Further your understanding of the modelling of physical, biological and economic phenomena to contribute to applied research and development in industry, commerce and research.

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. State-of-the-art statistical and operations research software used in the program will provide you with the hands-on experience required for a statistical analysis of data. You’ll be exposed to a wide variety of analytics tools including SQL, SAS Enterprise Guide, SAS Enterprise Miner, R, Python, Java, Julia, CPLEX, Gurobi and Arena.

The program includes a consulting component and/or minor thesis, which will develop your consulting and research skills.

Based on your previous studies you may be eligible for exemptions that may shorten your program duration to 1 year full-time.

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.

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 are a major driver for change in the program, particularly with regard to industry trends and future graduate capabilities, the use of state-of-the-art software, the introduction of specialisations and, most importantly, support for the introduction of work integrated learning (WIL). Work Integrated Learning will be visible in each year of the program through the use of guest lecturers, visits to industry, industry projects and, where possible, student placements in industry.

Career outlook
Demand for statistical and operations research skills is growing in this 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.

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 structure

The Master consists of 192 credit points. This incorporates the Graduate Diploma (96 credit points).

You’ll complete core studies in analytics, statistics and operations research and can choose from a diverse range of electives.

**Year 1**

Complete the following core courses:
- Essential Mathematics
- Mathematical Modelling and Decision Analysis
- Introduction to Statistical Computing
- Introduction to Statistics
- Database Concepts.

And complete at least one of the following:
- Data Visualisation
- Applied Bayesian Statistics
- Analysis of Categorical Data
- Design and Analysis of Experiments
- Forecasting
- Multivariate Analysis Techniques
- Regression Analysis
- Statistical Inference
- Statistics of Quality Control and Performance Analysis
- Stochastic Processes and Applications
- Time Series Analysis
- Analysis of Large Data Sets
- Game Theory and its Applications
- Methods and Models of Operations Research
- Questionnaire and Research Design
- Systems Simulation
- System Dynamics
- Sports Analytics
- Machine Learning.

And at most two of the following:
- Scripting Language Programming
- Artificial Intelligence
- Intelligent Web Systems
- Programming Techniques
- Algorithms and Analysis
- Advanced Programming
- Data Mining
- Advanced Programming Techniques
- Database Systems
- Programming Fundamentals
- Big Data Infrastructures
- Big Data Processing
- Data Visualisation and Communication
- Legal, Ethical and Policy Issues in Data Science
- Practical Data Science
- Social Media and Networks Analytics
- GIS Fundamentals
- GIS Principles
- Advanced GIS
- GIS Analytics
- Introduction to Information Security
- Case Studies in Information Security
- Information Theory for Secure Communications
- Information Systems Risk Management
- Knowledge and Data Warehousing
- Information Retrieval.

**Year 2**

Complete the following core course:
- Applied Research Project

And complete at least 60 credit points from the following:
- Data Visualisation
- Applied Bayesian Statistics
- Analysis of Categorical Data
- Design and Analysis of Experiments
- Forecasting
- Multivariate Analysis Techniques
- Regression Analysis
- Statistical Inference
- Statistics of Quality Control and Performance Analysis
- Stochastic Processes and Applications
- Time Series Analysis
- Analysis of Large Data Sets
- Game Theory and its Applications
- Methods and Models of Operations Research
- Minor Thesis
- Questionnaire and Research Design
- Systems Simulation
- System Dynamics
- Sports Analytics
- Machine Learning.
And complete at most two of the following:

- Scripting Language Programming
- Artificial Intelligence
- Intelligent Web Systems
- Programming Techniques
- Algorithms and Analysis
- Advanced Programming
- Data Mining
- Advanced Programming Techniques
- Database Systems
- Programming Fundamentals
- Big Data Infrastructures
- Big Data Processing
- Data Visualisation and Communication
- Legal, Ethical and Policy Issues in Data Science
- Practical Data Science
- Social Media and Networks Analytics
- GIS Fundamentals
- GIS Principles
- Advanced GIS
- GIS Analytics
- Introduction to Information Security
- Case Studies in Information Security
- Information Theory for Secure Communications
- Information Systems Risk Management
- Knowledge and Data Warehousing
- Information Retrieval
- Applied Bayesian Statistics

- Analysis of Categorical Data
- Design and Analysis of Experiments
- Forecasting
- Multivariate Analysis Techniques
- Regression Analysis
- Statistical Inference
- Statistics of Quality Control and Performance Analysis
- Stochastic Processes and Applications
- Time Series Analysis
- Analysis of Large Data Sets
- Game Theory and its Applications
- Methods and Models of Operations Research
- Questionnaire and Research Design
- Systems Simulation
- System Dynamics
- Sports Analytics
- Machine Learning.
Master of Statistics and Operations Research

How to apply
Direct to RMIT University:
rmnit.edu.au/programs/apply/direct

Application dates Semester 1, 2017
– Applications open 14 August 2016
– Timely applications close 10 November 2016

Semester 2, 2017
– Applications open 1 May 2017
– Timely applications close 31 May 2017

Late applications will continue to be accepted after this date if places are still available.

Entry requirements
– A bachelor degree; or
– At least 10 years of relevant work experience.

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

Fees (indicative)

2017 indicative fees
The annual tuition fees for full-fee places in 2017 is AU$22,080 per annum.

This program is offered on a full-fee paying basis only. If you are offered a place, you will need to pay the full tuition cost of your program. However, eligible students (such as Australian citizens or holders of an Australian permanent humanitarian visa) may apply to defer payment of some or all of their tuition fees via the Commonwealth Government’s FEE-HELP loan scheme.

Fees shown above apply to 2017 only and are based on an annual full-time study load of 96 credit points unless otherwise noted. A proportionate fee applies for more or less than the full-time study load. Tuition fees are adjusted on an annual basis and these fees should only be used as a guide.

For more information and to learn how to calculate your exact tuition fees see:
rmnit.edu.au/programs/fees/postgraduate

Articulation and pathways
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:

<table>
<thead>
<tr>
<th>Qualification level</th>
<th>Credit</th>
<th>Remaining program duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor degree (AQF Level 7 or equivalent) Graduate Certificate</td>
<td>Up to 48 credit points (equivalent to one semester of full-time study)</td>
<td>144 credit points (equivalent to three semesters of full-time study)</td>
</tr>
<tr>
<td>Bachelor degree (Honours) Graduate Diploma Master PhD (AQF Level 8 or higher)</td>
<td>Up to 96 credit points (equivalent to two semesters of full-time study)</td>
<td>96 credit points (equivalent to two semesters of full-time study)</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Qualification level</th>
<th>Credit</th>
<th>Remaining program duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor degree (Honours) Graduate Certificate Graduate Diploma Masters PhD (AQF Level 7 or higher)</td>
<td>Up to 48 credit points (equivalent to one semester of full-time study)</td>
<td>144 credit points (equivalent to three semesters of full-time study)</td>
</tr>
</tbody>
</table>

If you choose to exit this degree after completing 96 credit points (equivalent to two semesters of full-time study) you will eligible to be awarded the Graduate Diploma in Statistics and Operations Research (GD120).

Note that the exemptions mentioned above cannot be used to exit with a Graduate Diploma.

Upon completion of your program, if you wish to continue your studies with a PhD degree, you may need to have completed MATH1332 Minor Thesis.

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