

**Full-time
Master
of Business**

Analytics.



MELBOURNE
BUSINESS
SCHOOL



BRAD TREWELLA

STAFF ENGINEER AT
CONVERGENCE. TECH
FULL-TIME MASTER OF BUSINESS
ANALYTICS GRADUATE

The Full-time Master of Business Analytics has taught me some really valuable analytics skills, but more importantly, I've gained a suite of soft skills to convincingly present data to tell compelling stories that drive decision-making and provide a better understanding of business problems.

Program snapshot

Program details

- Length: one year, starting in January
- Fees: AUD\$70,400*
- FEE-HELP and major government student support payments (Austudy, ABSTUDY and Youth Allowance) available to those who meet the eligibility criteria
- Class size: approximately 50-70
- Age range: typically 23-28 years
- Contact hours: 38-40 hours a week
- Delivery: Face-to-face
- Study load: Full-time

*Fees are for 2023 only and subject to change

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Welcome to Analytics

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DR. SIMON HOLCOMBE
ACADEMIC DIRECTOR, MASTER OF
BUSINESS ANALYTICS
MELBOURNE BUSINESS SCHOOL

In the decade through to 2030, the U.S. Bureau of Labour Statistics (BLS) predicts a 20% rise in analytics jobs. In addition to this increasing demand for talent, Australia offers one of the highest paid business analytics sectors in the world, alongside the U.S. and U.K. This reflects the increasing reliance of business on data, with companies seeking to build business analytics capability for competitive advantage.

Graduates with the analytics skills to derive those insights will be sought after by Australian and global employers. Melbourne Business School has designed an intensive one year program that will equip you with advanced skills in business analytics and accelerate your career.

Known internationally for our diverse faculty and research that is at the forefront of global business trends and knowledge, you can find our alumni making a difference across a range of industries in more than 90 countries.

Underpinning our success has been the unique partnership between business and academia, which continues to this day.

Our business pedigree distinguishes the Full-time Master of Business Analytics from other data science degrees and makes it so highly valued in the marketplace.

Full-time Master of Business Analytics

The digital age is generating a continuous flow of information and datasets for all aspects of business. To interpret and transform this data into valuable insights for business decision-makers, you need to speak the language of business.

The Full-time Master of Business Analytics degree offers the most integrated learning experience for future analytics leaders in the Asia-Pacific region. It provides you with a solid foundation in business alongside the maths and technology pillars of data science.

Along the way, experts from our business partners in the fields of computer science, statistics, mathematics and business management will support your studies through Analytics Labs, scholarships and industry events.

Our Careers Management Centre will connect you with major companies who recruit from Melbourne Business School each year to find the best and brightest talent in business analytics.

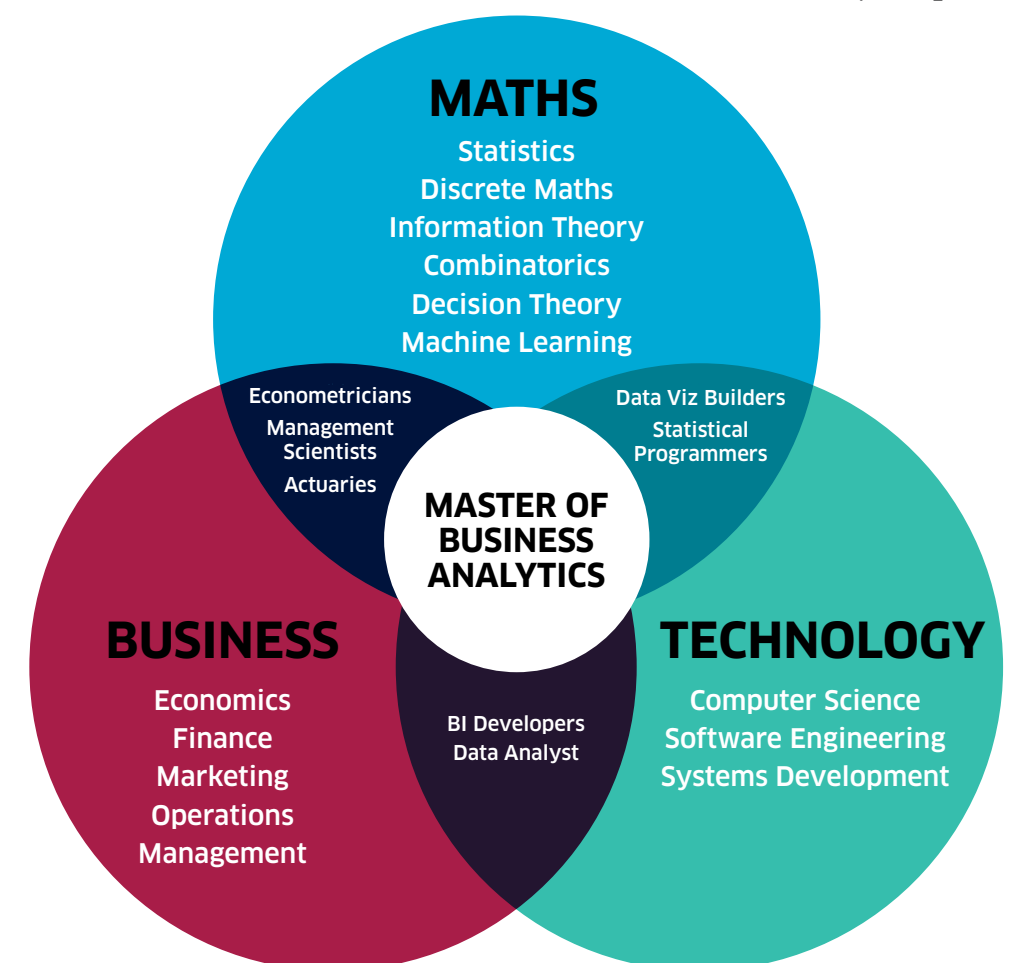
After one year, you will become a data science expert who will join the Full-time Master of

Business Analytics graduates now helping top businesses empower their decision making, and who can approach any data challenge with a mindset to explain clearly to business leaders:

- What is happening?
- Why is this happening?
- What if these trends continue?
- What will happen next?
- What should we do?

