

Detailed Licensing

Overview

Title: Organic Chemistry I (Liu)

Webpages: 93

Applicable Restrictions: Noncommercial

All licenses found:

- [CC BY-NC-SA 4.0](#): 87.1% (81 pages)
- [Undeclared](#): 12.9% (12 pages)

By Page

- Organic Chemistry I (Liu) - [CC BY-NC-SA 4.0](#)
 - Front Matter - [Undeclared](#)
 - TitlePage - [Undeclared](#)
 - InfoPage - [Undeclared](#)
 - Table of Contents - [Undeclared](#)
 - Licensing - [Undeclared](#)
 - About the Author - [Undeclared](#)
 - Acknowledgements - [Undeclared](#)
 - Introduction - [Undeclared](#)
 - 1: Basic Concepts in Chemical Bonding and Organic Molecules - [CC BY-NC-SA 4.0](#)
 - 1.1: Chemical Bonding - [CC BY-NC-SA 4.0](#)
 - 1.2: Lewis Structure - [CC BY-NC-SA 4.0](#)
 - 1.3: Resonance Structures - [CC BY-NC-SA 4.0](#)
 - 1.4: Resonance structures in Organic Chemistry - [CC BY-NC-SA 4.0](#)
 - 1.5: Valence-Shell Electron-Pair Repulsion Theory (VSEPR) - [CC BY-NC-SA 4.0](#)
 - 1.6: Valence Bond Theory and Hybridization - [CC BY-NC-SA 4.0](#)
 - 1.7: Answers to Practice Questions Chapter 1 - [CC BY-NC-SA 4.0](#)
 - 2: Fundamental of Organic Structures - [CC BY-NC-SA 4.0](#)
 - 2.1: Structures of Alkanes - [CC BY-NC-SA 4.0](#)
 - 2.2: Nomenclature of Alkanes - [CC BY-NC-SA 4.0](#)
 - 2.3: Functional Groups - [CC BY-NC-SA 4.0](#)
 - 2.4: IUPAC Naming of Organic Compounds with Functional Groups - [CC BY-NC-SA 4.0](#)
 - 2.5: Degree of Unsaturation/Index of Hydrogen Deficiency - [CC BY-NC-SA 4.0](#)
 - 2.6: Intermolecular Force and Physical Properties of Organic Compounds - [CC BY-NC-SA 4.0](#)
 - 2.7: Answers to Practice Questions Chapter 2 - [CC BY-NC-SA 4.0](#)
 - 3: Acids and Bases- Organic Reaction Mechanism Introduction - [CC BY-NC-SA 4.0](#)
 - 3.1: Review of Acids and Bases and Ka - [CC BY-NC-SA 4.0](#)
 - 3.2: Organic Acids and Bases and Organic Reaction Mechanism - [CC BY-NC-SA 4.0](#)
 - 3.3: pKa of Organic Acids and Application of pKa to Predict Acid-Base Reaction Outcome - [CC BY-NC-SA 4.0](#)
 - 3.4: Structural Effects on Acidity and Basicity - [CC BY-NC-SA 4.0](#)
 - 3.5: Lewis Acids and Lewis Bases - [CC BY-NC-SA 4.0](#)
 - 3.6: Answers to Practice Questions Chapter 3 - [CC BY-NC-SA 4.0](#)
 - 4: Conformations of Alkanes and Cycloalkanes - [CC BY-NC-SA 4.0](#)
 - 4.1: Conformation Analysis of Alkanes - [CC BY-NC-SA 4.0](#)
 - 4.2: Cycloalkanes and Their Relative Stabilities - [CC BY-NC-SA 4.0](#)
 - 4.3: Conformation Analysis of Cyclohexane - [CC BY-NC-SA 4.0](#)
 - 4.4: Substituted Cyclohexanes - [CC BY-NC-SA 4.0](#)
 - 4.5: Answers to Practice Questions Chapter 4 - [CC BY-NC-SA 4.0](#)
 - 5: Stereochemistry - [CC BY-NC-SA 4.0](#)
 - 5.1: Summary of Isomers - [CC BY-NC-SA 4.0](#)
 - 5.2: Geometric Isomers and E/Z Naming System - [CC BY-NC-SA 4.0](#)
 - 5.3: Chirality and R/S Naming System - [CC BY-NC-SA 4.0](#)
 - 5.4: Optical Activity - [CC BY-NC-SA 4.0](#)
 - 5.5: Fisher Projection - [CC BY-NC-SA 4.0](#)
 - 5.6: Compounds with More Than One Chirality Centers - [CC BY-NC-SA 4.0](#)
 - 5.7: Answers to Practice Questions Chapter 5 - [CC BY-NC-SA 4.0](#)

