

Experience. Science and Mathematics

09

- » Mathematical Sciences
- » Quantitative Finance
- » Science
- » Double Degrees



Welcome.

Choosing to study at UniSA means you'll graduate with more than just a degree. You'll be ready to progress in the profession of your choice. You'll have gained an international network. And you'll have the skills to make an immediate and lasting contribution to society. We look forward to welcoming you.

Professor Peter Høj

Vice Chancellor and President, University of South Australia

UniSA helps you solve the problems of the real world

- » The Hypatia Scholarship for Mathematically talented women and the new SA Water Hypatia Scholarship are offered to mathematically talented female year 12 students by the School of Mathematics and Statistics and by SA Water. The Scholarships pay the HECS fees in the first year of study for students enrolled in the Bachelor of Mathematical Science or the Bachelor of Quantitative Finance
- » Employment rates for Bachelor degree graduates are: 93 per cent for Mathematical Sciences, 94 per cent for Computing and Mathematics and 99 per cent for Computer Science
- » Selected UniSA students have the exclusive opportunity to work with business or industry on a major Mathematics Clinic Project. This is the only program of its type in Australia and more than 250 organisations have participated worldwide, resulting in over 1000 completed projects in the areas of Engineering, Computer Science, Mathematics, Physics and multidisciplinary areas
- » Of bachelor degree graduates who were available for full-time employment in 2007, 84.5 per cent were in full-time employment within four months of completing their degrees. These are the strongest employment figures for new graduates since 1990.¹

¹ Source Australian Mathematics Society Jobs for Mathematicians Centre.

¹ GradFiles, Schools Edition, December 2007 (Graduate Careers Australia).

Experience. Science and Mathematics

Science forms the foundation of our dynamic world and has a particularly close affiliation with industry and technology. The Bachelor of Science is one of UniSA's most flexible programs, with all streams providing students with fundamental experience in practical fieldwork and active, project-based learning activities. Studies within the disciplines of physics, biology, chemistry, information technology, environmental studies, geoinformatics or geology lead to a range of inspiring and well paid career paths.

Mathematics is an important part of our everyday life and graduates of this discipline are highly sought. UniSA's Bachelor of Mathematical Sciences gives students problem solving skills, an ability that is highly valued by prospective employers. Graduates have a broad selection of professions to choose from, especially since mathematics is used in, and underpins, all areas of science, finance, engineering, agriculture and health science. Fields in which mathematics graduates are in great demand include government, teaching, logistics, business, finance and computing.

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Bachelor of Mathematical Sciences

(Applied Mathematics), (Statistics), (Optimisation)

Open Day information sessions

Sunday, 17 August 2008
9.45 am, room BH 2-16
City West campus
www.unisa.edu.au/openday

Program information sessions

Tuesday, 2 September 2008
Tuesday, 9 December 2008
6.30 pm, room MC2-03
Mawson Lakes campus
www.unisa.edu.au/infosessions

UniSA program code:	LBMA
SATAC code:	434661
CRICOS code	
(international students only):	057871D
TER (February 2008 cutoff):	88.40
Program length:	3 years
Home campus:	Mawson Lakes
Program fees:	Commonwealth supported
Program fees	
(international students only):	A\$18,350 per annum
Prerequisites:	Stage 2 Mathematical Studies
Assumed knowledge:	None
Accepts Special Entry (STAT):	Yes
External study available:	No
Part-time study available:	Yes
TAFE credit available:	Yes
Honours study available:	Yes
Scholarships available:	www.unisa.edu.au/scholarship

Program Overview

Graduates of this program are engaged in activities such as mathematical modelling, data collection and analysis, numerical analysis and computer implementations of solutions within a diversity of employment positions. Analytical and problem-solving skills developed in this program are highly valued by prospective employers.

Scholarships available for this program include the Hypatia Scholarship, for mathematically talented women, and entrance scholarships for students who achieve a TER of 90 or above in their final year of secondary school study. For further information and

scholarship criteria visit www.unisa.edu.au/scholarship

Selected students in their final year of study in this program also have the opportunity to engage in a semester of study overseas on student exchange, either in the Netherlands or California.

What will I study?

In the first two years of the program students take courses in computing, statistics, operations research and optimisation, numerical mathematics and applied mathematics. In their final year, students have the option of specialising in one of three areas: Applied Mathematics, Optimisation, or Statistics, and within

each specialisation students have a number of elective courses to choose from.