As this is an advanced business analytics degree program, you will focus on how quantitative methods – such as quantitative analysis, predictive modelling and fact-based management – can drive business decision making.

At the end of the program you will be prepared for your career as a business analytics professional.



What makes our program different?



One-year program

The Full-time Master of Business Analytics is offered at Melbourne Business School as an intensive program, allowing you to complete a 1.5-year degree in just one year of full-time study. Classes are taught Monday to Friday, 9am to 5.30pm. It differs from undergraduate study, with smaller classes, students on campus each weekday for the full day and greater access to teaching faculty.



Connection with industry

The Full-time Master of Business Analytics program gives you the business acumen to unpack complex data and present insights to senior executives to drive business value, while developing your technical skills to analyse and interpret complex data.

Supported by the Centre of Business Analytics and its Industry Advisory Board, this unique program is distinguished by its strong focus on solving business problems, which are tackled throughout the one-year degree but most intensively in the five-week Analytics Lab, where you work within an organisation to help solve pressing business challenges.



Guaranteed Internship

As part of the Full-time Master of Business Analytics program, every student undertakes a group internship at one of Melbourne's leading companies. During this internship, students will gain practical experience by completing a five-week real analytics project.



Interdisciplinary content

This program is interdisciplinary, incorporating maths and statistics, computer science and business. Many analytics degrees choose one of these areas as their primary focus with only minimal attention paid to the other two. This degree is quantitatively rigorous, requiring you to become comfortable with programming while maintaining a focus on the business context of analytics work. This context is important because the purpose of business analytics is to ensure that the analysis of data is practical and applicable in a business environment.

Preparing you for the working world

The Professional Development Program (formerly known as Personal Effectiveness Program) provides you with the soft skills needed to complete your transformation into the well-rounded analytics professional that employers want. It is unique to Melbourne Business School and runs throughout the year as a part of our Full-time Master of Business Analytics program.

Soft skills are the personal qualities that allow you to effectively interact with people. They include attitudes, professional attributes, character traits and communication skills. A good set of soft skills develops your self-awareness, emotional intelligence, confidence with people and leadership qualities.

The soft skills you develop on the Professional Development Program are reinforced through the Analytics Lab, targeted workshops and subjects that put analytics in the business context.

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YALÇIN AKÇAY
Director of the Centre
for Business Analytics
and Associate Dean,
Business Analytics



You will gain the skills and knowledge to not just be an expert in maths and technology but to approach analytics with the strategic perspective of the business in mind.

”

JOHN GURSKEY
Director, Career
Management Centre



Through the Professional Development Program, we prepare you for the job market and facilitate the transition from the classroom into the workplace.


The Professional Development Program

Analytics professionals with a strong blend of soft and technical skills are in demand. At the conclusion of the Professional Development Program (PDP), you will have a well-rounded understanding of the link between analytics, business and decision-making. The ability to communicate findings to guide decision-making is just as important as data manipulation for the analytics professional – because executives can make the wrong decision if good data is communicated to them poorly.

The PDP runs across the program. It identifies specific needs of each individual student and provides ongoing support, training and opportunities to practise and perfect these skills. The program focuses on four core areas:




Communication skills including effective presentations, oral communication, written communication, public speaking and communicating technical material to non-technical audiences



Career development skills including case practice, interview skills, CV writing, networking, and business etiquette



Team skills including managing conflict, cultural awareness, giving and receiving feedback, and resilience



Business knowledge including understanding the business and industry context in which analytics professionals operate, how different parts of organisations interact, and meeting and networking with business leaders.

Academic experts and business leaders are invited to speak to the class about a range of subjects to increase knowledge and understanding of business environments.

Typical Topics



Seminars and workshops delivered through PDP may include:

- Managing your career
- How to find and use a mentor
- Managing your next career transition
- Technical writing for a non-technical audience
- Difficult conversations and managing up
- Storytelling with data
- Presentation skills
- Networking skills
- Behavioural interviewing
- Case interview techniques
- Leading a team
- Project management
- Using LinkedIn for your job search.

The structure of the morning lectures and afternoon workshops meant that you could take advantage of the afternoon sessions to absorb and reinforce the prior content.

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JENNY FILBY
GENERAL MANAGER,
REPORTING AND
ANALYTICS,
CONVERGE INTERNATIONAL
FULL-TIME MASTER OF
BUSINESS ANALYTICS
GRADUATE

