and in class worksheet | **Quiz on Zeff and charges on ions** |
| **T** | **Mar 7** | Prepare for second week of Lab 4 (will check your plan as prelab at the beginning of lab) | **Lab 4, Week 2: Qualitative Analysis of Soluble Salts (Unknowns)** | |

| Day | Date | Homework | In Class Activities, Topics, Learning goals | Special Notes |
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| **W** | **Mar 8** | **EXAM Corrections due in class**<br>Read Chapter 4, Section 1, **Finish In Class 6 and bring it to class,** Book Problems: Chapter 3: 111, 113, 115, 117, 119<br><br>Socrative questions | Lewis dot structures, intro to covalent bonding | |
| **R** | **Mar 9** | Prepare for second week of Lab 4 (will check your plan as prelab at the beginning of lab) | **Lab 4, Week 2: Qualitative Analysis of Soluble Salts (Unknowns)** | |
| **F** | **Mar 10** | Read Chapter 4, Sections 4, 5, 6, 7, Book Problems: Chapter 4: 63, 65, 67, 69, 73, 77, 79, 81, 83, 85<br>Socrative questions | Resonance structures, X-ray crystallography (how we know about bonding) | |
| **M** | **Mar 13** | Chapter 4<br>99, 101, 103, 107, 109, 113, 115, 117, 119, 123<br>Socrative questions | VSEPR, Molecular Geometry<br><br>Electronegativity and formal charges (this is a mini-lecture available on the Educreations link on home page for course) | **Quiz on periodic properties** |
| **T** | **Mar 14** | **Read Lab 5, prelab, do the Lewis dot structures for the lab (will go much faster!), Lab 4 is due in lab but OK to turn in Wed!** | **Lab 5: Molecular Models and Modeling with Spartan** | **Bring a jump drive along to lab!** |

| Day | Date | Homework | In Class Activities, Topics, Learning goals | Special Notes |
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| **W** | **Mar 15** | Read Chapter 5, Section 1, 2, 3<br>Book problems<br>Chapter 4<br>125, 127, 129, 131, 133, 135, 137, 139, 141, 143, 145, 147, 149, 151, 155, 157, 159, 163, 165, 167, 171,175, 179<br><br>Chapter 5:<br>5: 11,13,15, 17, 19, 21, 23, 25, 27, 29, 31, 35, 37, 107, 109<br><br>Watch mini lecture on charge distribution and inequivalent resonance structures (see email from me!)<br><br>Socrative questions | Inequivalent resonance structures con't, polarity<br><br>In Class worksheet (finish 7 and start 8) | |
| **R** | **Mar 16** | **Read Lab 5, prelab, do the Lewis dot structures for the lab (will go much faster!), Lab 4 is due in lab** | **Lab 5: Molecular Models and Modeling with Spartan** | **Bring a jump drive along to lab!** |
| **F** | **Mar 17** | Read Chapter 5, Section 4, 5<br><br>Book Problems, Chapter 5: 39, 41, 43, 45, 49, 53, 55, 57, 58, 59, 61, 63, 65, 111, 119, 125, 129<br><br>Socrative questions | Introduction to VB Theory | |

| Day | Date | Homework | In Class Activities, Topics, Learning goals | Special Notes |
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| **M** | **Mar 20** | Socrative questions | VB Theory | **Quiz on Lewis dot, resonance structures, and VSEPR** |
| **T** | **Mar 21** | Read Lab 6, Lab 5 is due | **Lab 6: Synthesis and Characterization of Spinel Compounds** | |
| **W** | **Mar 22** | **In Class 8 is due!** Problems: Do valence bond descriptions for $SF_4O$, $NH_3$, $NO_3^-$, $SF_4$, $CH_3OH$, HCN, $HCO_3$-, Chapter 5, Problem 73, Socrative questions | More VB Theory, In Class 8, Athletic periodic trends | |
| **R** | **Mar 23** | Read Lab 6, Lab 5 is due | **Lab 6: Synthesis and Characterization of Spinel Compounds**<br><br>**Office hour 2-3 pm**<br>**Q&A Session 3-5 pm Julian 374** | **Problems from old Exams: Exam 2 Sp 16: All but ones from previous exam; Exam 2 Fall All; Exam 3 Spring 16: 1c, 3d, 4; Exam 3 Fall 16: 3c, 4 VB only, 5b, 6** |
| **F** | **Mar 24** | Book problems: 113, 123, 127, Socrative questions<br><br>**Study for Exam II** | **Exam II in class** | |
| | | | HAVE A GREAT SPRING BREAK!!!! | |

