

CHEM 1F92. Approximate Lecture Schedule 2004 - 2005.

Date	Lecture Topic	Chang Ref.
Sep 10-17	Dimensional Analysis; Periodic Table; Formulas and Naming; The mole	1, 2
Sep 20-24	Chemical equations; Stoichiometry	3
Sep 27-Oct 1	Kinds of Reactions; Solutions and solution concentrations	4.1 - 4.5
Oct 4-8	Chemical analysis; Quantum theory	4.6 - 4.8, 7.1 - 7.5
Oct 13-15	Atomic orbitals; Electronic configurations and the periodic table	7.6 - 8.3
Oct 18-22	Periodic variations in properties; Ionic bonding	8.5 - 8.6; 9.1 - 9.3
Oct 23	Exam 1. Date to be confirmed; time and place to be announced.	
Oct 25-29	Covalent bonding and Lewis structures; Bond energies	9.4 - 9.10
Nov 1-5	Molecular geometry; Valence bond theory	10.1 - 10.5
Nov 8-12	Molecular orbitals; Introduction to organic chemistry	10.6 - 10.7; 24.1
Nov 15-19	Alkanes and alkenes: structures, isomers, and naming	24.2
Nov 22-26	Alkynes and aromatic compounds. Alcohols and ethers. Aldehydes and ketones	24.2 - 24.4
Nov 29-Dec 3	Carboxylic acids and esters; organic amines and amides	24.4
Dec 6-9	Polymers; Biological molecules	25
Jan 5-7	Gases and the ideal gas law	5.1 - 5.4
Jan 10-14	Gas reaction stoichiometry; Kinetic-molecular theory; Intermolecular forces	5.5 - 5.8; 11.1 - 11.2
Jan 17-21	Structure and properties of solids; Phase Diagrams; Thermochemistry	11.4 - 11.9; 6.1-6.2
Jan 24-28	Heats of reaction; work and heat	6.2 - 6.7
Jan 31-Feb 4	Clausius-Clapeyron Equation; Bronsted acids and bases; Ionization equilibria	11.8, 15.1-15.7
Feb 7-11	Polyprotic acids; Acid-base properties of salts; Lewis acids and bases	15.8-15.12
Feb 21-25	Buffers; Titrations; Acid-base indicators	16.1-16.5
Feb 28-Mar 4	Solutions and solubility. Concentration units.	12.1 - 12.5
Mar 5	Exam 2. Date to be confirmed; time and place to be announced.	
Mar 7-11	Colligative properties; Rates of reaction	12.6 - 12.7; 13.1 - 13.3
Mar 14-18	Activation Energy. Catalysis. Reaction mechanisms. Chemical equilibrium	13.4 - 13.6; 14.1 - 14.3
Mar 21-23	Equilibrium constants; LeChatelier's principle; Entropy	14.4-14.5; 18.1 - 18.2
Mar 28-Apr 1	2 nd Law of thermodynamics; Free energy and equilibrium	18.3 - 18.6
Apr 4-8	Redox equations. Electrochemistry. Standard potentials. Spontaneity of redox reactions	19.1 - 19.4
Apr 11-12	Nernst equation; Batteries	19.5 - 19.8

* Reading week is February 14-18