

Bachelor of Science (BSc) Overview



If your students are intrigued by the natural world around them, or enjoy understanding how things work, Waikato's Bachelor of Science (BSc) is what they're looking for.

A BSc from Waikato will open doors to some of the world's fastest growing industries and most exciting research areas, including climate change and the sustainable management of environmental resources. Students will graduate with the theory, technical ability and leadership skills to succeed in the science industry. A lot of our scientific research involves collaboration with businesses, other research institutes and

local authorities, and it impacts development all over New Zealand and around the world. Part of our success comes from our investment in world-class research equipment and facilities, most of which is available to students during their studies. The first year of the BSc will enable them to explore a range of scientific disciplines, laying a solid foundation for you to build on, even if they haven't studied science before. The BSc

enables students to choose from a range of specific skill sets depending on how they wish to use their degree. Career-start options include: project-based learning that will prepare them for management careers in the science field; research experience where they can practice the skills needed to succeed in postgraduate study and research-oriented careers; and entrepreneurial courses where

mentors will help students develop their own ideas and teach them how to assess commercial viability. Our science minors will give students a taste of a complementary discipline to broaden their knowledge and demonstrate the breadth of their scientific skills. Alternatively, they can select a minor from a supporting non-science discipline to show employers they can apply themselves in a range of fields.

Y1	100 Level Major	100 Level Major	100 Level Science Elective	100 Level Science Elective	100 Level Science Elective	100 Level Science Elective	Elective	Elective
Y2	200 Level Major	200 Level Major	200 Level Major	200 Level Major	200 Level Science Elective	Elective	Elective	Elective
Y3	300 Level Major	300 Level Major	300 Level Major	SCIEN305 Science and Mātauranga Māori (or Approved Alternative)	Career-start Elective	Elective	Elective	Elective

The BSc contains three distinct elements designed to increase employability and support progress through the degree.

Science electives: A range of STEM papers to broaden scientific skill set.

Quantitative skills: Across their degree students should take two papers which increase their confidence in quantitative science. In many cases this will be met through papers ordinarily selected.

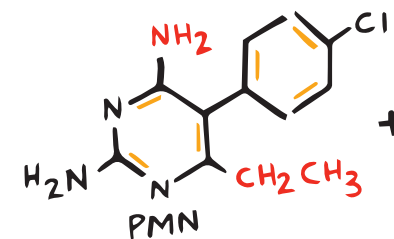
Career-start: A project or research paper which draws on experiences in the degree to prepare a student for their chosen career.

BSc in Chemistry

Y1	CHEMY101 Structure and Spectroscopy	CHEMY102 Chemical Reactivity	100 Level Science Elective	100 Level Science Elective	100 Level Science Elective	100 Level Science Elective	Elective	Elective
Y2	CHEMY201 Organic Chemistry	CHEMY202 Physical Chemistry	CHEMY203 Inorganic Chemistry	CHEMY204 Analytical Chemistry	200 Level Science Elective	Elective	Elective	Elective
Y3	Any CHEMY3 Paper	Any CHEMY3 Paper	Any CHEMY3 Paper	SCIEN305 Science and Mātauranga Māori (or Approved Alternative)	Career-start	Elective	Elective	Elective

CHEMY Papers

- CHEMY301 Advanced Organic Chemistry
- CHEMY302 Advanced Physical Chemistry
- CHEMY303 Advanced Inorganic Chemistry
- CHEMY304 Advanced Analytical Chemistry

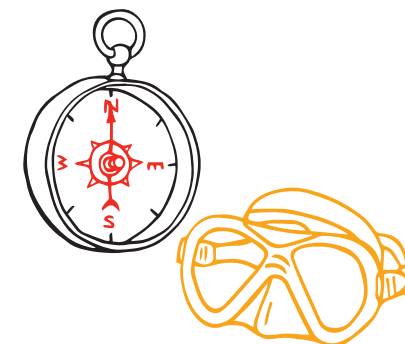




Y1	EARTH101 Introduction to Earth System Sciences	EARTH102 Discovering Planet Earth	100 Level Science Elective	100 Level Science Elective	100 Level Science Elective	100 Level Science Elective	Elective	Elective
Y2	EARTH211 Earth Resources and Materials	EARTH221 Soil Science	EARTH231 Water Resources, Weather and Climate	EARTH241 Oceanography	200 Level Science Elective	Elective	Elective	Elective
Y3	Any EARTH3 Paper	Any EARTH3 Paper	Any EARTH3 Paper	SCIEN305 Science and Mātauranga Māori (or Approved Alternative)	Career-start	Elective	Elective	Elective

EARTH3 Papers

- EARTH311 Volcanology
- EARTH312 Sedimentary and Petroleum Geology
- EARTH313 Engineering Geology
- EARTH321 Pedology and Land Evaluation
- EARTH322 Soil and Water Management
- EARTH331 Water Resources and Hazards
- EARTH341 Coastal Oceanography
- EARTH342 Coastal Geomorphology and Management



BSc in Ecology and Biodiversity

Y1	BIOEB101 Concepts of Biology	BIOEB102 Introduction to Ecology and Biodiversity	100 Level Science Elective	100 Level Science Elective	100 Level Science Elective	100 Level Science Elective	Elective	Elective
Y2	BIOEB201 Principles of Evolution	BIOEB202 Principles of Ecology	BIOEB203 Animal Structure and Function	BIOEB204 Plant Structure and Function	200 Level Science Elective	Elective	Elective	Elective
Y3	Any BIOEB3 Paper	Any BIOEB3 Paper	Any BIOEB3 Paper	SCIEN305 Science and Mātauranga Māori (or Approved Alternative)	Career-start	Elective	Elective	Elective