REBECCA WILSON
MANAGER, ANALYTICS AND
AUTOMATION
AUSTRALIAN VENUE CO.
FULL-TIME MASTER OF
BUSINESS ANALYTICS
GRADUATE

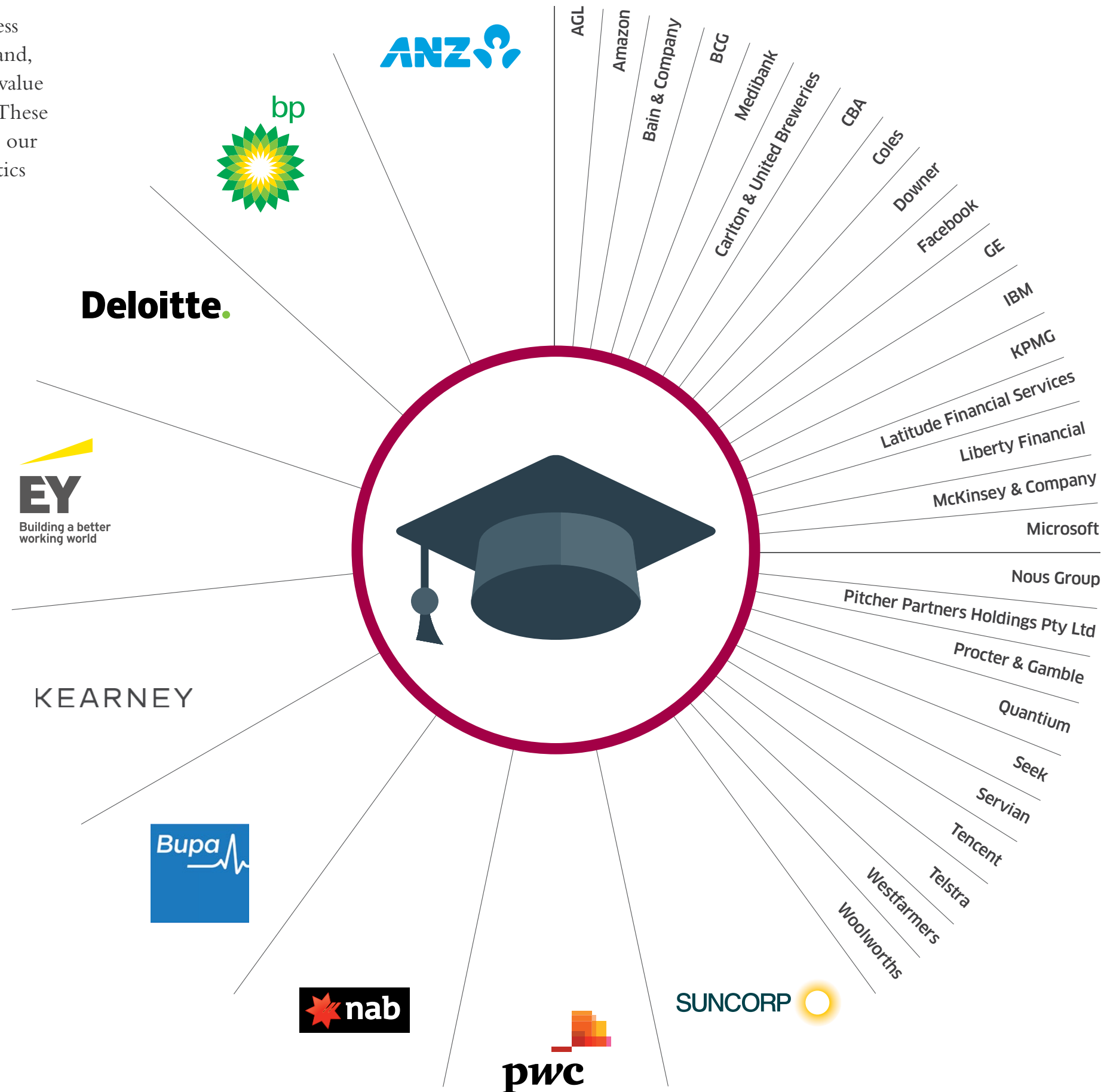


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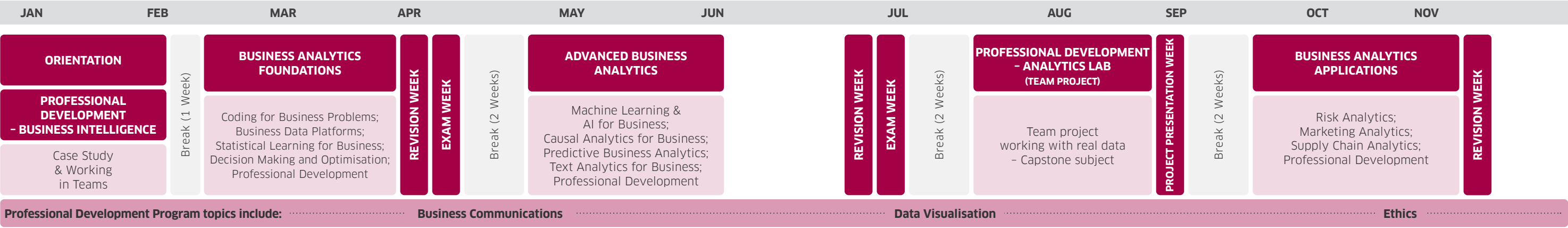
The [PDP] sessions really helped me build on my soft skillset. It was one of the things that most attracted me to the Full-time Master of Business Analytics program. The sessions ranged from workshops with an acting company to work on voice projection and body language, to networking and interview etiquette training – all of which were very useful at the many industry events held by the School.

Graduate outcomes

Graduates of Melbourne Business School's Full-time Master of Business Analytics program are in high demand, due to their ability to add tangible value to the organisations they work for. These are just some of the companies that our Full-time Master of Business Analytics graduates are working at.



Indicative Program Structure



The goal of this program is to equip its graduates with the capabilities to apply data-analytic techniques to a variety of business problems. The knowledge and skills required to do this are multi-disciplinary, drawing on mathematics, statistics, computer science and business. The program will cover foundational and advanced data-analytic techniques, as well as frameworks for applying those techniques to a variety of business contexts.