- 6: Structural Identification of Organic Compounds- IR and NMR Spectroscopy - CC BY-NC-SA 4.0
 - 6.1: Electromagnetic Radiation and Molecular Spectroscopy - CC BY-NC-SA 4.0
 - 6.2: Infrared (IR) Spectroscopy Theory - CC BY-NC-SA 4.0
 - 6.3: IR Spectrum and Characteristic Absorption Bands - CC BY-NC-SA 4.0
 - 6.4: IR Spectrum Interpretation Practice - CC BY-NC-SA 4.0
 - 6.5: NMR Theory and Experiment - CC BY-NC-SA 4.0
 - 6.6: ^1H NMR Spectra and Interpretation (Part I) - CC BY-NC-SA 4.0
 - 6.7: ^1H NMR Spectra and Interpretation (Part II) - CC BY-NC-SA 4.0
 - 6.8: ^{13}C NMR Spectroscopy - CC BY-NC-SA 4.0
 - 6.9: Structure Determination Practice - CC BY-NC-SA 4.0
 - 6.10: Answers to Practice Questions Chapter 6 - CC BY-NC-SA 4.0
- 7: Nucleophilic Substitution Reactions - CC BY-NC-SA 4.0
 - 7.1: Nucleophilic Substitution Reaction Overview - CC BY-NC-SA 4.0
 - 7.2: $\text{S}_\text{N}2$ Reaction Mechanism, Energy Diagram and Stereochemistry - CC BY-NC-SA 4.0
 - 7.3: Other Factors that Affect $\text{S}_\text{N}2$ Reactions - CC BY-NC-SA 4.0
 - 7.4: $\text{S}_\text{N}1$ Reaction Mechanism, Energy Diagram and Stereochemistry - CC BY-NC-SA 4.0
 - 7.5: $\text{S}_\text{N}1$ vs $\text{S}_\text{N}2$ - CC BY-NC-SA 4.0
 - 7.6: Extra Topics on Nucleophilic Substitution Reaction - CC BY-NC-SA 4.0
 - 7.7: Answers to Practice Questions Chapter 7 - CC BY-NC-SA 4.0
- 8: Elimination Reactions - CC BY-NC-SA 4.0
 - 8.1: $\text{E}2$ Reaction - CC BY-NC-SA 4.0
 - 8.2: $\text{E}1$ Reaction - CC BY-NC-SA 4.0
 - 8.3: $\text{E}1/\text{E}2$ Summary - CC BY-NC-SA 4.0
 - 8.4: Comparison and Competition Between $\text{S}_\text{N}1$, $\text{S}_\text{N}2$, $\text{E}1$ and $\text{E}2$ - CC BY-NC-SA 4.0
 - 8.5: Answers to Practice Questions Chapter 8 - CC BY-NC-SA 4.0
- 9: Free Radical Substitution Reaction of Alkanes - CC BY-NC-SA 4.0
 - 9.1: Homolytic and Heterolytic Cleavage - CC BY-NC-SA 4.0
 - 9.2: Halogenation Reaction of Alkanes - CC BY-NC-SA 4.0
 - 9.3: Stability of Alkyl Radicals - CC BY-NC-SA 4.0
 - 9.4: Chlorination vs Bromination - CC BY-NC-SA 4.0
 - 9.5: Stereochemistry for Halogenation of Alkanes - CC BY-NC-SA 4.0
 - 9.6: Synthesis of Target Molecules- Introduction of Retrosynthetic Analysis - CC BY-NC-SA 4.0
 - 9.7: Answers to Practice Questions Chapter 9 - CC BY-NC-SA 4.0
- 10: Alkenes and Alkynes - CC BY-NC-SA 4.0
 - 10.1: Synthesis of Alkenes - CC BY-NC-SA 4.0
 - 10.2: Reactions of Alkenes- Addition of Hydrogen Halide to Alkenes - CC BY-NC-SA 4.0
 - 10.3: Reactions of Alkenes- Addition of Water (or Alcohol) to Alkenes - CC BY-NC-SA 4.0
 - 10.4: Reactions of Alkenes- Addition of Bromine and Chlorine to Alkenes - CC BY-NC-SA 4.0
 - 10.5: Reaction of Alkenes- Hydrogenation - CC BY-NC-SA 4.0
 - 10.6: Two Other Hydration Reactions of Alkenes - CC BY-NC-SA 4.0
 - 10.7: Oxidation Reactions of Alkenes - CC BY-NC-SA 4.0
 - 10.8: Alkynes - CC BY-NC-SA 4.0
 - 10.9: Answers to Practice Questions Chapter 10 - CC BY-NC-SA 4.0
- Back Matter - *Undeclared*
 - Index - *Undeclared*
 - Glossary - *Undeclared*
 - Detailed Licensing - *Undeclared*