In the final year of the program students taking the Applied Mathematics specialty are selected on merit to be engaged in the Mathematics Clinic, where one-third of their year involves working on a major project with industry. The Mathematics Clinic was introduced in 2004 and has involved collaboration with Woolworths Supermarkets, BHP-Billiton and the Electricity Supply Industry Planning Council.

Involvement in the Clinic can open up employment opportunities for graduates and make them more aware of the potential applications of mathematics in business and industry.

The School of Mathematics and Statistics has collaborative relations with the University of Twente in the Netherlands and Harvey Mudd College in California, USA. Over the past ten years, several of our final-year students have studied in each of these institutions and all have found their experiences to be both educationally enriching and culturally broadening.

What does it take?

Students with a passing qualification in Stage 2 Mathematical Studies (or equivalent) and a competitive TER will qualify for entry into this program. Stage 2 Specialist Mathematics is also recommended. Above all we are seeking prospective students who have ability and a genuine interest in learning more about mathematics. Our program is well designed to nurture and develop these skills and interests.

Graduates of sufficient merit may enrol in an honours program in Industrial and Applied Mathematics. Successful completion of this program then provides the opportunity for postgraduate study. Testimony to this program and its predecessors is that approximately half of our current group of postgraduate research (PhD) students are graduates from these programs.

Who will employ me?

Specific areas for graduate employment include:

- » the finance sector, which includes banks, financial organisations, insurance and investment. Employment opportunities for mathematics graduates in this sector are excellent.
- » the Defence sector, including organisations such as the Defence Science and Technology Organisation (DSTO), BAE Systems, Tenix and ASC. DSTO has been a major sponsor of our Hypatia Scholarship program since its inception in 1998 and we have enjoyed an excellent working and collaborative research relationship with them over many years.
- » research-based organisations such as the Australian Commonwealth Scientific and Research Organization (CSIRO), with whom we have a strong working relationship, and the South Australian Research and Development Institute (SARDI).
- » the mining and oil sector including companies such as BHP-Billiton.
- » the state and federal public service sectors, including health (statisticians), agriculture (mathematical modelling and statistics) and the Australian Bureau of Statistics.

Honours

Graduates of sufficient merit will have the opportunity to proceed to a further year of study in our Honours program LHMS.

Program requirements

FIRST YEAR

First Half (Study Period 1, 2 or 3)

Calculus 1
Mathematical Modelling
Programming in Java 1
Statistical Methods

Second Half (Study Period 4, 5 or 6)

Calculus 2
Discrete Mathematics
Programming in Java 2
Linear Algebra

SECOND YEAR

First Half (Study Period 1, 2 or 3)

Differential Equations 1
Linear Programming
and Networks
Statistical Modelling
Real and Complex Analysis

Second Half (Study Period 4, 5 or 6)

Numerical Methods 1
Statistical Foundations
Introduction to
Stochastic Processes
Mathematical Communication

THIRD YEAR

First Half (Study Period 1, 2 or 3)

Applied Mathematics Stream
Mathematics Clinic 1
Differential Equations 2
BUGE Elective
Mathematics Elective
Statistics Stream
Differential Equations 2
BUGE Elective
Financial Time Series
Categorical Data Analysis
Optimisation Stream
Optimisation
Differential Equations 2
BUGE Elective
Mathematics Elective

Second Half (Study Period 4, 5 or 6)

Applied Mathematics Stream
Mathematics Clinic 2
Mathematics Electives
Statistics Stream
Multivariate Statistical Analysis
Statistics Project
BUGE Elective
Mathematics Elective
Optimisation Stream
Advanced Operations Research
Decision Science
BUGE Elective
Mathematics Elective

**Han Vu**

Bachelor of Applied Science (Mathematical and Computer Modelling) [now Bachelor of Mathematical Sciences]
Bachelor of Applied Science (Honours) (Industrial and Applied Mathematics)

'I did work experience with the Defence Science Technology Organisation (DSTO), where I looked at underwater bearings-only tracking.

In my final year, I had the opportunity to work on a group industry project with BHP Billiton that involved their Olympic Dam mine.

It was fantastic working on a problem we knew had real-life, not just theoretical applications.

I am currently employed with DSTO.'

