CHEMISTRY 102B/102C
FALL 2016 ASSIGNMENTS

WEEK 1
(August 23-26)

**Lecture: Tuesday**  
Topics: Introduction, Classification of Matter, Significant Figures
Reading: Zumdahl*, Chapter 1.1-1.2, 1.5, 1.10, Appendix A1.1
Course Policy (accessed on our Chem 102B/102C website)
Problems: Zumdahl, Chapter 1: 19, 26, 29, 31, 79, 81, 83, 86, 87
Review Questions: Zumdahl, Chapter 1: 1, 9

**Lecture: Thursday**  
Topics: Measurements - Units, Significant Figures, Dimensional Analysis, Density, Dalton’s Atomic Theory
Reading: Zumdahl, Chapter 1.3-1.7, 1.9; 2.1-2.4
Problems: Zumdahl, Chapter 1: 21-23, 33, 35, 36, 37(a,b,e,f), 42, 54, 69, 72
Chapter 2: 20, 41, 42
Review Questions: Zumdahl, Chapter 1: 5-7
Chapter 2: 1(a,b)

WEEK 2
(August 30-September 2)

**Lecture: Tuesday**  
Topics: Subatomic Particles, Isotopes, Nomenclature, Periodic Table
Reading: Zumdahl, Chapter 2.4-2.8
Problems: Zumdahl, Chapter 2: 21, 23, 25, 28, 31, 32, 56, 57, 61, 67, 69, 71, 73, 76, 78, 80, 85, 87, 92, 93, 99
Review Questions: Zumdahl, Chapter 2: 4-10

**Lecture: Thursday**  
Reading: Zumdahl, Chapter 3.1-3.5, 3.8-3.9; Handouts Book, p. 41
Problems: Zumdahl, Chapter 3: 37, 39, 65, 67, 77, 96, 102, 129, 130, 140
Zumdahl, Chapter 6: 43, 45(a,b)
Review Questions: Zumdahl, Chapter 3: 1-4

*Chemistry by Zumdahl & Zumdahl (Ninth Edition)
**WEEK 3**  
(September 6-9)

<table>
<thead>
<tr>
<th><strong>Lecture: Tuesday</strong></th>
<th><strong>Discussion: Wednesday</strong></th>
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<tbody>
<tr>
<td>Topics: Electromagnetic Radiation, Atomic Spectra, The Bohr Model, The Quantum Mechanical Model</td>
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<tr>
<td>Reading: Zumdahl, Chapter 7.1-7.5</td>
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<tr>
<td>Problems: Zumdahl, Chapter 7: 20, 24, 45, 48, 64, 65, 67, 140, 141</td>
<td>Review Questions: Zumdahl, Chapter 7: 1-3</td>
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<tr>
<th><strong>Lecture: Thursday</strong></th>
<th><strong>Discussion: Friday</strong></th>
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<tbody>
<tr>
<td>Topics: Orbitals and Electronic Structure, The Periodic Table</td>
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<tr>
<td>Reading: Zumdahl, Chapter 7.6-7.11</td>
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<tr>
<td>Problems: Zumdahl, Chapter 7: 28, 76, 80, 83, 84, 89, 91, 93, 98, 100, 132, 145, 148</td>
<td>Chapter 8: 46</td>
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<tr>
<td>Handouts Book, p. 61: Ion configuration problems at bottom of the page.</td>
<td>Review Questions: Zumdahl, Chapter 7: 6-8</td>
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**WEEK 4**  
(September 13-16)

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<tr>
<th><strong>Lecture: Tuesday</strong></th>
<th><strong>Discussion: Wednesday</strong></th>
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<tbody>
<tr>
<td>Topics: Periodic Properties</td>
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<tr>
<td>Reading: Zumdahl, Chapter 7.12-7.13, 8.4</td>
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<tr>
<td>Problems: Zumdahl, Chapter 7: 105, 107, 110, 114, 115, 120, 125, 149, 150</td>
<td>Chapter 8: 21, 41, 52, 127</td>
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<tr>
<td>Review Questions: Zumdahl, Chapter 7: 9, 10</td>
<td>Chapter 8: 2</td>
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<th><strong>Lecture: Thursday</strong></th>
<th><strong>Discussion: Friday</strong></th>
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<tr>
<td>Topics: Introduction to Bonding, Lewis Structures, Nonoctets, Resonance</td>
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<tr>
<td>Reading: Zumdahl, Chapter 8.1-8.3, 8.9-8.12</td>
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<tr>
<td>Problems: Zumdahl, Chapter 8: 16, 17, 27, 34, 35, 37, 38, 48, 84, 85, 87-91 94, 97, 107, 134</td>
<td>Handouts Book, p. 70: Complete the Lewis structures for the organic compounds listed on the bottom of this page.</td>
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<tr>
<td>Review Questions: Zumdahl, Chapter 8: 1, 5, 6</td>
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WEEK 5  
(September 20-23)

