



Anatomy Mātai Tinana

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Katie Galvin
Bachelor of Science with Honours
(Anatomy), studying for a Master of
Nursing Science

The inside story

Anatomy – you can’t leave home without it. It’s with you everywhere you go. It holds you together, it controls what you think and do, it enables you to run, jump and play. So as you might expect, there is more to studying Anatomy than immediately meets the eye. There’s cell biology, neurobiology, clinical and functional anatomy, body systems, reproductive biology, developmental biology, and biological anthropology.

The University of Otago is the only New Zealand university to offer a bachelor’s degree majoring in Anatomy. You have the opportunity to explore the traditional approaches to studying Anatomy, as well as using the latest techniques and hi-tech equipment to explore the human body at all levels of its structure: from single cells to multi-organ systems.

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Why study Anatomy?

Anatomy is a diverse, vibrant, and visual subject. It explores the relationship between the structure of the body and the functions it performs, and can be studied from microscopic to macroscopic levels.

Some of the things you will learn include:

- How the body develops from just a single cell to an individual with millions of cells organised into many different tissues and organ systems.
- How the desire to move is transmitted from the brain to the muscles.
- How you can tell the age a person was when they died just by looking at their bones.
- What changes occur when we develop from child to adult.
- How the brain actually works.
- How the reproductive system functions.
- Using skeletal remains to track movement, culture, and health of ancient people.

Studying papers in Anatomy will expose you to world-leading research in the anatomical sciences. You will learn techniques such as immunohistochemistry, cell culture, and gene sequencing, and have access to state-of-the-art equipment such as electron and confocal microscopes, and next-generation sequencing technology.

Background required

You don't need any particular subjects to get into the first-year papers that lead into Anatomy. However, because these papers are biologically oriented, it is helpful to have completed Year 13 biology and chemistry.

Careers in Anatomy

A University of Otago graduate in Anatomy has the world at their feet. Opportunities available to them are varied and numerous, ranging from health professions such as medicine, dentistry, physiotherapy, to research and teaching at university of secondary and primary school, to technical work in medical or agricultural laboratories, to sales, marketing and research positions with pharmaceutical, medical, or agribusiness

companies, or national bodies such as the Cancer Society of New Zealand. Graduates also work as funeral directors, winemakers, policymakers, and beyond – there is definitely something for everyone with a degree in Anatomy!

Anatomy students gain a high level of knowledge and competencies across a broad range of topics, with a range of skills that can be applied to any chosen career. These skills range from learning to speak and work in group environments, honing and extending thinking and communication skills, through to having an awareness and understanding of ethics and developing the ability to undertake self-directed learning. And then of course there are the technical and applied skills that are used every day in practical labs.

Some graduates use their degree as a stepping stone to further study in a health professional course, while others have gone on to postgraduate study in forensic science, clinical embryology, and of course the various research fields – Biological Anthropology, Clinical Anatomy, Neuroscience, and Reproductive and Developmental Biology – offered here in the department.

Anatomy at Otago

Anatomy is offered as a major for the Bachelor of Science (BSc) degree programme, which includes all ANAT papers as well as Biological Anthropology (BIOA). We also offer the Reproduction, Genetics and Development theme as part of the Biomedical Sciences (BBiomedSci) degree.

Anatomy papers also form key components of degrees in Neuroscience, Forensic Science, Genetics, Human Nutrition, Food Science, and Medical Laboratory Science. BIOA papers can also form part of an Arts (BA) degree.

What does a BSc in ANAT involve?

In your first year, you will be introduced to the structure, function, and development of the various systems in the human body. You will also learn about the biology of cells and human genetic variation, the diversity of microorganisms, and microbial virulence and diseases. You'll also take other general first-year Health Sciences papers, including Chemistry or Physics.

At the end of your first year, you will have a good basic knowledge of the whole body, be able to recognise the different cells and their organelles, and have a basic understanding of how the human body systems work.

The skills and knowledge learnt at first year will then be developed more in-depth in second and third-year papers which cover human cells and systems, neurobiology, reproductive and developmental biology, functional anatomy, cell biology, and biological anthropology.

Teaching style

Papers are taught in a lecture and laboratory format. Laboratory classes are exciting and hands-on, and involve learning state-of-the-art techniques for the scientific analysis of human and animal tissue, including tissue / cell culture; electron, light and confocal microscopy; immunohistochemistry; histology; stereology; molecular biological techniques; and skeletal forensic investigations.

Laboratory rooms are well equipped and modern, and you will have access to hi-tech equipment. You will also be able to study in our historic and world-leading WD Trotter Anatomy Museum.

Postgraduate study

If you wish to take your knowledge beyond third year, a range of postgraduate opportunities are available. We have a large family of postgraduate students who are vital contributors to the ongoing research in the department and have developed a vibrant social network. You could find yourself doing an honours degree, a master's degree, or a one-year Postgraduate Diploma in Science. Or why not aim high and shoot for a PhD?

For questions about
Anatomy
otago.ac.nz/anatomy



PROFILE

Katie Galvin

Bachelor of Science with Honours (Anatomy), studying for a Master of Nursing Science

"I didn't know what I wanted to do when I left school so I picked general Science papers for my first year, as I'd enjoyed these at secondary school. The Anatomy component of the HUBS papers interested me the most so I made it my major subject. A Bachelor of Science gave me good skills in concise writing and analytical thinking, which are invaluable skills in any area.

"After my honours degree, I decided to take a break from study. I was working as a research assistant with Dr Erik Wibowo at the University continuing my 400-level research project – this involved recruiting and meeting prostate cancer patients and their spouses. I found people really opened up to me about their health and their lives, it made me decide I wanted to learn more about health and support people through their journeys. I have

always enjoyed working with people and the Master of Nursing Science seemed like a great fit to combine my academic knowledge from Anatomy into something more patient-centred.

"The Department of Anatomy was so supportive in helping me achieve my goals. My undergraduate study in Anatomy has been really helpful for the science papers in my nursing course – we also undertake a research project, so having completed a dissertation in my honours degree and having the ability to use a scientific writing style has been really beneficial. In general, applying anatomical knowledge to the pathologies you see in clinical experience is useful. I've studied what normal structure is, so seeing how this plays out in pathology is really interesting!"