Bachelor of Quantitative Finance

Open Day information sessions

Sunday, 17 August 2008
9.45 am, room BH 2-16
City West campus
www.unisa.edu.au/openday

Program information sessions

Tuesday, 2 September 2008
Tuesday, 9 December 2008
6.30 pm, room MC2-03
Mawson Lakes campus
www.unisa.edu.au/infosessions

UniSA program code:	DBQF
SATAC code:	424431
CRICOS code (international students only):	048563B
TER (February 2008 cutoff):	70.70
Program length:	3 years
Home campus:	City West
Program fees:	Commonwealth supported
Program fees (international students only):	A\$17,900 per annum
Prerequisites:	Stage 2 Mathematical Studies
Assumed knowledge:	None
Accepts Special Entry (STAT):	Yes
External study available:	No
Part-time study available:	Yes
TAFE credit available:	Yes
Honours study available:	Yes
Scholarships available:	www.unisa.edu.au/scholarship

Program Overview

This program provides sound professional training in mathematics and statistics, while specialising in areas of financial applications.

Students develop aptitudes and interests in mathematics and statistics through:

- » a tailored program providing skills and knowledge in an area of high demand for graduates (mathematics and statistics as applied in the finance, banking and insurance industries)
- » a program which offers a range of finance courses including actuarial studies. Graduates from this program will have a wide selection of job opportunities in the finance sector
- » courses that focus on the application of mathematics and statistics to solving real-life problems from business and commerce
- » sufficiently general skills and knowledge to allow the pursuit of a career not just in the finance sector but in many areas where mathematics and statistics are used
- » a high level of individual attention and many courses with team projects.

Scholarships available for this program include the Hypatia Scholarship, for mathematically talented women, the SA Water Hypatia Scholarship and entrance scholarships for students who achieve a TER of 90 or above in their final year of secondary school study.

For more information and scholarship criteria visit www.unisa.edu.au/scholarship

Selected students in their final year of study may have the opportunity to engage in a semester of study overseas.

What will I study?

Throughout the three years of study, students develop their expertise in mathematics and statistics, with increasing levels of application to specialised areas of quantitative finance, risk management, and actuarial studies. Many of these courses involve learning to use specialised software. The mathematical and statistical applications are underpinned by contextual courses in economics, business and finance offered by the School of Commerce.

What does it take?

Students should have a strong interest in mathematics and statistics, and in applications in banking and finance. Those with a passing qualification in Stage 2 Mathematical Studies (or equivalent), and a competitive TER, will qualify for entry into this program. However, Stage 2 Specialist Mathematics is highly desirable. Students with a logical, inquiring and creative mind, and an interest in mathematics and finance, are encouraged to apply.

Who will employ me?

This program provides career opportunities in many areas of financial application including risk management, financial planning, financial modelling and actuarial science within the banking, insurance, investment and general finance sectors.

Further Study

Graduates of sufficient merit will have the opportunity to proceed to further study in Honours and Masters and research PhD programs.

Honours

Graduates of sufficient merit will have the opportunity to proceed to a further year of study in our Honours program LHMS.

Program requirements

FIRST YEAR

First Half (Study Period 1, 2 or 3)

Calculus 1
Theory of Interest
Statistical Methods
Financial Management

Second Half (Study Period 4, 5 or 6)

Calculus 2
Programming in Java 1
Linear Algebra
Microeconomics

SECOND YEAR

First Half (Study Period 1, 2 or 3)

Linear Programming
and Networks
Differential Equations 1
Statistical Foundations
Business Finance

Second Half (Study Period 4, 5 or 6)

Introduction to
Stochastic Processes
Mathematical Communication
Life Contingencies
International Currency
and Banking Markets

THIRD YEAR

First Half (Study Period 1, 2 or 3)

Financial Time Series
Optimisation
Categorical Data Analysis
Portfolio and Fund Management

Second Half (Study Period 4, 5 or 6)

Decision Science
Elective
Risk Theory
Investment Science



Nancy Matricciani

Bachelor of Quantitative Finance

'I will have the opportunity to work at DSTO during the summer holidays after completing my second year of study. This will give me the opportunity to experience employment in the field of mathematics and how the qualities gained from my studies will assist me after completing my degree.'

