COLLEGE OF THE CANYONS

Chem 201 16-week vs 8-week schedules

Lecture and Lab Schedules 16-Week Sessions

Week	Topics	Textbook Chapter	Laboratory schedule (due dates)
1	Introduction, Scientific approach to problem solving, classification of matter, properties of matter Units of measurements, Uncertainty in measurements,	1.1-1.6	Lab Safety **Lab 1:** Introduction to Graphing and Microsoft Excel **Chemistry Skill Builder:** Common Laboratory Glassware
	Dimensional analysis Atomic theory, atomic structure, introduction to periodic table,	1.7 2.1-2.4	
2	isotopes, atomic mass, molar mass of elements	2.5-2.6	**Lab 2:** Determining the Amount of Sugar in Soft Drinks **Chemistry Skill Builder:** •Accuracy vs Precision •Calibration Curves •Creating Publication Quality Scatterplot
	Ionic and molecular compounds, Chemical Formulas Naming ions	3.1-3.3	
3	Formulas and names of ionic compounds Naming covalent compounds and acids	3.4- 3.5	**Lab 3:** Determination of an Empirical Formula **Chemistry Skill Builder:** • Bunsen Burner
	Molar mass of compounds, Percent Composition, Empirical & Molecular Formulas	3.6-3.8	
4	Introduction to solutions, solution concentration, solution dilution, solubility of ionic compounds, introduction to acid and bases	4.1-4.6	**Lab 4:** Introduction to spectroscopy **Chemistry Skill Builder:** none
	Exam 1	Chapters 1-4	
5	Writing and Balancing Chemical Equations, Types of Chemical Rxn	5.1-5.5	**Lab 5:** Red Dye 40 Concentration Determination by Visible Spectroscopy **Chemistry Skill Builder:** The Dilution equation
	Oxidation-Reduction reaction	5.6	
6	Stoichiometry, limiting reactants, and percent yield	6.1-6.2	**Lab 6:** Introduction to Qualitative Analysis: 4 Bottle Mystery **Chemistry Skill Builder:** None
	Solution stoichiometry, titration, gravimetric analysis	6.3-6.4	
7	Pressure, simple gas laws, ideal gas law, ideal gas law application, Dalton's law, Gas	7.1-7.5	**Lab 7:** Quantitative Determination of Ascorbic Acid in a Vitamin C Supplement **Chemistry Skill Builder:** Buret Use and Care
	stoichiometry, effusion and diffusion, kinetic molecular theory, non-ideal gas behavior	7.6-7.9	
8	Types of energy, internal energy and first law of thermodynamics, Quantifying heat	8.1-8.3	**Lab 8:** Analysis of a Zinc-Aluminum Alloy **Chemistry Skill Builder:** None
	Exam 2	chapters 5-7	

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Chem 201 16-week vs 8-week schedules

Week	Topics	Textbook Chapter	Laboratory schedule (due dates)
9	Constant volume calorimetry, enthalpy of reaction, constant pressure calorimetry	**8.4-8.6**	**Lab 9:** Determining Enthalpy of a Chemical Reaction **Chemistry Skill Builder:** None
	Standard enthalpy of formation, calculating enthalpy using Hess's Law	**8.7-8.8**	
10	Nature of light, Bohr model, wave nature of matter, quantum mechanical model of atoms	**9.1-9.4**	**Lab 10:** Investigation of Visible Atomic Spectra **Chemistry Skill Builder:** None
	Electron configuration, Periodic trends	**9.5-9.7**	
11	Chemical Bonding & Molecular Geometry - Ionic & covalent bonding; Lewis Structures	**10.1-10.5**	**Lab 11:** Conductimetric Titration and Gravimetric Determination of a Precipitate **Chemistry Skill Builder:** None
	Resonance structures, formal charges, strength of bonds	**10.6-10.8**	
12	VSEPR theory, polarity of molecules	**11.1-11.2**	**Lab 12:** Molecular Geometry of Simple Molecules (Assign Molecules)
	Exam 3	**Chapters 8-10**	
13	Valence bond theory, hybrid orbitals overlap of hybrid orbital Molecular orbital theory	**11.3-11.6**	**Lab 13**: Adopt-a-Molecule Presentations Mock practical **Chemistry Skill Builder:** Skeletal Formulas for Organic Molecules
	IMFs, properties of liquids, phase changes,	**12.1-12.3**	
14	phase diagram Solids, lattice structure	**12.4-12.6**	Work on PBL report
	Energetics of solutions, electrolytes, factors affecting solubility, Solution concentration,	**13.1-13.6**	
15	colligative properties, colloids		**Lab Practical Exam (12/3)**
	Exam 4	**Chapters 11-13**	
16	**Catch-up with material**		**No new lab**
	Final Exam on the las day of classes		

*Please note that this is a tentative schedule and might change depending on the progress of the class.

