

---

# Contents

Introduction .....	i
Acknowledgements .....	i

## ***Achievement Standard 90305 (Chemistry 2.1)***

Carry out qualitative analysis

Internally assessed, 3 credits

Chapter 1: Achievement Standard 90305 (Chemistry 2.1) .....	1
Chapter 2: Ionic compounds .....	3
Chapter 3: Qualitative analysis .....	13

## ***Achievement Standard 90306 (Chemistry 2.2)***

Carry out an acid-base volumetric analysis

Internally assessed, 3 credits

Chapter 4: Achievement Standard 90306 (Chemistry 2.2) .....	23
Chapter 5: Acid-base Titrations .....	25

## ***Achievement Standard 90763 (Chemistry 2.3)***

Solve simple quantitative chemical problems

Internally assessed, 2 credits

Chapter 6: Achievement Standard 90763 (Chemistry 2.3) .....	37
Chapter 7: Quantitative Chemistry .....	39
Chapter 8: Concentration and Standard Solutions .....	59

## ***Achievement Standard 90308 (Chemistry 2.4)***

Describe the nature of structure and bonding in different substances

Externally assessed, 4 credits

Chapter 9: Achievement Standard 90308 (Chemistry 2.4) .....	69
Chapter 10: Atomic Structure .....	71
Chapter 11: Molecules .....	83
Chapter 12: Types of Solid .....	99
Chapter 13: Periodic Trends .....	115

## ***Achievement Standard 90309 (Chemistry 2.5)***

Describe the structural formulae and reactions of compounds containing selected organic functional groups

Externally assessed, 4 credits

Chapter 14: Achievement Standard 90309 (Chemistry 2.5) .....	125
Chapter 15: Organic Chemistry, Alkanes and Haloalkanes .....	127
Chapter 16: Alkenes, Polymers and Alkynes .....	145
Chapter 17: Alcohols .....	159

Chapter 18: Carboxylic acids, Esters and Soaps.....	167
Chapter 19: Organic Reactions Summary .....	179
<b>Achievement Standard 90310 (Chemistry 2.6)</b>	
<b>Describe thermochemical and equilibrium principles</b>	
<b>Externally assessed, 5 credits.</b>	
Chapter 20: Achievement Standard 90310 (Chemistry 2.6).....	187
Chapter 21: Energy Changes .....	189
Chapter 22: Rates of Reaction.....	197
Chapter 23: Thermochemical and Equilibrium Principles .....	207
Chapter 24: Acids and Bases.....	221
Chapter 25: pH and Solutions .....	227
<b>Achievement Standard 90311 (Chemistry 2.7)</b>	
<b>Describe oxidation-reduction Reactions</b>	
<b>Externally assessed, 3 credits.</b>	
Chapter 26: Achievement Standard 90311 (Chemistry 2.7).....	237
Chapter 27: Oxidation-Reduction reactions.....	239
Chapter 28: Electrolysis.....	255
Answers.....	265
Glossary/Index .....	325