

Exam 1 Video Tutorials and Activities

Submit this Table of Contents (TOC) with your video tutorial lecture notes and completed activity packets at the beginning of lecture for exam 1. The materials need to be organized according to the TOC for FULL credit. Refer to the Video/Activity grading rubric. **Exam 1 is based on the following course materials.** It will be helpful to keep your course materials organized using this TOC.

_____	Introduction to Atomic Structure Lecture Notes (1 st day of class)
_____	Atoms & Elements Part 1 – Atomic Structure: Isotopes & the Nucleus (15:08) Video Tutorial Lecture Notes
_____	Atoms & Elements Part 1b – Atomic Structure & the Electrons (22:06) Video Tutorial Lecture Notes
_____	Atoms & elements Part 2 – Valence Electrons & the Octet Rule (11:05) Video Tutorial Lecture Notes
_____	Atomic Structure Activity
_____	Compounds Part 1: Ionic Cpds – Formula Units & Nomenclature (29:15) Video Tutorial Lecture Notes
_____	Ionic Compounds Activity
_____	Compounds Part 2: Lewis Structures & Molecular Cpds (31:32) Video Tutorial Lecture Notes
_____	Shapes and Interactions Part 1: Shapes of Molecules (29:15) Video Tutorial Lecture Notes
_____	Covalent Compounds and Lewis Structures Activity
_____	Measurement Part 1: Significant Figures (24:30) Video Tutorial Lecture Notes
_____	Measurement Part 2: Scientific Notation (20:10) Video Tutorial Lecture Notes
_____	Measurement Part 3: Converting Between Units (19:21) Video Tutorial Lecture Notes
_____	Measurement Part 4: Dosage Calculations (28:49) Video Tutorial Lecture Notes
_____	Matter & Measurement Activity from Lab
_____	Shapes & Interactions Part 2: Electronegativity and Molecular Polarity (25:30) Video Tutorial Lecture Notes
_____	Shapes & Interactions Part 3: Intermolecular Forces (IMFs) (23:13) Video Tutorial Lecture Notes
_____	Shapes & Interactions Part 4: IMFs and Solutions (23:19) Video Tutorial Lecture Notes
_____	Shapes, Polarity, and Intermolecular Forces (IMFs) Activity Video Tutorial Lecture Notes
_____	Compounds Part 3: The Mole (28:34) Video Tutorial Lecture Notes
_____	Solutions & Membranes Part 1: Solution Concentrations (9:24) Video Tutorial Lecture Notes
_____	Solutions & Membranes Part 2: mass/volume (10:22) Video Tutorial Lecture Notes
_____	Solutions & Membranes Part 3: %mass/volume (12:13) Video Tutorial Lecture Notes
_____	Solutions & Membranes Part 4: Molarity (20:14) Video Tutorial Lecture Notes
_____	The Mole and Solution Chemistry Activity
_____	Solutions & Membranes Part 5: Equivalents (14:18) Video Tutorial Lecture Notes
_____	Solutions & Membranes Part 6: Membranes, Osmosis, & Tonicity (27:05) Video Tutorial Lecture Notes
_____	Solutions & Membranes Part 7: Dilution Calculations (18:24) Video Tutorial Lecture Notes
_____	Solutions, Colloids, and Membranes Activity
_____	Solids, Liquids & Gases Part 1: Temperature (6:44) Video Tutorial Lecture Notes
_____	Solids, Liquids & Gases Part 2: Energy & Phase Changes (15 :07) Video Tutorial Lecture Notes
_____	Solids, Liquids & Gases Part 3: IMFs & Boiling Points (21 :43) Video Tutorial Lecture Notes
_____	Solids, Liquids & Gases Part 4: Pressure (7 :43) Video Tutorial Lecture Notes
_____	Solids, Liquids & Gases Part 5: Gas Laws (22 :47) Video Tutorial Lecture Notes
_____	Solids, Liquids, and Gases Activity

Exam 2 Video Tutorials and Activities

Submit this Table of Contents (TOC) with your video tutorial lecture notes and completed activity packets at the beginning of lecture for exam 2. The materials need to be organized according to the TOC for FULL credit. Refer to the Video/Activity grading rubric. **Exam 2 is based on the following course materials.** It will be helpful to keep your course materials organized using this TOC.

- _____ Hydrocarbons Part 1: Structural Formulas (26:26) Video Tutorial Lecture Notes
- _____ Hydrocarbons Part 2 – Recognizing Isomers (31:49) Video Tutorial Lecture Notes

- _____ Hydrocarbons and their Structure Activity

- _____ Hydrocarbons Part 3 – IUPAC Nomenclature of Hydrocarbons (31:45) Video Tutorial Lecture Notes
- _____ Hydrocarbons Part 4 – Structure and IUPAC Nomenclature Review (16:33) Video Tutorial Lecture Notes

- _____ Hydrocarbon Nomenclature Activity

- _____ Organic Functional Groups Part 1: Introduction (23:43) Video Tutorial Lecture Notes
- _____ Organic Functional Groups Part 2: IUPAC Nomenclature (32:16) Video Tutorial Lecture Notes
- _____ Organic Functional Groups Part 3: Esters, Thioesters, & Phosphoesters (7:48) Video Tutorial Lecture Notes
- _____ Organic Functional Groups Part 4: Naming Ethers, Phenols, & Esters (9:50) Video Tutorial Lecture Notes

