

ENTRY REQUIREMENTS

Minimum university entry requirements apply. To enrol in first-year Calculus & Applications, the prerequisites are Mathematics MME5C or MSP5C. Students may also enrol after having successfully completed the mathematics bridging unit offered during the summer semester. The prerequisite to enrol in Data Handling & Statistics and Mathematics for Computer Science is Mathematics - Applied MAP5C.

FOR MORE INFORMATION

Full details of courses are published annually in the University of Tasmania *Course and Unit Handbook*. Go to the University's website www.utas.edu.au/handbooks

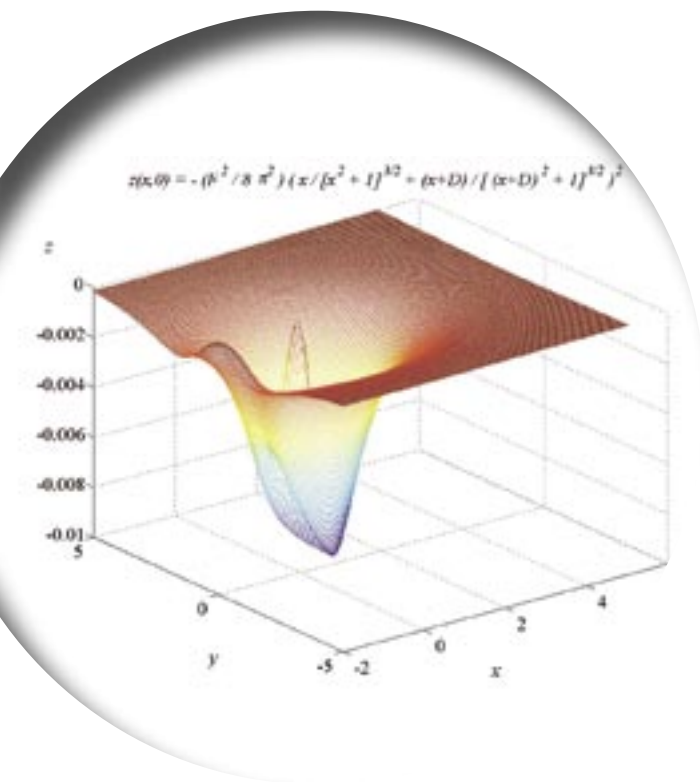
OR CONTACT

School of Mathematics & Physics
University of Tasmania
Private Bag 37
Hobart, Tasmania 7001
Phone: (03) 6226 2439
Fax: (03) 6226 2410
Email: Karen.Bradford@utas.edu.au
www.utas.edu.au/maths

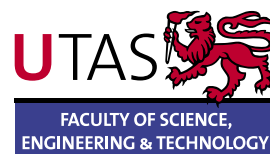
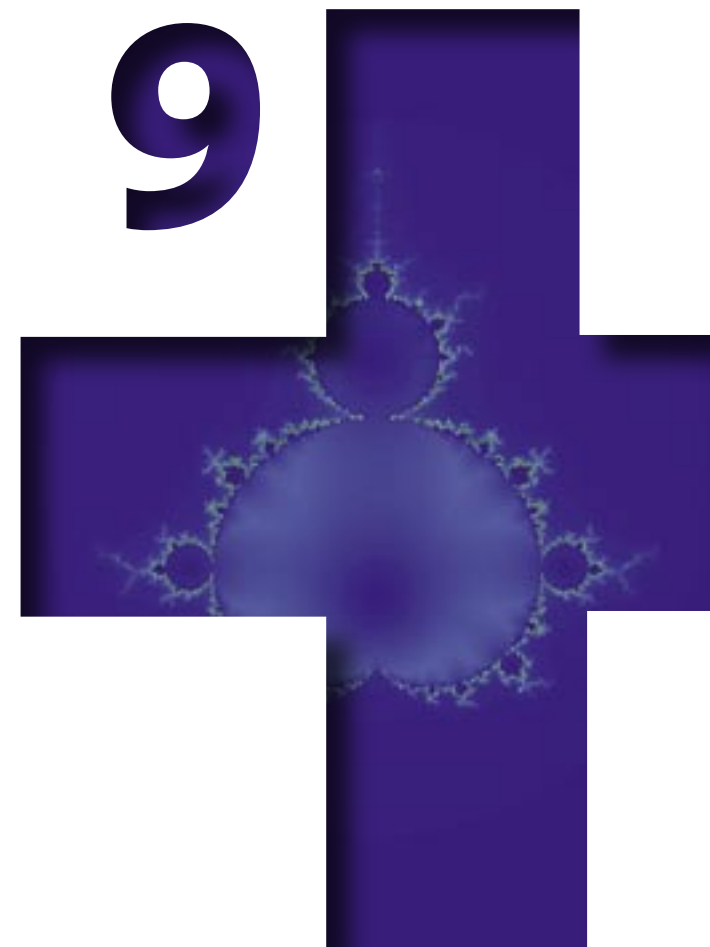
Mathematics