The program is intensive. Content is organised into five modules, covering a whole calendar year. Generally speaking, mornings are devoted to lectures, workshops and direct instruction. Afternoons are devoted to exercises, team assignments and tutorials.

Typical week

	Monday	Tuesday	Wednesday	Thursday	Friday
9.00am -12.00pm	Coding for Business Problems	Business Data Platforms	Statistical Learning for Business	Decision Making and Optimisation	Professional Development
12.00pm-2.00pm	Lunch Break	Lunch Break	Lunch Break	Lunch Break	Lunch Break
2.00pm-5.00pm	Coding for Business Problems exercises	Business Data Platforms exercises	Statistical Learning for Business exercises	Decision Making and Optimisation exercises	Professional Development

Module 1

Professional Development - Business Intelligence

This subject is the introduction to the Full-time Master of Business Analytics. It focuses on two issues: (i) introduce business problems, best addressed with analytics, and their complexities, and (ii) the complexities of possible solutions. A broad survey of business frameworks and perspectives are covered in this module to help set the context for the business problems encountered. Team processes will be examined, and project management tools provided, to implement the proposed solutions.

During the module, students will also attend sessions on foundational concepts in maths, statistics, programming and SAS to ensure that all background material required for Module 2 has been reviewed.

Students will be presented with a dataset and a case study of an organisation, facing a significant business problem. Students will be asked to prepare possible solutions to the problem.

Module 2

Foundations of Business Analytics

This subject equips students with the foundations and tools needed for a career in Business Analytics.

Coding for Business Problems

Solving problems in business often requires computer programming to manipulate, analyse, and visualise data. This component helps students, with little or no background in computer programming, learn how to design and write programs using a high-level procedural programming language, and to solve problems using these skills. Topics such as cyber security, cyber ethics and privacy, regarding the collection of individual data, will also be discussed.

Business Data Platforms

Data warehouses are designed to provide organisations with an integrated set of high-quality data to support decision-makers. They should support flexible and multi-dimensional retrieval and analysis of data. Topics covered include data warehousing and decision-making; data warehouse design; data warehouse implementation; data sourcing and quality; online analytical processing (OLAP); dashboards; data warehousing for customer relationship management; and case studies of data warehousing practice.

Decision Making and Optimisation

There are an assortment of mathematical methods to obtain efficient solutions to a large variety of complex business problems. This component helps students formulate a business problem as a mathematical model and then use computational techniques to estimate and solve the model. Topics covered could include decision-making under uncertainty, optimal location/ allocation of resources in business processes, decision trees, linear programming, integer linear programming, and Monte Carlo simulations.

Statistical Learning for Business

With the explosion of available data, statistical learning, which is the analysis of complex datasets, has become an important field in many business contexts, including marketing, finance, and even human resource management. The aim of this component, and the follow-on component in Advanced Business Analytics, is to help students learn how to extract relevant information from large amounts of complex data to make improved business decisions. Topics covered in this component include data exploration; resampling methods; linear and nonlinear regression; parametric classification techniques; and model selection.

Module 3

Advanced Business Analytics

This subject equips students with the advanced models, methods and tools required for a deep understanding of the latest analytic techniques.

Machine Learning and AI for Business

This component builds on the material in Module 2’s Statistical Learning and covers advanced analytic methods. It extends the statistical-learning component of Module 2 (Foundations of Business Analytics) in three ways. First, new techniques, such as tree-based methods and neural networks, are introduced. Second, students are introduced to unsupervised statistical-learning techniques, and third, students learn how to combine models and techniques to produce ensembles with better predictive capabilities.

Causal Analytics for Business

Data Analytics models can be used to predict a performance variable. But many business decisions are not about predicting performance per se. They are about choosing the values of key inputs, such as price or advertising spend, to optimise performance. This requires that the effects of the inputs, as coded by the model, are causal. This typically requires further assumptions about how the data was generated.

The gold standard for establishing causality is a randomised experiment, which is becoming more common in business contacts. The course covers basic principles and practice of experimentation from A-B testing to randomised incomplete block designs. All these methods give rise to estimates of causal effects.

Predictive Business Analytics

Predicting key business and economic variables is increasingly important as it drives both objective decision-making and improved profitability.

This component aims to cover the main methods used to predict business and economic variables, based on historical data. These methods include traditional regression, time series, multivariate and econometric models, as well as emerging methods such as ensemble forecasts. Both point and density prediction will be considered, along with metrics for the quality of both. Throughout, the focus will be on introducing methods in the context of substantive business and economic problems using a wide range of prediction methods.

The importance of benchmarking different methodologies, and the use of prediction in decision-making frameworks, is also stressed.

Text Analytics for Business

This component helps students develop an understanding of the key algorithms used in natural-language processing and text retrieval for use in a diverse range of applications, including search engines, cross-language information retrieval, machine translation, text mining, question answering, summarisation, and grammar correction. Topics to be covered include text normalisation; sentence boundary detection; part-of-speech tagging; n-gram language modelling; sentiment analysis; web mining and analysis; network analysis (including social network analysis); and text classification.



Module 4

Group Internship

This subject involves practical experience for teams of students working on a real analytics project for an organisation. The five-week project integrates academic learning, practical challenges in implementing data analytics in an organisation, employability skills and attributes, and an improved knowledge of organisations, workplace culture and career pathways.

The assessment week will involve the completion of a report for the subject and a project presentation.

In 2021, students worked with:

- ANZ
 - Tanarra Capital
 - BP
 - Deloitte
 - Downer
 - EY
- Melbourne Water
 - Suncorp
 - Nikpol
 - Department of Premier & Cabinet
 - L’Oréal Australia

What type of topics could be covered?