Bachelor of Science

Open Day information sessions

Sunday, 17 August 2008
12.45 pm, room HH 3-09
City West campus
www.unisa.edu.au/openday

Program information sessions

Wednesday, 3 September 2008
Wednesday, 10 December 2008
6.30 pm, room MC1-03,
Mawson Lakes campus
www.unisa.edu.au/infosessions

UniSA program code:	LBSC
SATAC code:	434201
CRICOS code (international students only):	024220A
TER (February 2008 cutoff):	63.25
Program length:	3 years
Home campus:	Mawson Lakes
Program fees:	Commonwealth supported
Program fees (international students only):	A\$17,900 per annum
Prerequisites:	None
Assumed knowledge:	For students selecting studies in Applied Physics: Stage 2 Physics and Mathematical Studies. For students selecting studies in Biology or Chemistry: Stage 2 Chemistry. For students selecting studies in Mathematics and Statistics: Stage 2 Mathematical Studies
Accepts Special Entry (STAT):	Yes
External study available:	No
Part-time study available:	Yes
TAFE credit available:	Yes
Honours study available:	No
Scholarships available:	www.unisa.edu.au/scholarship

Program overview

Science is concerned with the systematic study of the nature and behaviour of the physical universe by observation, experiment and measurement. It enables us to model the universe and to make predictions and informed decisions.

This program provides a broad science education through a combination of majors and minors from a variety of science disciplines. It is also permissible to choose one minor from any discipline area in which a minor is offered by the University.

The program produces graduates who have an understanding of the fundamental concepts of the sciences that they have elected to study, while the emphasis on laboratory and fieldwork is designed to give graduates the necessary skills to apply their knowledge.

What will I study?

The Bachelor of Science is one of the most flexible programs to study at UniSA. Almost the entire program is made up of elective majors and minors and students can choose from the following areas of study:

- » Applied Physics allows students to pursue in-depth studies in the areas of advanced materials, computational physics and medical health physics.
- » Biology includes studies into plant and animal biology, cell biology, physiology, environmental biology, biochemistry and introductory biotechnology.
- » Chemistry offers in-depth studies in both physical and inorganic chemistry.

- » Computer Science combines core studies in computer science, information systems, software engineering and internet technology.
- » Environmental Systems provides a broad understanding of environmental sciences and policy, including the contemporary concepts of ecosystem management and sustainable development that link natural and social systems. Students receive a solid foundation in the natural sciences and field research techniques, while engaging in active, project-based learning opportunities.
- » Geospatial Information Systems (GIS) are computerised systems that store and analyse spatial or geographic data. Data stored by coordinates in 2D, 3D or 4D space are related to relational databases, which can be used to perform spatial queries and analyses.
- » Geoscience is the study of the earth and its resources. This stream introduces the basic concepts of geology and develops these concepts with emphasis on science applications and the practice of geoscience in environmental management and civil engineering.
- » Mathematics provides core studies in applied mathematics, statistics and optimisation.
- » Psychology can be taken as a minor or sub-major. After studies in basic psychology students may select from further topics for more advanced study.

What does it take?

Students should have an inquiring mind and a keen interest in science. Some knowledge and skills in mathematics, biology, chemistry, physics, or related disciplines are also necessary, depending on the stream in which students wish to specialise.

In addition, students must possess a variety of personal skills and qualities to succeed in their chosen profession. Scientists in any discipline need well developed interpersonal abilities, verbal and written communication skills, problem-solving skills, creative thinking and the ability to work collaboratively.

Who will employ me?

Given the broad nature of the scientific field, employment prospects for science graduates are extensive. Graduates may find work in research and development positions in private or government laboratories, the medical and pharmaceutical industries, manufacturing, environmental management, the food and beverage industry, oil and mining industries, information technology, defence science, meteorology, or banking, management and finance industries.

Laboratory- and fieldwork in this program is designed to teach students the necessary skills to apply their knowledge in a scientific field of interest.

Program requirements

FIRST YEAR

First Half (Study Period 1, 2 or 3)

Communication for Information Systems and Technology
Science major 1
First minor 1
Second minor 1

Second Half (Study Period 4, 5 or 6)

Statistics for Laboratory Sciences 101
Science major 2
First minor 2
Second minor 2

SECOND YEAR

First Half (Study Period 1, 2 or 3)

Science major 3
Science major 4
First minor 3
Second minor 3

Second Half (Study Period 4, 5 or 6)

Science major 5
Science major 6
First minor 4
Second minor 4

THIRD YEAR

First Half (Study Period 1, 2 or 3)

Science major 7
Elective 1
Elective 2
Elective 3

Second Half (Study Period 4, 5 or 6)

Science major 8
Elective 4
Elective 5
Elective 6



Tricia Cranwell

Bachelor of Science
Graduated 2007

'Our class of about 20 students went to Maslins Beach to dig up fossils. It was a great time as we discovered many unusual animals that lived thousands of years ago. It was a very cold winter's day and we got covered in mud, but it will always be a great memory.

