Bachelor of Mathematics & Bachelor of Applied Science (Honours) - Dean’s Scholars Honours Program (MA54 + SC60)

Year offered: 2011
Admissions: Yes
Course duration (full-time): 4 years - with optional acceleration to 3 or 3½ years
Domestic Fees (indicative): 2011: CSP $2,178 (indicative) per semester
Domestic Entry: February: Fixed Closing Date- 26 November 2010.
International Entry: International Students: Course commences in February - (This course is only available to international students completing Year 12 in Australia)
QTAC code: 418042
Past rank cut-off: 98 plus questionnaire and possible interview. Please refer to Additional Entry Requirements.
Past OP cut-off: 2 plus questionnaire and possible interview. Please refer to Additional Entry Requirements.
Assumed knowledge: English (4, SA) and Maths B (4, VHA) plus two (2) of Biological Science, Chemistry, Earth Science, Maths C or Physics (4, VHA)
Preparatory studies: For information on acquiring assumed knowledge visit http://www.qut.edu.au/assumed-knowledge
Total credit points: 384 (BMaths 288 cp and BAppSc(Hons) 96cp)
Standard credit points per full-time semester: 48
Course coordinator: Mr Richard Thomas
Discipline coordinator: A/Prof Dann Mallet
Campus: Gardens Point

Additional Entry Requirements
Must be a current Year 12 student or students returning from a gap year who completed their Year 12 education in Australia; successful questionnaire; an interview may be required.

Shortlisted registrants may be required to attend an interview in December and will be notified of date and venue after registrations close.

Overview
The Dean’s Scholars Program in Mathematics offers an enriched course of study, with an early introduction to mathematical research, for students who obtain outstanding levels of academic achievement at Secondary School. At the same time it provides the option of an accelerated pathway by which these students are able to complete the Bachelor of Mathematics course plus the Bachelor of Applied Science (Honours) course in a total of just three years.

Mathematics Dean’s scholars are able to undertake research enrichment units and individually-tailored tutorial programs:
- an individually-tailored tutorial program under the guidance of an academic mentor (SCB303 Tutorial Program for Dean’s Scholars); and
- a research component that is individually tailored to the student’s interests, in which research skills are developed and a small research project supervised by a research mentor is completed in the final year (SCB401 Research Methods for Dean’s Scholars and SCB501 Research Project for Dean’s Scholars).

Professional Recognition
As a graduate of the Bachelor of Mathematics and Bachelor of Applied Science Dean's Scholars Honours Program you will qualify for professional membership of the Australian Mathematical Society (AMS), the Statistical Society of Australia (SSA) and the Australian Society for Operations Research (ASOR). It is expected that many Dean’s Scholars will proceed to Doctor of Philosophy studies.

Who should apply
The program is open to applicants currently undertaking Year 12 studies at a secondary school, and who achieve an OP 1 or 2 (or interstate equivalent). Applicants must be outstanding current, or returning from a gap year, Year 12 students who completed their Year 12 education in Australia.

Career Outcomes
As a graduate of the Bachelor of Mathematics and Bachelor of Applied Science Dean's Scholars Honours Program you will find employment opportunities across a wide range of areas, such as finance, investment, information technology, environmental management, health, marketing, logistics, defence, medic, education and research. In addition to your knowledge and abilities in mathematics, you will also be highly valued for your analytical and problem-solving skills. Development of skills in communication, problem solving, critical thinking and teamwork form an integral part of the course.
Note:
The Faculty may wish to make your project or thesis work available to other students undertaking Honours studies as an exemplar. As the copyright owner of the work you have created, the Faculty will respect your rights and will seek your authorisation to share your work.

Non-Accelerated Course Structure – 4 Years

<table>
<thead>
<tr>
<th>Year 1, Semester 1 (48 cp)</th>
<th>Normal BMaths and BAppSc(Hons) units: BMaths Coursework (48 cp)</th>
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<tbody>
<tr>
<td>Year 1, Semester 2 (48 cp)</td>
<td>Dean's Scholars Program enrichment unit: SCB303 Tutorial Program for Dean's Scholars</td>
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<td>Normal BMaths and BAppSc(Hons) units: BMaths Coursework (36 cp)</td>
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<tr>
<td>Year 2, Semester 1 (48 cp)</td>
<td>Dean's Scholars Program enrichment unit: SCB401 Research Methods for Dean's Scholars</td>
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<td></td>
<td>Normal BMaths and BAppSc(Hons) units: BMaths Coursework (36 cp)</td>
</tr>
<tr>
<td>Year 2, Semester 2 (48 cp)</td>
<td>Normal BMaths and BAppSc(Hons) units: BMaths Coursework (48 cp)</td>
</tr>
<tr>
<td>Year 3, Semester 1 (48 cp)</td>
<td>Dean's Scholars Program enrichment unit: SCB501-1 Research Project for Dean's Scholars</td>
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<td>Normal BMaths and BAppSc(Hons) units: BMaths Coursework (36 cp)</td>
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<tr>
<td>Year 3, Semester 2 (48 cp)</td>
<td>Dean's Scholars Program enrichment unit: SCB501-2 Research Project for Dean's Scholars</td>
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<td>Normal BMaths and BAppSc(Hons) units: BMaths Coursework (36 cp)</td>
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<tr>
<td>Year 4, Semester 1 (48 cp) and Semester 2 (48 cp)</td>
<td>Normal BMaths and BAppSc(Hons) units: BAppSc(Hons) Coursework/Research (48 cp)</td>
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<td></td>
<td>Normal BMaths and BAppSc(Hons) units: BAppSc(Hons) Coursework/Research (48 cp)</td>
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Notes:
- The exact timing of Dean's Scholars Program enrichment units may be varied to suit the student's chosen program of study.
- It is also possible to complete the program in 3.5 years using a combination of the 3 and 4 year structures. There is also flexibility for students to undertake Dean's Scholars Program enrichment units during the summer semesters between years 1 and 2, and years 2 and 3 to lighten regular semester study loads or to assist in acceleration.

