# **Applied Mathematics**

Wherever problems need to be solved, mathematics has a role to play. Applied Mathematics makes essential contributions to the biological, information and physical sciences, economics, engineering and finance, but can also be applied to communications, linguistics and genetics.

From studying climate change, preventing structural damage due to earthquakes, to analysing neuronal dynamics in the brain – Applied Mathematics has a role to play. You will gain valuable skills that bring you to the frontiers of knowledge and the thrill of discovery that will provide you with the satisfaction of seeing mathematics at work.

Some of the courses available in this subject include:

- Advanced Numerical Analysis
- Dynamical Systems
- Nonlinear Partial Differential Equations
- Mathematical Modelling
- Inverse Problems

· Stochastic Differential and Difference Equations

BSc(Hons) BSc PGDipSci PGDipSci

SCIENCE

Explore and discover everything you need to know about studying postgraduate Applied Mathematics: science.auckland.ac.nz/pg-applied-maths







#### **No.1** In New Zealand for Employability

QS World Rankings Graduate Employability, number one in NZ and 59th Worldwide in 2020

#### AVAILABLE IN:

- ✓ Bachelor of Science (Honours) (BSc(Hons))
- Postgraduate Diploma in Science (PGDipSci)
- ✓ Master of Science (MSc)
- Master of Mathematical Modelling (MMathModel)
- Doctor of Philosophy (PhD)

You may also be interested in our programmes in Computer Science, Statistics and Physics.

> Our subject is ranked #1 in New Zealand

#1

**Mathematics** 

Start early to avoid disappointment. Supervisors can usually only take a small number of students, so make sure you talk to them sooner rather than later.

Choose an area you feel passionate about. Undertaking research involves successes as well as challenges, so choosing a topic you are genuinely interested in will help you overcome challenges and get through the tough times.

Ensure you're compatible with your supervisor. Ask questions, seek advice and share your ideas with academic staff to find out their research interests, and whether you would be a good fit with their current projects.

# Findathesis

Check out our searchable database of masters and doctoral supervisors and research projects that you can join at **www.findathesis.auckland.ac.nz.** 

# Guaranteed postgraduate scholarships

Did you know the University of Auckland offers guaranteed scholarships to highachieving domestic postgraduate research students?

Apply for admission to your chosen postgraduate programme and the University will consider your eligibility for a scholarship at the same time.

Learn more: www.scholarships.auckland.ac.nz

# **Careers in Applied Mathematics**

Applied Mathematics plays a fundamental role in providing the skills and framework needed to tackle many challenges.

Graduate study in mathematics can provide you with advanced knowledge and problem-solving skills applicable in any number of fields.

A good mathematical background enhances and develops your problem-solving skills, comprehension of abstract concepts and analytical and creative thinking. These are valued qualities in technical roles and in positions of leadership and management.

Our graduates take up positions in business, government, industry, research, planning, and environmental organisations.

Our graduates have been employed in the following jobs:

- Manager of device development, Alta Devices
- Analyst, Dimensional Fund Advisors
- Senior client representative, IBM
- Consultant, Gentrack Ltd
- · Director of product and infrastructure, Zeald
- Actuary, PricewaterhouseCoopers
- Traffic engineer, Traffic Engineering Solutions

#### Have any questions? Our Science Advisers are happy to help

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# Haere tonu ki tõu ara pūtaiao i tõ mātou Hāpori. Continue your Science journey as part of our community.

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# **Henry Chen**

Graduated with a Bachelor of Science specialising in Applied Mathematics and Statistics.

# Graduated with a Bachelor of Arts (First Class Honours) in Applied Mathematics.

"I pursued my degree because applied mathematics is an immensely creative discipline, yet it is also rigorous. An Honours degree encompasses academic research which further promotes creative thought.

"I was privileged enough to have been supported by the University of Auckland Postgraduate Honours scholarship which covered the tuition fees with a healthy stipend on top. The scholarships I have received have helped me immensely as without them, I may not have enrolled and pursued a degree at university.

"Since graduating, I've been working as a Forecasting Analyst at TESLA Asia Pacific. We do electricity and gas load/price forecasting in New Zealand, Australia, Japan, and India.

"Studying applied mathematics has sharpened my analytical skills and my Honours year assisted immensely with my soft skills, the presentations of my research at conferences transfers over nicely to communicating with clients in industry.