**Lecture: Tuesday**  
Topics: Formal Charge, VSEPR, Polarity

**Discussion: Wednesday**

Reading: Zumdahl, Chapter 8.2, 8.3, 8.12, 8.13

Problems: Zumdahl, Chapter 8: 20, 40, 113-121, 124, 126, 157

Review Questions: Zumdahl, Chapter 8: 8-10

**Lecture: Thursday**  
Topics: Hybrid Orbitals, Delocalization

**Discussion: Friday**

Reading: Zumdahl, Chapter 9.1, 9.5

Problems: Zumdahl, Chapter 9: 6, 9, 11, 12, 21, 22, 27, 28, 31, 39, 61, 66, 67, 87

Review Questions: Zumdahl, Chapter 9: 1-4, 10

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WEEK 6  
(September 27-30)

**Lecture: Tuesday**  
Topics: Catch-up and Review for Hour Exam I

**Discussion: Wednesday**

Hour Exam I: 7:00 p.m. Wednesday, September 28 (location to be announced.)

**Lecture: Thursday**  
Topics: States of Matter, Intermolecular Forces and Physical Properties

**Discussion: Friday**

Reading: Zumdahl, Chapter 10.1-10.2, 10.8 (vapor pressure discussion only)

Problems: Zumdahl, Chapter 10: 12-14, 21, 27, 35, 37, 39, 41, 111, 132

Review Questions: Zumdahl, Chapter 10: 1
WEEK 7
(October 4-7)

Lecture: Tuesday  
Topics: Formula Calculations - Percent Composition, Empirical and Molecular Formulas

Discussion: Wednesday

Reading: Zumdahl, Chapter 3.6-3.7

Problems: Zumdahl, Chapter 3: 27, 28, 81, 82, 86, 89, 93, 94, 137, 143, 175

Review Questions: Zumdahl, Chapter 3: 5, 6

Lecture: Thursday  
Topics: Chemical Reactions, Stoichiometry - Mole and Mass Relations, Limiting Reagents

Discussion: Friday

Reading: Zumdahl, Chapter 3.8-3.11


Review Questions: Zumdahl, Chapter 3: 7-10

WEEK 8
(October 11-14)

Lecture: Tuesday  
Topics: Solutions: Concentration Units, Electrolytes, Reactions in Solution

Discussion: Wednesday

Reading: Zumdahl, Chapter 4.1-4.6, 4.8

Problems: Zumdahl, Chapter 4: 13, 15, 24, 31, 34, 37, 39, 43, 45, 47, 50, 53, 66*, 67*, 92

Review Questions: Zumdahl, Chapter 4: 1-7

*For Exercises 4.66 and 4.67, only give the balanced formula equations.

Lecture: Thursday  
Topics: Solution Stoichiometry

Discussion: Friday

Reading: Zumdahl, Chapter 4.7-4.8

Problems: Zumdahl, Chapter 4: 56, 61, 74, 75, 77, 95, 105, 106, 133, 136, 137

Review Questions: Zumdahl, Chapter 4: 8
WEEK 9
(October 18-21)

**Lecture: Tuesday**
Topics: Gases - P, V, T Relationships, Ideal Gas Law, Stoichiometry, Partial Pressures

**Reading:** Zumdahl, Chapter 5.1-5.5, Appendix A1.3

**Problems:** Zumdahl, Chapter 5: 23, 26, 28, 31, 46, 54, 55, 60, 67, 78, 79, 81, 85, 91, 124, 134

**Review Questions:** Zumdahl, Chapter 5: 1-5

**Discussion: Wednesday**

**Lecture: Thursday**
Topics: Kinetic Molecular Theory, Real Gases

**Reading:** Zumdahl, Chapter 5.6-5.9

**Problems:** Zumdahl, Chapter 5: 29, 32-34, 107, 110, 111, 114

**Review Questions:** Zumdahl, Chapter 5: 6-10

**Discussion: Friday**

WEEK 10
(October 25-28)