| Day | Date | Homework | In Class Activities, Topics, Learning goals | Special Notes |
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| **M** | **Apr 3** | No reading! But make sure you read Chapter 18, Section 18.3 and 18.6 before lab! | **Introduction to Solid State Structure** | |
| **T** | **Apr 4** | **Read Lab 7 and do prelab** | **Lab 7 Solid State Structure** | |
| **W** | **Apr 5** | Read 18.6, 18.1 Socrative Questions | **Ionic and metallic bonding, structures of solids** | |
| **R** | **Apr 6** | **Read Lab 7 and do prefab** | **Lab 7 Solid State Structure** | |
| **F** | **Apr 7** | **Exam corrections due at 4 pm**<br><br>Socrative questions | **Properties and Bonding of solids, con't** | |
| **M** | **Apr 10** | Read 18.4, 18.7 (for stuff we did on Friday) Chapter 5, Section 7, Socrative questions, Chapter 4: 23, 27, 29 Chapter 18: Visual problems: 18.3, 5, 7, 9, 11, 13, 35, 37, 41, 45, 53, 55, 59, 79, 85<br><br>**Finish In Class 9 for class** | **MO Theory of Covalent compounds** | **Quiz on Solid State Structure and bonding (Lab + MW lectures)** |

| Day | Date | Homework | In Class Activities, Topics, Learning goals | Special Notes |
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| **T** | **Apr 11** | **Lab 7 (Solid State Structure is due), Read Lab 8, prelab** | **Lab 8 Modern Materials** | |
| **W** | **Apr 12** | No new reading! | **MO Theory, Con't** | |
| **R** | **Apr 13** | **Lab 7 (Solid State Structure is due), Read Lab 8, prelab** | **Lab 8 Modern Materials** | |
| **F** | **Apr 14** | Read 18.1, 18.2<br>Book problems:<br>Chapter 5, 5.89, 5.90, 5.91, 5.93, 5.95, 5.97, 5.99, 5.101, 5.103, 5.105, 5.130, 5.113<br>Socrative questions | **Band Theory and Semi-conductors** | |
| **M** | **Apr 17** | Book problems:<br>Chapter 18:<br>18.20, 22, 29, 31, 33<br>**Read Chapter 15: 15.1, 15.2,15.3, 15.5 Focus only the qualitative parts, Socrative questions**<br><br>Socrative questions | **Introduction to Acid-Base Chemistry, Ka, Kb**<br><br>**Acid base properties metal ions, ladder diagrams** | **Quiz is on Properties of solids and molecular orbital theory for diatomic molecules** |
| **T** | **Apr 18** | **Read Lab 9**<br><br>**Lab 8 is due** | **Lab 9: Acid base chemistry** | |

| Day | Date | Homework | In Class Activities, Topics, Learning goals | Special Notes |
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| **W** | **Apr 19** | **Read:** http://www.chemguide.co.uk/inorganic/complexions/acidity.html<br><br>http://chemwiki.ucdavis.edu/Analytical_Chemistry/Analytical_Chemistry_2.0/06_Equilibrium_Chemistry/6F%3A_Ladder_Diagrams<br><br>Chapter 15: 15.9, 11, 13, 15, Socrative questions | **Acidity of metal ions, predominance diagrams** | |
| **R** | **Apr 20** | **Lab 8 is due, Read Lab 9 and do prelab** | **Lab 9 Acid Base Chemistry** | |
| **F** | **Apr 21** | **Read Chapter 15. 6, 16.11**<br><br>15.81, 15.49<br><br>Socrative questions | **Metal ion acidity, predicting the favorability of acid base reactions, Trends in acidity and basicity, Acid base properties of salts** | |