FACULTY OF SCIENCE, ENGINEERING & TECHNOLOGY



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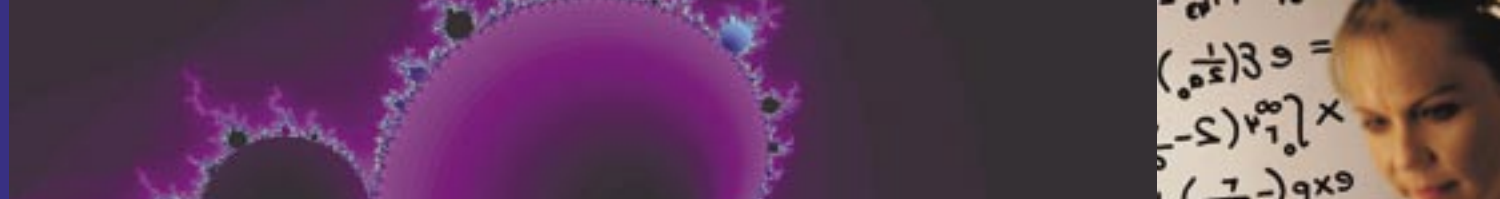
School of
Mathematics & Physics
CRICOS Provider Code:00586B

*The Faculty of Science, Engineering and Technology
encourages applicants from all equity groups.*

0701d March 2005

UNIVERSITY OF TASMANIA

DID YOU KNOW
that medical 'photos' taken by
ultrasound, CAT scan and MRI machines
are not really photos at all, but
mathematically constructed images?



MATHEMATICS

WHY STUDY MATHEMATICS?

The range of professions to which mathematics is applicable is continually expanding. In addition to its more traditional role in modelling in the physical sciences, mathematics is now a key component in the analysis of financial markets, coding and cryptography, the design of computer networks and weather and climate modelling.

Mathematics can be used to solve problems in fields that range from psychology to biology, chemistry and physics to engineering and commerce, to information technology. The need for mathematics in the biological sciences, economics and medical technology is ever increasing.

Mathematics should be considered as the science component of a combined degree with arts, commerce or law. Surveys have shown that employers perceive that mathematics graduates have good problem-solving skills, the capacity for logical thought and the ability to think laterally. Studying mathematics enhances these attributes.

CAREERS WITH MATHEMATICS

Some of the employment opportunities for mathematics graduates are:

- Weather forecasting
- Statistics and analysis of data
- Resource management (operations research)
- Market forecasting and finance
- Analysis of economic data
- Computer programming
- Medical technology
- Logical design
- Industrial consultancy
- Secondary and tertiary teaching
- Telecommunications industry

Employers include government agencies (such as the Defence Force and the Australian Bureau of Statistics), CSIRO, universities and colleges. In the private sector, employment opportunities include banks, computer firms, insurance and mining companies.

WHAT MAKES US DISTINCTIVE?

- We have a fully integrated mathematics-physics program.
- We offer a mathematics bridging course that qualifies students for entry into first-year mathematics units.
- We offer smaller classes where possible, to enable individual attention to you, the student.

COURSE CONTENT

The following is a general guide to completing a Bachelor of Science with a major in mathematics.

Year 1

Calculus & Applications 1A – provides the fundamental tools of single variable calculus that are needed in the application of mathematics to science and engineering. It extends the ideas of differentiation and integration and shows how they can be used to optimise various processes. There is also an introduction to the powerful modern tools of symbolic computer algebra.

Calculus & Applications 1B – continues the study of calculus in the second semester with the focus on integration and some linear algebra; also includes an introduction to differential equations, which are important in modelling growth and decay problems that arise in fields such as chemistry and biology.

Mathematics for Computer Science 1 – focuses on some of the mathematics that underpins concepts in computer science (although no previous computing experience is required). The material covered includes Boolean logic, vector spaces and linear transformations.

Data Handling & Statistics 1 – a 'hands-on' statistics course designed to introduce students to collecting and analysing data, drawn from various disciplines of practical relevance.

Three first-year mathematics units are taught in Launceston: Mathematics 1 and Mathematics II covers the material of Calculus & Applications 1. Data Handling & Statistics is also offered.

For students who have completed Mathematics - Specialised MSP5C and are interested in an advanced course, there is Calculus & Applications 1S.

Years 2 and 3

In second and third year, further development takes place in calculus, analysis, computational and numerical methods, algebra, discrete mathematics, operations research and data handling and statistics.

SCHOLARSHIPS

The University of Tasmania offers national undergraduate scholarships in mathematics. To find out more, visit the University website www.utas.edu.au, email the Scholarships Office at Tas.Scholarships@utas.edu.au or talk to your careers adviser.

FURTHER STUDY

The School of Mathematics and Physics offers the following postgraduate courses:

- Graduate Diploma of Science, in Mathematics
- Master of Applied Science, in Mathematics
- Master of Science, in Mathematics
- Research higher degrees at masters and doctoral levels

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