"Employers these days are seeking graduates with mathematical backgrounds for all sorts of positions. They find quantitative skill and ability extremely important."

"I can see myself thriving in the energy industry with the onset of increasing renewable energy generation and challenges presented by climate change. In the future, I would like to work with and manage some interns on cutting-edge machine learning models to provide more accurate and reliable forecasts."



# **Computer Science**

Whether you are interested in software engineering, systems development and evaluation, cyber security, intelligent systems, algorithms, or the theory of computing – we are living in an information age and have become dependent on information technology and the complex way that information is stored, transmitted and processed.

Postgraduate study in Computer Science is divided into two general areas: software systems and the theory of computing. Areas of research interests open to exploration include artificial intelligence, computer vision, cyber security, human-computer interaction, and quantum information science.

Some of the courses available in this subject include:

Network Defence and Countermeasures

Computing Education

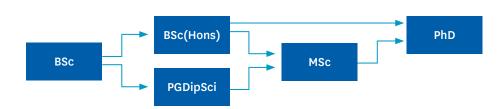
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- outer Interaction
- Parallel and Distributed Computing

· Security for Smart Devices

- Human-computer Interaction
  - System Security

SCIENCE



Explore and discover everything you need to know about studying postgraduate Computer Science: science.auckland.ac.nz/pg-comp-sci







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#### AVAILABLE IN:

- ✓ Bachelor of Science (Honours) (BSc(Hons))
- Postgraduate Diploma in Science (PGDipSci)
- ✓ Master of Science (MSc)
- ✓ Doctor of Philosophy (PhD)

You may also be interested in our programmes in Data Science, Digital Security, Information Technology, Logic and Computation, and Mathematics.



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# **Careers in Computer Science**

#### Computer Science graduates can find careers in an everwidening variety of industries and roles.

The heavy reliance on networks and the explosive growth of the internet have created a particular demand for people with skills in data communications, network design, cyber security, web development, and object-oriented programming.

Software design and development, data analysis, and user experience (UX) research and design are also in high demand as the need for companies to hire professional staff with computer expertise grows.

Our graduates have been employed in the following jobs:

- Software engineer, Google
- · Chief technology officer, Roofstock
- · Security product lead, Instart Logic
- Senior engineering manager, Castlight Health
- · Architecture manager, Nvida
- Network specialist, Optus
- · Systems analyst, Australian Crime Commission
- Senior developer, Westpac
- · Systems administrator, Sears Canada Inc

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# Olivier Graffeuille

Doctor of Philosophy in Computer Science.

"I decided to pursue this qualification to follow my interest in machine learning, and get a taste for academia and teaching rather than getting an office job after completing my undergrad degree. I also hope that this programme will open doors towards careers that I'll find more interesting and fulfilling, and who knows, maybe even travel!

"I studied at the University of Auckland as an undergraduate student in Engineering Science. I had a good experience in this degree, and met my now-supervisors in a fourth year elective. So when I was offered a PhD opportunity which sounded interesting with supervisors I knew to be good, it wouldn't make any sense to go anywhere else.

"The name of my thesis topic is 'Machine Learning for Extreme Climate

"I am focusing on the problem of detecting harmful algal blooms in NZ lakes using satellite data, by applying machine learning techniques."

"Currently, I'm looking into potential novel semi-supervised regression approaches due to the abundance of available unlabelled satellite

"After my PhD I hope to find a position where I'll be able to use my knowledge to help a company, whether that be in Auckland or overseas. My ideal job would also be focussing on solving

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# Data Science

Data Science is a rapidly growing field, giving individuals the ability to manage and analyse big data, and drive innovation in organisations across all industries. There are two options for a postgraduate qualification in Data Science: the Master of Data Science, and the Master of Professional Studies specialising in Data Science.

Both programmes cover a core of Computer Science and Statistics courses where you'll learn to apply techniques from large-scale data management, data mining, machine learning, statistical modelling and statistical analysis, and assemble theories and tools from computer science, statistics and domains of data science to create information, knowledge, or innovative products, from data.

Some of the courses available in this subject include:

- Database Systems
- Big Data Management
- · Algorithms on massive datasets
- Data Mining and Machine Learning
- Statistical Computing
- Statistical Data Mining



SCIENCE

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The free software environment for statistical computing and graphics.