- _____ Organic Functional Groups Intro and Nomenclature Activity

- _____ Organic Functional Groups Part 5: IMFs and H₂O Solubility (14:07) Video Tutorial Lecture Notes
- _____ Organic Functional Groups Part 6: IMFs and Boiling Points (8:40) Video Tutorial Lecture Notes
- _____ Organic Functional Groups Part 7: Combustion Reactions (7:12) Video Tutorial Lecture Notes
- _____ Organic Functional Groups Part 8: Carboxylic Acids: Acid-Base Chem & H₂O Solubility (11:56) Vid Tut Lect Notes
- _____ Organic Functional Groups Part 9: Amines: Acid-Base Chemistry & H₂O Solubility (13:11) Vid Tut Lect Notes

- _____ Organic Functional Groups: Physical Properties and Intro to Chemistry Activity

- _____ Chemical Reaction Part 1: Balancing Reactions (11:43) Video Tutorial Lecture Notes
- _____ Chemical Reaction Part 2: Collision Theory (7:58) Video Tutorial Lecture Notes
- _____ Chemical Reaction Part 3: Thermodynamics (Reaction Energy) (26:04) Video Tutorial Lecture Notes
- _____ Chemical Reaction Part 4: Kinetics (Reaction Rates) (15:19) Video Tutorial Lecture Notes

- _____ Chemical Reaction Basics Activity

- _____ Acid & Bases Part 1: Intro with Predicting the Products (12:06) Video Tutorial Lecture Notes
- _____ Acid & Bases Part 2: Inorganic and Organic Acid Nomenclature (24:50) Video Tutorial Lecture Notes
- _____ Acid & Bases Part 3: Bronsted-Lowry Definition & Conjugate Acid Base Pairs (11:46) Video Tutorial Lecture Notes
- _____ Acid & Bases Part 4: Equilibrium Rxns & Le Chatlier's Principle (46 :47) Video Tutorial Lecture Notes

- _____ Acids & Bases Part 1 Activity

- _____ Acid & Bases Part 5: Kw [H₃O⁺] & [OH⁻] Calcs (13:32) Video Tutorial Lecture Notes
- _____ Acid & Bases Part 6: pH Calculations (13:49) Video Tutorial Lecture Notes
- _____ Acid & Bases Part 7: Buffers (10:38) Video Tutorial Lecture Notes
- _____ Acid & Bases Part 8: Effects of Cellular pH on Carboxylic Acids, Amines & Phosphates (5:47) Vid Tut Lect Notes
- _____ Acid & Bases Part 9: Serial Dilution and pH (14:02) Video Tutorial Lecture Notes

- _____ Acids & Bases Part 2 Activity

- _____ Rxns of Organic Functional Grps Part 1: Intro & Acid Base Review (18:37) Video Tutorial Lecture Notes
- _____ Rxns of Organic Functional Grps Part 2: Redox Intro (36:22) Video Tutorial Lecture Notes
- _____ Rxns of Organic Functional Grps Part 3: Redox of Alcohols & Carbonyls (17:56) Video Tutorial Lecture Notes
- _____ Rxns of Organic Functional Grps Part 4: Hydration-Dehydration Rxns (9:36) Video Tutorial Lecture Notes

- _____ Reactions of Organic Functional Groups Part 1 Activity

- _____ Rxns of Organic Functional Grps Part 5: Acyl Transfer Rxns (24:37) Video Tutorial Lecture Notes
- _____ Rxns of Organic Functional Grps Part 6: Phosphoryl Grp Transfer Rxns (9:36) Video Tutorial Lecture Notes
- _____ Rxns of Organic Functional Grps Part 7: Coenzymes & Biochemical Redox Rxns (17:45) Video Tutorial Lect Notes

- _____ Reactions of Organic Functional Groups Part 2 Activity

Exam 3 Video Tutorials and Activities

Submit this Table of Contents (TOC) with your video tutorial lecture notes and completed activity packets at the beginning of lecture for exam 3. The materials need to be organized according to the TOC for FULL credit. Refer to the Video/Activity grading rubric. **Exam 3 is based on the following course materials.** It will be helpful to keep your course materials organized using this TOC.

