



VICTORIA UNIVERSITY OF
WELLINGTON
TE HERENGA WAKA

Bachelor of

BIOMEDICAL SCIENCE

TOHU PAETAHI MĀTAI RONGOĀ KOIORA





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Te Herenga Waka—Victoria University of Wellington has been awarded five stars plus overall in the QS Stars university ratings system. In addition, the University received five stars in all eight categories on which it was evaluated.

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TOHU PAETAHI MĀTAI RONGOĀ KOIORA

BACHELOR OF BIOMEDICAL SCIENCE

The COVID-19 pandemic, antibiotic resistance, gene-editing technology, and drug design are some of the biggest challenges—and opportunities—facing our world. The Bachelor of Biomedical Science (BBmedSc) is a three-year degree that helps you develop the skills to embark on a range of scientific research careers and to be engaged in the discovery of vital medical developments.

As a Bachelor of Biomedical Science student at Te Herenga Waka—Victoria University of Wellington, you'll study the relationship between health, humans, and disease—from researching genetics, neuroscience, and reproduction to understanding the cellular and molecular basis of a disease and searching for cures.

You'll learn from enthusiastic, passionate lecturers who are experts in their fields and are at the forefront of biomedical research and development. Throughout your degree, you'll look at real-life health and medical issues and gain first-hand experience of biomedical and clinical research, including through the Malaghan Institute of Medical Research, which is located on the University's Kelburn campus, and Te Kāuru—Ferrier Research Institute.

If you have an interest in human health and are passionate about making a difference, a BBmedSc could be the first step on your future career path.

 www.wgtn.ac.nz/bbmedsc





CAREERS

Biomedical graduates have the knowledge base to enter a variety of fields, including human genetics research, genetic counselling or management, human fertility and ageing, clinical biochemistry, immunology, molecular pathology, and the development of new pharmaceuticals. Note that some careers may require further qualifications.

Potential jobs include:

- ▶ biomedical scientist
- ▶ biomedical technician
- ▶ cell biologist
- ▶ data analyst
- ▶ drug discovery and development chemist
- ▶ geneticist
- ▶ haematology scientist
- ▶ immunopathologist
- ▶ laboratory technician
- ▶ microbiologist
- ▶ molecular biochemist
- ▶ pathology scientist
- ▶ policy analyst
- ▶ research analyst
- ▶ science communicator
- ▶ teacher
- ▶ university lecturer.

Go to our website to find out more about career paths that start with a Bachelor of Biomedical Science.

i www.wgtn.ac.nz/science-careers

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"I really enjoyed the practical learning that the courses in the Biomedical Science degree offer. The skills I learnt in the laboratory sessions made it easy to transition from a university teaching laboratory to a working medical laboratory. These practical sessions teach everything from basic skills such as how to use a micropipette and a centrifuge to DNA analysis and bioinformatics."

Beth Gannon

Graduate, Bachelor of Biomedical Science in Molecular Pathology
Medical laboratory technician at the New Zealand Blood Service



FURTHER STUDY OPPORTUNITIES

Once you've completed your BBmedSc, you can choose to expand your knowledge with a postgraduate qualification to develop your skills further. Work on building hypotheses, gathering, evaluating, and interpreting data—then putting it all together and communicating your findings. A BBmedSc degree gives you postgraduate options in:

- ▶ Biomedical Science
- ▶ Clinical Immunology
- ▶ Clinical Research
- ▶ Drug Discovery and Development.

The degree is also an excellent starting point for medical school, or you may choose a career in a medical laboratory.

📍 www.wgtn.ac.nz/mbmedsc



ENTRY REQUIREMENTS

An interest in science and mathematics will go a long way to helping you during your degree, and a background in chemistry is recommended for the BBmedSc. If you feel you haven't studied enough science at secondary school or have not met the NCEA requirements for a subject, there are alternative pathways available—our student advisers can give you more information.

For the latest information on degree and course details, go to our website.

i www.wgtn.ac.nz/bbmedsc





DEGREE STRUCTURE

YOUR FIRST YEAR

You'll study five core 100-level courses that cover the basics of cell biology (how the body is put together), and animal and human physiology (how the body functions). You'll look at the biology of disease and you'll study related areas such as Chemistry, Programming, Psychology, and Statistics.

YOUR SECOND YEAR

You'll be studying metabolic processes, how genes control cellular functions, how cells arrange themselves into a complex adult, and how the human body functions.

YOUR THIRD YEAR

In this year, you'll be advancing your knowledge with a focus on biomedical applications that, depending on your major, will prepare you for postgraduate research or a career in human health- and clinical medicine-related fields.

SAMPLE DEGREE PROGRAMME

Example: BBmedSc with a major in Human Genetics

YEAR 1		YEAR 2		YEAR 3	
TRIMESTER 1	TRIMESTER 2	TRIMESTER 1	TRIMESTER 2	TRIMESTER 1	TRIMESTER 2
BIOL 114 Biology of Animals (15 points)	BIOL 111 Cell Biology (15 points)	BIOL 244 Introductory Biochemistry (20 points)	BIOL 241 Genetics (20 points)	BIOL 340 Genes and Genomes (20 points)	BMSC 339 Cellular Regulation (20 points)
CHEM 114 Principles of Chemistry (15 points)	BMSC 117 The Biology of Disease (15 points)	BIOL 252 Cell and Developmental Biology (20 points)	BIOL 243 Physiology and Pharmacology (20 points)	BMSC 343 Advanced Genetics (20 points)	Any 300-level BIOL/BMSC/ BTEC/COMP/ DATA/PSYC or STAT course (20 points)
STAT 193 Statistics in Practice (15 points)	COMP 132 Programming for the Natural and Social Sciences (15 points)	Elective course (20 points)	Any 200- or 300-level BIOL/ BMSC/BTEC/ COMP/DATA/ PSYC or STAT course (20 points)	Elective course (20 points)	Elective course (20 points)
Elective course (15 points)	Elective course (15 points)				
60 POINTS	60 POINTS	60 POINTS	60 POINTS	60 POINTS	60 POINTS
120 POINTS		120 POINTS		120 POINTS	

Total points required: 360

Total points completed: 360

CORE	MAJOR	ELECTIVE
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Core: Core courses are the courses you're required to take to complete a Bachelor of Biomedical Science.

