New courses at Flinders 2013
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Arts - High Achievers Program
• 3 years full-time or equivalent part-time
(SATAC Code: 224561)
The new Bachelor of Arts – Enhanced Program for High Achievers is designed to enable high achieving students to maximise their intellectual growth in a supportive environment. It enables you to study alongside students with similar capabilities, develop your interests and share ideas. In addition, it provides you with the skills and knowledge required to pursue further study at honours and research higher degree levels.

You will study three core topics, one in each year of the Program, which are designed specifically for high achieving students. These topics will introduce you to inquiry and research methodologies, address broad questions affecting the modes and practices of study across Arts disciplines and investigate the seminal assumptions that unite and differentiate the intellectual communities of the Humanities, Sciences and the Social Sciences. They will also provide you with the opportunity to develop leadership and collaborative skills, and to undertake a project in the final year of the Program. You will also receive mentoring throughout your degree and be required to attend conferences and seminars.

You will study at least one major sequence (taken across three years of study) and one minor sequence (taken across two years) from a different area of study. It is possible to arrange the Program in order to complete two major sequences. The major/minor sequences available are: American Studies; Applied Linguistics; Archaeology; Asian Studies; Australian Studies; Biological Sciences; Business Studies; Chinese; Creative Writing; Criminal Justice; Development Studies; Drama; Earth Sciences; English; Environmental Studies; French; Geography; History; Indigenous Studies (minor sequence only); Indonesian; Information Technology; International Relations; Italian; Latin American Studies (minor sequence only); Legal Studies; Mathematics; Modern Greek; Philosophy; Political Studies; Professional Studies (minor sequence only); Psychology; Public Policy; Screen and Media; Sociology; Spanish; Statistics (minor sequence only); and Women’s Studies.

Clean Technology
• 3 years full-time or equivalent part-time.
• 4 years with Honours.
• Prerequisites – Stage 2 Chemistry and either Specialist Mathematics, Mathematical Methods, or Mathematical Studies or equivalent.
(SATAC code: 224571; SATAC Code 224581 (Hons))
The new Clean Technology degrees address an emerging trend in industry to develop and use practices that are ‘green’ and sustainable. The specialisation prepares you to play a key role in the reshaping of industries to make them both financially and environmentally sustainable and is available in one of three streams:
• Technology Solutions,
• Environmental Solutions, and
• Biological Solutions
First Year gives you a grounding in science and allows for some choice of topics. In second and third year you focus your studies on one of the three streams. Students undertaking the Technology Solutions stream complete studies such as chemistry, clean technology, spectroscopy and electrochemistry, chemical reactivity and global climate change. You will look into examples of new sensors, solar cells and water filtration membranes.

Students in the Environmental Solutions stream will focus on areas such as groundwater, field investigations, clean technology, environmental impact assessment, global climate change, and environmental decision making tools. These studies examine environmental monitoring, actions, groundwater and environmental health.

Students in the Biological Solutions stream complete studies in animal diversity, ecology, clean technology, microbiology, conservation biology and restoration. Studies focus on the issues of remediation, bioremediation and bioenergy, including microbial fuel cells, biogas production and biofuels.

For those undertaking Clean Technology (Hons) the fourth year is an Honours year where you undertake a research project and further coursework.

Engineering (Electrical)
• 4 years full-time or equivalent part-time.
• 5-5.5 years combined.
• Either Stage 2 Specialist Mathematics, Mathematical Methods or Mathematical Studies or equivalent. Knowledge of Stage 2 Physics is assumed.
(SATAC Code: 224591; SATAC Code 224592 (Combined))
The new Bachelor of Engineering (Electrical) provides you with a strong foundation in both the theoretical and practical aspects of engineering, particularly those relevant to the systematic development of electrical systems. The course is designed to prepare you to become a well-rounded electrical engineer capable of working across the industry.

First year gives students a good base to develop their knowledge from and includes topics such as professional skills, engineering design, electronics, engineering physics and computer programming.

Second and third year students specialise further and complete studies in areas such as electronic circuits and machines, electromagnetics, electronic design and automation, electrical energy systems, control systems, signal processing and sensors and actuators.

At third year, students undertake a key topic in project management which is an essential skill for engineers and they will participate in Flinders nationally recognised 20 week industry placement. There is opportunity for this placement to be taken in Australia or overseas.

In fourth year depending on results, students will either complete an honours program which includes a research project or a fourth year
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program which includes further topics in engineering and an engineering project. Can be combined with Bachelor of Engineering (Mechanical) or Master of Business and Technology.

Engineering Technology
• 3 years full-time or equivalent part-time.
• Prerequisites – Either Stage 2 Specialist Mathematics, Mathematical Methods or Mathematical Studies or equivalent. Knowledge of Stage 2 Physics is assumed.
(SATAC Code: 224601)

The new Bachelor of Engineering Technology is accredited with Engineers Australia and equips you with the knowledge to become an engineering technologist. The degree offers specialisations in:
• Biomedical Engineering
• Electrical Engineering
• Electronic Engineering
• Mechanical Engineering
• Software Engineering

This course enables you to transfer to a four-year Bachelor of Engineering degree, often with no loss of time.

First Year comprises topics in fundamental science and engineering including electronics, professional skills, computer programming and mathematics plus some choice of topics from a student’s preferred specialisation.

Second and third year then builds on this base with topics from a variety of areas that depend on the specialisation option chosen. Specialisations are chosen from either biomedical, electrical and electronic, mechanical or software engineering.

