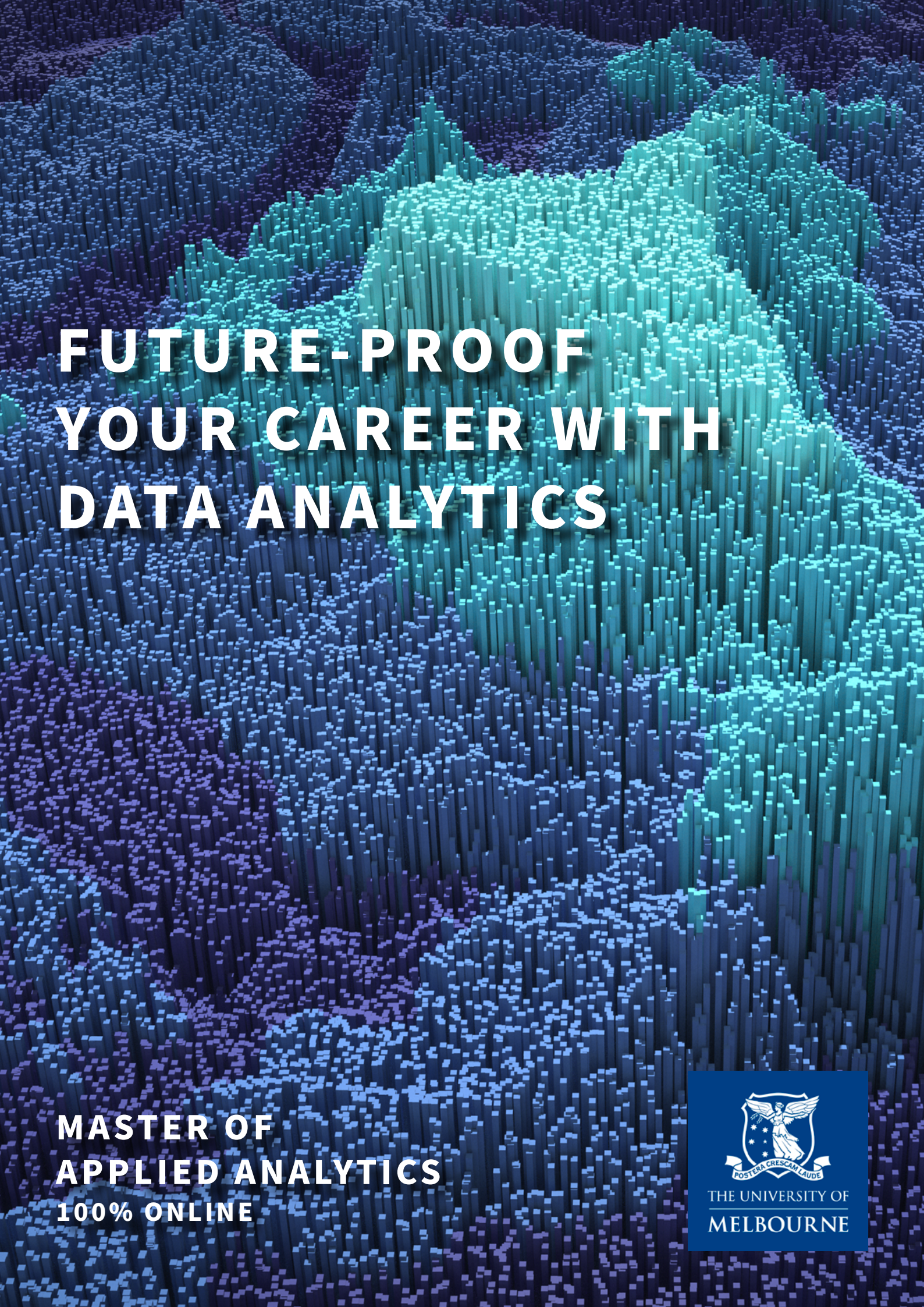
FUTURE-PROOF
YOUR CAREER WITH
DATA ANALYTICS
MASTER OF
APPLIED ANALYTICS
100% ONLINE
POSTERA CRESCAM LAUDE
THE UNIVERSITY OF
MELBOURNE

ONLINE APPLIED DATA ANALYTICS PROGRAM

Overview

The amount of data generated worldwide is increasing each year – captured through our smartphones, subscriptions, social networks, loyalty cards and more. This has created the need for specialists in applied analytics.

The Master of Applied Data Analytics is designed to meet a rapidly growing market demand for skilled professionals with the ability to apply analytics solutions to real-world operational and strategic issues.

Offered completely online, this course draws on evidence-based practice to develop your understanding of analytics technology – its capabilities, its limits and its pitfalls. You'll become a specialist in how to collect, measure and manage data to drive change and develop future-focused workplace solutions.