Data analysis on datasets, investigating issues such as:

- Customer churn/loyalty
- Logistics and supply chain
- Forecasting demand
- Optimal product or category portfolio
- Marketing-mix optimisation
- Credit risk
- Employee selection, retention and training
- Analysis of social media or other unstructured data sources

Optimisation of processes, such as:

- Call centre operations
- Logistics and delivery routes
- Schedules
- Allocation of marketing resources across products
- Service delivery

Module 5

Business Analytics Applications

This module’s primary focus is the application of data analytics in business contexts. Three of the subject’s components address common applications of business analytics: Risk Analytics, Marketing Analytics and Supply Chain Analytics.

Risk Analytics

Quantitative analytics have become an invaluable part of managing financial institutions, not only for profitability but also for safeguarding the organisation against risk. In this component, students will be applying data-analytic skills to finance applications. Topics include financial performance benchmarking; modelling and computation of financial risks; dynamic portfolio management; computational derivative pricing; and modelling fixed income securities. The focus of the component will be on both theoretical development and practical implementation, using contemporary data from the financial market.

Marketing Analytics

It has become increasingly important to know how marketing actions translate into revenue and profit growth. The tools that enable this translation are part of the toolkit called ‘marketing analytics’. Marketing analytics is a technology-enabled and model-supported approach to harness customer and market data and enhance marketing decision-making. This component of Module 5 provides students with (i) knowledge of marketing analytics, (ii) the ability to know which analytics tools to use for which marketing problems, (iii) the ability to use those tools to solve marketing problems, and (iv) the ability to influence marketing outcomes such as satisfaction, choice, loyalty, word of mouth, and customer referrals.

Supply Chain Analytics

Rapid advancements in technology (particularly the Internet), combined with fast and cheap computing power, has enabled firms to radically transform their industries by developing business models and re-engineering their supply chains. This Module 5 component provides students with (i) knowledge of mathematical modelling and analytic tools, relating to logistics and supply chain optimisation problems, (ii) the ability to use these tools and techniques to analyse strategic, tactical and operational decisions, pertaining to inventory management, facility location, logistics and other supply chain, management-related decisions, and (iii) exposure to real world logistics and supply chain decisions through case studies.

Analytics Lab snapshot: EYC3

For their five-week analytics lab, students Shin Tan, Ignacio Recasens and Joshua Carmichael helped design and build a client-facing website chatbot for EYC3 – EY’s Asia Pacific centre of information management excellence.

The ultimate purpose of the tentatively named ‘Bot-bot’ is to support clients and develop their understanding of EYC3. It will answer simple and curveball questions, direct users to where they need to be, retrieve case studies and converse naturally to provide a memorable experience.

In designing variations of the conversation flow, the students gathered a list of possible questions and used Microsoft Community of Intelligence technology to best understand the intent behind each query. By effectively creating a new EYC3 staff member, the students are helping to improve user experience and show that EYC3 is a pioneer in the use of artificial intelligence.

Working alongside some of the brightest talents in advanced analytics at EYC3, the students have applied numerous techniques learnt in the classroom to a cutting-edge business challenge.

For EYC3, the chatbot has just begun to grow. As the technology evolves and new ideas emerge, EYC3 will build upon the students’ work to showcase its technological capabilities in the APAC region.

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JOSHUA CARMICHAEL

FULL-TIME MASTER OF
BUSINESS ANALYTICS
GRADUATE

In terms of the bot’s personality, we’re trying to give it a bit of flair. You want to see a bit of variety, a bit of spice and we’re trying to inject that into its personality so people will be engaged by the chatbot.

Analytics Lab snapshot: Suncorp

After an intensive five-week analytics lab, students Maggie Ma, Zihan Gao and Raj Vijayaraghavan delivered a commercial insurance forecasting tool that Suncorp now uses every day.

The students were given ownership of a large analytical problem to which they applied classroom techniques and visualisation tools to analyse a few hundred million rows of clean and dirty data. They deciphered a way to influence cash flow and revenue to improve the bottom line, and experienced just how complicated real-world data can be.

Thanks to careful planning, the close-knit team systematically broke the problem down and brought structure to the data so it was easier to work with in their allotted time. They then applied their soft skills to communicate with stakeholders about the project, which helped them clarify the best way to present their solution as a money saver.

Thanks to their meticulous work, stakeholders in the business were pleased with the elegant solution the students created from the sea of data they dealt with every day of the lab.

As new data continues to pour in to Suncorp, the team is proud that their forecasting tool can handle any large dataset that comes its way, making all future reporting for Suncorp much easier.

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MAGGIE MA

FULL-TIME MASTER OF
BUSINESS ANALYTICS
GRADUATE

I really liked the working environment here. The people are very friendly and I like how they won’t tell you the answer to a problem, instead they will tell you how to solve that problem yourself. So that helped me a lot throughout the entire process.

Analytics Lab snapshot: Downer

Full-time Master of Business Analytics students Coco Wu, Imalka Rangala and Venkatesh Vijayaraghavan worked with Downer's Road Services team to optimise the way pavement materials are produced and delivered to job sites each day.

A key operation of Downer's Road Services team is to schedule trucks throughout the day to pick up the required asphalt mix manufactured at their asphalt plants and deliver them to specific job sites.

Working closely with the pavements production team, the A-Lab team developed a set of decision support tools aimed at helping plant allocators determine an optimal job schedule on any given day.

Raw data such as a job list of customer demands and materials, were transformed and inputted into the model. Multiple mathematical formulae were created to represent the decisions at different stages and to accurately capture the objective functions and the constraints.

The optimisation models they built reduce production and transport costs, eases the workload of the human allocator at the source plant, and provides Downer with both the macro and micro-outlook on the business operation for strategic decision-making.