Major: A major is the main subject you'll focus on in your degree.

Elective: Elective courses are courses in other subjects you're interested in and they don't necessarily need to be related to your major or minor subjects.

MAJORS

HUMAN GENETICS

If you're interested in syndromes and diseases of genetic origin, ageing, human fertility, and genetic counselling, then a major in Human Genetics is right for you. It covers the study of the human genome, epigenetics, the molecular basis and treatment of disease, evolutionary genomics, molecular biology, and recombinant DNA technology. A qualification in human genetics can lead to career paths in genetic counselling, fertility treatment, or health research.

📍 www.wgtn.ac.nz/subjects



“The lecturers and lab staff have been very friendly and approachable. Through them, I’ve had the opportunity to volunteer in one of the neuroscience labs, which gave me practical experience in a lab environment.”

Bria Pengelly

Student, Bachelor of Biomedical Science
with Honours

MOLECULAR PATHOLOGY

This major is an introduction to the molecular basis of disease. You'll focus on the organs of the body and the changes that occur in cells, tissue, and organs within the body when humans become ill. You'll learn about ways that biomedical research can be used to detect disease, prevent the spread of disease, and reduce and repair damage caused by disease. This major will suit students interested in clinical biochemistry, forensics, immunology, microbiology, neuroscience, and the relationship between health and disease.

www.wgtn.ac.nz/subjects

MOLECULAR PHARMACOLOGY AND MEDICINAL CHEMISTRY

If you're interested in both chemistry and biology and how substances are delivered through, and dealt with by, the body, then the Molecular Pharmacology and Medicinal Chemistry major is right for you. Your study will focus on aspects of chemistry in relation to our bodies. You'll learn about modern chemical methods for the synthesis of drugs and how they work within a living system. Studying Molecular Pharmacology and Medicinal Chemistry is an important first step to pursuing a career in drug discovery or pharmaceuticals. You could work in research and development for a large multinational company such as Bayer, or combine your degree with Law to become a patent lawyer.

www.wgtn.ac.nz/subjects



“I chose to study Biomedical Science because I wanted to learn about real health issues in our world. I chose Wellington because I'm able to apply that knowledge in modern, state-of-the-art labs.”

Kavinda Dharmawardane

Student, Bachelor of Biomedical Science
in Molecular Pathology and Molecular
Pharmacology and Medicinal Chemistry

FIND OUT MORE

WHY WELLINGTON?

Te Wāhanga Pūtaiao—Wellington Faculty of Science is one of New Zealand's top research institutions, and our teaching staff are some of the most respected in the world. Our University is ranked first in New Zealand for intensity of high-quality research (2018 Performance-Based Research Fund); and we're ranked in the world's top 100 for subjects including Earth and Marine Sciences, Geology, and Psychology (2021 QS World University Rankings).

Our career-focused curriculum and relationships with industry and government will prepare you for success in your chosen field and give you the chance to make a difference. We're home to several leading research institutes—you might learn from someone who is developing vaccines at the Malaghan Institute of Medical Research (the country's largest private medical research institute), designing sustainable technology at the MacDiarmid Institute for Advanced Materials and Nanotechnology (New Zealand's top research institute in materials science), or researching climate change at Te Puna Pātioio—Antarctic Research Centre (winner of the 2019 Prime Minister's Science Prize, New Zealand's most valuable science award).

KEY DATES

Enrolments open on 10 September in the year before study commences. Go to our website for key enrolment dates.

We'd love to see you at one of our information events—check our website for dates.

-  www.wgtn.ac.nz/study/apply-enrol/dates
-  www.wgtn.ac.nz/information-evenings

CONTACT US

Te Wāhanga Pūtaiao

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-  04 463 5101
-  science-faculty@vuw.ac.nz
-  www.wgtn.ac.nz/science
-  www.facebook.com/vicuniwgtscience

COURSE PLANNING

For help with course planning, contact Te Kahupapa—Future Students.

-  0800 04 04 04
-  course-advice@vuw.ac.nz
-  www.wgtn.ac.nz/courses

OTHER STUDENT RESOURCES

Disability support

www.wgtn.ac.nz/disability

Māori student support

www.wgtn.ac.nz/awhina

Pasifika student success

www.wgtn.ac.nz/pasifika

Rainbow student support

www.wgtn.ac.nz/rainbow

Scholarships

www.wgtn.ac.nz/scholarships

Student services and support

www.wgtn.ac.nz/student-support

SCIENCE SUBJECTS

BACHELOR OF BIOMEDICAL SCIENCE

Human Genetics

Molecular Pathology

Molecular Pharmacology and Medicinal Chemistry

BACHELOR OF SCIENCE

Actuarial Science

Environmental Studies

Biology

Geography

Biotechnology

Geology

Cell and Molecular
Bioscience

Geophysics (Meteorology)

Chemistry

Geophysics (Solid Earth)

Computer Graphics and
Games

Marine Biology

Computer Science

Mathematics

Data Science

Physical Geography

Development Studies

Physics

Ecology and Biodiversity

Psychology

Electronic and
Computer Systems

Statistics

Environmental Science

For more details about these majors, see the *Bachelor of Science* and *Engineering and Computer Sciences* publications.



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