

2020 至 2021 学年 第 一 学期

教 学 日 历

课程名称 大学化学(I) 性质 必修

总学时 72 讲课 64 实验 8 其它

授课班级 石工 19-13

学生人数 22

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所在院(系、部) 理学院应用化学系

系(教研室)主任签字

教材名称：化学：中心科学 作者：西奥多 L 布朗 等

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Teaching time			Course content	Weekly hours	Time allocation			
Week #	Week day	Course section			lecture	experiment	exercise	
1	Mon	5-6	Introduction + Mass and Measurement	6	2			
	Tue	5-6	§10 gas; Clicker questions and discussions		2			
	Fri	7-8	§ 5 Energy, system & surroundings, work, heat, state functions		2			
2	Mon	5-6	Enthapy, endo exo thermic, rxn, Calorimetry, C, Cs	6	2			
	Tue	5-6	Hess's Law ΔH_f° , ΔH calculation		2			
	Fri	7-8	Enthalpy, clickers and examples questions		2			
3	Mon	5-6	Hess's law, clickers and examples questions	6	2			
	Tue	5-6	Keep working on delt H problems		2			
	Fri	7-8	§19 entropy, (reversible vs. irreversible; spontaneous vs. non-spontaneous		2			
4	Mon	5-6	Entropy, 2nd law of thermodynamics, delt S, 3rd law of thermodynamics,	6	2			
	Tue	5-6	Gibbs energy and example questions		2			
	Fri	7-8	§ 15_Chemical Equilibrium		2			
5	Mon	5-6	§ 15_ clickers Review § 14 kinetics (factors that affect rates), reaction rate, relative rates and stoichiometry, order of the reaction.	6	2			
	Tue	5-6	Quiz 1 Reaction order example questions (questions)		2			
	Fri	7-8	1 st order, 2 nd order, and 0 order reactions; factors affect reaction rates		2			
6	Mon	5-6	Ea, Arrhenius Equation, molecularity, reaction mechanism	6	2			
	Tue	5-6	Catalyst, clickers § 13 solution Up till colligative properties		2			
	Fri	7-8	colligative properties , sample questions, and clicker questions		2			

7	Mon	5-6	§4 Reactions in Aqueous Solution Electrolytes and non-electrolytes, acids and bases, reactions types, mixing a solution	6	2			
	Tue	5-6	Dilution, titration (related to lab), and clicker questions (solve problems for practice), and start § 16 Acid–Base Equilibria		2			
	Fri	7-8	Conjugate acids and bases, strength of acids and bases, pH, K_a , K_b		2			
8	Mon	5-6	Types of weak bases, relations between K_a & K_b , Factors that Affect Acid Strength, and clicker questions.	6	2			
	Tue	5-6	§ 17, additional aspects of aqueous equilibria, Effect of Acetate on the Acetic Acid Equilibrium, buffers, titration, indicator choice		2			
	Fri	7-8	Solubility Equilibria, Solubility vs. Solubility Product, Calculating Solubility from K_{sp}		2			
9	Mon	5-6	Review of Section 3 - solutions	6	2			
	Tue	5-6	§20 electrochemistry, oxidation, reduction, balancing equation by half-reaction method in acid		2			
	Fri	7-8	Quiz 2 & Lab Safety		2			
10	Mon	5-6	Cell types, standard cell potentials, Free Energy and Redox	6	2			
	Tue	5-6	Nernst equation fuel cell, electrolysis, clicker questions		2			
	Fri	7-8	Phase diagram		2			
11	Mon	5-8	Experiment 1: acid base titration	6	2			
	Tue	5-6	Surface tension and interphacial phenomena			4		
	Mon	5-8	Experiment 2 : salt purification	6	2			

12	Tue	5-6	Review class			4		
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