COCO WU

FULL-TIME MASTER OF
BUSINESS ANALYTICS
GRADUATE



The A-Lab experience... helped me get a taste of working as a data professional. As well as having the opportunity to apply classroom knowledge in solving real-world problems, I also got experience in stakeholder management and communicating my ideas clearly to people without a strong technical background.

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Analytics Lab snapshot: L'Oréal Australia

Full-time Master of Business Analytics students Lizzy Prosselkova, Claire Li and Fan Jia were tasked with finding ways to improve how L'Oréal Australia predicts consumer appetite for its products, or 'consumer-side demand forecasting'.

Something Lizzy didn't expect when starting the project was just how much support there was for data-driven decision making within the company – and the fact everyone already knew about the challenge she was working on.

During that five-week period, Lizzy and her teammates worked closely with members of the Data Science team and the Consumer Products Division to help develop their demand planning and forecasting methodology. This gave her the opportunity to work closely with different teams and stakeholders across the project, including the Head of People and the CEO.

Throughout the project, Lizzy and the A-Lab team were supported by mentors from the company as well as their professors from the Master of Business Analytics. Lizzy also got to see how L'Oréal Australia shares knowledge about analytics across different teams. At L'Oréal's Plenary Day, for example, a whole day was dedicated to educating and discussing topics in analytics for all levels of the organisation, she recalls.

"The support and enthusiasm from all departments was inspiring. People are truly excited to learn more about this emerging field," Lizzy said.

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LIZZY PROSSELKOVA

FULL-TIME MASTER OF
BUSINESS ANALYTICS
GRADUATE



L'Oréal Australia is pioneering the way in disruptive data and analytics in CPG (consumer packaged goods). I found the A-Lab a truly unique experience in which I had the opportunity to dive into a large organisation with a pioneering analytics team, and apply some of the skills that I learned in class.

“



CHRISTELLE YOUNG
CHIEF STRATEGY & ANALYTICS
OFFICER
AT L'ORÉAL SOUTH ASIA
PACIFIC, MIDDLE EAST &
NORTH AFRICA
FULL-TIME MASTER OF
BUSINESS ANALYTICS
GRADUATE

The program brings in a technology aspect and a business aspect that no other course or school can offer. It's the first time I've been able to explore different elements of what I'm good at – IT, Mathematics and Business – and bring them all together. Not only that, the Professional Development Program enabled me to refine those communication skills that a lot of other courses forget about.

”



JASON WIDJAJA

ASSOCIATE DIRECTOR, GLOBAL
DATA SCIENCE COMPETENCY,
MSD (SINGAPORE)
FULL-TIME MASTER OF
BUSINESS ANALYTICS
GRADUATE

The most effective analytics leaders marry technical understanding, commercial acumen and strategic thinking – and that's what Melbourne Business School teaches. Real-life data science is intensely technical but also intensely business focused. Knowing the right talent, technical approaches and analytics tools to bring to the table is invaluable.

Learn from our world-class faculty

Our faculty experts will help you approach problems in new ways and master the tools required to solve them.

Melbourne Business School will provide a blend of statistical, mathematical, and decision-making tools while computing and data-management skills will be provided by the Department of Computing and Information Systems at the University of Melbourne's School of Engineering. Together, we deliver an integrated program that will provide you with the skills to not only analyse the data but also use that information to formulate strategy.

We teach using a variety of techniques, including case studies, simulations and practical projects. These techniques allow you to work in a team, tackle real data, think critically and articulate your findings.

For a full list of our Faculty, please visit <https://mbs.edu/faculty>



Yalçın Akçay

Director of the Centre for Business
Analytics and Associate Dean,
Business Analytics
PhD (Penn State University)
MBA, BSc, Middle East Technical University



Tomohiro Ando

Professor of Management
PhD, B.S (Kyushu University)



James Bailey

Professor
(Computing and Information Systems)
PhD, BE (Hons), BSc (Melb)



Gerardo Berbeglia

Associate Professor
(Operations Management)
PhD (HEC Montreal)
MSc and BSc (Buenos Aires)



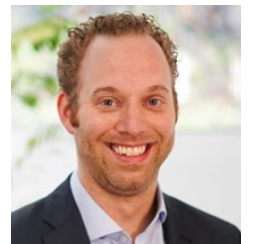
Chris Lloyd

Professor of Statistics
PhD (Melb)



**Worapree (Ole)
Maneesoonthorn**

Associate Professor
(Statistics and Econometrics)
BCom (Cant), BA (Cant), MAE (Monash),
PhD (Monash)



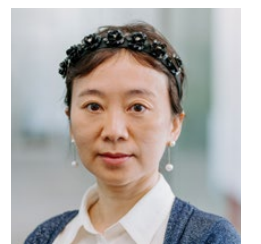
Nico Neuman

Assistant Professor (Marketing)
PhD (UNSW), Dipl. (Wirtschaftsng.
Uni Kaiserslautern)



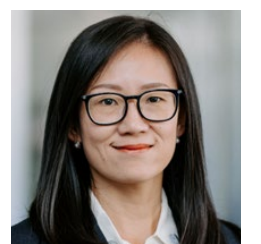
Michael Smith

Chair and Professor
of Econometrics
PhD (UNSW), BA Hons (UWA)



Ping Xiao

Associate Professor (Marketing)
PhD (Washington University),
BSBM (University of Science and
Technology of China)



Wenying Yao

Assistant Professor
(Econometrics and Business Statistics)
PhD (Monash)

Why Business Analytics?

