



THE UNIVERSITY OF  
**AUCKLAND**  
Te Whare Wānanga o Tāmaki Makaurau  
NEW ZEALAND

**SCIENCE**

# Welcome to Statistics



Welcome to the Department of Statistics at the University of Auckland.

Statistics graduates have excellent career 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.

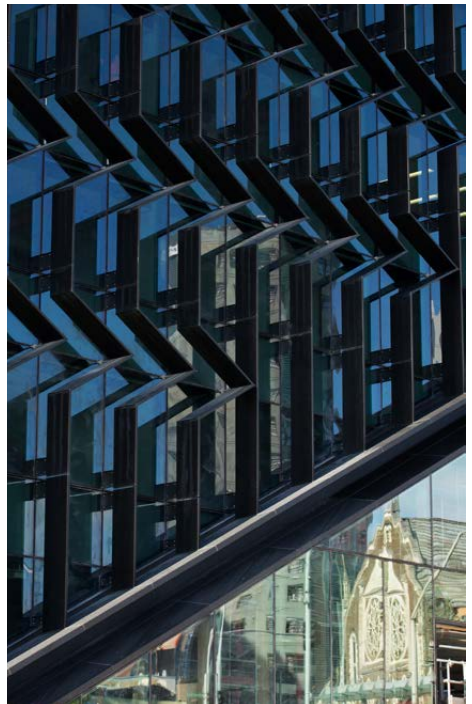
A postgraduate qualification in Statistics will be essential if you wish to develop a career as a statistician. Our department offers a wide selection of graduate courses, and the opportunity to develop research skills. If you decide you are interested in joining the postgraduate programme in statistics at the University of Auckland, we would love to hear from you.

ILZE ZIEDINS  
Head of Department

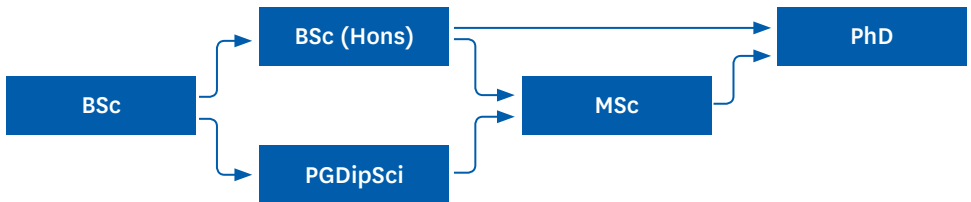
The University of Auckland has the  
**LARGEST\***  
statistics department  
in Australia and New Zealand

Birthplace of 

\*[www.science.auckland.ac.nz/excellence](http://www.science.auckland.ac.nz/excellence)



# Postgraduate study options in Statistics



## Bachelor of Science (Hons) in Statistics

BSc (Hons) is a prestigious qualification, which prepares students for MSc and can provide a suitable basis for PhD study. An Honours year encourages students to develop valuable skills such as problem-solving, independent learning, critical thinking, communication and research analysis, that are highly regarded by employers.

# 1

The average number of years it takes to complete a Bachelor of Science (Hons) degree



### Prerequisites

- A Bachelors degree with a major in Statistics or equivalent (at least three Statistics courses above Stage II and STATS 210 or STATS 225)
- A grade point average of at least 5.5 (B+) in 45 points above Stage II in Statistics, and a total of at least 90 points above Stage II

### Programme structure

- 30 points STATS 781 Honours Project in Statistics
- 15 points STATS 779, 782 or equivalent
- At least 45 points from STATS 701-787, BIOINF 704, POPLHLTH 711
- Up to 30 points from 707-709 level courses in Statistics or related subjects, as approved by the Head of Department






## Postgraduate Diploma in Science (PGDipSci) majoring in Statistics

These diplomas are designed for candidates who have a bachelors degree that includes a substantial amount of statistics, and who want a one-year postgraduate qualification with the option of a further year leading to a Masters degree. There is also the option of majoring in Medical Statistics (see Medical Statistics handbook for more information).

**1** The average number of years it takes to complete a Postgraduate Diploma in Science



### Programme structure

- 15 points STATS 779, 782 or equivalent
- At least 75 points from STATS 701-787, BIOINF 704, POPLHLTH 707-709
- Up to 30 points from 700 level courses in Statistics or related subjects, as approved by the Head of Department

### Prerequisites

- A Bachelors degree majoring in Statistics or the equivalent (at least three Statistics courses at Stage 3 or above with at least a GPA of 2.5 and STATS 210 (or STATS 225 or equivalent)) is required
- If your academic background does not satisfy this requirement, there are bridging options which you can discuss with a Graduate Officer for Statistics. ([office@stat.auckland.ac.nz](mailto:office@stat.auckland.ac.nz))

# Master of Science (MSc) in Statistics

An MSc in Statistics follows a PGDipSci or degree BSc (Hons) (or the equivalent) and can be done either as a taught masters or a research masters. For study options in Medical Statistics, please see (the Medical Statistics Postgraduate Handbook).