#### **No.1** In New Zealand for Employability

QS World Rankings Graduate Employability, number one in NZ and 59th Worldwide in 2020

#### AVAILABLE IN:

- Master of Data Science (MDataSci)
- Master of Professional Studies (MProfStuds)
- Doctor of Philosophy (PhD)

You may also be interested in our programmes in Computer Science, Information Systems, Information Technology, and Statistics.



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Ensure you're compatible with your supervisor. Ask questions, seek advice and share your ideas with academic staff to find out their research interests, and whether you would be a good fit with their current projects. There may be opportunities to work on a research project with an industry partner, supervised jointly by your supervisor – enquire to see if this is a possibility.

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# **Careers in Data Science**

On the world stage, data science is a rapidly growing field with an unmet demand for suitably qualified graduates.

As a data scientist you need to be able to both manage and analyse the data and this programme will give graduates a unique combination of skills in data science and data management.

Not only will you be able to comprehend, process and manage data efficiently, you will also be able to extract value from data, so you can visualise and communicate it effectively.

Your ability to turn data into information, knowledge and products is what will drive innovation and lead to successful outcomes across a diverse range of businesses and organisations.

Our graduates have been employed in the following jobs:

- Chief analytics officer, Lab360 NZ
- Data consultant, Fonterra Cooperative Group Ltd
- · Director of data science, Qrious
- Marketing research manager, IBM Enterprise Group
- · Statistical analyst, Statistics New Zealand



# Aarti Raghav

Master of Professional Studies in Data Science.

"I like dealing with data crunching and analysing data to derive what factors influence the numbers and their impact (figuratively).

"My interest into data analysis and data visualisation tools made me pursue the MProfStuds in Data Science.

"The courses taught are industry-oriented, giving you real-world experiences as you work through projects and assignments.

"There is a focus on the theory too, and I can easily relate to what this course content can be used for in a job. The assistance given by the lecturers also makes the courses easy to follow and interesting.

#### "This programme makes you 'job-ready' focusing on some very important and advanced topics in various courses."

"The selection of courses makes it quite unique as we get the opportunity to choose our preferred courses from a set of specialised courses based on our interests and our own individual career roadmap.

"I am looking forward to working as a data analyst/scientist in the ICT industry when I graduate."

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as part of our community.

# **Digital Security**

# Learn how to protect assets, personal identity and technology from viruses, spyware and hackers by studying Digital Security.

With the explosion in the use of digital technology, there is a real need for people with the right skills in the design, planning and management of secure information technology infrastructure.

You'll learn how to identify vulnerabilities within a network, manage physical security and surveillance, and provide risk analysis for networks and systems.

You'll also have the opportunity to explore integral skills in digital security by working on projects about real industry problems, supervised by our researchers.

Some of the courses available in this subject include:

- Advanced Information Security
- Cryptographic Management
- Security for Smart-devices
- Network Defense and Countermeasures
- Advanced Design and Analysis of Algorithms
- Advanced Topics in Human Computer
  Interaction



Explore and discover everything you need to know about studying postgraduate Digital Security: science.auckland.ac.nz/pg-digital-security



# SCIENCE



#### **No.1** In New Zealand for Employability

QS World Rankings Graduate Employability, number one in NZ and 59th Worldwide in 2020

#### AVAILABLE IN:

#### Master of Professional Studies (MProfStuds)

You may also be interested in our programmes in Computer Science, Data Science and Information Technology.

# Our subject is ranked **#1** in New Zealand



Computer Science and Information Systems

#1

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# **Careers in Digital Security**

Any company that relies heavily on its information and technology systems has a particular need for a secure digital network. There is a demand for digital security specialists due to the increasing risks of disruption and compromise of information technology systems.

Our graduates learn the fundamentals of secure IT design, planning and management, which make this qualification very attractive to employers. You may find work in all types of industries including: airline, financial services, governmental services, healthcare and retail.

Jobs related to Digital Security include:

- · Information security analyst
- · Network support engineer
- · Security operations analyst
- · Senior security specialist



# **Aishwarya Dhatrak**

Master of Professional Studies in Digital Security.

"Security is a very important aspect in today's fast-paced technological environment as we are constantly being exploited by various new forms of technology-aided attacks.

"Studying Digital Security is the right choice for me as it will enable me to upgrade my existing qualifications, gain a new highly sought after, internationally recognised qualification and take the first few steps in a career in the digital security sphere.

"The opportunity to gain hands-on training and experience where the IT industry is at its peak is one of the draw cards for studying at the Faculty of Science."