Today, majority of companies spend a significant portion of their total technology budgets on data analytics. Despite an influx of talent into the job market in recent years, there is still significant shortage of highly specialised and skilled analytics professionals as demand continues to outpace supply. The US Bureau of Labour Statistics estimates that jobs requiring data science and analytics skills will rise by 28% by 2026. And according to Accenture, although

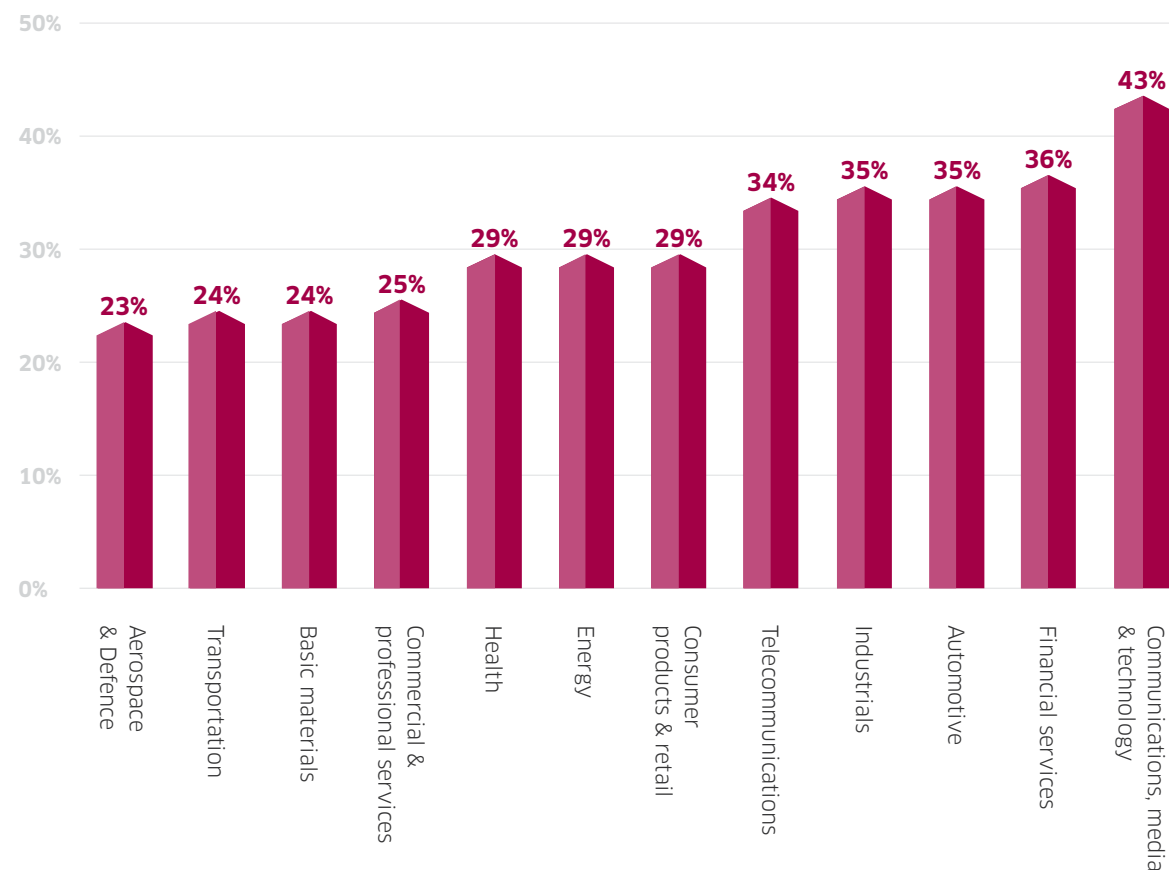
the industry has been largely centred in the United States and Western Europe, it is fast expanding to the rest of the world.

Analytics is quickly moving from a background role in business to the centre of many key decisions and processes. Many industries, which never considered using data in the decision-making process, are recognising analytics as a strategic capability.

The upside of data analytics is that businesses can see the benefits. It leads to change and improvement and the ultimate goal of increased business growth.

Whether it's predictive analytics, insight analytics or optimisation, the analysis of data in business helps make informed decisions across varying business problems in many domains. That's why demand for professionals possessing these skills is increasing.

The expected
**growth for
analytics
talent over the
next five years**



Source: A.T. Kearney 2015 LEAP (Leadership Excellence in Analytic Practices) talent study

The type of jobs the Master of Business Analytics could lead to:





NAGENDER CHETTI
Executive Manager,
Commercial & Consumer
Markets - Insurance
Mass Markets Manager
- Insurance



Case studies

Analytics professionals gather and organise data – small or big, structured or unstructured – for analysis using statistics and modelling, and build maths models through optimisation and simulation. The following examples show how organisations use business analytics to gather insights and make business decisions.



1 How analytics helped Suncorp understand driver behaviour

To understand the driving behaviour and events that can lead to insurance claims, Suncorp's Motor Insurance department worked with external analytics consultants to gain predictive insights for their current and future policyholders.

Over six months, the team looked at existing customer data and purchased information to:

- Outline where customers live
- Identify where customers could drive in a 5 and 10-minute radius
- Investigate the type of roads (back, main, freeway, dead-end) and the surrounds (walkways, parks, schools, supermarkets, intersections) within each radius
- Compare the information against existing insurance claims.

Using various technical and statistical models, the findings were applied to every property within a region for Suncorp to predict insurance claim frequencies – allowing them to predict the number of accidents a customer could have depending on their location.

The findings became part of Suncorp's pricing algorithm for motor insurance, ensuring that its policies and premiums were set at the right level for where a customer lives.