The course prepares graduates to use analytics technology across various industry sectors –education, health, urban and environmental fields, psychological bodies and government organisations.

"We've designed this course to show the power of taking a data driven approach to understand the world and to drive change. The use of analytics complements the core skills in your discipline and can ultimately be the basis for making better decisions"

Professor James Bailey
Course Coordinator, Master of Applied Data Analytics

Who is this course for?

The Master of Applied Data Analytics is suited to individuals who want to enrich and extend their career paths by becoming an expert in analytics techniques.

It's aimed at professionals who want to improve processes, systems and outcomes in their workplace through data analysis. The course is intended for those who are keen to understand the potential of computer technology and through this knowledge be able to analyse vast amounts of data to make better decisions and forecasts.

- Health (System managers, hospital data managers, epidemiologists, nurses, clinicians)
- Urban and environment sectors (Real estate developers and investors, REIT managers, acquisitions, sales channels, statutory planners, town planners)
- Psychology (Peak bodies such APS and ACPA, organisational psychological consultancies, market research agencies, HR experts)
- Education (Instructional leaders, principals, head of schools, education specialists, learning designers, app developers, computer programmers); and
- Government organisations (Department of Health, Department of Justice, policymakers).

What are the benefits?

This course caters to a range of disciplines which means you'll be able to specialise in analytics approaches that are industry specific – whether that's tracking customer purchasing patterns or the ability to monitor patient health before symptoms even arise.

You'll gain an understanding of expert data wrangling and develop the ability to take abstract business issues and turn them into successful analytical solutions by studying within one of the following streams:

- Education
- Health
- Urban and environment
- Psychology

For people who require a more flexible approach, students can also choose subjects across all streams rather than specialise.

What will I learn?

Students of this course will be equipped to select suitable analytics techniques for a variety of real-world scenarios. You'll gain an advanced understanding of research principles and analytics knowledge (data collection, measurement and management) to be able to predict and influence behaviours and business decisions.

You will learn how to:

- Derive key insights and measure the impact of data analytics
- Improve the relevance of data that is collected
- Use data to make informed business decisions and gain commercial advantage
- Drive community change by predicting and influencing behaviour through data
- Identify potential ethical issues in the application of an analytics approach
- Create bespoke solutions that improve outcomes.

You'll also be able to evaluate the complex factors involved in applying analytics solutions by learning to assess risk and developing in-depth knowledge of compliance with current and future privacy requirements.

Graduates of this course will learn how to deliver business intelligence through analytics and be prepared to lead the way in a data-driven world.

Subject summaries

Compulsory core subjects		Points
Critical Thinking with Analytics	Introduction to the principles and practice of dealing with data, including measurement scales, data organisation, summaries, study design and inference. Students will learn how to think critically about the use of data in the public and private sectors and appraise how results and analyses are presented by outlets such as the media. Emphasis will focus on interpretation and understanding of the appropriate use of data rather than the technical details of performing the analysis.	12.5
Analytics and Society	This subject will broaden students' understanding of the variety of ways analytics is being used in society and the range of challenges that are associated with its use. It will also introduce students to how analytics may be used to support and drive social and organisational change. Students will also examine the role that analytics plays in organisations and society, as a tool for evidence-based decision making and the evaluation of policies and their impact. Students will examine professional codes of conduct for the use of analytics, in regard to ethical issues and ways to achieve an appropriate balance between privacy and utility.	12.5
Applied Analytics Capstone (Part 1 & 2)	Students undertake an original investigation of a topic relevant to analytics and its application. Under the supervision and guidance of an academic researcher, students are required to design and conduct a practice-oriented investigation. This would typically involve a literature review, data collection, data analysis and critical reflection of real-world practice. The results will be reported as a thesis and in a public presentation. In some instances, it is expected that the results will also be submitted for publication in a conference or journal. The project will require an explorative approach, where students will pursue outcomes associated with new knowledge or understanding, within the analytics disciplines, often as an adjunct to existing academic research initiatives.	25
Specialisation subjects		**Points**
Foundations of Analytics (Health Specialisation)	The foundational principles and practice of modern data analytics, including skills in data manipulation, presentation, and analysis; introduction to probability models used for a continuous response. Students will learn how to use methods such as linear models and tree-based methods for forecasting. Students will use statistical software to analyse data. However, emphasis will focus on interpretation and understanding of the appropriate use of data rather than the technical details of performing the analysis.	12.5
Advanced Elements of Analytics (Health Specialisation)	This subject equips students with the practical skills to apply regression methods to health data using the statistical packages R and Stata, as well as a major emphasis on the interpretation and communication of results. Topics covered include: analysis of continuous outcomes with linear regression; analysis of binary outcomes with logistic and tree-based regression methods; analysis of time-to-event outcomes with Cox and Poisson regression; fitting the aforementioned regression models in the statistical packages R and Stata; interpretation of the different measures of association estimated in each of the regression models; how to adjust for confounding and identify variables that modify measures of association using these regression methods; and purpose of regression modelling (causal vs. predictive).	12.5
Designing Analytics Investigations (Health Specialisation)	This subject provides a platform for students to apply their knowledge to designing studies with the aim of investigating topical problems in health and public health. Published guidelines for the reporting of studies will be used to assist with the design and appraisal of studies. Topics covered include: clinical trial design; observational studies including cohort, case-control and ecological; causal diagrams (to identify confounders and selection bias); effect modification; measurement error; external validity of findings; and principles of sample size. The collection and use of routinely collected data will be considered in health and public health settings. The cultural and ethical considerations of data collection with Indigenous populations will also be discussed.	12.5
Measurement Analytics (Education Specialisation)	Measurement analytics combines measurement science and validity theory with analytics methods. Its main application is to assess human (or sometimes organisational) performance or attributes, using digital big data and analytical techniques. In this subject, students will develop an understanding of the rationale for using measurement analytics rather than alternative analytics techniques and become familiar with contemporary and emerging applications. This subject provides candidates with the ability to assess claims to reliability and validity of analytics-based assessments of attributes or performance of individuals and provides basic understandings and skills in how to maximise validity using complex digital data.	12.5