It's hard to learn about animals or creatures that no longer exist. It's hard to visualise a creature from a textbook. The Maslins Beach practical trip was very rewarding as we got to keep a part of history long forgotten and were able to touch and hold a creature instead of trying to visualise it.'

Bachelor of Science (Honours) (Specialisation)

Open Day information sessions

Sunday, 17 August 2008
12.45 pm, room HH 3-09
City West campus
www.unisa.edu.au/openday

Program information sessions

Wednesday, 3 September 2008
Wednesday, 10 December 2008
6.30 pm, room MC1-03,
Mawson Lakes campus
www.unisa.edu.au/infosessions

UniSA program code:	LHSH
SATAC code:	434731
CRICOS code (international students only):	045411J
TER (February 2008 cutoff):	N/A
Program length:	4 years
Home campus:	ML
Program fees:	Commonwealth supported
Program fees (international students only):	A\$18350 per annum
Prerequisites:	None
Assumed knowledge:	Stage 2 Mathematical Studies, Chemistry, Physics
Accepts Special Entry (STAT):	Yes
External study available:	No
Part-time study available:	Yes
TAFE credit available:	Yes
Honours study available:	No
Scholarships available:	www.unisa.edu.au/scholarship

Program overview

This four-year program is designed to appeal to a distinct cohort of high-achieving and highly motivated students from all over Australia and Internationally. These students have a genuine interest in making a contribution to scientific studies in fields that are of fundamental importance to today's society and consistent with major areas of scientific activity within the Division of Information Technology and the Environment. Students in this program engage in advanced learning, have the opportunity to work with world-class researchers and engage in research projects and clinics in their first-and final-year of study. Students select a specialisation from among the following

areas of scientific study: Ecology and Biodiversity; Medical and Health Physics; Nanotechnology and Biomaterials; Sustainable Energy and Water Science.

What will I study?

In first-year, all students study fundamental courses in chemistry, mathematics and physics, and participate in a multidisciplinary group project based on a hot topic in science. The project will be supported by studies in communication.

Second year includes courses in biology and environmental science. Courses in the student's chosen specialisation commence in second year and continue through to the fourth-year, including a major project

or clinic. Electives from other areas of science may be chosen in the third and fourth years.

Each student also chooses a science minor and a collection of elective courses. In many cases, it is possible to extend the minor into a major. The program has a strong practical and industry focus, while also show casing research strengths.

What does it take?

Year 12 applicants must obtain a high TER and all applicants should have an aptitude and passion for scientific study.

Who will employ me?

Employment opportunities will depend on the choice of specialisation.

The global emphasis on our environment, with an increasing focus on water resource management, indicates that graduates of this multidisciplinary science program with specialisations in water resources management, ecology and sustainability will have the background required to work in a variety of workplaces both public and private.

Medical and healthcare relies greatly on advances in science and technology that require support of medical physicists for development and routine operation. Most hospitals employ medical physicists who work in many areas of health care including radiotherapy, radiology, cardiology, and nuclear medicine. State health and environmental protection departments employ health physicists to act in monitoring roles and to oversee the safe use of microwaves, sound and laser radiation.

Nanotechnology is acknowledged as a major driver of current and future advances in a range of areas including health and medical science, biotechnology, optoelectronics, and materials science.

