

Chap. 11 - PROPERTIES OF SOLUTIONS (1.5 LECTURES)

Class topic	Suggested problems
11.1 Solution Composition	19, 21, 23, 51, 53, 57
11.5 Boiling-Point Elevation and Freezing-Point Depression	83, 87, 89, 131
11.7 Colligative Properties of Electrolyte Solutions	99, 101, 109, 111

Chap. 12 - CHEMICAL KINETICS (2.5 LECTURES)

Class topic	Suggested problems
12.1 Reaction Rates	31,
12.2 Rate Laws: An Introduction	37,
12.3 Determining the Form of the Rate Law	39, 45, 123
12.4 The Integrated Rate Law (1 st and 2 nd only)	51, 52, 57, 61, 62, 65, 66
12.5 Reaction Mechanisms	15, 17, 75, 77, 79, 80
12.6 A Model for Chemical Kinetics	83, 85, 89, 91
12.7 Catalysis (Brief in class, expand in lab)	97, 103

Chap. 13 - CHEMICAL EQUILIBRIUM (2.5 LECTURES)

Class topic	Suggested problems
13.1 The Equilibrium Condition	15
13.2 The Equilibrium Constant	33, 35, 37, 99, 100
13.3 Equilibrium Expressions Involving Pressures*	41, 43, 61,
13.4 Heterogeneous Equilibria	47,
13.5 Applications of the Equilibrium Constant	23, 63
13.6 Solving Equilibrium Problems	67, 73, 76, 77, 78, 105, 109,
13.7 Le Châtelier's Principle	85, 91, 116

*The student is invited to review Dalton's law of partial pressure (section 5.5 pp. 182 to 188)

Chap. 14 - ACIDS AND BASES (3.5 LECTURES)

Class topic	Suggested problems
14.1 The Nature of Acids and Bases	43, 44, 45
14.2 Acid Strength	47, 49, 51
14.3 The pH Scale	57
14.4 Calculating the pH of Strong Acid Solutions	63, 65, 69
14.5 Calculating the pH of Weak Acid Solutions	77, 83, 85, 87, 89, 92
14.6 Bases	95, 97, 99, 103, 111
14.8 Acid-Base Properties of Salts	129, 130, 133, 135, 141, 143, 145

Chap. 15 - ACIDS AND BASES (1.5 LECTURES)

Class topic	Suggested problems
15.1 Solutions of Acids or Bases Containing a Common Ion	31, 33
15.2 Buffered Solutions	43, 49, 51, 59, 139
15.3 Buffering Capacity	53, 61, 71, 73
15.4 Titrations and pH Curves	75, 77, 81, 91, 122

Chap. 16 - SOLUBILITY AND COMPLEX ION EQUILIBRIA (1.5 LECTURES)

Class topic	Suggested problems
16.1 Solubility Equilibria and the Solubility Product	29, 36, 39, 45, 55, 57, 62
16.2 Precipitation and Qualitative Analysis (up to Qualitative Analysis)	63, 65, 69, 73