# Apologia Chemistry 3rd Edition

| Audio MP3 CD Track | Textbook Section | Audio MP3 CD Filename | Audiobook Start Time |
|---|---|---|---|
| | **Module 1** | | |
| 1 | Units of Measurement | 01001.mp3 | 0:00:00 |
| 2 | The Metric System | 01002.mp3 | 0:08:04 |
| 3 | Manipulating Units | 01003.mp3 | 0:12:38 |
| 4 | Converting between Units | 01004.mp3 | 0:19:01 |
| 5 | Converting between Unit Systems | 01005.mp3 | 0:27:17 |
| 6 | More Complex Unit Conversions and Problem Solving | 01006.mp3 | 0:28:31 |
| 7 | Derived Units | 01007.mp3 | 0:32:38 |
| 8 | Making Measurements | 01008.mp3 | 0:42:25 |
| 9 | Accuracy, Precision, and Significant Figures | 01009.mp3 | 0:49:19 |
| 10 | Scientific Notation | 01010.mp3 | 1:00:40 |
| 11 | Using Significant Figures in Mathematical Problems | 01011.mp3 | 1:07:26 |
| 12 | Measuring Temperature | 01012.mp3 | 1:12:14 |
| 13 | The Nature of a Scientific Law | 01013.mp3 | 1:18:39 |
| 14 | Experimentation and the Scientific Method | 01014.mp3 | 1:24:17 |
| Track | **Module 2** | Filename | Start Time |
| 15 | Early Attempts to Understand Matter | 02001.mp3 | 0:00:00 |
| 16 | The Law of Mass Conservation | 02002.mp3 | 0:05:18 |
| 17 | Elements: The Basic Building Blocks of Matter | 02003.mp3 | 0:08:30 |
| 18 | Compounds | 02004.mp3 | 0:21:01 |
| 19 | The Law of Multiple Proportions | 02005.mp3 | 0:24:37 |
| 20 | Dalton's Atomic Theory | 02006.mp3 | 0:28:34 |
| 21 | Molecules: The Basic Building Blocks of Compounds | 02007.mp3 | 0:35:28 |
| 22 | Abbreviating and Classifying Compounds | 02008.mp3 | 0:37:16 |
| 23 | Classifying Matter as Ionic or Covalent | 02009.mp3 | 0:41:05 |
| 24 | Naming Compounds | 02010.mp3 | 0:46:41 |
| 25 | Classifying Matter | 02011.mp3 | 0:52:54 |
| Track | **Module 3** | Filename | Start Time |
| 26 | Historical Overview | 03001.mp3 | 0:00:00 |
| 27 | Electrical Charge | 03002.mp3 | 0:05:29 |
| 28 | Electrical Charge and Atomic Structure | 03003.mp3 | 0:09:45 |
| 29 | Determining the Number of Protons and Electrons in an Ator | 03004.mp3 | 0:12:53 |
| 30 | Determining the Number of Neutrons in an Atom | 03005.mp3 | 0:14:10 |
| 31 | Isotopes and Nuclear Bombs | 03006.mp3 | 0:20:44 |
| 32 | Atomic Structure in More Detail | 03007.mp3 | 0:23:43 |
| 33 | The Nature of Light | 03008.mp3 | 0:35:38 |
| 34 | The Electromagnetic Spectrum | 03009.mp3 | 0:48:30 |
| 35 | The Relationship between Frequency and Energy | 03010.mp3 | 0:55:41 |
| 36 | How the Eye Detects Color | 03011.mp3 | 0:58:19 |
| 37 | The Bohr Model of the Atom | 03012.mp3 | 1:02:48 |
| 38 | The Quantum Mechanical Model of the Atom | 03013.mp3 | 1:13:37 |

| | | | |
|---|---|---|---|
| 39 | Building Atoms in the Quantum Mechanical Model (Electron | 03014.mp3 | 1:24:08 |
| 40 | Abbreviated Electron Configurations | 03015.mp3 | 1:39:16 |
| 41 | The Amazing Design of Atoms | 03016.mp3 | 1:40:34 |