Program Requirements

FIRST YEAR

First Half (Study Period 1, 2 or 3)

Communication for Information Systems and Technology
Applied Physics 1
Chemistry 100
Engineering Mathematics 1

Second Half (Study Period 4, 5 or 6)

Hot Topics in Science Project
Applied Physics 2
Chemistry 101
Engineering Mathematics 2E

ECOLOGY & BIODIVERSITY SPECIALISATION

SECOND YEAR

First Half (Study Period 1, 2 or 3)

Biological Science 100
Earth Systems
Biodiversity for the Environment
Elective 1

Second Half (Study Period 4, 5 or 6)

Biological Science 101
Sustainable Ecosystems
Soil Science
Elective 2

THIRD YEAR

First Half (Study Period 1, 2 or 3)

Minor 1
Ecology
Elective 3
Elective 4

Second Half (Study Period 4, 5 or 6)

Minor 2
 Conservation Biology
 Arid Land Ecology and Management
 BUGE elective

FOURTH YEAR with HONOURS

First Half (Study Period 1, 2 or 3)

Honours Science Project 1
 OR
 Science Clinic 1
 Minor 3
 Wildlife Ecology for Management
 Elective 5

Second Half (Study Period 4, 5 or 6)

Honours Science Project 2
 OR
 Science Clinic 2
 Minor 4
 Elective 6

MEDICAL AND HEALTH PHYSICS SPECIALISATION
 SECOND YEAR

First Half (Study Period 1, 2 or 3)

Biological Science 100
 Earth Systems
 Physics for Medical Radiation 1
 Human Anatomy 100

Second Half (Study Period 4, 5 or 6)

Biological Science 101
 Sustainable Ecosystems
 Physics for Medical Radiation 2
 Computer Measurement and Control in Physical Systems

THIRD YEAR

First Half (Study Period 1, 2 or 3)

Minor 1
 Computational Physics 1
 Physics for Medical Radiation 3
 IT Physics

Second Half (Study Period 4, 5 or 6)

Minor 2
 Physics for Medical Radiation 4
 Applied Physics 5S
 BUGE elective

FOURTH YEAR with HONOURS

First Half (Study Period 1, 2 or 3)

Honours Science Project 1
 OR
 Science Clinic 1
 Minor 3
 Applied Physics Laboratory 3
 Elective 1

Second Half (Study Period 4, 5 or 6)

Honours Science Project 2
 OR
 Science Clinic 2
 Minor 4
 Elective 2

NANOTECHNOLOGY AND BIOMATERIALS SPECIALISATION
 SECOND YEAR

First Half (Study Period 1, 2 or 3)

Biological Science 100
 Earth Systems
 IT Physics
 Elective 1

Second Half (Study Period 4, 5 or 6)

Biological Science 101
 Sustainable Ecosystems
 Interface Science
 Elective 2

THIRD YEAR

First Half (Study Period 1, 2 or 3)

Minor 1
 Biochemistry P 200
 Nanoparticles and Assembly
 Elective 3

Second Half (Study Period 4, 5 or 6)

Minor 2
 Biomaterials
 Nanofabrication and Microfluidics
 BUGE elective

FOURTH YEAR with HONOURS

First Half (Study Period 1, 2 or 3)

Honours Science Project 1
 OR
 Science Clinic 1
 Minor 3
 Elective 4
 Elective 5

Second Half (Study Period 4, 5 or 6)

Honours Science Project 2
 OR
 Science Clinic 2
 Minor 4
 Electives 6

SUSTAINABLE ENERGY SPECIALISATION
 SECOND YEAR

First Half (Study Period 1, 2 or 3)

Biological Science 100
 Earth Systems
 Fluid and Energy Engineering
 Introduction to Electrical Engineering

Second Half (Study Period 4, 5 or 6)

Biological Science 101
 Sustainable Ecosystems
 Elective 1
 Elective 2

THIRD YEAR

First Half (Study Period 1, 2 or 3)

Minor
 Energy Conversion and Management
 Elective 3
 Elective 4

Second Half (Study Period 4, 5 or 6)

Minor 2
 Fluid and Energy Management Practice
 Elective 5
 BUGE elective

FOURTH YEAR with HONOURS

First Half (Study Period 1, 2 or 3)

Honours Science Project 1
 OR
 Science Clinic 1
 Minor 3
 Sustainable Energy System Design
 Elective

Second Half (Study Period 4, 5 or 6)

Honours Science Project 2
 OR
 Science Clinic 2
 Minor 4
 Energy and Society

WATER SCIENCE SPECIALISATION
 SECOND YEAR

First Half (Study Period 1, 2 or 3)

Biological Science 100
 Earth Systems
 Fluid and Energy Engineering
 Geospatial Information Science

Second Half (Study Period 4, 5 or 6)

Biological Science 101
 Sustainable Ecosystems
 Water Quality Management
 Elective 1

