

# AP Chem Schedule for 2017-2018 – Quarter 1

(This schedule is subject to change.)

Test Date	Time Frame	Major Topics	Detailed Topics
Tuesday Aug. 29, 2017	9 days (block)	<b>Stoichiometry</b>  <b>Combustion, Single, &amp; Double Displacement Rxns</b>	<ul style="list-style-type: none"> <li>✓ Atom Basics (proton, electron, neutron)</li> <li>✓ Calculating average atomic mass (isotopes)</li> <li>✓ Making solutions/calculating molarity</li> <li>✓ Empirical formulas</li> <li>✓ Hydrates</li> <li>✓ % composition</li> <li>✓ Combustion analysis</li> <li>✓ Limiting reagents</li> <li>✓ Percent yield</li> <li>✓ Solubility rules</li> <li>✓ Gravimetric Analysis</li> <li>✓ Titration basics</li> <li>✓ Writing balanced net-ionic equations</li> <li>✓ Single &amp; double replacement reactions</li> </ul>
Friday Sep. 15, 2017	12 days (block)	<b>Gas Laws</b>  <b>Decomposition &amp; Synthesis Rxns</b>	<ul style="list-style-type: none"> <li>✓ G-L, Boyles, Charles Law</li> <li>✓ Ideal gas law</li> <li>✓ Daltons Law</li> <li>✓ Collecting gases over water</li> <li>✓ Finding the molar mass of a gas</li> <li>✓ Gas stoichiometry</li> <li>✓ Decomposition &amp; synthesis reactions</li> <li>✓ Deviation from ideal behavior (Van der Waals qualitative explanations.)</li> </ul>
Friday Oct 6, 2016	15 days (block)	<b>Thermodynamics (Ch. 5 &amp; 19)</b>	<ul style="list-style-type: none"> <li>✓ Define system vs. surroundings</li> <li>✓ Sign notation of energy flow</li> <li>✓ Definition of enthalpy</li> <li>✓ Hess' law</li> <li>✓ Writing reactions and use of enthalpy of formation</li> <li>✓ Calculations with bond enthalpy</li> <li>✓ Predicting entropy sign for a reaction</li> <li>✓ Use of entropy of formation</li> <li>✓ Use of free energy of formation</li> <li>✓ Use of <math>\Delta G = \Delta H - T\Delta S</math></li> <li>✓ Spontaneous vs. non-spontaneous</li> <li>✓ Predicting affect of temperature change on spontaneity</li> </ul>
	<b>End Quarter 1</b>	No Quarter 1 final	

## AP Chem Schedule for 2017-2018 – Quarter 2

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Test Date	Time Frame	Major Topics	Detailed Topics
Thursday Nov. 2, 2017	19 days (block)	<b>Basic Equilibrium (Chapters 15 &amp; 16)</b>	<ul style="list-style-type: none"> <li>✓ Definition of Equilibrium</li> <li>✓ <math>K_c</math>, <math>K_p</math>, <math>K_{eq}</math> – writing equilibrium expressions, interpreting and manipulating K</li> <li>✓ ICE tables – solving equilibrium problems</li> <li>✓ LeChatelier's Principle</li> <li>✓ Review of CP Acids and Bases (pH, pOH, hydronium and hydroxide concentrations)</li> <li>✓ Acid/Base Equilibria, <math>K_a</math>, <math>K_b</math>, <math>K_w</math></li> <li>✓ Acidity/Basicity of Salts</li> <li>✓ Common ions in equilibrium</li> <li>✓ Use of <math>\Delta G = -RT \ln K</math></li> <li>✓ Use of <math>\Delta G = \Delta G^\circ + RT \ln Q</math></li> </ul>
Thursday Dec. 7, 2016	19 days (block)	<b>Applications of Equilibria (Chapter 17)</b>	<ul style="list-style-type: none"> <li>✓ Buffers – identifying, preparation of, calculations</li> <li>✓ Titrations – titration curves, calculating pH at any point, salts produced, making buffers, choice of indicator, calculations</li> <li>✓ <math>K_{sp}</math> – solubility of salts, common ion effect</li> <li>✓ Qualitative effects of pH on solubility</li> </ul>
Dec. 20 & 21 2017 (Finals days)	6 days (block)	<b>Intermolecular Forces. Basic Organic Naming</b>	<ul style="list-style-type: none"> <li>✓ Review Lewis dot structures, molecular polarity</li> <li>✓ Polarizability, London-dispersion forces</li> <li>✓ Dipole-Dipole, Hydrogen bonding, Dipole-Induced dipole</li> <li>✓ Physical properties associated with IMF's (capillary action, boiling point, volatility, vapor pressure, surface tension)</li> <li>✓ Naming alkanes, alkenes, alkynes, functional groups</li> </ul>
	<b>End Quarter 1</b>	Quarter 2 Comprehensive Final Exam with special emphasis on Intermolecular Forces	