| Track | **Module 4** | Filename | Start Time |
|---|---|---|---|
| 42 | Electron Configurations and the Periodic Table | 04001.mp3 | 0:00:00 |
| 43 | Lewis Structures | 04002.mp3 | 0:12:14 |
| 44 | Lewis Structures for Ionic Compounds | 04003.mp3 | 0:15:14 |
| 45 | Handling the Exceptions in Ionic Compounds | 04004.mp3 | 0:31:58 |
| 46 | Ionization Energy and Periodic Properties | 04005.mp3 | 0:35:31 |
| 47 | Electronegativity: Another Periodic Property | 04006.mp3 | 0:41:37 |
| 48 | Atomic Radius: Another Periodic Property | 04007.mp3 | 0:44:29 |
| 49 | Lewis Structures of Covalent Compounds | 04008.mp3 | 0:47:56 |
| 50 | More Complicated Lewis Structures | 04009.mp3 | 1:01:27 |
| 51 | An Application of Lewis Structures | 04010.mp3 | 1:07:00 |

| Track | **Module 5** | Filename | Start Time |
|---|---|---|---|
| 52 | Polyatomic Ions | 05001.mp3 | 0:00:00 |
| 53 | Molecular Geometry: The VSEPR Theory | 05002.mp3 | 0:09:42 |
| 54 | Nonpolar Covalent and Polar Covalent Bonds | 05003.mp3 | 0:24:45 |
| 55 | Nonpolar Covalent and Polar Covalent Molecules | 05004.mp3 | 0:35:02 |
| 56 | The Practical Consequence of Whether or Not a Molecule Is I | 05005.mp3 | 0:40:57 |

| Track | **Module 6** | Filename | Start Time |
|---|---|---|---|
| 57 | Classifying Changes That Occur in Matter | 06001.mp3 | 0:00:00 |
| 58 | Phase Changes | 06002.mp3 | 0:07:08 |
| 59 | The Kinetic Theory of Matter | 06003.mp3 | 0:13:05 |
| 60 | Density | 06004.mp3 | 0:20:02 |
| 61 | Phase Changes in Water | 06005.mp3 | 0:26:06 |
| 62 | Chemical Reactions and Chemical Equations | 06006.mp3 | 0:28:42 |
| 63 | Determining Whether or Not a Chemical Equation Is Balance | 06007.mp3 | 0:41:57 |
| 64 | Balancing Chemical Equations | 06008.mp3 | 0:47:22 |

| Track | **Module 7** | Filename | Start Time |
|---|---|---|---|
| 65 | Three Basic Types of Chemical Reactions | 07001.mp3 | 0:00:00 |
| 66 | Decomposition Reactions | 07002.mp3 | 0:01:58 |
| 67 | Formation Reactions | 07003.mp3 | 0:06:03 |
| 68 | Combustion Reactions | 07004.mp3 | 0:07:53 |
| 69 | Combustion of Metals | 07005.mp3 | 0:09:15 |
| 70 | Complete Combustion Reactions | 07006.mp3 | 0:11:35 |
| 71 | Incomplete Combustion Reactions | 07007.mp3 | 0:13:12 |
| 72 | Atomic Mass | 07008.mp3 | 0:20:38 |
| 73 | Molecular Mass | 07009.mp3 | 0:27:02 |
| 74 | The Mole Concept | 07010.mp3 | 0:28:00 |
| 75 | Using the Mole Concept in Chemical Equations | 07011.mp3 | 0:39:10 |