Representing Spatial Information (Urban Specialisation)	Representing Spatial Information is the study of conveying insight gained through geospatial data and information. Upon completion, students will be able to communicate complex relations and insights through visual storytelling and concise graphics. This subject will introduce students to fundamental concepts in spatial information and provide a practical understanding of the rise of the Smart City and how spatial information can assist in evidenced-based and collaborative decision-making. Students will also be exposed to a range of digital environments, including open data repositories, urban modelling and visualisation tools and open source geospatial information technologies.	12.5
Spatial Analytics (Urban Specialisation)	Spatial Analytics is the study of geospatial digital data, information, knowledge and models to understand trends, complexities and inform decision processes. This subject explores a range of approaches at the intersection of spatial information, statistics and policy to further students' understanding of the built environment. The new science of cities is driven by the deluge of data that enables the mapping of new geographies that can be explored, analysed and synthesized. A range of research methods will be considered in combination with case studies to provide fundamental skills in spatial analysis and sharpen critical spatial and geographical thinking. Case studies will be based on contemporary problems in health, urban planning and real estate.	12.5
Introduction to Experience Sampling (Psychology Specialisation)	Dense data sources such as smartphones, social networks, wearable sensors and the Internet of Things are being used to provide an unparalleled window into psychological processes as they occur in the real world. In this subject, we will train you in the collection and analysis methods that are applicable to experience sampling data from dense data sources. As the data is often sensitive, we will also explore the security and privacy issues that need to be considered when conducting experience sampling studies. Completion of this subject requires each individual student to collect and analyse experience sampling data about themselves – it is not possible to opt out of this activity. This experience sampling data will be confidential to the individual student and will not be visible to others.	12.5
Social Analytics (Psychology & Education Specialisations)	Social networks and social platforms are a widely used technology for connecting individuals and connecting organisations. They can provide key insights into human and organisational behaviours and needs. This subject will introduce students to methods for analysing data generated by social networks and social platforms. The following topics will be covered: network structure and semantics, including friend follower relationships; social network analysis fundamentals including connectedness, centrality and influence; community detection; social network visualisation methods; combining text and social network analysis; user modelling, including prediction and recommendation strategies; gaining insights into groups of users via clustering/segmentation; trend monitoring in social networks; prediction and anomaly detection in networks; automated social interaction: conversational chatbots and their inferential capabilities and interfaces; case studies in public health surveillance, education and psychology.	12.5
Elective subjects*		**Points**
Text Analytics	Text data is a primary form of data and its analysis can provide important insights into the behaviours and needs of individuals and organisations. This subject will introduce students to methods for analysing text and unstructured data. The following topics will be covered: introduction to text analytics and distinctive features of text datatext data acquisition and storage; text representations and transforming text for analysis; similarity and clustering for text analysis dimensionality reduction strategies; topic and thematic analysis; text classification; text analytics for information extraction and named entity recognition; multi-lingual text data; applications of text analytics: question answering, essay grading and sentiment analysis; case studies: clinical notes, learning management systems.	12.5
Business Analytics for Decision Making	This subject will focus on developing students' understanding of a wide variety of strategic and operational business problems and decisions being faced by managers and decision makers in the fields of financial management, human resource management, marketing management, operations management, and international business management. Students will be shown how to use a range of quantitative approaches to analyse business problems and, based on these analyses, make effective decisions. The subject will take descriptive analytic, predictive analytic, and prescriptive analytic approaches. Students will be expected to be able to calculate and manipulate data as well as interpret the results in order to derive and evaluate alternative solutions to typical business problems.	12.5

*Students can take subjects from outside of their own specialisation and within other specialisations as an elective.