Third Year provides further studies and scope to take selected electives. In addition, Engineering Technology students undertake an engineering project, engineering work experience and a special topic in project management, where skills obtained are relevant to the workplace.

If you have not successfully completed SACE Stage 2 Mathematics or Physics, the Bachelor of Engineering Science (SATAC code - 214811) is available.

Forensic and Analytical Science
• 3 years full-time or equivalent part-time. 4 years with Honours.
• Prerequisites – SACE Stage 2 Chemistry or equivalent.
(SATAC Code: 224611; SATAC Code 224621 (Hons))

The Forensic and Analytical Science specialisation is available in two streams:
• Forensic and Analytical Chemistry
• Forensic Biology

Forensic and Analytical Chemistry combines the practice of analytical chemistry with the application to forensic investigation. Forensic Biology uses aspects of life sciences to examine biological material in a forensic context.

Both streams of Forensic and Analytical Chemistry and Forensic Biology in this degree combine studies in chemistry and biology with related sciences such as the necessary mathematical and computer skills required to process and analyse data, and a thorough grounding in industrial practice and the relevant areas of our legal system. There is also a strong focus on developing students’ oral and written communication skills, interpersonal skills and ability to work independently or as part of a team which are highly regarded by employers.

The first year of both streams are similar allowing students to change between the streams with minimal loss of time if they wish. All students in first year gain a sound knowledge in chemistry, biology, forensic methods and statistics and have a choice of two elective topics.

In second and third year students focus more on their preferred stream. Examples of studies in the Forensic and Analytical Chemistry stream include chemical reactivity, separation science, chemical criminalistics, spectroscopy and electrochemistry and drug action, metabolism, toxicology and analysis. Examples of studies in the Forensic Biology stream include molecular biology, DNA to genome, forensic biology, biological criminalistics and human molecular genetics.

In addition to the set program of studies there is room for elective topics in both streams and students can opt to select another minor from the Bachelor of Science in an area which interests them, such as physics, mathematics and computer science.

All students are given the opportunity to apply what they have learnt in advanced laboratories.

Students undertaking Forensic and Analytical Science (Honours) undertake a research project and further coursework. During this year students are able to work closely with leading academic and research staff. Students present the results of their research in a thesis and a seminar. Examples of research projects conducted in Forensic and Analytical Science are the identification of impurities in drug manufacture, new methods of analysis of forensic glass evidence, new methods of forensic analysis of suspected herbicide poisonings, and the analysis of energetic materials.

Mathematical Sciences
• 3 years full-time or equivalent part-time. 4 years with Honours
• Prerequisites – Stage 2 Specialist Mathematics or Mathematical Studies or equivalent.
(SATAC Code: 224631; SATAC Code 224641 (Hons))

The new Bachelor of Mathematical Sciences and Bachelor of Mathematical Sciences (Honours) focus on modern applied mathematics. These courses will teach you both mathematical fundamentals and their application to real-world problems. You will study topics in essential mathematics and statistics from first year, with later studies directed towards relevant application areas such as epidemiology, mathematical physics and econometrics.

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This Bachelor of Mathematical Sciences degree gives students both a firm foundation in the principles and techniques of modern mathematics but also, how mathematics is applied and is used to solve today's problems. Students will have the opportunity to complete topics in other disciplines that use this applied mathematics, such as medicine (in epidemiology), business (in economics), physics (mathematical physics) and the environment (such as groundwater modelling). This results in graduates who are industry focussed.

In first year, students complete mathematics focused topics which cover pure and applied mathematics. They will also complete studies in professional skills, computer programming and be able to undertake two elective topics chosen from across the university. This combination of topics ensures students have a broad range of skills, which they continue to develop throughout their degree.

In second and third year, students continue with their studies in applied and pure mathematics and continue to choose elective topics which interest them from a range of areas across the university. Mathematics topics cover areas such as: algebra, calculus, mathematical analysis, computer mathematics, numerical analysis, complex analysis, differential equations, probability and statistics.

Students undertaking Mathematical Sciences (Honours) undertake a research project and further coursework. During this year, students are able to work closely with leading academic and research staff. Students present the results of their research in a thesis and a seminar.

Psychological Science

- 3 years full-time or equivalent part-time. 4 years with Honours
- Prerequisites – None. No assumed knowledge.
(SATAC Code: 224651)

Our new Bachelor of Psychological Science enables you to undertake a nationally accredited major sequence in psychology. It provides you with grounding in theory and practice in core areas of basic and applied psychology as well as the skills to critically evaluate psychological literature and to apply psychology knowledge to real-world problems. Graduates are eligible to apply for accredited honours programs in psychology and to subsequently pursue higher degree studies or supervision towards registration as a psychologist.

The first year introduces a range of areas such as social psychology, child development, physiology, personality, intelligence, and psychological problems. Later years build on this foundation. In the upper year, you select from elective topics that address areas such as forensic psychology, clinical psychology and neuropsychology, sleep disorders, body image, social justice and emotions.

As psychology is an evidence-based discipline, students learn throughout about how knowledge is acquired and the steps entailed in testing and communicating ideas, understanding and solving problems, and how to evaluate claims and research.

This course has been designed to maximise student choice.

In addition to psychology, students select from a wide range of university offerings as elective topics, depending on their individual interests. They can choose from areas as diverse as Social Work, English, Archaeology, Disability Studies, History, Politics, Philosophy, Sociology, Criminal Justice, Environmental Studies, Biology, Health, Business and others. There is also space to take extra Psychology elective topics.

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