"The programme challenges me to find out the vulnerabilities in systems and also the solutions to those vulnerabilities.

"There is a great scope for anyone who pursues this course as the job opportunities that beckon are limitless - especially for those who wish to be dedicated and ingenious professionals in the field of information

"As an international student and when choosing a destination for higher education, I preferred New Zealand because it's a safe, peaceful, multicultural and English speaking environment."

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# facebook.com/science.uoa

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science.auckland.ac.nz/pg-digitalsecurity

# **)**

# A quick guide to postgraduate

# **Information Technology**

Combine the technological skills and business awareness that are essential to the development of smart-design and the security of the devices we use.

As an Information Technology student you'll study advanced courses in computer science, computer systems, electrical and electronic engineering and infosystems, as well as optional complementary courses in global management and innovation, health informatics and science enterprise.

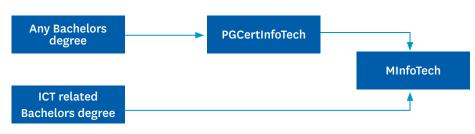
The ICT industry is one of the fastest growing industries in the world and there is huge demand for graduates who possess the right skills to work in this exciting field.

Some of the courses available in this subject include:

- Programming for Industry
- Programming with Web Technologies .
- · Security for Smart Devices
  - Intelligent Software Agents
- Computer Games Technology Cloud computing

• Intelligent Vision Systems

Big Data Management



SCIENCE

Explore and discover everything you need to know about studying postgraduate Information Technology: science.auckland.ac.nz/pg-info-tech





# Our subject is ranked New Zealand



QS World University Rankings

#### No.1 In New Zealand for Employability

QS World Rankings Graduate Employability, number one in NZ and 59th Worldwide in 2020

#### AVAILABLE IN:

- ✓ Postgraduate Certificate in Information Technology (PGCertInfoTech)
- Master of Information Technology (MInfoTech)

You may also be interested in our programmes in Computer Science, Data Science and Digital Security.

by Subject 2021

#### More about this programme

Postgraduate study in Information Technology offers two options:

- The Postgraduate Certificate in Information Technology is a unique course that provides you with a gateway into Information Technology if you come from a non-IT background. It is also a pathway into further study with the Master of Information Technology.
- The Master of Information Technology explores business enterprise and project-based learning, and you will spend time devoted to an internship where you will work on a real-world project.

Both these programmes are taught by the ICT Graduate School and awarded jointly by the University of Auckland and the University of Waikato.

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# **Careers in Information Technology**

The ICT industry is one of the fastest growing industries in the world and there is huge demand for graduates who possess the right skills to work in this exciting field.

Information Technology graduates are employed in roles as diverse as database developers and data security specialists. You can look forward to joining them as you ignite your career in the ICT industry.

You'll add value to New Zealand's vibrant, dynamic ICT sector as you acquire advanced, specialist technological skills; gain industry experience in the development and commercialisation of products and services; and understand the demands and expectations of a professional workplace.

Our graduates have been employed in the following jobs:

- · Software engineer, Manhattan Associates
- · Freelancer, Defined Crowd Corporation
- Treasury analyst, Price Waterhouse Cooper
- Network analyst, HCL Technologies
- Other jobs related to Information Technology include:
- Cloud computing specialist
- Cybersecurity specialist
- Internet/multimedia developer

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# William Asiata

#### Master of Information Technology.

"When I graduated with a BSc in Mathematics a few years ago I wasn't really sure what kind of career I wanted to pursue.

"I went around trying out a few different jobs and discovered the procedures and technologies used in many businesses and organisations were somewhat behind where the latest technologies were heading in a digitally connected world.

#### "The thing I like about getting a qualification in information technology is that there is little risk of losing your job as other jobs become more automated."

"That's when I decided it was a good time to get on the ICT bandwagon and advance my software development and data science skills.

"In this programme, you have the opportunity to learn advanced theoretical and practical concepts across both computer technology and business managerial fields. This provides a balance of scientific, research, management and leadership skills.

"I have chosen to focus on artificial intelligence, distributed computing, database management and cyber security, as well as the design and analysis of adaptive enterprise systems within complex world environments. These are very stimulating topics.

"I expect this qualification will lead me into a junior software development or data science role, and at some point down the track I'd like to work as a technology consultant or manager for a government agency."