THIRD YEAR

First Half (Study Period 1, 2 or 3)

Minor 1
 Hydraulics and Hydrology
 Environmental Engineering N
 Elective 2

Second Half (Study Period 4, 5 or 6)

Minor 2
 Water Resources Systems Design
 Elective
 BUGE elective

FOURTH YEAR with HONOURS

First Half (Study Period 1, 2 or 3)

Honours Science Project 1
 OR
 Science Clinic 1
 OR
 Science Clinic 2
 Minor 4
 Water Quality Processes N

Bachelor of Science, Bachelor of Education

Open Day information sessions

Sunday, 17 August 2008
12.45 pm, room HH 3-09
1.30 pm, room BH 2-09
City West campus
www.unisa.edu.au/openday

Program information sessions

Tuesday, 9 September 2008
Monday, 1 December 2008
Magill campus
Wednesday, 3 September 2008
Wednesday, 10 December 2008
Mawson Lakes campus
Register at
www.unisa.edu.au/infosessions
Registrations essential

UniSA program code:	LBES
SATAC code:	434611
CRICOS code (international students only):	048562C
TER (February 2008 cutoff):	60.35
Program length:	4 years
Home campus:	Mawson Lakes
Program fees:	Commonwealth supported
Program fees (international students only):	A\$14,700 per annum
Prerequisites:	None
Assumed knowledge:	For students selecting studies in Applied Physics: Stage 2 Physics and Mathematical Studies. For students selecting studies in Biology or Chemistry: Stage 2 Chemistry. For students selecting studies in Mathematics and Statistics: Stage 2 Mathematical Studies
Accepts Special Entry (STAT):	Yes
External study available:	No
Part-time study available:	Yes
TAFE credit available:	Yes
Honours study available:	No
Scholarships available:	www.unisa.edu.au/scholarship

Program overview

The Bachelor of Science, Bachelor of Education double degree prepares graduates to become secondary school science and mathematics teachers. Throughout the program, students develop the science, laboratory and education skills required to teach effectively in classrooms.

Throughout this program students will develop high-level interpersonal skills and abilities in communication and research, which enhance employment opportunities in education and other areas.

In their final two years of study, students will gain a broader understanding of the teaching environment by undertaking practical placements that focus on both the theory and practice of teaching.

What will I study?

The education components of this program offer a combination of theory and practice, and provide students with opportunities to demonstrate their understanding in school settings. These practicum placements allow students to apply the principles they learn throughout their studies.

Students can choose from a number of professional majors in the sciences, providing them with broad science studies as well as advanced studies in one or more of their chosen professional science disciplines.

The program provides a broad science education through a combination of majors and minors from Applied Physics, Biology, Chemistry, Computer Science, Environmental Systems, Geospatial Information Systems, Geoscience, Mathematics and Statistics and Psychology. Descriptions of these areas can be found on the Bachelor of Science pages on this brochure. Some of the other courses that students undertake include Approaches to Learning; Ethics, Education and Critical Enquiry; Social Contexts of Education; and Constructing Curriculum. In addition, they complete a number of elective courses to complement their knowledge and skills within another area of interest.

What does it take?

Teachers need to genuinely care for their students, physically, socially and emotionally, and have a desire for stimulating intellectual growth. They also need to be interested in educating and working with young people as well as having an ongoing commitment to their own personal and professional development.

Teachers must be confident and articulate and able to explain concepts and instructions concisely and accurately. They should possess high levels of literacy and numeracy, as well as be highly skilled and knowledgeable in their chosen field of specialisation. Teachers also require patience, enthusiasm, and sound organisational and communication skills.

Students need to be motivated and self-directed and have a committed and enthusiastic approach to their studies.

Who will employ me?

Graduates will find employment opportunities locally in metropolitan and regional centres, nationally and internationally in schools and related educational fields. Employers include the Department of Education and Children's Services (DECS) in South Australia, Catholic Education Australia, and Independent Schools Association schools.

Professional recognition

Graduates of the double degree Bachelor of Science, Bachelor of Education will meet the academic requirement for registration as teachers in South Australia. However, applicants should note that there are other criteria determining eligibility for registration by the Teachers Registration Board of South Australia, which are outlined in the Teachers Registration and Standards Act 2004 and Teachers Registration and Standards Regulations 2005.