Accelerated Course Structure – 3 Years

| Year 1, Semester 1 (60 cp) | Dean's Scholars Program enrichment unit: SCB303 Tutorial Program for Dean's Scholars |
|                           | Normal BMaths and BAppSc(Hons) units: BMaths Coursework (48 cp) |
| Year 1, Semester 2 (60 cp) | Dean's Scholars Program enrichment unit: SCB401 Research Methods for Dean's Scholars |
|                           | Normal BMaths and BAppSc(Hons) units: BMaths Coursework (48 cp) |
| Year 1/2, Summer Semester (24 cp) | Dean's Scholars Program enrichment unit: SCB301 Science for Dean's Scholars |
| Year 2, Semester 1 (60 cp) | Dean's Scholars Program enrichment unit: SCB501-1 Research Project for Dean's Scholars |
|                           | Normal BMaths and BAppSc(Hons) units: BMaths Coursework (48 cp) |
| Year 2, Semester 2 (60 cp) | Dean's Scholars Program enrichment unit: SCB501-2 Research Project for Dean's Scholars |
|                           | Normal BMaths and BAppSc(Hons) units: BMaths Coursework (48 cp) |
| Year 3, Semester 1 (60 cp) and Semester 2 (60 cp) | Normal BMaths and BAppSc(Hons) units: BMaths + BAppSc(Hons) Coursework/Research (24cp + 36 cp respectively) |
|                           | Normal BMaths and BAppSc(Hons) units: BAppSc(Hons) Coursework/Research (60 cp) |

Note:
It is also possible to complete the program in 3.5 years using a combination of the 3 and 4
year structures. There is also flexibility for students to undertake Dean’s Scholars Program enrichment units during the summer semesters between years 1 and 2, and years 2 and 3 to lighten regular semester study loads or to assist in acceleration.

Potential Careers:
Actuary, Computer Game Programmer, Market Research Manager, Mathematician, Quantitative Analyst, Statistician.

UNIT SYNOPSES

SCB301 SCIENCE FOR DEAN’S SCHOLARS
The content of this unit is offered through a series of approximately six modules, of which students are required to complete three. The range of modules, together with the selection required, ensures that students have a broad foundation for advanced studies. The modules offered include Life Sciences, Chemistry, Physics, Mathematics, Statistics and Environmental Science.

Other requisites: Enrolment is by invitation to Science and Maths Dean's Scholars and approval of the unit coordinator.

Credit points: 24 Contact hours: 20 per week (for five weeks) Campus: Gardens Point Teaching period: 2011 SUM-2 and 2011 SEM-1

SCB303 TUTORIAL PROGRAM FOR DEAN’S SCHOLARS
The content of this unit is designed in a consultative process involving the student, the academic mentor, and the Dean. The unit aims to allow the study of topics and concepts in science that will support the student's progress in initial studies in advanced level units.

Prerequisites: SCB301 Credit points: 12 Campus: Gardens Point Teaching period: 2011 SEM-1, 2011 SEM-2 and 2011 SUM

SCB401 RESEARCH METHODS FOR DEAN’S SCHOLARS
In order to be able to commence independent research, students need to be able to identify in conjunction with an academic mentor a topic suitable for a scientific investigation, review and report on the literature relevant to the investigation, identify questions or problems to be investigated and appropriate procedures for their investigation, and develop and write a report on their investigations. This unit aims to develop these skills in students through the guidance of an academic mentor.

Prerequisites: SCB303 Credit points: 12 Contact hours: Arranged by academic mentor Campus: Gardens Point Teaching period: 2011 SEM-1, 2011 SEM-2 and 2011 SUM

SCB501 RESEARCH PROJECT FOR DEAN’S SCHOLARS
Independent research is a fundamental aspect of science and mathematics. This unit involves a small research project that may be based on a previously developed research proposal. The unit guides students through the research process from the experimentation and/or literature searching and review to the writing of a paper under the guidance of a research mentor. The research project aims to foster enhanced observational, practical, and problem solving skills, literacy and communications skills, and professional responsibility and ethical conduct.

Prerequisites: SCB401 Credit points: 12 Contact hours: (Individual research project) Campus: Gardens Point Teaching period: 2011 SEM-1, 2011 SEM-2 and 2011 SUM

SCB501 RESEARCH PROJECT FOR DEAN’S SCHOLARS
Independent research is a fundamental aspect of science and mathematics. This unit involves a small research project that may be based on a previously developed research proposal. The unit guides students through the research process from the experimentation and/or literature searching and review to the writing of a paper under the guidance of a research mentor. The research project aims to foster enhanced observational, practical, and problem solving skills, literacy and communications skills, and professional responsibility and ethical conduct.

Prerequisites: SCB401, SCB501-1. SCB501-1 can be enrolled in the same teaching period as SCB501-2.

Credit points: 12 Campus: Gardens Point Teaching period: 2011 SEM-1, 2011 SEM-2 and 2011 SUM