BIOEB3 Papers

- BIOEB301 Advanced Animal Behaviour
- BIOEB302 Advanced Zoology
- BIOEB303 Forest Ecology and Restoration
- BIOEB304 Freshwater Ecology
- BIOEB305 Marine Ecology
- BIOEB306 Molecular Ecology and Biodiversity
- BIOEB307 Plant Physiological Ecology



BSc in Environmental Sciences



Y1	ENVSC101 Environmental Science	EARTH102 Discovering Planet Earth	100 Level Science Elective	100 Level Science Elective	100 Level Science Elective	100 Level Science Elective	Elective	Elective
Y2	ENVSC201 Environmental Monitoring	EARTH221 EARTH231 or EARTH241	ENVSC202 or CHEMY204	BIOEB202 or BIOMO203	200 Level Science Elective	Elective	Elective	Elective
Y3	ENVPL303 Environmental Assessment and Policy	Any 300 Level Environmental Science Paper	Any 300 Level Environmental Science Paper	SCIEN305 Science and Mātauranga Māori (or Approved Alternative)	Career-start	Elective	Elective	Elective

Environmental Science Papers

Papers chosen from the list must encompass at least two different subject areas.

BIOEB202 Principles of Ecology

BIOMO203 Microbiology

CHEMY204 Analytical Chemistry

EARTH221 Soil Science

EARTH231 Water Resources

EARTH241 Oceanography

ENVSC202 Environmental Chemistry and Geochemistry

BIOEB303 Forest Ecology and Restoration

BIOEB304 Freshwater Ecology

BIOEB305 Marine Ecology

CHEMY304 Advanced Analytical Chemistry

EARTH313 Engineering Geology

EARTH321 Pedology and Land Evolution

EARTH322 Soil and Water Management

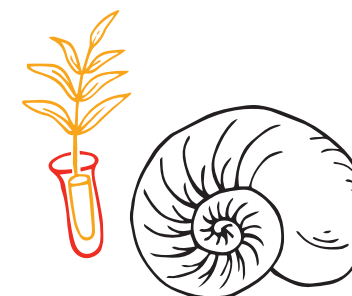
EARTH331 Water Resources and Hazards

EARTH341 Coastal Oceanography

EARTH342 Coastal Geomorphology and Management

ENVSC302 Applied Environmental Geochemistry

ENVPL303 Environmental Assessment and Policy

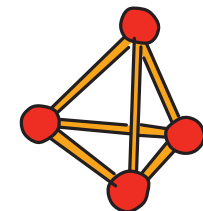


BSc in Materials Science*

Y1	ENGEN112 Materials Science and Engineering	CHEMY101 Structure and Spectroscopy	100 Level Science Elective	100 Level Science Elective	100 Level Science Elective	100 Level Science Elective	Elective	Elective
Y2	ENGMP211 Materials 1	ENGME280 Design and Manufacture	CHEMY201 or CHEMY203	ENGEN241 Environmental Technology	200 Level Science Elective	Elective	Elective	Elective
Y3	ENGMP311 Materials 2	ENGMP312 Advanced Materials Engineering	CHEMY301 CHEMY303 or CHEMY304	SCIEN305 Science and Mātauranga Māori (or approved alternative)	Career Start	Elective	Elective	Elective

Papers

- CHEMY201 Organic Chemistry
- CHEMY203 Inorganic Chemistry
- CHEMY301 Advanced Organic Chemistry
- CHEMY303 Advanced Inorganic Chemistry
- CHEMY304 Advanced Analytical Chemistry



* Note: Subject to approval

BSc in Molecular and Cellular Biology



Y1	BIOEB101 Concepts of Biology	BIOMO101 Introduction to Molecular and Cellular Biology	100 Level Science Elective	100 Level Science Elective	100 Level Science Elective	100 Level Science Elective	Elective	Elective
Y2	BIOMO201 Biochemistry	BIOMO202 Genetics	BIOMO203 Microbiology	BIOMO204 Cell and Organ Physiology	200 Level Science Elective	Elective	Elective	Elective
Y3	Any BIOMO3 Paper	Any BIOMO3 Paper	Any BIOMO3 Paper	SCIEN305 Science and Mātauranga Māori (or Approved Alternative)	Career-start	Elective	Elective	Elective

BIOMO3 Papers

- BIOMO301 Advanced Biochemistry
- BIOMO302 Advanced Genetics
- BIOMO303 Advanced Microbiology
- BIOMO304 Applied Animal Physiology
- BIOMO305 Molecular Biology and Biotechniques
- BIOMO306 Molecular Biology and Health



BSc in Psychology

Y1	PSYCH100 Brain, Behaviour and Cognition	PYSCH101 Social Health and Indigenous Psychology	100 Level Science Elective	100 Level Science Elective	100 Level Science Elective	100 Level Science Elective	Elective	Elective
Y2	PSYCH203 Brain, Cognition and Development	PSYCH204 Behavioural Psychology and Perception	PSYCH211 Understanding Psychological Research	200 Level Science Elective	Elective	Elective	Elective	Elective
Y3	Any PSYCH3 Paper	Any PSYCH3 Paper	Any PSYCH3 Paper	Any PSYCH3 Paper	SCIEN305 Science and Mātauranga Māori (or Approved Alternative)	Career-start	Elective	Elective

PSYCH3 Papers

- PSYCH303 Infant and Child Development
- PSYCH304 Behaviour Analysis
- PSYCH305 Psychological Science: Putting Theory into Practice
- PSYCH308 Abnormal Psychology
- PSYCH309 Memory and Cognition
- PSYCH311 Psychological Research Methods
- PSYCH312 Individual Differences and Measurement