_____	Proteins and Enzymes Part 1: Amino Acids (10:03) Video Tutorial Lecture Outlines
_____	Proteins and Enzymes Part 3: Overview of Protein Structure (5:40) Video Tutorial Lecture Outlines
_____	Proteins and Enzymes Part 4: The Primary Structure of Proteins (14:13) Video Tutorial Lecture Outlines
_____	Proteins and Enzymes Part 5: Secondary Structure of Proteins (7:35) Video Tutorial Lecture Outlines
_____	Proteins and Enzymes Part 6: Tertiary Structure of Proteins (12:39) Video Tutorial Lecture Outlines
_____	Proteins and Enzymes Part 7: Quaternary Structure of Proteins (7:57) Video Tutorial Lecture Outlines
_____	Protein Structure and Function Activity
_____	Introduction to Proteins, Carbohydrates, Lipids and Bioenergetics (16:15) Video Tutorial Lecture Notes
_____	Chirality (31:16) Video Tutorial Lecture Notes
_____	Proteins and Enzymes Part 2: Chirality and Amino Acids (19:33) Video Tutorial Lecture Notes
_____	Proteins and Enzymes Part 8: Introduction to Enzymes (14:54) Video Tutorial Lecture Notes
_____	Proteins and Enzymes Part 9: Enzyme Inhibition (14:56) Video Tutorial Lecture Notes
_____	Proteins and Enzymes Part 10: Enzyme Classification & Reaction Catalysts (32:20) Video Tutorial Lect Notes
_____	Proteins and Enzymes Part 11: Enzyme Cofactors (7:23) Video Tutorial Lecture Notes
_____	Proteins: Chirality and Enzymes Activity
_____	Carbohydrates Part 1: introduction and Monosaccharides (32:46) Video Tutorial Lecture Notes
_____	Carbohydrates Part 2: Stereochemistry of Monosaccharides (8:47) Video Tutorial Lecture Notes
_____	Carbohydrates Part 3: Disaccharides and Glycosidic Bonds (23:29) Video Tutorial Lecture Notes
_____	Carbohydrates Part 4: Polysaccharides(5:28) Video Tutorial Lecture Notes
_____	Carbohydrates: Structure and Function Activity
_____	Carbohydrates Part 5: Catabolism – Hydrolysis and Glycolysis (29:48) Video Tutorial Lecture Notes
_____	Carbohydrates Part 6: Other Metabolic Roles of Glucose & Ketone Bodies (14:22) Video Tutorial Lecture Notes
_____	Carbohydrates: Metabolism Activity
_____	Lipids Part 1: Fatty Acids, Fats, and Oils (22:21) Video Tutorial Lecture Notes
_____	Lipids Part 2: Membrane Lipids (16:03) Video Tutorial Lecture Notes
_____	Lipids Part 3: Transport across Cell Membranes (7:52) Video Tutorial Lecture Notes
_____	Lipids Part 4: Cholesterol (5:29) Video Tutorial Lecture Notes
_____	Lipids Part 5: Eicosanoids (6:40) Video Tutorial Lecture Notes
_____	Lipids: Structure and Function Activity
_____	Lipids Part 6: Bile Salts and Lipoproteins (9:26) Video Tutorial Lecture Notes
_____	Lipids Part 7: Fat Catabolism (19:12) Video Tutorial Lecture Notes
_____	Lipids: Metabolism Activity

_____ Metabolism and Bioenergetics Part 1: Intro and Acetyl CoA (8:45) Video Tutorial Lecture Notes
_____ Metabolism and Bioenergetics Part 2: The Citric Acid Cycle (18:48) Video Tutorial Lecture Notes
_____ Metabolism and Bioenergetics Part 3: Electron Transport Chain & Oxidative Phosphorylation (30:31)
Video Tutorial Lecture Notes

_____ Metabolism and Bioenergetics: the CAC and ETC Activity

_____ Metabolism and Bioenergetics Part 4: Reduced Coenzymes and ATP (13:37) Video Tutorial Lecture Notes
_____ Metabolism and Bioenergetics Part 5: Reaction Energies (34:55) Video Tutorial Lecture Notes

_____ Metabolism and Bioenergetics: Reaction Energies Activity

_____ Nucleic Acids Part 1: Intro and Nucleotides (17:01) Video Tutorial Lecture Notes
_____ Nucleic Acids Part 2: DNA (22:33) Video Tutorial Lecture Notes
_____ Nucleic Acids Part 3: RNA and Protein Synthesis (22:15) Video Tutorial Lecture Notes
_____ Nucleic Acids Part 4: Genetic Mutations (5:02) Video Tutorial Lecture Notes

_____ Nucleic Acids Activity

Final Exam Video Tutorials and Activity

Submit this Table of Contents (TOC) with your video tutorial lecture notes and completed activity packets at the beginning of the final exam. The materials need to be organized according to the TOC for FULL credit. Refer to the Video/Activity grading rubric. **The following course materials will be included in Final Exam Part 3.** It will be helpful to keep your course materials organized using this TOC.

- _____ Nuclear Chemistry Part 1: Nuclear Structure Review and Intro to Nuclear Chemistry (14:43)
Video Tutorial Lecture Notes
- _____ Nuclear Chemistry Part 2: Nuclear Reactions (20:24) Video Tutorial Lecture Notes
- _____ Nuclear Chemistry Part 3: Half Lives (14:27) Video Tutorial Lecture Notes
- _____ Nuclear Chemistry Part 4: Biological Effects of Ionizing Radiation (18:42) Video Tutorial Lecture Notes
- _____ Nuclear Chemistry Part 5: Nuclear Medicine (3:56) Video Tutorial Lecture Notes
- _____ Nuclear Chemistry Part 6: Fusion vs Fission (12:06) Video Tutorial Lecture Notes

- _____ Nuclear Chemistry Activity