CHEMISTRY 102C/102D
Spring 2024 ASSIGNMENTS

WEEK 1
(January 16-19)

Lecture: Tuesday **Discussion: Wednesday**

Lecture/Topics: Lecture 0: Course Policy; Lecture 1: Classification of Matter

Reading: Zumdahl*, Chapter R.3, R.8, 1.1-1.2, Appendix A1.1
Course Policy (accessed on our Chem 102C/D website)

Problems: Zumdahl, Chapter R: 11, 17, 19, 67, 69, 71, 74, 75
Chapter 1: 11, 13

Review Questions: Zumdahl, Chapter 1: 1

Lecture: Thursday **Discussion: Friday**

Lecture/Topics: Lecture 2: Units, Significant Figures, Dimensional Analysis, Density

Reading: Zumdahl, Chapter R.1-R.5, R.7, 1.3-1.4

Problems: Zumdahl, Chapter R: 2, 3, 5, 6, 8, 21, 23, 24, 25 (a,b,e,f), 30 (a,c,d), 42, 57, 60, 65, 87, 90, 91
Chapter 1: 18, 29, 30

Review Questions: Zumdahl, Chapter 1: 3

WEEK 2
(January 22-26)

Lecture: Tuesday **Discussion: Wednesday**

Lecture/Topics: Lecture 3: Dalton, Rutherford, Nomenclature, Periodic Table

Reading: Zumdahl, Chapter 1.4-1.6, 3.10

Problems: Zumdahl, Chapter 1: 19, 21, 23, 39, 41, 47, 53, 55
Chapter 3: 18, 24, 37, 79, 81, 84, 86, 93, 95, 111, 113

Review Questions: Zumdahl, Chapter 1: 6-8
Chpater 3 : 2, 8, 9

Lecture: Thursday **Discussion: Friday**

Lecture/Topics: Lecture 4: The Mole, Chemical Reactions, Enthalpy

Reading: Zumdahl, Chapter 5.1-5.5, 5.8-5.9

Problems: Zumdahl, Chapter 5: 37, 39, 64, 65, 67, 77, 96, 102, 130, 141, 146
Chapter 7: 43, 45(a,b)

Review Questions: Zumdahl, Chapter 5: 1-4

***Chemistry-An Atoms First Approach by Zumdahl & Zumdahl (3rd Edition)**

WEEK 3
(January 29-February 2)

Lecture: Tuesday **Discussion: Wednesday**

Lecture/Topics:	Lecture 5: Electromagnetic Radiation, Bohr Model	
Reading:	Zumdahl, Chapter 2.1-2.5	
Problems:	Zumdahl, Chapter 2:	20, 24, 43, 46, 59, 60, 62, 63, 65, 121
Review Questions:	Zumdahl, Chapter 2:	1-3

Lecture: Thursday **Discussion: Friday**

Lecture/Topics:	Lecture 6: Orbitals, Electron Configurations	
Reading:	Zumdahl, Chapter 2.6-2.11	
Problems:	Zumdahl, Chapter 2:	28, 74, 78, 81, 82, 89, 91, 93, 98-102
	Chapter 3:	44
	Extra Problems:	Ion configuration problems at the bottom of p. 77 of the Handouts book.
Review Questions:	Zumdahl, Chapter 2:	6-8

WEEK 4
(February 5-9)

Lecture: Tuesday **Discussion: Wednesday**

Lecture/Topics:	Lecture 7: Periodic Properties	
Reading:	Zumdahl, Chapter 2.12, 3.3	
Problems:	Zumdahl, Chapter 2:	36, 105, 107, 110, 113-115, 132
	Chapter 3:	20, 39, 50, 101
Review Questions:	Zumdahl, Chapter 2:	9, 10
	Chapter 3:	3

Lecture: Thursday **Discussion: Friday**

Lecture/Topics:	Lecture 8: Introduction to Bonding, Lewis Structures, Non-octets, Resonance	
Reading:	Zumdahl, Chapter 3.1-3.2, 3.5-3.9	
Problems:	Zumdahl, Chapter 3:	15, 25, 32, 33, 35, 36, 46, 56, 57, 59-63, 66, 69, 75, 105
	Extra Problems:	Complete the Lewis structures for the organic compounds shown at the bottom of p. 90 of the Handouts book.
Review Questions:	Zumdahl, Chapter 3:	1, 4-6