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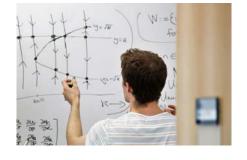
# **Mathematics Education**

Mathematics Education is vital to ensure young people are numerate, understand how the world works and are equipped for future careers. Understanding how students learn Mathematics and the most effective ways of teaching it are at the heart of this subject.

High-quality Mathematics Education informs education, science, technology and engineering. As well as ensuring a numerate, highly skilled society, Mathematics Education provides the foundation for teaching young people important skills in logic, critical and creative thinking, problem solving, seeking evidence and analysing data.

Some of the courses available in this subject include:

- Teaching and Learning in Algebra
- Topics in Statistical Education
- $\cdot$   $\,$  Technology and Mathematics Education  $\,$
- Special Topics in Mathematics Education
- Theoretical Issues in Mathematics Education



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#### AVAILABLE IN:

#### Master of Professional Studies (MProfStuds)

You may also be interested in our programmes in Mathematics, Education, Applied Mathematics and Psychology.

> Our subject is ranked

New Zealand

QS World University Rankings by Subject 2021 Mathematics

#1



# SCIENCE

#### More about this programme

A Master of Professional Studies (MProfStuds) in Mathematics Education is designed for mathematics teachers who wish to reflect on and enhance their classroom practice through professional development, study and research.

The programme is tailored for teachers working part or full-time and can be taken part-time.

The degree brings together research, subject knowledge and professional experience to develop critical approaches to mathematics and statistics teaching and learning. The programme will allow students to explore research relevant to their mathematics teaching practice.

Students may be eligible for partial or full fees subsidies from their schools or the Ministry of Education, and scholarships from the University (see below), or the Auckland Mathematical Association (AMA).

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# **Careers in Mathematics Education**

Mathematics Education is essential for making sure mathematics is more widely understood and that students are inspired to pursue mathematical-based subjects and careers.

Graduates of this programme will be better equipped to be senior practitioners in mathematics and statistics education at primary, secondary or tertiary level, to lead the research-based professional development of mathematics teachers in their institution, and to take on positions of responsibility that involve mentoring other teaching staff.

Mathematics Education can also open up career opportunities in training in industry, policy making, research and many other fields.

Our graduates have been employed in the following jobs:

- · Lecturer, University of Tasmania
- · Teacher, Ministry of Education
- Mathematics teacher, Otahuhu College •
- Deputy principal, Puhinui School •
- · Associate professor, National Institute of Education



# Kaitlin Riegel

Doctor of Philosophy in Mathematics Education.

"Mathematics education is a relatively new field, so it means there are plenty of original questions to investigate and I am excited about the opportunity to contribute to this body of research.

"The University of Auckland is in the unique position of having the Mathematics Education Unit situated within the Mathematics department."

"This made for an easy transition from my undergraduate degree and allows for conducting powerful research, with tangible outcomes.

cognition is deeply interwoven with affect - simply, how we think is influenced by how we feel. I am considering how students' beliefs and emotions change across a semester in different types of mathematics assessment, how these changes are mediated by their mindset, and how these constructs together predict their performance in

"I would ideally like to continue conducting research in this area to improve our understanding of effective ways to teach mathematics and how to improve its accessibility to everyone as a subject.

"I have a University of Auckland Doctoral Scholarship. I am incredibly grateful, as it has helped me perceive my PhD as the start of my career since I am able to independently support myself without accumulating student debt."

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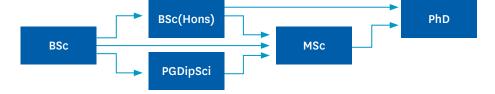
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# Mathematics

Postgraduate study in Mathematics enables you to indulge your academic enthusiasm or satisfy your intellectual curiosity, and at the same time provide you with advanced knowledge and problem-solving skills to open up many career opportunities, including mathematics education.

A postgraduate qualification in Mathematics will provide you with advanced knowledge and understanding across a broader and deeper range of topics. It will give you an opportunity to learn about research, conduct your own research, make new discoveries and develop new ways of looking at things. Some of the courses available in this subject include:

- Complex Analysis
- Functional Analysis
- Logic and Set Theory
- Number Theory
- Graph Theory and Combinatorics



SCIENCE

Explore and discover everything you need to know about studying postgraduate Mathematics: science.auckland.ac.nz/pg-maths



- Group Theory
- Mathematics Education: Mathematical
  Processes
- Measure Theory and Integration





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Mathematics

#1

QS World University Rankings by Subject 2021

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These skills are valued qualities in technical roles and positions of leadership and management - and can open up new career opportunities, and enhance your earning potential.

