

# Master of Statistics and Operations Research

2018  
Postgraduate

Further your understanding of the mathematical and statistical modelling of data to forecast trends and predict outcomes in a variety of industries including scientific and commercial sectors.

The program will develop your knowledge of statistical and operations research methodologies.

You'll combine a theoretical foundation with practical applications of current techniques employed by practising engineers, scientists and other professionals in industry, research, consulting, teaching and business.

This is achieved using statistical software accompanied by an in-depth understanding of the statistical processes involved.

You will be particularly knowledgeable, creative and critical in the sense of how you interpret and analyse data. You will also be equipped with the ability to apply knowledge to solve a wide range of real-world problems.

You'll be exposed to a wide variety of analytics tools including R, SQL, SAS Enterprise Guide, SAS Enterprise Miner, Python, Java, Julia, CPLEX, Gurobi and Arena.

The program includes an industry project component and/or minor thesis which will develop your consulting and research skills.

## Career outlook

Demand for statistical and operations research skills is growing in a data-driven world.

Graduates are employed by a variety of scientific commercial and government enterprises, most commonly as data scientists, statisticians, business analysts, consultants, modellers and researchers.

## Industry connections

You'll apply your knowledge and skills via consulting and work-integrated learning. Your involvement with industry projects and data will give you the chance to build your theoretical capabilities in the context of practical problems.

The program is linked to industry through the Program Advisory Committee (PAC) and through various consulting and research projects undertaken by staff.

Members of the PAC provide valuable input and insight into industry trends, the introduction of specialisations and, most importantly, support for the introduction of work integrated learning (WIL).

WIL is incorporated in each year of the program through guest speakers, industry projects and, when available, student placements/internships in industry.

## Learning and teaching

The program is offered through a flexible combination of lectures, tutorials and computer laboratory classes.

Classes are usually held once a week in the evenings. There are also opportunities for you to work as part of a team on projects and in consulting activities.

## Professional recognition

Graduates are eligible for membership of the following organisations:

- Statistical Society of Australia Inc. (SSAI)
- Australian Society for Operations Research (ASOR)
- American Statistical Association (ASA)
- Institute for Operations Research and the Management Sciences (INFORMS)
- Institute of Analytics Professionals of Australia (IAPA).

## Program snapshot

Program code: MC004

## Exit points

After completing 96 credit points of study approved by the program manager, you may exit with a Graduate Diploma in Statistics and Operations Research

## Duration

Full-time: 2 years  
Part-time: 4 years

## Location

City campus

## Program Manager

Dr. James Baglin  
Tel. +61 3 9925 6118  
Email: james.baglin@rmit.edu.au

## How to apply

Direct to RMIT University:  
[rmit.edu.au/programs/apply/direct](http://rmit.edu.au/programs/apply/direct)

## Fees

2018 indicative fees

- Full fee: \$AU23,040 per annum

For more information and to learn how to calculate your exact tuition fees see:  
[rmit.edu.au/programs/fees/postgraduate](http://rmit.edu.au/programs/fees/postgraduate)

[rmit.edu.au/programs/mc004](http://rmit.edu.au/programs/mc004)

## Program structure

The Master consists of 192 credit points.

The first year of the program includes five core courses in analytics, statistics and operations research, which lay the foundation of the program.

Throughout the program students will choose up to four general options and six other options from analytics, statistics and operations research courses.

The final year includes an applied research project course where students work on a real industry problem. Students who find approved placements or internships in their second year can have them count towards the applied research project course.

### Program elective examples

- Advanced GIS
- Advanced Programming Techniques
- Algorithms and Analysis
- Analysis of Categorical Data
- Applied Bayesian Statistics
- Artificial Intelligence
- Big Data Infrastructures
- Cartography and Visualisation
- City Building and Urban Design Process
- Data Mining
- Database Concepts
- Distributed Mapping
- Economics of Spatial Decision-Making
- Ecosystems and Human Impact
- Forecasting
- GIS Analytics
- GIS Fundamentals
- GIS Principles
- Heritage and Environmental Design
- Human Geography
- Information Retrieval
- Information Systems Risk Management
- Integrated Transport Planning
- Intelligent Web Systems
- Introduction to Statistical Computing
- Knowledge and Data Warehousing
- Land Development
- Legal, Ethical and Policy Issues in Data Science
- Machine Learning
- Practical Data Science

<b>Year 1</b>	Essential Mathematics	Mathematical Modelling and Decision Analysis	Data Preprocessing	Introduction to Statistics
	Database Concepts	Program elective	Program elective	Program elective
<b>Year 2</b>	Applied Research Project	Program elective	Program elective	Program elective
	Program elective	Program elective	Program elective	Program elective

■ Compulsory courses    ■ Program electives

Please note: This is an example of the program structure and program electives, effective as of Semester 1, 2018. Courses may change and may not be available each semester.

## Entry requirements

You must have one of the following:

- A bachelor degree

OR

- At least 10 years of relevant work experience.

International qualifications are assessed according to the Australian Qualifications Framework (AQF).

## Credit and exemptions

If you have successfully completed one of the following qualifications majoring in analytics, statistics, operations research or a relevant discipline you will be eligible for credit as follows:

Qualification level	Exemptions
Bachelor degree Graduate certificate (AQF Level 7 or equivalent)	Up to 48 credit points (equivalent to one semester of full-time study)
Bachelor degree (honours) Graduate diploma Master PhD (AQF Level 8 or higher)	Up to 96 credit points (equivalent to two semesters of full-time study)

If you have successfully completed one of the following qualifications majoring in information technologies, information security, computer science, geospatial science or a relevant discipline you will be eligible for exemptions as follows:

Qualification level	Exemptions
Bachelor degree Bachelor degree (honours) Graduate certificate Graduate diploma Masters PhD (AQF Level 7 or higher)	Up to 48 credit points (equivalent to one semester of full-time study)

Note that the exemptions mentioned above cannot be used to exit with a graduate diploma.

This information is designed for Australian and New Zealand citizens and permanent residents of Australia.

Disclaimer: Every effort has been made to ensure the information contained in this publication is accurate and current at the date of printing. For the most up-to-date information, please refer to the RMIT University website before lodging your application. Visit [www.rmit.edu.au](http://www.rmit.edu.au).

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