Entry requirements

In order to be considered for entry, applicants must have completed:

- a bachelor honours degree or equivalent in a cognate area (Health, Psychology, Urban Design/Architecture, Built Environment or Education); or
- a three-year undergraduate qualification in a cognate area and at least two years of documented, relevant work experience; or
- a bachelor honours degree or equivalent and at least two years of documented, relevant work experience (no specialisation stream); or
- a minimum of eight years documented, relevant work experience; and
- a personal statement.

Meeting these requirements does not guarantee selection.

In ranking applications, the Selection Committee will consider:

- Prior academic performance; and
- Work experience; and
- A personal statement.

The Selection Committee may seek further information to clarify any aspect of an application in accordance with the Academic Board rules on the use of selection instruments.

Applicants are required to satisfy the University of Melbourne's English language requirements for graduate courses. For those applicants seeking to meet these requirements by one of the standard tests approved by the Academic Board, **performance band 6.5** is required.

Note: It is expected that students will already be familiar with basic concepts from statistics and probability.

Course structure and fees

Course	Duration	Structure	Point program	Fee
Master of Applied Data Analytics (Education, Psychology or Urban specialisation)	2 years part-time	• Two core subjects • One capstone subject • Two specialisation theme-based subjects; and • Two elective subjects	100 points	AU$33,786
Master of Applied Data Analytics (Health Specialisation)	2 years part-time	• Two core subjects • One capstone subject • Three specialisation theme-based subjects; and • One elective subject	100 points	AU$33,786
Master of Applied Data Analytics	2 years part-time	• Two core subjects • One capstone subject; and • Four elective subjects	100 points	AU$33,786
Graduate Certificate in Applied Data Analytics	1 year part-time	• Two core subjects and; • Two electives subjects	50 points	AU$16,480
Professional Certificate in Applied Data Analytics	6 months part-time	• Two core subjects	25 points	AU$8,240

Students can take subjects from outside of their own specialisation and within other specialisations as an elective . Students who are studying the Master of Applied Data Analytics (unspecified area), take the compulsory core subjects and any selection of 4 other subjects from the specialisations and elective subjects.

At the University of Melbourne course fees are the same for both domestic and international students. The fees listed are the indicative cost for the entire course. This course is only offered on a part-time basis.

The University of Melbourne reviews fees annually and this rate is the indicative total based on typical subject enrolments and includes an indexation of 5 per cent per annum.

A world class university

The University of Melbourne is consistently ranked among the leading universities in the world. The Times Higher Education World University Rankings placed us number one in Australia and number 33 in the world in its most recent release (2017-2018).

Studying online

Our courses are designed by a team of graphic designers, education technologists, video producers, video editors and technicians. Our expert e-learning designers work closely with teaching staff to make certain the content we create is ideal for the online medium. And, thanks to recent advances in technology, studying online is more interesting, enjoyable and interactive than ever before.

Online students come from different backgrounds and have many different stories to tell, but one thing that most have in common is that they're very busy. For that reason we make sure their education is as targeted and flexible as possible and available at the times that suit them. We make it possible to connect easily with experts and fellow students and to quickly access grades and academic feedback.

Although it's an entirely different learning experience to face-to-face, you will receive exactly the same qualification and graduation certificate as an on-campus student because you will achieve identical learning outcomes from the same academics that teach our on-campus courses. If you complete a master degree you will also be invited to attend a graduation ceremony in Melbourne.

As an online student at the University of Melbourne you can expect:

- Enriching and engaging learning
- Flexibility and choice
- Connection with leading experts
- Interaction and feedback
- Dedicated Student Support team
- Virtual student community
- Specialisation and career advancement

Dedicated student support

As an online student with the University of Melbourne you can expect a high level of administrative and technical and academic support from your initial expression of interest in the course, through to your graduation.

Don't be surprised if you get to know our Student Support team members by name; they are dedicated, personal and friendly and they understand that every student experience is unique. And if a challenge arises, they'll do everything in their power to assist you so that you can continue to have excellent learning experiences.

Key dates

Term	Intake
Term 1	January
Term 3	July

Learn more

To learn more about this course, contact our Student Support team on **study-online@unimelb.edu.au** or **+61 3 8344 0149** (Mon - Fri 8am - 9pm, Sat - Sun 10am - 5pm, Public Holidays 10am - 5pm).

Ready to apply?

Apply online at
https://study.unimelb.edu.au/find/courses/graduate/master-of-applied-data-analytics/

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