WEEK 5
(February 12-16)

Lecture: Tuesday **Discussion: Wednesday**

Lecture/Topics: Lecture 9: Formal Charge, VSEPR, Polarity

Reading: Zumdahl, Chapter 4.1, 4.2

Problems: Zumdahl, Chapter 4: 10, 21, 22, 27, 28, 31-33, 36-38

Review Questions: Zumdahl, Chapter 4: 1-3

Lecture: Thursday **Discussion: Friday**

Lecture/Topics: Lecture 10: Hybrid Orbitals, Delocalization

Reading: Zumdahl, Chapter 4.3, 4.7

Problems: Zumdahl, Chapter 4: 6, 11, 13, 15, 16, 43, 44, 47, 48, 51, 59, 85, 97, 111

Review Questions: Zumdahl, Chapter 4: 4-6, 12

WEEK 6
(February 19-23)

Lecture: Tuesday **Discussion: Wednesday**

Topics: Review for Exam I

Exam I: **7:00-8:30 p.m. Wednesday, February 21 (location to be announced)**

Lecture: Thursday **Discussion: Friday**

Lecture/Topics: Lecture 11: States of Matter, Intermolecular Forces and Physical Properties

Reading: Zumdahl, Chapter 9.1-9.2, 9.3 (vapor pressure discussion only)

Problems: Zumdahl, Chapter 9: 12-14, 21, 27, 35, 37, 39, 41, 112, 132

Review Questions: Zumdahl, Chapter 9: 1

WEEK 7
(February 26-March 1

Lecture: Tuesday **Discussion: Wednesday**

Lecture/Topics: Lecture 12: Empirical and Molecular Formulas

Reading: Zumdahl, Chapter 5.6-5.7

Problems: Zumdahl, Chapter 5: 27, 28, 81, 82, 86, 89, 92, 93, 142, 149, 179

Review Questions: Zumdahl, Chapter 5: 5, 6

Lecture: Thursday **Discussion: Friday**

Lecture/Topics: Lecture 13: Chemical Reactions, Stoichiometry, Limiting Reactants

Reading: Zumdahl, Chapter 5.8-5.11

Problems: Zumdahl, Chapter 5: 33, 34, 106, 113, 116, 121, 124-126, 162

Review Questions: Zumdahl, Chapter 5: 7-10

WEEK 8
(March 4-8)

Lecture: Tuesday **Discussion: Wednesday**

Lecture/Topics: Lecture 14: Electrolytes, Reactions in Solution

Reading: Zumdahl, Chapter 6.1-6.6, 6.8

Problems: Zumdahl, Chapter 6: 13, 17, 26, 33, 36, 39, 41, 45, 47, 49, 52, 55, 68*, 69*, 94

Review Questions: Zumdahl, Chapter 6: 1-7

*For Exercises 6.68 and 6.69, only give the balanced formula equations.

Lecture: Thursday **Discussion: Friday**

Lecture/Topics: Lecture 15: Solution Stoichiometry

Reading: Zumdahl, Chapter 6.7-6.8

Problems: Zumdahl, Chapter 6: 58, 62, 63, 76, 79, 103, 118, 119, 137, 140, 141

Review Questions: Zumdahl, Chapter 6: 8

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SPRING BREAK, MARCH 11-15

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WEEK 9
(March 18-22)

Lecture: Tuesday **Discussion: Wednesday**

Lecture/Topics: Lecture 16: Ideal Gas Law, Stoichiometry, Partial Pressures

Reading: Zumdahl, Chapter 8.1-8.5, Appendix A1.3

Problems: Zumdahl, Chapter 8: 23, 26, 28, 31, 46, 54, 55, 60, 67, 78, 79, 81, 85, 91, 123, 141

Review Questions: Zumdahl, Chapter 8: 1-5

Lecture: Thursday **Discussion: Friday**

Lecture/Topics: Lecture 17: Kinetic Molecular Theory, Real Gases

Reading: Zumdahl, Chapter 8.6-8.9

Problems: Zumdahl, Chapter 8: 29, 32-35, 107, 110, 111, 114

Review Questions: Zumdahl, Chapter 8: 6-10

WEEK 10
(March 25-29)