## Prerequisites

- Students from the University of Auckland must have completed a PGDipSci, PGDipArts, BSc (Hons) or BA (Hons) in Statistics with a GPA of at least 4.0 (over the entire degree)
- Other students must have a comparable qualification

## Programme structure

### Research Masters

- 90 points: STATS 798 Masters Thesis in Statistics
- 30 points, subject to approval by the Head of Department, from 600 or 700 level courses in Statistics or related subjects

### Taught Masters

- 30 points: STATS 790 Masters Dissertation 1
- 15 points: STATS 732
- At least 45 points from STATS 701–787, BIOINF 704, POPLHLTH 702, 707–709, 711
- Up to 30 points from 707–709 level courses in Statistics or related subjects, as approved by the Head of Department

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# Doctor of Philosophy (PhD) in Statistics

A PhD in Statistics is intended to train students to be able to undertake research in statistics and its more advanced applications. The work done should result in the preparation of a thesis based on original research that makes a significant contribution to the area of specialisation.

We normally require a background in statistics with good supporting mathematics. However, we would also be very happy to consider other applicants with a background suited to any particular part of our research programme, for example, good mathematicians with less statistical knowledge, or good computer scientists with interests in statistical computing issues.

Some of our research students take PhDs in cross-disciplinary areas involving another subject (eg, a medical discipline) and applied statistics. These PhDs typically have two supervisors, one from Statistics and one from another department of the University.

## Quick facts

**Points per degree:** 360 points

**Full-time study:** 3-4 years

**Part-time study:** 6-8 years

**Degree structure:** Research

**Application closing dates:** Apply at anytime

**Start date:** Start at anytime

For more information, go to [www.science.auckland.ac.nz/phd](http://www.science.auckland.ac.nz/phd)

*For a searchable database where you can find masters and doctoral supervisors and research projects that you can join visit [www.findathesis.auckland.ac.nz](http://www.findathesis.auckland.ac.nz)*

| Postgraduate Statistics courses |  |          |
|---------------------------------|--|----------|
| Course code                     | Title                                    | Semester |
| STATS 701                       | Advanced SAS Programming                 | S1       |
| STATS 705                       | Topics in Official Statistics            | S2       |
| STATS 707                       | Computational Introduction to Statistics | S1       |
| STATS 710                       | Probability Theory                       | S1       |
| STATS 721                       | Special Topic in Applied Probability     | S2       |
| STATS 722                       | Financial Mathematics                    | S2       |
| STATS 723                       | Stochastic Methods in Finance            | S1       |
| STATS 726                       | Time Series                              | S2       |
| STATS 727                       | Special Topic in Time Series             | S2       |
| STATS 730                       | Statistical Inference                    | S1       |
| STATS 731                       | Bayesian Inference                       | S1       |
| STATS 732                       | Introduction to Statistical Inference    | S1       |
| STATS 740                       | Sample Surveys                           | S1       |
| STATS 741                       | Special Topic in Sampling                | S1       |
| STATS 747                       | Statistical Methods in Marketing         | S2       |
| STATS 750                       | Experimental Design                      | S1       |
| STATS 760                       | A Survey of Modern Applied Statistics    | S1       |
| STATS 761                       | Mixed Models                             | S2       |
| STATS 762                       | Special Topic in Regression              | S1       |
| STATS 766                       | Multivariate Analysis                    | S2       |
| STATS 768                       | Longitudinal Data Analysis               | S2       |
| STATS 769                       | Advanced Data Science Practice           | S2       |
| STATS 770                       | Introduction to Medical Statistics       | S1       |
| STATS 773                       | Design and Analysis of Clinical Trials   | S2       |
| STATS 779                       | Professional Skills for Statisticians    | S1       |
| STATS 780                       | Statistical Consulting                   | S2       |
| STATS 782                       | Statistical Computing                    | S2       |
| STATS 784                       | Statistical Data Mining                  | S2       |
| STATS 785                       | Topics in Statistical Data Management    | SS, S2   |

For course description and more information, go to [www.stat.auckland.ac.nz/courses](http://www.stat.auckland.ac.nz/courses)

# Careers in Statistics

Statistics is the human side of the computer revolution, an information science, the art and science of extracting meaning from seemingly incomprehensible data. Statistics applies to almost any field. For this reason, many students find it complements their core area of interest or degree extraordinarily well, giving them an additional string to their bow that opens up new and exciting career opportunities.

