Mathematics and Statistics

The School of Mathematics & Statistics empowers discovery through creative human thought, ranging from pure abstractions to real-world applications. As Australia’s largest and highest ranked school of mathematics & statistics, we provide comprehensive coverage of modern mathematics, underpinned by leading teaching and research. Our connections with industry provide students with experience of important practical applications of their learning, and industry with the mathematical insights of our talented students. We have links with many leading organisations such as the Roads and Maritime Services, Commonwealth Bank and SIRCA.

We are proud to be the home of many leading mathematicians including Fellow of the Royal Society Trevor McDougall, and past President of the International Council for Industrial and Applied Mathematics, Ian Sloan.

Undergraduate Studies in Mathematics and Statistics

Bachelor of Science (Advanced Mathematics) (Honours)

UAC Code: 429300 / UNSW Program Code: 3956

The Advanced Mathematics degree is aimed at high achieving students who wish to specialise in mathematics as a basis for the increasing range of quantitative careers in areas such as finance, environmental modelling and research. This four-year degree combines advanced coursework with an Honours-level research project in one of the available plans of study. UNSW offers mathematics students advanced facilities combined with innovative teaching. This program has been designed to cater for the specific abilities and interests of talented students with a superior ATAR.

Approved majors in the Bachelor of Science (Advanced Mathematics) (Honours) program are:

- Applied Mathematics
- Advanced Statistics
- Pure Mathematics
- Quantitative Risk

Career Opportunities

Mathematics and statistics graduates work in a huge variety of areas, wherever logical skill and analysis of quantitative data is needed to provide accurate and timely answers. Examples include:

- Data Forensics/Fraud Detection – analysing patterns in large data sets to find the “needles in the haystack” of fraudulent or terrorist activity.
- Environmental Modelling – understanding of massive computer models that predict changes in weather, climate and ocean currents.
- Biostatistics – securing public health and testing drugs and new procedures for safety and efficacy, using statistical inference.
- Cryptography – encoding and decoding signals within financial markets, the internet and the military, as well as numerous other applications.
- Quantitative Risk – monitoring the risk positions of banks in light of changing market conditions as well as credit and operational profiles.
- Game Design – designing complex games to ensure correct probabilities and accurate simulations.
- Biostatistics – understanding of massive computer models that predict changes in weather, climate and ocean currents.
- Environmental Modelling – understanding of massive computer models that predict changes in weather, climate and ocean currents.
- Game Design – designing complex games to ensure correct probabilities and accurate simulations.
- Data Management – ensuring accuracy and accessibility of organisations’ data warehouses.
- Teaching – inspiring the new generation with an understanding of the power of mathematics.

Research – answering the many abstract questions thrown up by other sciences and by mathematics itself.

Graduates of Mathematics and Statistics are employed by a wide range of companies and organisations including Google, CSIRO, The Reserve Bank, The Australian Bureau of Statistics, Goldman Sachs, Commonwealth Bank, Telstra, and universities throughout the world.

For further information on careers within Mathematics and Statistics, visit our careers page on maths.unsw.edu.au/futurestudents/careers

Student Testimonials

My first reason for choosing to study mathematics at UNSW was because of the quality and diversity of the faculty, which is one of the largest and most respected in Australia. This has given me the opportunity to study mathematics at a very high level over a broad range of fields. Secondly, a mathematics degree at UNSW has given me a lot of flexibility with what I have wanted to study. This allowed me to extend myself with higher levels of mathematics, as well as to study courses outside of mathematics which I have found interesting. The quality and flexibility of the degree has meant that I have had a diverse range of opportunities available to me as I near the completion of my degree. I personally considered options ranging from corporate careers in finance or management consulting to further postgraduate study in mathematics, before choosing a technical role in software engineering at Google.

In my first few years of studying mathematics at UNSW the classes were huge. I enjoyed the company of not only other mathematics students, but also potential physicists, engineers and computer scientists, among others. They all needed mathematics in the beginning. It didn’t take too long for me to realise that I didn’t just need to study mathematics, I wanted to. In later years, the classes shrunk and I developed a strong relationship with a small group of mathematically minded people. The study of mathematics is so very diverse. A single problem can be challenging, inspiring, humbling, uplifting and fun; all at the same time. I mapped in Pure Mathematics, but studied a few applied and statistical subjects as well. On the side, I filled my electives with computing subjects. I loved how interrelated it all was – how my study in one subject enriched my understanding of another. I now work as an Actuarial Analyst at Taylor Fry Consulting Actuaries, and I am an Associate member of the Institute of Actuaries Australia. I’m excited to have found a niche of mathematically minded people in the workforce, as I did at UNSW.”

Anthony Morris
Bachelor of Science (Advanced Mathematics) – Honours Pure Mathematics

Jessica Egan
Bachelor of Science (Advanced Mathematics) – Honours Pure Mathematics

Applicable Majors

Mathematics/Advanced Mathematics can also be studied within the following degree programs, amongst others:

<table>
<thead>
<tr>
<th>Program</th>
<th>UAC Code</th>
<th>UNSW Program Code</th>
<th>Length of Study</th>
<th>Entry Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Science</td>
<td>429000</td>
<td>3970</td>
<td>3 years full time</td>
<td>2017 Guaranteed Entry: 86.00 IB: 31 or equivalent</td>
</tr>
<tr>
<td>Bachelor of Advanced Science (Honours)</td>
<td>429350</td>
<td>3962</td>
<td>4 years full time</td>
<td>2017 Guaranteed Entry: 96.00 IB: 37 or equivalent</td>
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<tr>
<td>Bachelor of Advanced Science (Advanced Mathematics) (Co-op Program)</td>
<td>429300</td>
<td>3996</td>
<td>5 years full time</td>
<td>2017 Guaranteed Entry: 87.00 IB: 33 or equivalent</td>
</tr>
<tr>
<td>Bachelor of Advanced Mathematics (Honours) / Actuarial Studies</td>
<td>424350</td>
<td>3589</td>
<td>5 years full time</td>
<td>2017 Guaranteed Entry: 97.00 IB: 34 or equivalent</td>
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<tr>
<td>Bachelor of Science (International)</td>
<td>429420</td>
<td>3947</td>
<td>4 years full time</td>
<td>2017 Guaranteed Entry: 88.00 IB: 32 or equivalent</td>
</tr>
<tr>
<td>Bachelor of Science and Business</td>
<td>429100</td>
<td>3929</td>
<td>3 years full time</td>
<td>2017 Guaranteed Entry: 90.00 IB: 34 or equivalent</td>
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<tr>
<td>Bachelor of Science / Engineering</td>
<td>429850</td>
<td>3767</td>
<td>5 years full time</td>
<td>2017 Guaranteed Entry: 92.00 IB: 34 or equivalent</td>
</tr>
<tr>
<td>Bachelor of Science / Computer Science</td>
<td>429800</td>
<td>3983</td>
<td>4 years full time</td>
<td>2017 Guaranteed Entry: 92.00 IB: 34 or equivalent</td>
</tr>
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For further information on careers within Mathematics and Statistics, visit our careers page on maths.unsw.edu.au/futurestudents/careers
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