Lecture: Tuesday **Discussion: Wednesday**

Topics: Review for Exam II

Exam II: **7:00 p.m. Wednesday, March 27 (location to be announced)**

Lecture: Thursday **Discussion: Friday**

Lecture/Topics: Lecture 18: Introduction to Thermodynamics, Heat, Work, Internal Energy

Reading: Zumdahl, Chapter 7.1-7.2

Problems: Zumdahl, Chapter 7: 12, 13, 32-34, 41-43, 46, 105, 111, 132, 133
Zumdahl, Chapter 8: 151, 167
Zumdahl, Chapter16: 105

Review Questions: Zumdahl, Chapter 7: 1-4

WEEK 11
(April 1-5)

Lecture: Tuesday **Discussion: Wednesday**

Lecture/Topics: Lectures 19: Enthalpy, Calorimetry, Hess's Law, Standard Enthalpies of Formation

Reading: Zumdahl, Chapter 7.3-7.7

Problems: Zumdahl, Chapter 7: 18, 19, 21, 49, 50, 54, 55, 60, 63, 65, 70, 73, 76, 77, 84, 126, 128
Zumdahl, Chapter 16: 106

Review Questions: Zumdahl, Chapter 7: 5-9

Lecture: Thursday **Discussion: Friday**

Lecture/Topics: Lecture 20: Bond Energies, Heating Curves

Reading: Zumdahl, Chapter 7.6, Figure 9-14 (p. 376)

Problems: Zumdahl, Chapter 7: 85, 88, 91, 93, 95, 96
Zumdahl, Chapter 9: 23, 53, 54, 57, 59, 126

Review Questions: Zumdahl, Chapter 7: 10

WEEK 12
(April 8-12)

Lecture: Tuesday **Discussion: Wednesday**

Lecture/Topics: Lecture 21: Chemical Equilibrium

Reading: Zumdahl, Chapter 12.1-12.4

Problems: Zumdahl, Chapter 12: 11, 13, 14, 21, 23, 25, 28, 29, 33, 35, 37, 38, 43

Review Questions: Zumdahl, Chapter 12: 1-5

Lecture: Thursday **Discussion: Friday**

Lecture/Topics: Lecture 22: Equilibrium Calculations, LeChatelier's Principle

Reading: Zumdahl, Chapter 12.5-12.7

Problems: Zumdahl, Chapter 12: 15, 16, 20, 39, 41, 47, 49, 51, 57, 59-61, 63, 67-69, 86, 90, 91

Review Questions: Zumdahl, Chapter 12: 6-10

WEEK 13
(April 15-19)

Lecture: Tuesday **Discussion: Wednesday**

Lecture/Topics: Lecture 23: Solubility Equilibrium, Common Ion Effect

Reading: Zunmdahl, Chapter 15.1

Problems: Zumdahl, Chapter 15: 8, 11, 13, 19, 22, 25, 30, 36, 39, 40, 43, 88

Review Questions: Zumdahl, Chapter 15: 1-3

Lecture: Thursday **Discussion: Friday**

Lecture/Topics: Lecture 24: Precipitation Analysis

Reading: Zumdhal, Chapter 15.2

Problems: Zumdahl, Chapter 15: 49, 52, 54-57, 59

Review Questions: Zumdahl, Chapter 15: 5, 6

WEEK 14
(April 22-26)

Lecture: Tuesday **Discussion: Wednesday**

Topics: Review for Exam III

EXAM III: 7:00 p.m. Wednesday, April 24 (location to be announced)

Lecture: Thursday **Discussion: Friday**

Lecture/Topics: Lecture 25: How to dissolve a precipitate

Reading: Zumdahl, 15.1 (pH and Solubility part)

Problems: Zumdahl, Chapter 15: 15, 45, 75, 76

Review Questions: Zumdahl, Chapter 15: 4

WEEK 15
(April 29-May 1)

Lecture: Tuesday **Discussion: Wednesday**

Topics: Review for Final Exam

FINAL EXAM for CHEM 102C: 7-10 pm Thursday, May 9

FINAL EXAM for CHEM 102D: 7-10 pm Tuesday, May 7