Academic research

Actuary

Banking

Bioinformatics

Biology

Business analysis

Data Scientist

Ecology

Education

Energy

Engineering

Finance

Government

Market research

Marketing

Medical statistics

Operations research

Organisational psychology

Policy development

Statistician (eg. Biometrician)

School teacher



*“By the time I graduated with my Master’s degree, I knew I wanted my PhD research to involve statistical theory working with the \*R project, which originated in the Department of Statistics. So the University of Auckland was the ideal place to continue my study.*”

*“My thesis topic focuses on problems concerning the generalised hyperbolic (GHyp) distribution and fits into both statistical theory work and computing. After I have completed my qualification, my aim is to work independently and have a solid foundation to enter the industry.*”

*“I’ve made many good friends throughout my study and I’ve really enjoyed my time at university.”*

*Xinxing (Joyce) Li studied a Master of Science majoring in Statistics and is currently studying toward a PhD in Statistics.*

*\*The R Project is a free software environment for statistical computing and graphics*

**Find out where  
a postgraduate  
degree in Statistics  
can take you.**



## Disclaimer

Although every reasonable effort is made to ensure accuracy, the information in this document is provided as a general guide only for students and is subject to alteration. All students enrolling at the University of Auckland must consult its official document, the University of Auckland Calendar, to ensure that they are aware of and comply with all regulations, requirements and policies.



# Helpful information

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|--|--|
| Academic dates                             | <a href="http://www.auckland.ac.nz/dates">www.auckland.ac.nz/dates</a>   |
| Accommodation                              | <a href="http://www.accommodation.auckland.ac.nz">www.accommodation.auckland.ac.nz</a>   |
| Apply for postgraduate study               | <a href="http://www.auckland.ac.nz/applynow">www.auckland.ac.nz/applynow</a>   |
| Career Development and Employment Services | <a href="http://www.cdes.auckland.ac.nz">www.cdes.auckland.ac.nz</a>   |
| Childcare                                  | <a href="http://www.auckland.ac.nz/childcare">www.auckland.ac.nz/childcare</a>   |
| Degree planning and course advice          | <a href="http://www.science.auckland.ac.nz/student-centre">www.science.auckland.ac.nz/student-centre</a>   |
| Disability Services                        | <a href="http://www.disability.auckland.ac.nz">www.disability.auckland.ac.nz</a>   |
| How to enrol                               | <a href="http://www.auckland.ac.nz/enrolment">www.auckland.ac.nz/enrolment</a>   |
| Information for postgraduate students      | <a href="http://www.postgraduate.ac.nz">www.postgraduate.ac.nz</a>   |
| International students                     | <a href="http://www.international.auckland.ac.nz">www.international.auckland.ac.nz</a>   |
| Libraries and Learning Services            | <a href="http://www.library.auckland.ac.nz">www.library.auckland.ac.nz</a>   |
| Māori and Pacific students                 | <a href="http://www.science.auckland.ac.nz/tuakana">www.science.auckland.ac.nz/tuakana</a>   |
| Need help?                                 | <a href="http://www.askauckland.ac.nz">www.askauckland.ac.nz</a>   |
| Postgraduate Students' Association         | <a href="http://www.pgsa.org.nz">www.pgsa.org.nz</a>   |
| Rainbow Science Network for LGBTI students | <a href="http://www.science.auckland.ac.nz/rainbowsience">www.science.auckland.ac.nz/rainbowsience</a>   |
| Scholarships, awards and fees              | <a href="http://www.scholarships.auckland.ac.nz">www.scholarships.auckland.ac.nz</a><br><a href="http://www.auckland.ac.nz/fees">www.auckland.ac.nz/fees</a><br><a href="http://www.auckland.ac.nz/studentloansandallowances">www.auckland.ac.nz/studentloansandallowances</a> |
| Support for Science students               | <a href="http://www.science.auckland.ac.nz/support">www.science.auckland.ac.nz/support</a>   |

**Questions about Statistics? Email [office@stat.auckland.ac.nz](mailto:office@stat.auckland.ac.nz)**



## Connect with us

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Web: [www.stat.auckland.ac.nz](http://www.stat.auckland.ac.nz)



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