Our Mathematic graduates take up positions in business, industry or government, research and teaching, computer development and programming, systems analysis, operations research and many other fields.

Our graduates have been employed in the following jobs:

- Mathematician, University of California (Berkley)
- · Software engineer, Google Inc
- Researcher, Microsoft Corporation
- Managing partner, Park Avenue Value Partners LLC .
- Postdoctoral researcher, Weill Cornell Medical College
- Principals and managing broker, Cornerstone Property Professionals LLC •
- Senior analyst, Defence Science and Technology Organisation
- Game Designer, Bally Technologies

# **Daniel Hughes**

#### Bachelor of Science (Honours) in Mathematics.

"My research is in lattice cryptography, which includes studying the structure of lattices (a discrete mathematical object) and their

"The rest of my degree involves studying pure maths topics such as number theory, group theory, analysis and algebra.

# "I have always enjoyed maths, and after taking a BSc in Maths and Stats at Auckland I chose to continue my studies and do an honours year."

"My favourite thing about my programme is the interaction we have with our lecturers. Since most of our classes are quite small by this stage, our lectures are more personalised, which allows us to feel more comfortable when asking questions about the course, or our studies in

"I'm currently receiving the Honours Scholarship, which provides me with funding for both my fees and living expenses throughout my honours year.

"This has helped immensely, as it allows me to focus more on my studies, and was a great influence in my decision to stay at Auckland for my honours year."

#### Have any questions? Our Science Advisers are happy to help

Phone: 0800 61 62 63 Email: scifac@auckland.ac.nz



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# Haere tonu ki tõu ara pūtaiao i tō mātou Hāpori.

**Continue your Science journey** as part of our community.



# **Medical Statistics**

# Medical statisticians detect and monitor disease and evaluate treatments.

The main focus to this work is research, which sees medical statisticians design, implement and analyse clinical studies and present their findings in reports or publications. The role of a medical statistician is integral to public health education and policy making.

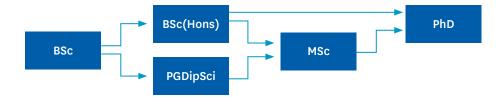
Probability Theory

Stochastic Processes

· Bayesian Inference

Some of the courses available in this subject include:

- Epidemiology
- Introduction to Medical Statistics
- Design and Analysis of Clinical Trials
- Statistical Computing



Explore and discover everything you need to know about studying postgraduate Medical Statistics: science.auckland.ac.nz/pg-med-stats







#### **No.1** In New Zealand for Employability

QS World Rankings Graduate Employability, number one in NZ and 59th Worldwide in 2020

#### AVAILABLE IN:

- ✓ Bachelor of Science (Honours) (BSc (Hons))
- Postgraduate Diploma in Science (PGDipSci)
- ✓ Master of Science (MSc)
- ✓ Doctor of Philosophy (PhD)

You may also be interested in our programmes in applied mathematics, bioinformatics, population health and mathematics.

> Our subject is ranked #1 in New Zealand

by Subject 2021

#1

**Operational Research** 

**Statistics and** 

Start early to avoid disappointment. Supervisors can usually only take a small number of students, so make sure you talk to them sooner rather than later.

Choose an area you feel passionate about. Undertaking research involves successes as well as challenges, so choosing a topic you are genuinely interested in will help you overcome challenges and get through the tough times.

Ensure you're compatible with your supervisor. Ask questions, seek advice and share your ideas with academic staff to find out their research interests, and whether you would be a good fit with their current projects.

# Findathesis

Check out our searchable database of masters and doctoral supervisors and research projects that you can join at **www.findathesis.auckland.ac.nz.** 

# Guaranteed postgraduate scholarships

Did you know the University of Auckland offers guaranteed scholarships to highachieving domestic postgraduate research students?

Apply for admission to your chosen postgraduate programme and the University will consider your eligibility for a scholarship at the same time.

Learn more: www.scholarships.auckland.ac.nz

# **Careers in Medical Statistics**

In New Zealand most medical statisticians are employed by universities, hospitals, and district health boards, as well as the private sector in epidemiology, pharmaceutical and biotech industries.

Our graduates have excellent career prospects and are qualified for jobs across the field of medical statistics. With experience, medical statisticians can progress to independent consulting and to leadership roles.