| Track | **Module 8** | Filename | Start Time |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 76 | Mole Relationships in Chemical Equations | 08001.mp3 | 0:00:00 |
| 77 | Limiting Reactants and Excess Components | 08002.mp3 | 0:06:11 |
| 78 | Fully Analyzing Chemical Equations | 08003.mp3 | 0:10:19 |
| 79 | Relating Products to Reactants in Chemical Equations | 08004.mp3 | 0:14:03 |
| 80 | Using Chemical Equations When the Limiting Reactant Is Ider | 08005.mp3 | 0:16:57 |
| 81 | Volume Relationships for Gases in Chemical Equations | 08006.mp3 | 0:22:02 |
| 82 | Mass Relationships in Chemical Equations | 08007.mp3 | 0:27:22 |
| 83 | Using Stoichiometry to Determine Chemical Formulas | 08008.mp3 | 0:35:57 |
| 84 | Empirical and Molecular Formulas | 08009.mp3 | 0:38:34 |
| 85 | More Complicated Experiments for Determining Chemical Fo | 08010.mp3 | 0:46:23 |

| Track | **Module 9** | Filename | Start Time |
|---|---|---|---|
| 86 | Acids and Bases | 09001.mp3 | 0:00:00 |
| 87 | The Chemical Definitions of Acids and Bases | 09002.mp3 | 0:06:26 |
| 88 | The Behavior of Ionic Compounds in Aqueous Solutions | 09003.mp3 | 0:14:25 |
| 89 | Identifying Acids and Bases in Chemical Reactions | 09004.mp3 | 0:16:39 |
| 90 | Recognizing Acids and Bases from Their Chemical Formulas | 09005.mp3 | 0:19:06 |
| 91 | Predicting the Reactions That Occur between Acids and Base: | 09006.mp3 | 0:23:51 |
| 92 | The Reactions between Acids and Covalent Bases | 09007.mp3 | 0:32:41 |
| 93 | Molarity | 09008.mp3 | 0:37:34 |
| 94 | The Dilution Equation | 09009.mp3 | 0:42:50 |
| 95 | The Importance of Concentration in Chemistry | 09010.mp3 | 0:45:11 |
| 96 | Using Concentration in Stoichiometry | 09011.mp3 | 0:48:43 |
| 97 | Acid-Base Titrations | 09012.mp3 | 0:52:43 |

| Track | **Module 10** | Filename | Start Time |
|---|---|---|---|
| 98 | How Solutes Dissolve in Solvents | 10001.mp3 | 0:00:00 |
| 99 | Solubility | 10002.mp3 | 0:16:04 |
| 100 | Energy Changes That Occur When Making a Solution | 10003.mp3 | 0:26:07 |
| 101 | Applying Stoichiometry to Solutions | 10004.mp3 | 0:30:23 |
| 102 | Molality | 10005.mp3 | 0:33:03 |
| 103 | Freezing-Point Depression | 10006.mp3 | 0:36:25 |
| 104 | Boiling-Point Elevation | 10007.mp3 | 0:44:22 |

| Track | **Module 11** | Filename | Start Time |
|---|---|---|---|
| 105 | The Definition of Pressure | 11001.mp3 | 0:00:00 |
| 106 | Boyle's Law | 11002.mp3 | 0:06:27 |
| 107 | Charles's Law | 11003.mp3 | 0:11:07 |
| 108 | The Combined Gas Law | 11004.mp3 | 0:26:57 |
| 109 | Ideal Gases | 11005.mp3 | 0:32:32 |
| 110 | Dalton's Law of Partial Pressures | 11006.mp3 | 0:35:49 |
| 111 | Vapor Pressure | 11007.mp3 | 0:38:10 |
| 112 | An Alternative Statement of Dalton's Law | 11008.mp3 | 0:44:53 |
| 113 | The Ideal Gas Law | 11009.mp3 | 0:48:50 |
| 114 | Using the Ideal Gas Law in Stoichiometry | 11010.mp3 | 0:52:29 |

| Track | **Module 12** | Filename | Start Time |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 115 | Energy and Heat | 12001.mp3 | 0:00:00 |
| 116 | The First Law of Thermodynamics | 12002.mp3 | 0:06:06 |
| 117 | Units for Measuring Heat and Energy | 12003.mp3 | 0:08:31 |
| 118 | The Calorie Unit | 12004.mp3 | 0:12:24 |
| 119 | Measuring Heat | 12005.mp3 | 0:18:07 |
| 120 | Calorimetry | 12006.mp3 | 0:26:19 |

