



Master of Data Science

The Master of Data Science enables students to discover the breakthroughs that turn data and statistics into business intelligence.

Degree of the future

Data science is a rapidly expanding field that shows no sign of slowing. Big data and analytics now drive and inform strategic decision making and innovation whether it is in relation to engineering, finance, health or other professional areas. The challenge for organisations around the world is how to harness ever increasing volumes of data as an asset.

About the course

The Master of Data Science provides students with the knowledge and skills to understand and apply appropriate analytical methodologies to transform the way an organisation achieves its goals and objectives, to deal effectively with large data management tasks, to master the statistical and machine learning foundations on which data analytics is built, and to evaluate and communicate the effectiveness of new technologies.

The course is designed with the current and future needs of industry in mind and is ideal for graduates with a background in engineering and IT or students from other areas who wish to pursue a career in this exciting field.

As the rise of Data Science is a global phenomenon, the course prepares graduates for international careers. Students will gain a detailed knowledge of contemporary data management and analysis technologies, including those for data collection and storage, visualisation, internet-based applications, and software project management.

As well as undertaking advanced units in computing and statistics, students will undertake related units offered by other Faculties, allowing students to apply their data science knowledge and skills to interdisciplinary domains.

Students will also acquire essential skills in high performance computing. Since processing a large amount of data requires knowledge in this area, our students will be uniquely placed in this niche within Australia and will benefit from the abundant parallel computing resources available in Perth.

Fast facts

UWA is ranked among the top 1% of universities in the world in the Academic Ranking of World Universities

UWA is the only Western Australian member of the Group of Eight – a coalition of prestigious, research-intensive Australian universities

Our engineering and technology graduates are among the highest paid graduates in Australia, earning an average starting salary of \$69,126, (The Good Universities Guide)



Research project¹

Through the substantial individual research project, selected students will be able to further develop and demonstrate their research and implementation skills to address topics at the leading edge of data science.

Students will benefit from close interaction with our leading research groups in 'Complex Data Modelling' and 'Big Data Processing and Mining' and their key industry partnerships that help inform teaching and course content.

Course structure

Core units

- Introduction to Data Science
- Cloud Computing
- Data Warehousing
- Advanced Data Mining
- Computationally Intensive Methods in Statistics
- Applied Predictive Modelling

Electives

Students choose 6 units from the following list:

- Scientific Communication
- Computer Vision
- Computational Modelling
- Artificial Intelligence and Adaptive Systems
- Open Source Tools and Scripting
- Mobile and Wireless Computing
- Data Science Research Project 1
- Data Science Research Project 2
- Data Science Research Project 3
- Agile Web Development
- Internet of Things
- High Performance Computing
- Project Management and Engineering Practice
- Business Intelligence
- Data Analysis and Decision Making
- Biostatistics II
- Advanced Analysis of Linked Health Data
- Multilevel and Mixed-Effects Modelling
- Bayesian Computing and Statistics
- Applied Statistics and Data Visualisation

1: Enrolment in the Data Science Research Project is by invitation only. Conversion units²

- Problem Solving and Programming
- Relational Database Management Systems
- Computer Analysis and Visualisation
- Statistics for Science
- Economic and Business Statistics
- Analysis of Experiments
- Analysis of Observations

2: Students who have completed undergraduate studies in Statistics or Data Science may be eligible to receive credit towards conversion units.

Delivery

The standard course duration is 1.5 to 2 years of full-time study or the equivalent in part-time study, depending on the requirement to include conversion units. The mode of assessment is 12 to 16 units of coursework, with the option to complete a research project. The course has intake periods in February and July.

Admission requirements

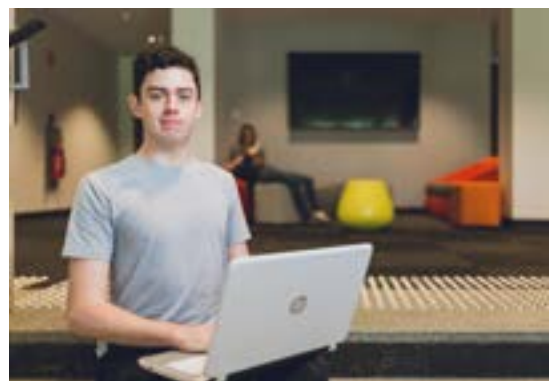
To be considered for admission to this course an applicant must have:

- A bachelor's degree completed with a weighted average mark of at least 65 per cent, or equivalent; and
- Completed Mathematics Applications ATAR, or equivalent, as recognised by UWA.
- Be able to meet the University's required level of English Language Competency (visit studyat.uwa.edu.au/elc).

How to apply

For information about the application process, both domestic and international applicants should refer to the Future Students Website at: **study.uwa.edu.au/how-to-apply/lodging-your-application**

International students should also visit **international.uwa.edu.au/students/esos** for more information about the study environment, course fees and refund policy, support services and schooling obligations for dependent children.



"Data Science is critical to the spectrum of organisations; from tech start-ups to mature industries. As industry and government embrace this need to drive the next generation of productivity improvement, there is a large demand for highly qualified data science graduates."

Brian Haggerty

*Associate Dean, Community & Engagement
Former head of Innovation, Woodside*

Course enquiries

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This publication should be treated as a general guide only. For further information, contact the UWA Faculty of Engineering and Mathematical Sciences.