



School of Mathematics &
Statistics

MSc and Graduate Diploma (Advanced) in Mathematics and Statistics

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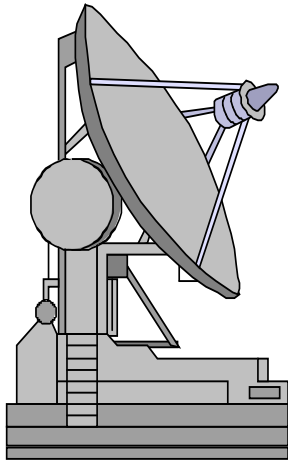
Career outcomes

Qualified mathematicians and statisticians are in demand. There is a national shortage. Graduates of higher-level degrees in these areas often attract headhunters and above average salaries. As a graduate from this program, you can enjoy rewarding careers in fields such as:

Quantitative analysis	Strategic management
Equities analysis	Financial services and fund management
Statistics	Biostatistics
Operations management	Business development
Epidemiology	Software development
Consulting	...
Data services	

... and of course, academia.

“Why an MSc or a GDA?”



MSc/GDA graduates acquire skills keenly sought after by employers

- In-depth knowledge of Mathematics and/or Statistics.
- Strong skillset for problem solving.
- Facility to learn new, advanced topics and techniques.
- Rigorous training in meeting strict deadlines, clearly and professionally explaining and reporting on new technical results, and (for the MSc) managing a multicomponent project.

Key information sources

The Uni Handbook entries for:

- [MC-SCIMAT for MSc](#) (Mathematics and Statistics)
- [GDA-SCI Graduate Diploma in Science](#) (Advanced)

School of Maths & Stats MSc & GDA Guide:

- Available [online](#) (from the Maths & Stats website).
- Hard copy form available from the General Office.

READ THE GUIDE!!!

MSc/GDA in the School of Mathematics and Statistics

- Provides flexible course structure.
- Excellent work facilities (MSc students will *eventually* get a desk with a dedicated PC or Mac!).
- Participation in original research, particularly in MSc degree (no research component in GDA).
- Intensive project supervision by excellent academics.
- Interaction with other highly motivated postgraduate students with similar interests. Postgraduate students learn a lot from continuous discussions with each other.

The MSc is a postgraduate degree

- Two years full-time (or longer, part-time).
- CSPs are available. Please contact the Faculty of Science for details.
- Scholarships! (Will talk about that a bit later.)
- 11 discipline subjects + 1 “toolkit subject” + a 50-point research project (thesis + talk).
- Flexible course structure: up to 2 disc. subjects can be replaced with undergraduate Maths and Stats subjects, and up to 2 MSc **approved** relevant subjects from another school.
- Broad and rigorous preparation for a PhD.

Requirements for MSc

- An undergraduate degree with a major in Mathematics, Statistics or Mathematical Physics, with at least an H3 (65%) in the major, or equivalent. Approximate benchmarks are:

AustFee: 65-69%

CSP: at least 70%.

MSc specialisations

- Applied Mathematics & Mathematical Biology
- Mathematical Physics & Physical Combinatorics
- Operations Research & Industrial Optimisation
- Pure Mathematics
- Statistics and Stochastic Processes

MSc subject structure

- Discipline subjects (12.5 points each, 170h per subject):
 - 11 Maths and Stats master's-level discipline subjects.
 - **Specialisation**: 2 core and 3 elective subjects
 - **Add** 2 subjects from a single specialisation different to the one you've selected.
 - **Add** 4 further Master's level units from *any* specialisation (including up to 2 **approved** subjects from other schools).
 - Of these, at most 2 may be replaced by **approved undergraduate** subjects.
- Professional Tools Subject (12.5 points)

MSc research project

Research Project: 50 points over THREE consecutive semesters (**800 hours** of work!). Requires writing a thesis and giving two talks (about 30 minutes each):

1. A presentation on a topic relevant to the thesis.
2. A final presentation on the topic of the thesis.

There are also hurdles (in semesters 1& 2 of the RP).