| Day | Date | Homework | In Class Activities, Topics, Learning goals | Special Notes |
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| **M** | **Apr 24** | Book problems: 16.79, 16.80, 16.81, 15.23, 15.26, 15.41, 15.43, 15.65, 15.76, 15.77, 15.146,<br><br>**Do rest of In Class 10 for homework, Socrative questions** | **Acid base chemistry** | **Quiz on Band theory and acid base (up through predominance diagrams)** |
| **T** | **Apr 25** | **Lab 9 is due, Read Lab 10** | **Lab 10 Applications of Redox Chemistry** | |
| **W** | **Apr 26** | Read Chapter 17.5, 7, 8, 9 (qualitative parts)<br><br>Book problems: 8.75, 77, 79, 17.9, 23<br><br>Socrative questions | **Acid base chemistry, review** | |
| **R** | **Apr 27** | **Lab 9 is due, Read Lab 10** | **Lab 10 Applications of Redox Chemistry** | **Q&A Session: probable times—12 pm - 1 pm, Julian 374 and 3-4 pm, Julian 315**<br><br>**Relevant questions from old exams: Exam 3 SP16 (all but #6), Exam 3 Fall 16 (all but 1c, 4) + some extra problems** |
| **F** | **Apr 28** | **Study for exam!** | **Exam 3 in Class** | |

| Day | Date | Homework | In Class Activities, Topics, Learning goals | Special Notes |
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| **M** | **May 1** | **Reread Chapter 8.6, Chapter 17.1, 2, 3**<br><br>Socrative questions | **Calculating E°rxn, predicting products and reactions** | |
| **T** | **May 2** | **Read Lab 11, Prelab 11** | **Lab 11: Synthesis of M(acac)3 complexes** | |
| **W** | **May 3** | **Book problems: 17.13, 21, 25, 31, 35, 55a, (don't worry about balancing or ΔG's)**<br><br>**Socrative questions** | **Batteries and applications of redox** | |
| **R** | **May 4** | **Read Lab 11, Prelab 11** | **Lab 11: Synthesis of M(acac)3 complexes** | |
| **F** | **May 5** | Chapter 17,<br>Read 16.1, 16.4<br>**In Class 12 is due**<br>**Lab 10 is due**<br>Socrative questions | **Finish Batteries, Coordination chemistry and types of ligands** | |
| **M** | **May 8** | Study for quiz, Book problems TBA, Socrative questions, **Exam corrections due** | **Crystal field theory and colors of coordination complexes** | **Quiz on Redox and Electrochemistry** |
| **T** | **May 9** | | **Check out of lab, check crystals, Review old exams, Juilan 315** | |

| Day | Date | Homework | In Class Activities, Topics, Learning goals | Special Notes |
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| **W** | **May 10** | Read 16.5-16.7, Book problems: 16.2, 16.6, 16.7, 41, 43,45, 47, 49, 51, 53, 55, 95, 99, 24, 25, 26<br><br>Socrative questions | **Crystal Field Theory** | |
| **R** | **May 11** | | **Check out of lab, check crystals, Review old exams, Julian 368** | |
| **F** | **May 12** | **Lab 11 + pages due** | | **Extra Office hours 11 am - 12 pm** |
| **Su** | **May 14** | | **Q&A Session 1-2 and 4-5 pm in Julian 368** | **Extra Office hours 2 pm - 4 pm** |
| **M** | **May 15** | | **Q&A Session 4-5 pm in Julian 368** | **Extra office hours 2-4 pm** |
| **Finals week M, T** | **May 15, 16<br><br>8:30 am<br><br>-11:30 am** | Socrative questions (not graded but it will let you know if you are correct)<br><br>**Study for final exam** | **Cumulative Final Exam (approx 30-35% new material since the last exam), will be administered in two sessions with a break in between, no caculators but you can set up problems that require a calculation** | |

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| R | May 18 | Lab 6 + pages is due | | If you have any additional questions, I will have normal Wednesday and Thursday office hours. By Thursday I hope to have the exams done! |