Our graduates have been employed in the following jobs:

- Senior manager (biostatistics), Covance Pty Ltd
- · Data analyst, Injury Prevention Research Center
- · Biostatistician, LSK Global Pharma Service Co., Ltd
- · Statistics advisor, Ministry of Health
- Seconded national expert, European Medicines Agency
- · Statistician, University of California (Davis)
- · Analyst, Compass Health
- Strategic reporting analyst, University of Auckland



# **Tegan Stone**

Bachelor of Science (Honours) in Statistics with a focus on Medical Statistics.

"I finished my undergraduate degree in Statistics and History and wanted to apply my statistics knowledge in a way that aligned with my interests. I found out about the Master of Medical Statistics and knew I wanted to go down that path. I want to be able to use statistical skills in a medical sense to be able to do research to help our society in public health.

"My research topic is to determine the effect of the introduction of high sensitivity troponin on the incidence of myocardial infarction and unstable angina in New Zealand.

"The area of study I am following involves combining the study of Statistics in a medical sense.

# "The skills gained in statistics can be used widely."

"This year is helping me to still progress my skills in statistics but also get an introduction to the context of medical statistics and begin to combine the two areas.

"After completing my honours I hope to continue my studies by completing Masters of Medical Statistics."

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# 

A quick guide to postgraduate

# Statistics

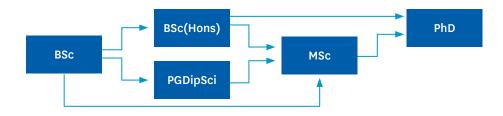
Statistics is the human side of the computer revolution, an information science, the art and science of extracting meaning from seemingly incomprehensible data. From designing an experiment to evaluate the effects of a new treatment for a disease, to analysing a set of data gathered by an ecologist – the diversity of applications of statistics is immense.

Statistics applies to almost any field, ranging from scientific research to business management and media analysis. As a postgraduate Statistics student you could explore topics like Bayesian statistics, bioinformatics, case control sampling and extension, experimental design and quality improvement, and operations research and stochastic processes, plus many more.

Some of the courses available in this subject include:

- Advanced SAS Programing
- Financial Mathematics
- Operations Research

- Probability Theory
- Professional Skills for Statisticians
- Statistical Computing



SCIENCE

Explore and discover everything you need to know about studying postgraduate Statistics: science.auckland.ac.nz/pg-statistics







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> > QS World University Rankings by Subject 2021



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# **Careers in Statistics**

Statistics applies to almost any field and is the ideal partner course for people who want to enhance their quantitative capabilities while pursuing their career choice subject.

Training in statistics gives you an additional string to your bow that can help make you more effective in almost any profession, and will be essential if you wish to develop a career as a statistician.

With a postgraduate qualification in Statistics you will have excellent prospects and find employment in a wide range of industries, including banking, insurance companies, web-based and IT companies, market research organisations, pharmaceutical companies, public health and utility providers, Crown Research Institutes, government departments, universities and technical institutes.

Our graduates have been employed in the following jobs:

- Senior manager advanced analytics, PepsiCo
- · Manager marketing analytics, Constellation Brands
- Web developer, Stack Overflow
- · Statistician, The George Institute for Global Health
- · Senior data administrator, New South Wales Health
- · Chief Scientist, R Studio



# Andrea Havron

#### Doctor of Philosophy in Statistics.

"My background is in marine biology and I obtained my masters degree in Marine Resource Management. My dissertation focused on the development of a statistical model used to predict species occurrences.

"This work demanded a higher level of statistical understanding than I had at the time, so I enrolled in numerous postgraduate statistics classes. These courses sparked a deeper academic curiosity that fuelled my ambition towards pursuing a PhD in Statistics.

"I enjoy the mathematical elements of statistical modelling and the challenges inherent in the development of new statistical methods which can be applied towards analysing marine ecological data."

"It was important for me to work with a faculty who shared my interests in marine biology and statistics and within a facility that valued applied research. I found both of these expectations met here at the University of Auckland.

"My thesis focuses on spatial population and community models of marine species. I have been working with a new modelling platform, Template Model Builder, which incorporates recent advancements in Gaussian Markov Random Fields for improved computing efficiency in modelling spatial random effects.

"Through this work, I plan to develop novel spatial models and techniques for application towards marine ecology."

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