Please note

Applicants are advised that a successful National Police Check (NPC) is required by teacher employment authorities in South Australia. A successful NPC is required for all students prior to undertaking any professional experience or compulsory practicum placements which involve contact with minors (under 18 years of age).

Program requirements**FIRST YEAR****First Half (Study Period 1, 2 or 3)**

Science major 1
Science minor 1
Science elective 1
Approaches to Learning

Second Half (Study Period 4, 5 or 6)

Statistics for Laboratory Sciences 101
Science major 2
Science minor 2
Constructing Curriculum

SECOND YEAR**First Half (Study Period 1, 2 or 3)**

Science major 3
Science major 4
Science minor 3
Science Education 1
(Curriculum course 1)

Second Half (Study Period 4, 5 or 6)

Science major 5
Science major 6
Science minor 4
Science and Mathematics Education 2
(Curriculum course 2)

THIRD YEAR**First Half (Study Period 1, 2 or 3)**

Science major 7
Science /Education elective
Curriculum course 3
Reflective Practice 1

Second Half (Study Period 4, 5 or 6)

Reflective Practice 2
Curriculum course 4
Middle Schooling for the Middle Years

Summer (Study Period 7)

Education, Change and Society

FOURTH YEAR**First Half (Study Period 1, 2 or 3)**

Reflective Practice 3
Curriculum course 5
Ethics, Education and Critical Inquiry

Second Half (Study Period 4, 5 or 6)

Science major 8
Science elective 2
Science elective 3
Science elective 4



Michael Bowen

Bachelor of Science/Bachelor of Education

'Over the course of a full year I was a student teacher at Valley View Secondary School.

At first this involved simple observation and getting a feel for the teaching experience.

Later I took on teaching duties myself and also became heavily involved in new curriculum development projects at the school. These experiences have not only helped equip me with the skills to become a competent teacher, they have also helped me develop great professional networks and future job opportunities.'

Entry requirements

For Undergraduate Bachelor Degrees and Associate Degrees

Applicants are required to have one of the following qualifications:

- » Qualified for SACE; and
 - Recorded achievement in five SACE subjects taken at stage 2 level; and
 - Included at least four Stage 2 subjects which are approved Higher Education Selection Subjects (HESS); and
 - Obtained a competitive TER
- » Completed interstate or overseas qualifications that the University considers equivalent to the SACE
- » Completed the International Baccalaureate Diploma
- » Completed or partly completed a recognised higher education program at a recognised higher education institution
- » Completed at least four Open Universities Australia (OUA) courses at the appropriate level

- » Completed an award from TAFE or from another registered training organisation at Australian Qualifications Framework Certificate IV or above
- » Qualified for Special Entry and completed the Special Tertiary Admissions Test (STAT). A personal competencies statement and/or employment experience may also be considered
- » Completed the University Foundation Studies program.

Please note that some programs have prerequisites. Applicants should check all entry requirements before applying. For some programs, applicants may also be required to attend an interview or present a folio.

For more information on entry requirements, visit www.unisa.edu.au/future

Equity and special access

UniSA offers various programs and services to assist rural and/or socio-economically disadvantaged students, Indigenous Australians and people with a disability to apply to UniSA.

For more information, contact (08) 8302 2376 or 1300 UNINOW or email study@unisa.edu.au

Student contributions

Student contributions are the amount you pay towards the cost of your program. The University determines the amount that you contribute within a range set by the Australian Government. The contribution that applies depends on which courses you choose to study and the contribution band in which those courses are classified. The amount of your student contribution also depends on the unit value of your courses of study (the equivalent full-time student load [EFTSL] value of the course).

As per the Australian Government guidelines, the student contribution amounts for 2008 are:

Band	Fields of study	Student contribution
National priorities	Nursing, education	A\$4,077
Band 1	Humanities, behavioural science, social studies, foreign languages, visual and performing arts	A\$5,095
Band 2	Mathematics, statistics, computing, built environment, health, engineering, science, surveying, agriculture	A\$7,260
Band 3	Law, accounting, commerce, administration, economics, dentistry, medicine, veterinary science	A\$8,499

Note: these amounts are for 1 EFTSL in 2008

For more information visit www.unisa.edu.au/future/fees

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The University of South Australia reserves the right to alter, amend or delete any program, fee, course, admission requirement, mode of delivery or other arrangement without prior notice.

For information specific to international students please visit
www.unisa.edu.au/international/default.asp

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