COLLEGE OF THE CANYONS

Chem 201 16-week vs 8-week schedules

Lecture and Lab Schedules 8-Week Sessions

Week	Lecture Videos Topics (asynchronous lecture)	Textbook Chapter	Laboratory assignment (in-person labs)
1	Introduction, Scientific approach to problem solving, classification of matter, properties of matter, Units of measurements, Uncertainty in measurements, Dimensional analysis	1.1-1.7	Lab Safety **Lab 1:** Introduction to Graphing and Microsoft Excel **Chemistry Skill Builder:** • Common Laboratory Glassware
	Atomic theory, atomic structure, introduction to periodic table, isotopes, atomic mass, molar mass of elements	2.1-2.6	**Lab 2:** Determining the Amount of Sugar in Soft Drinks **Chemistry Skill Builder:** • Accuracy vs Precision • Calibration Curves • Creating Publication Quality Scatterplot
2	Ionic and Covalent Bonds, Chemical Formulas, Nomenclature, Molar mass of compounds, Percent Composition, Empirical, & Molecular Formulas	3.1-3.8	**Lab 3:** Determination of an Empirical Formula **Chemistry Skill Builder:** • Bunsen Burner
	Introduction to solutions, solution concentration, solution dilution, solubility of ionic compounds, introduction to acid and bases	4.1-4.6	**Lab 4:** Introduction to spectroscopy **Chemistry Skill Builder:** none
3	Writing and Balancing Chemical Equations, Types of Chemical Rxn, Oxidation-Reduction reaction, balancing Redox reaction	5.1-5.6	**Lab 5:** Red Dye 40 Concentration Determination by Visible Spectroscopy • **Chemistry Skill Builder:** The Dilution equation **Exam 1 Chapters 1-4**
	Reaction Stoichiometry, limiting reactants, and percent yield Solution, stoichiometry, titration, gravimetric analysis	6.1-6.4	**Lab 6:** Introduction to Qualitative Analysis: 4 Bottle Mystery **Chemistry Skill Builder:** None
4	Pressure, simple gas laws, ideal gas law, ideal gas law application, Dalton's law, Gas stoichiometry, effusion and diffusion, kinetic molecular theory, Non-ideal gas behavior	7.1-7.9	**Lab 7:** Quantitative Determination of Ascorbic Acid in a Vitamin C Supplement **Chemistry Skill Builder:** • Buret Use and Care
	Types of energy, internal energy and first law of thermodynamics, Quantifying heat, Constant volume calorimetry, enthalpy of reaction, constant pressure calorimetry, Standard enthalpy of formation, calculating enthalpy using Hess's Law	8.1-8.6	**Lab 8:** Analysis of a Zinc-Aluminum mixfure **Chemistry Skill Builder:** None
5	Nature of light, Bohr model, wave nature of matter, quantum mechanical model of atoms, Electron configuration, Periodic trends	9.1-9.7	**Lab 9:** Determining Enthalpy of a Chemical Reaction **Chemistry Skill Builder:** None **Exam 2 Chapters 5-8**
	Chemical Bonding & Molecular Geometry - Ionic & covalent bonding; Lewis Structures, Resonance structures, formal charges, strength of bonds	10.1-10.8	**Lab 10:** Investigation of Visible Atomic Spectra **Chemistry Skill Builder:** None

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Chem 201 16-week vs 8-week schedules

Week	Lecture Videos Topics (asynchronous lecture)	Textbook Chapter	Laboratory assignment (in-person labs)
6	VSEPR theory, polarity of molecules,	**11.1-11.3**	**Lab 11:** Conductimetric Titration and Gravimetric Determination of a Precipitate **Chemistry Skill Builder:** None
	Valence bond theory, hybrid orbitals overlap of hybrid orbital, Molecular orbital theory	**11.4-11.6**	**Lab 12:** Molecular Geometry of Simple Molecules (Assign Molecules) Mock practical **Chemistry Skill Builder:** None
7	IMFs, properties of liquids, phase changes, phase diagram, Solids, lattice structure	**12.1-12.6**	Lab 13: Adopt-a-Molecule Presentations **Chemistry Skill Builder:** Skeletal Formulas for Organic Molecules **Exam 3 Chapters 9-11**
	Energetics of solutions, electrolytes, factors affecting solubility Solution concentration, colligative properties, colloids	**13.1-13.7**	**Lab practical (10/7 @ 8:00 am)**
8	Catch-up with material/review for final		**Lab 14:** Vapor Pressure and Heat of Vaporization **Chemistry Skill Builder:** None
	Final exam on the last day of classes		**No new lab**

*Please note that this is a tentative schedule and might change depending on the progress of the class.