| Track | **Module 13** | Filename | Start Time |
|---|---|---|---|
| 121 | Enthalpy | 13001.mp3 | 0:00:00 |
| 122 | Determining Change in Enthalpy for a Chemical Reaction by E | 13002.mp3 | 0:12:43 |
| 123 | Determining the Change in Enthalpy of a Chemical Reaction U | 13003.mp3 | 0:14:36 |
| 124 | Hess's Law | 13004.mp3 | 0:25:11 |
| 125 | Applying Enthalpy to Stoichiometry | 13005.mp3 | 0:39:25 |
| 126 | Energy Diagrams | 13006.mp3 | 0:41:23 |
| 127 | The Second Law of Thermodynamics | 13007.mp3 | 0:48:51 |
| 128 | The Proper Application of the Second Law of Thermodynamic | 13008.mp3 | 1:00:56 |
| 129 | Gibbs Free Energy | 13009.mp3 | 1:06:59 |

| Track | **Module 14** | Filename | Start Time |
|---|---|---|---|
| 130 | Reaction Kinetics | 14001.mp3 | 0:00:00 |
| 131 | Factors That Affect the Kinetics of a Chemical Reaction | 14002.mp3 | 0:05:28 |
| 132 | The Rate Equation | 14003.mp3 | 0:15:28 |
| 133 | Using Experiments to Determine the Details of the Rate Equa | 14004.mp3 | 0:20:49 |
| 134 | Rate Orders | 14005.mp3 | 0:27:09 |
| 135 | Using Rate Equations | 14006.mp3 | 0:30:24 |
| 136 | Temperature Dependence in the Rate Equation | 14007.mp3 | 0:37:24 |
| | Catalysts and Reaction Rate | 14008.mp3 | 0:42:08 |

| Track | **Module 15** | Filename | Start Time |
|---|---|---|---|
| 137 | The Definition of Chemical Equilibrium | 15001.mp3 | 0:00:00 |
| 138 | The Equilibrium Constant | 15002.mp3 | 0:09:58 |
| 139 | A Few More Details about the Equilibrium Constant | 15003.mp3 | 0:19:58 |
| 140 | Using the Equilibrium Constant to Predict the Progress of a R | 15004.mp3 | 0:24:58 |
| 141 | Le Chatelier's Principle | 15005.mp3 | 0:27:50 |
| 142 | Pressure and Le Chatelier's Principle | 15006.mp3 | 0:36:22 |
| 143 | Temperature and Le Chatelier's Principle | 15007.mp3 | 0:40:39 |
| 144 | Acid-Base Equilibria | 15008.mp3 | 0:45:43 |
| 145 | The pH Scale | 15009.mp3 | 0:54:45 |
| 146 | Acid Rain | 15010.mp3 | 0:59:09 |

| Track | **Module 16** | Filename | Start Time |
|---|---|---|---|
| 147 | Oxidation Numbers | 16001.mp3 | 0:00:00 |
| 148 | Determining Oxidation Numbers | 16002.mp3 | 0:06:34 |
| 149 | Oxidation and Reduction | 16003.mp3 | 0:12:44 |
| 150 | Recognizing Reduction-Oxidation Reactions | 16004.mp3 | 0:15:39 |
| 151 | An Important Characteristic of Reduction-Oxidation Reaction | 16005.mp3 | 0:19:37 |
| 152 | How Batteries Work | 16006.mp3 | 0:22:28 |

| | | | |
|---|---|---|---|
| 153 | Real Batteries | 16007.mp3 | 0:34:26 |
| 154 | Corrosion | 16008.mp3 | 0:43:06 |
| 155 | Some Final Words | 16009.mp3 | 0:44:32 |