Mathematics & Careers
Canberra Grammar 2015

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Mathematical Sciences Institute [MSI], ANU
What is Mathematics?

• The study of universal patterns and structures

• Not just advanced algebra and calculus

• The quantitative language of, method of understanding, the World
Almost Everything in STEM
Science (both physical and biological)
Technology (including IT, computational science)
Engineering
Mathematics

Mathematics also increasingly underpins: biological and medical sciences, economics, finance, environmental science, sociology and psychology.
Nature March 2015

Historical, Language and Geographic Differences in Regions of Britain

Both
1) Recent times
and historical
2) Viking and Roman settlements
3) Last Ice Age (10,500 BCE)

Stephen Leslie (group leader)
ANU 2004 Hons1 Maths, Oxford PhD Stats, now Melbourne
How Much Mathematics Should You Do?

• Ross Gittins, economics editor, Sydney Morning Herald, “By 2020 … up to 70 per cent of all job categories are likely to change, 35 per cent will disappear and be replaced by jobs that do not currently exist. Employers are more likely to hire someone with a good background in mathematics.”

• The more you do the greater your options, in terms of University courses and later careers.

• Students frequently regret their lack of maths; those with more maths have a big advantage in future careers.
CareerCast.com (USA)
Ranks 200 Jobs for Overall Job Satisfaction
Criteria
• income
• work environment
• long term outlook
• stress

Mathematics based jobs top the list every year
http://www.careercast.com/sites/default/files/best-jobs-infograph.jpg

CareerCast
JOBS RATED REPORT
THE BEST JOBS OF 2015

MATH MATTERS
1. ACTUARY
3. MATHEMATICIAN
4. STATISTICIAN
6. DATA SCIENTIST

HIGH PAY
Jobs Rated 10 Best Earn $71,133 to $124,149
U.S. median wage is $34,750

HIGH GROWTH
Percent Job Growth by 2022

ALL CAREERS
BIOMEDICAL ENGINEER
AUDIOLOGIST
MATHEMATICIAN
STATISTICIAN
ACTUARY
DATA SCIENTIST
DENTAL HYGIENIST
SOFTWARE ENGINEER
OCCUPATIONAL THERAPIST
COMPUTER SYSTEMS ANALYST

Figures via U.S. Bureau of Labor Statistics
2015 Rankings of 200 Careers

1. Actuary
2. Audiologist
3. Mathematician
4. Statistician
5. Biomedical Engineer
6. Data Scientist
7. Dental Hygienist
8. Software Engineer
9. Occupational Therapist
10. Computer System Analyst
98. Surgeon
125. Attorney(Lawyer/Solicitor)
136. Corporate Executive
169. Airline Pilot
177. General (Armed Forces)
200. Newspaper Reporter
ANU Secondary College

Biology, Chemistry, Japanese, **Mathematics**, Physics

**Year 11 & 12 Students**

**Mathematics** Syllabus

- Number Theory and Cryptography
- Infinity
- Geometry & Topology
- Chaos and Fractals
Maths in First Year ANU

MATH1003 - Algebra & Calculus Methods (HSC Mathematics)
MATH1005 - Discrete Mathematical Models (HSC Mathematics)
MATH1013 - Mathematics & Applications 1 (HSC Math Ext 1)
followed by MATH1014 - Mathematics & Applications 2
MATH1115 - Mathematics & Applications 1(Hons)(Math Ext 2)
followed by MATH1116 - Mathematics & Applications 2(Hons)

Also, with permission, may do later year courses

NOTES: Engineering requires MATH1013+1014 or 1115+1116.
So you will need to do a bridging course if not qualified.

Actuarial Science requires at least Math Ext 1 for admission.
Faculty of Science

BSc: 3 years, 4th honours year if results good, ATAR $\geq 80$

BSc (Advanced)(Honours) ATAR $\geq 95$

Honours Pathway Options activities

Bachelor of Philosophy(Honours) ATAR$\geq 99 +$ quota

Individually tailored program, with mentor, special courses

Maths students can

• major in (48 units): Mathematics, Statistics, Math Economics, Math Finance, Math Modelling, Theor Physics

• specialise in (24 units): Advanced Maths, Astrophysics, math Physics; Quantitative Biology and Bioinformatics
ANU Bonus ATAR Points

Bonus points only apply to
- programs with entry requirement $\leq 97$
- students with ATAR $\geq 70$

Maximum of 5 bonus points

5 points for Maths Ext 1 or Ext 2 at Mark E3
(5 points for English, 2 for Physics, 2 for Chemistry, 5 for Foreign Language; with Marks 5)
More Info?

http://maths.anu.edu.au/education
CareerCast.com
anu.edu.au/study/apply/academic-bonus-points
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