



## Main entry point for students who are intending to continue in Science or Engineering

**MATHS 150 Advancing Mathematics 1:** This is the “Gateway to Mathematics” course, and is the post-Year 13 entry point for students intending to major in Mathematics, Physics, Statistics, Computer Science, Engineering, Biology, Geography, or Chemistry, or needing to keep their mathematical options open. It develops ideas in calculus, and introduces linear algebra. The emphasis is on the underlying ideas and developing mathematical thinking and problem solving. Recommended preparation for MATHS 250 and 208.

## For students who have passed NCEA Level 3 Calculus (or equivalent)

**MATHS 108 General Mathematics 1:** This is the post-Year 13 entry point for students whose background is not sufficient for MATHS 150 but who wish to take mathematics to support a BCom degree or major in Science. The topics covered are similar to MATHS 150, but the emphasis is on techniques and applications. Contexts from science, informatics, commerce, and biomedicine are used to illustrate the underlying role played by mathematics and provide students with the knowledge they need for these fields. Students can continue from MATHS 108 into MATHS 150.

## A core course for students who wish to advance in Applied Mathematics

**MATHS 162 Modelling and Computation:** In this introduction to mathematical modelling and scientific computing, students will learn how to formulate mathematical models and how to solve those using numerical and other methods.

## A course that prepares students for MATHS 108 and MATHS 150

**MATHS 102 Functioning in Mathematics:** This introduction to calculus focuses on the development of mathematical skills and concepts leading up to calculus, through active participation in problems using functions to model real life contexts.

For details please see [www.math.auckland.ac.nz](http://www.math.auckland.ac.nz)

## General Education courses

*These courses can be used to fulfil the General Education requirements or as an interest course within a BSc, BA degree. To take a course as General Education, students must enroll in the G version.*

**MATHS 101/101G Mathematics in Society:** Students encounter the role mathematics plays in understanding and guiding human activity. Teaching is thematic and students experience how fundamental mathematical ideas occur in modelling diverse features of our society such as the environment (eg. air pollution) and medicine (eg. burns, drug dosages). MATHS 101 can lead on to MATHS 102.

## MATHS 190/190G Great Ideas Shaping our World:

Mathematics contains many powerful and beautiful ideas that have shaped the way we understand our world. This course explores some of the grand successes of mathematical thinking. No formal mathematics background is required, just curiosity about topics such as infinity, paradoxes, cryptography, knots and fractals.

## Preparation courses

**Superstart** is a two-week course held from mid-February each year. The course is an intensive preparation specifically for students enrolling in MATHS 108, MATHS 150, ENGSCI 111 or PHYSICS 111, who do not have a strong background in Mathematics with Calculus.

**New Start** is run through the School of Business and provides preparation for students (of 20 years and older) who want to study for a BCom. It prepares students for MATHS 102. Classes are held on Thursday evenings from 6 – 8pm, over two semesters.

## Students who do not have University entrance

### Tertiary Foundation Certificate (TFC)

James finished year 13 at school last year, but he didn't get University entrance. Maria left school several years ago and would like to begin a degree. She knows that she has forgotten a lot and is not very confident of success. Many students like James and Maria have completed the University of Auckland's TFC programme and have now graduated. TFC is a full-year, full-time programme. Mathematics and English are compulsory and two other subjects are selected from History, Geography, Chemistry, Physics and Biology.

## Students still at School

### Mathematical Acceleration and eXtension (MAX)

is a programme designed for Year 13 students who:

- enjoy academic challenge
- have shown themselves to be very able mathematicians
- can handle a solid workload.

If accepted, students enrol in MATHS 153 in the first semester. Internal classes are held once a week at the university in the late afternoon. Extramural students are catered for via recorded lectures and a CD. Brochure available from [enquiries@math.auckland.ac.nz](mailto:enquiries@math.auckland.ac.nz) or see [www.math.auckland.ac.nz/Teaching/MAX](http://www.math.auckland.ac.nz/Teaching/MAX)

**The International Mathematics Olympiad (IMO)** is an international competition. Students who show talent for, and interest in, mathematics can be part of the process of building and developing the national team. The organisers provide graduated programmes for students, arrange competitions at the university and run training camps for selected competitors. Students can enrol at any age. Contact: [reilly@math.auckland.ac.nz](mailto:reilly@math.auckland.ac.nz)

### MathsReach [www.mathsreach.org](http://www.mathsreach.org)

This great resource created by the New Zealand Institute of Mathematics and its Applications contains video interviews with practicing mathematicians and statisticians, stories about varied uses of mathematics and statistics, and details of courses offered at New Zealand universities.

## Māori and Pacific Island Students

**Tuākana Programme** is available to all first year, second year and TFC students who identify themselves as Māori or Pacific Island. Tutors offer support, advice and assistance through workshops and tutorials. The programme's home room is on the 1st floor of the Mathematics building (Building 303).

**Aldis Scholarships** are offered at entry to Māori and Pacific Island students, usually from low decile schools. Nominations are received from Mathematics teachers. Students are enrolled for a summer school mathematics course. This is usually MATHS102 but exceptional students may be allowed to take MATHS 108. **The scholarship offers:** Course fees, resource materials, \$1000 to cover expenses during the summer school and ongoing academic and pastoral support.

**Note to Teachers:** when nominating students for this scholarship, please give preference to those students who are likely to gain entrance to university.