

**CHEM 209 L02**
**NOVEMBER 2016** To know rooms and exact dates for Tutorials/Expt you will need to refer to your own schedule in PeopleSoft.

SUN	MON	TUES	WED	THUR	FRI	SAT
	<b>Tut 3B</b> Acids and Bases <b>Expt 3</b> even-number sections	1 <i>HOW FAR – reading Chapters 17.3, 19.1-2</i> <i>Learning objectives:</i> Describe how solubility is affected by a common ion, a change in pH, or formation of a complex. Draw a diagram for a voltaic cell including labels for essential details.	2	3 <i>HOW FAR – reading Chapters 19.3-19.4</i> <i>Learning objectives:</i> Calculate $E^\circ_{\text{cell}}$ for a given reaction using tabulated half-cell data. Calculate $E_{\text{cell}}$ using the Nernst equation.	4	5
6	7 <b>Tut</b> None	8 <i>HOW FAR – reading Chapters 19.5-6</i> <i>Learning objectives:</i> Identify corrosion conditions and sacrificial anodes. Explain how batteries and fuel cells use redox reactions to store electrical energy.	9	10 Reading Day	11 Remembrance Day	12
13	14 <b>Tut 4A</b> Solubility <b>Expt 4</b> odd-number sections	15 <i>WHAT MAKES A BOND – reading Chapters 6.4, 7.1-7.2</i> <i>Learning objectives:</i> Recognize atomic orbital shapes ( <i>s</i> , <i>p</i> and <i>d</i> ) and predict their relative energies. Write electron configurations (full and condensed) and orbital diagrams for <i>s</i> & <i>p</i> -block elements with $Z \leq 54$ .	16	17 <i>WHAT MAKES A BOND – reading Chapters 7.3-7.4</i> <i>Learning objectives:</i> Identify paramagnetic and diamagnetic elements from their electron configurations. Relate electron configurations to periodic trends in atomic/ionic radius, ionization energy, and electron affinity.	18	19
20	21 <b>Tut 4B</b> Solubility <b>Expt 4</b> even-number sections	22 <i>WHAT MAKES A BOND – reading Chapters 8.1-8.7</i> <i>Learning objectives:</i> Use periodic trends and electronegativity to predict the nature of bonding in chemical species. Draw Lewis structures for atoms, molecules and ions that minimize formal charges and/or follow the octet rule. Explain how the type of bonding that characterizes a substance affects its physical and chemical properties.	23	24 <i>WHAT MAKES A BOND – reading Chapters 8.4 and 8.6</i> <i>Learning objectives:</i> Draw Lewis structures for atoms, molecules and ions that minimize formal charges and/or follow the octet rule. Identify trends in covalent bond strength.	25	26
27	28 <b>Tut 5A</b> Atomic Theories and Bonding <b>Expt 5</b> odd-number sections	29 <i>WHAT MAKES A BOND – reading Chapters 9.1-9.2</i> <i>Learning objectives:</i> Draw VSEPR structures for molecules and polyatomic ions and name each electron-group and molecular geometry. Assign bond polarity and overall molecular polarity.	30			