

GRADUATE PROFILE FOR THE BACHELOR OF SCIENCE

A graduate of the **Bachelor of Science** will be able to:

- a) Apply scientific knowledge and critical thinking to solving complex challenges at local and global scales.
- b) Analyse issues creatively from different perspectives, informed by scientific knowledge and skills, and inclusive worldviews.
- c) Communicate science appropriately to different audiences using a wide range of media. Students will deliver science-informed messages and arguments that influence people and issues.
- d) Work with others, using effective teamwork, collaboration, and leadership capabilities.
- e) Design and undertake self-led science projects that combine interests, aptitudes, knowledge base and application of knowledge, from inception to successful conclusion.
- f) Play an active role as an Aotearoa New Zealand and global citizen, contributing to society through their uniqueness, creativity, worldviews, and innovation. This includes the ability to engage in scientific enquiry in a way that honours their role as a partner in Te Tiriti o Waitangi.
- g) Reflect on ways in which their social responsibility and action makes a difference, underpinned by philosophy, scientific methodology, and sustainability.
- h) Develop in-depth academic credibility and rigour, through the acquisition of quantitative and scientific skills.
- i) Demonstrate and apply their understanding of the concepts of safe practice in their field of study.

Additionally, a graduate of the **Analytics** major will be able to:

- j) Demonstrate knowledge of statistical, mathematical, scientific, and computing concepts and tools related to the study and practice of analytics.
- k) Demonstrate proficiency with a range of statistical and scientific software, such as R or SAS.
- l) Develop and apply computer programmes and the tools of analytics to understand data relating to real-world phenomena.
- m) Understand the relevance and value of analytics in practice.

Additionally, a graduate of the **Biological Science** major will be able to:

- j) Demonstrate knowledge of molecules, cells and organisms and their interrelationships.
- k) Build in-depth understanding of evolutionary mechanics, processes and history.
- l) Demonstrate proficiency with a range of methods and practical skills for biological data collection and analysis.
- m) Understand and apply the concept of sustainability across a range of biological contexts and disciplines.

Additionally, a graduate of the **Biomedical Science** major will be able to:

- j) Demonstrate knowledge of fundamental science, biomedical disciplines and their interrelationships
- k) Demonstrate expertise in the application of biomedical science to industry practice.
- l) Design and conduct scientific experiments and observations in the laboratory that enhance biomedical laboratory skills and understanding of biomedical science.
- m) Contextualise biomedical science in relation to regulatory and policy frameworks for disease burden assessment, monitoring and management.

Additionally, a graduate of the **Chemistry** major will be able to:

- j) Demonstrate knowledge of chemical properties in the context of the periodic table, and of chemical bonding, reactivity and the processes that lead to chemical change.
- k) Critically apply knowledge across chemical subdisciplines to define problems, develop testable hypotheses, perform experiments, analyse data, and draw appropriate conclusions.
- l) Accurately measure chemical properties using appropriate laboratory instrumentation.
- m) Consider the role of chemistry across a range of contexts and in contemporary issues of national or global significance.

Additionally, a graduate of the **Environmental Science** major will be able to:

- j) Demonstrate knowledge of the abiotic, biotic, and human-related components of the total environment and their interrelationships across spatial and temporal scales.
- k) Demonstrate expertise in the application of environmental science to sustainability.
- l) Design and conduct scientific experiments and observations in the field and laboratory, and analyse data proficiently, to enhance understanding of ecosystem functioning.
- m) Understand the role of environmental science in regulatory and policy frameworks for environmental assessment, monitoring, and management.

Additionally, a graduate of the **Food Science** major will be able to:

- j) Demonstrate knowledge of microbial ecology in food systems and the chemical processes and interactions of biological and non-biological components of foods.
- k) Understand the relevant procedures to develop new food products.
- l) Design and conduct sensory evaluation trials to evaluate new and existing food products.
- m) Demonstrate proficiency in the relevant procedures of food packaging systems, preservation, acquisition, management, logistics, and marketing in food science and industrial practice.

Additionally, a graduate of the **Marine Science** major will be able to:

- j) Apply essential principles and fundamental concepts in marine science to predict and solve complex environmental challenges at local and global scales.
- k) Design and conduct scientific experiments and observations in the field and laboratory that enhance our understanding of marine ecosystem functioning.
- l) Demonstrate expertise in the acquisition, analysis, and interpretation of physical and biological data.
- m) Apply their analytical skills to improve regulatory and policy frameworks for global and national ocean assessments, monitoring, and management.

Additionally, a graduate of the **Mathematical Modelling and Computation** major will be able to:

- j) Demonstrate knowledge of mathematical tools, techniques and concepts related to the study and practice of applied mathematics.
- k) Demonstrate proficiency with a range of mathematical and scientific software, such as MATLAB or Python.
- l) Extract key information from real-world phenomena to develop and apply mathematical models, and validate models with real world data.
- m) Recognise the relevance of mathematical modelling and computation in the natural and social sciences, health and economics.