Research and presentations are carried out in regular consultation with your academic supervisor.

MSc thesis supervisors

- <https://www.ms.unimelb.edu.au/study/supervisors-list>
- Very approachable. They don't bite!



MSc Course Structure

Applied Mathematics & Mathematical Biology

2022, 2024, ...	
Advanced Methods: Transforms	Mathematical Biology
Advanced Biological Modelling: Dynamics	Bayesian Statistical Learning
Computational Differential Equations	
Random Matrix Theory	
2023, 2025, ...	
Advanced Methods: Differential Equations	Bayesian Statistical Learning
Mathematical Statistical Mechanics	Continuum Mechanics
	Infectious Disease Dynamics

MSc Course Structure

Mathematical Physics & Physical Combinatorics

2022, 2024, ...	
Advanced Methods: Transforms	Enumerative Combinatorics
Random Matrix Theory	Introduction to String Theory
2023, 2025, ...	
Mathematical Statistical Mechanics	Advanced Discrete Mathematics
Advanced Methods: Differential Equations	Exactly Solvable Models
Lie Algebras	

MSc Course Structure

Operations Research & Industrial Optimisation

2022, 2024, ...	
Optimisation for Industry	Approximation, Algorithms and Heuristics
Advanced Nonlinear Programming	Network Optimisation
2023, 2025, ...	
Optimisation for Industry	Approximation, Algorithms and Heuristics
Mathematical Game Theory	Scheduling and Optimisation

MSc Course Structure

Pure Mathematics

2022, 2024, ...	
Algebraic Topology	Algebraic Geometry
Algebraic Number Theory	Differential Geometry
Functional Analysis	Groups, Categories & Homological Algebra
2023, 2025, ...	
Measure Theory	Partial Differential Equations
Differential Topology	Representation Theory
Lie Algebras	Riemann Surfaces & Complex Analysis

MSc Course Structure

Statistics and Stochastic Processes

All years...	
Mathematical Statistics	Advanced Probability
Inference for Spatio-temporal Processes	Bayesian Statistical Learning
Random Processes	Computational Stats & Data Science
Statistical Modelling	Multivariate Stats for Data Science
2022, 2024, ... only	
Adv. Topics in Stochastic Models	Advanced Statistical Modelling
	Mathematics of Risk
	Practice of Stats & Data Science
2023, 2025, ... only	
Stochastic Calculus with Applications	

Graduate Diploma - Advanced

- One year, full-time.
- Entry requirements are similar to the MSc. Needs undergraduate degree in Maths, Stats or Math Physics: at least an H3 (65%) mark for the major.
- 8 master's-level Maths & Stats discipline subjects and no research component. Up to 4 may be replaced by 3rd-year Maths & Stats subjects.
- Can transition into MSc with credit awarded for completed postgraduate subjects.

Scholarships

First, check the University's scholarships webpage:

<https://scholarships.unimelb.edu.au/>

Of particular note:

- **Helen Freeman Scholarship:** One \$20k scholarship per year for a female student entering the MSc (Maths and Stats).
- **M Belz Scholarships:** Up to three \$7K scholarships to students enrolled in the MSc doing Statistics, Applied Probability, Stochastic Processes or Operations Research.
- **School MSc Scholarships:** \$2K per semester, if you do well ($\geq 80\%$ average).

Prizes

Wyselaskie Scholarship: Best student in Mathematics and Statistics.

Dwight Prize: Best student in Statistics.

Nanson/Wilson Prizes: Best original thesis in Pure or Applied.

Urquhart Prize: Best student overall, thesis as well as coursework.

When to apply

- Apply online here:

<https://study.unimelb.edu.au>

Beware of the deadline: **30 November**.

*Mid-year entry is also possible for our postgraduate degrees. Deadline is usually **31 May**.*

Thank you



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