**Lecture: Tuesday**
Topics: Catch-up and Review for Hour Exam II

**Hour Exam II:** 7:00 p.m. Wednesday, October 26 (Location to be announced.)

**Discussion: Wednesday**

**Lecture: Thursday**
Topics: Chemical Equilibrium

**Reading:** Zumdahl, Chapter 13.1-13.4

**Problems:** Zumdahl, Chapter 13: 11, 13, 14, 21, 23, 25, 27, 29, 33, 35, 37, 38, 43

**Review Questions:** Zumdahl, Chapter 13: 1-5

**Discussion: Friday**
WEEK 11  
(November 1-4)

**Lecture: Tuesday**  
Topics: Reaction Quotient, Equilibrium Calculations, LeChatelier's Principle

**Discussion: Wednesday**

Reading: Zumdahl, Chapter 13.5-13.7

Problems: Zumdahl, Chapter 13: 15, 16, 20, 28, 39, 41, 47, 49, 51, 57, 61, 63, 64, 68, 69, 80, 82, 83, 90

Review Questions: Zumdahl, Chapter 13: 6-10

**Lecture: Thursday**

Topics: Solubility Equilibrium, Common Ion Effect

**Discussion: Friday**

Reading: Zumdahl, Chapter 16.1

Problems: Zumdahl, Chapter 16: 8, 11, 19, 22, 25, 30, 35, 36, 39, 40, 43, 83

Review Questions: Zumdahl, Chapter 16: 1-3

WEEK 12  
(November 8-11)

**Lecture: Tuesday**

Topics: Precipitation Conditions, How to dissolve a precipitate

**Discussion: Wednesday**

Reading: Zumdhal, Chapter 16.2, 16.3 (general information only)

Problems: Zumdahl, Chapter 16: 15, 51-53, 56, 57, 59, 75, 76

Review Questions: Zumdahl, Chapter 16: 5, 6

**Lecture: Thursday**

Topics: Introduction to Thermodynamics, Heat, Work, Internal Energy, First Law

**Discussion: Friday**

Reading: Zumdahl, Chapter 6.1-6.2

Problems: Zumdahl, Chapter 6: 13, 32-34, 41-43, 46, 49, 50, 97, 100, 124, 130

Review Questions: Zumdahl, Chapter 6: 1-4
WEEK 13  
(November 15-18)

**Lecture: Tuesday**  
Topics: Enthalpy, Calorimetry, Hess’s Law, Standard Enthalpies of Formation

**Discussion: Wednesday**

Reading: Zumdahl, Chapter 6.2-6.6

Problems: Zumdahl, Chapter 6: 18, 19, 21, 51, 52, 56, 57, 62, 65, 67, 68, 72, 75, 78, 79, 86, 112

Review Questions: Zumdahl, Chapter 6: 5-9

**Lecture: Thursday**

Topics: Bond Energies, Heating Curves

**Discussion: Friday**

Reading: Zumdahl, Chapter 8.8, Figure 10.42 (p. 488)

Problems: Zumdahl, Chapter 8: 23, 65, 68, 71, 73, 75, 76  
Zundahl, Chapter 10: 23, 95, 96, 99, 100, 118

Review Questions: Zumdahl, Chapter 8: 4

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THANKSGIVING BREAK, NOVEMBER 21-25
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WEEK 14  
(November 29-December 2)

**Lecture: Tuesday**

Topics: Catch-up and Review for Hour Exam III

**Discussion: Wednesday**

**Lecture: Thursday**

Topics: Oxidation-Reduction (Redox) Reactions

**Discussion: Friday**

Reading: Zumdahl, Chapter 4.9, 18.1

Problems: Zumdahl, Chapter 4: 21, 79, 81, 83, 108  
Zumdahl, Chapter 18: 20, 29

Review Questions: Zumdahl, Chapter 4: 9  
Zumdahl, Chapter 18: 1

HOUR EXAM III: 7:00 PM Wednesday, November 30 (Location to be announced.)
WEEK 15
(December 6-7)

Lecture: Tuesday
Discussion: Wednesday

Topics: Catch-up and Review for Final

FINAL EXAM for CHEM 102B: 1:30-4:30 pm Monday, December 12
FINAL EXAM for CHEM 102C: 7:00-10:00 pm Friday, December 9