2 Repositioning Kmart

The business problem

In Australia, Kmart was struggling in the first decade of the new millennium. Profits were meagre and store traffic was stagnant. Furthermore, the brand was indistinct, having no strong position among the several discount department stores in the market.

One of the first steps taken by the new CEO was to introduce everyday low pricing and remodel stores. These changes resulted in some moderate improvement in store visits, but the brand message was still vague in the mind of consumers.

How data was used to help solve the business problem

To address the business problem, Kmart hired Forethought Research to undertake a thorough analysis of the factors that influence store choice.

It needed a model that:

Showed consumers' likelihood to choose a store, incorporating both emotional and rational evaluations of all stores in the market.

Simultaneously accommodated the attributes of performance, reputation and price; weighted and ranked into a hierarchy, according to their relative importance.

Captured differences between shoppers, including differences that can't be easily observed.

Represented how beliefs, emotions and preference change over time.

Emotions were measured and captured, using a quick but effective method to measure nine key feelings: surprise, happiness, love, pride, contentment, anger, sadness, anxiety, shame and value. Forethought Research found that including these emotions significantly improved the model for likelihood to choose a store. A key component of the conceptual model was the linkage between value, quality and price.

The outcome

Measuring emotions enabled Kmart's advertising agency to create a television commercial that tapped into the specific emotions that most strongly predict store choice. That is, the model informed the advertising creative brief, something that is notoriously difficult to achieve successfully. The resulting television commercial proved to be highly effective.

Using an econometric model, it was found that store visits were significantly enhanced, over and above Kmart's usual advertising effects, after the launch of the new campaign, which promoted two of the key emotions.

Moreover, compared with store-visit levels before the campaign, total annual visits increased by 20% over the next two and a half years, while the number of items sold increased by 42%. Finally, Earnings Before Interest and Taxes (EBIT) increased by 30% (more than \$65 million) in one year. Interestingly, Kmart's main rival had almost no EBIT growth over the same period, despite vigorous attempts to create advertising interference to counter Kmart's highly successful television commercial.

To read the full case-study visit: bit.ly/KmartStudy

Authors

Ken Roberts: CEO, Forethought Research. Alumnus of Melbourne Business School and a current Part-time Master of Business Analytics industry partner and program supporter.

John Roberts: Professor of Marketing, Australian National University and London Business School.

Peter Danaher: Professor of Marketing and Econometrics, Monash University.

Rohan Raghavan: Research Analyst, Forethought Research.

Industry leaders

NIGEL ANDRADE

Partner & Managing Director,
Australia & New Zealand
Global Lead Partner,
Proposition & Customer
Experience (PCE) Labs
Kearney



The industry, in many ways, is crying out for this integrated skillset, and I would be surprised if the students going through this program have any challenge landing excellent jobs. Being tri-lingual – conversant in technology, analytics and business – is squarely within the cross-hairs of what the industry needs.

ENRICO RIZZON

Vice President and Partner,
Member of the Kearney
Global Partner Selection
Committee



During the next 20 years, as analytics becomes more important, it is about far more than data – big or otherwise. It is about building a pervasive analytics culture with a clear vision, strong capability, and C-suite support to leverage data-enabled insights that fundamentally improve the competitive position of firms in Australia and around the world. That is why you should do the Part-time Master of Business Analytics program, because graduates of the program are the people that tomorrow's organisations are looking for and need today.

”

JANE EASTGATE

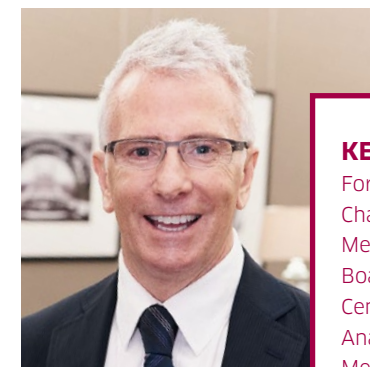
Head of Analytics Delivery,
Bunnings
Industry Advisor Board
Member
Centre For Business
Analytics



Never has there been a more pressing need by business to create value from data. The Centre For Business Analytics has pioneered a curriculum that sees students graduate with a strong working knowledge of customer and commercial analytics. Uniquely advised by industry, the CbBA is a trusted advisor guiding Executive team through its education program, informing trends and issues via the annual Global Analytics Impact Index and attracting world class speakers at the annual conference.

KEN ROBERTS

Forethought Executive
Chairman
Member, Industry Advisory
Board,
Centre for Business
Analytics
Melbourne Business School



There are those who assume that if we have enough data the numbers will speak for themselves. It is not machine led unaccompanied analytics but rather, humans who will make the essential connections. These latter day data explorers are bound to become our new “cartographers.”

Forethought Research wishes to congratulate Melbourne Business School for the outstanding Masters of Business Analytics program and faculty. We are confident that many of our newest and best navigators will hail from this program. Our support extends to offering the leading candidate from each year the Forethought-Roberts Prize.

“

How to apply

The application process is online at apply.mbs.edu



Required documents

You will need the following supporting documents:

1. An up-to-date CV showing at least two (2) years of work experience.
2. Academic transcript/s. If you haven't yet completed your undergraduate degree but have one semester left, please provide results for as much as you have completed at the time of your application.
3. Evidence of citizenship such as a passport or a birth certificate.
4. For non-Australian citizens residing in Australia: Evidence of residency status such as a visa.
5. For non-native English speakers: A copy of an approved English-language test with the required minimum scores.

Minimum admissions requirements

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

1. Completed an undergraduate degree of 3 or 4 years minimum in one of the relevant areas listed below, taken at a third-year university level from a recognised institution, with a minimum weighted average mark (WAM) of 65 or equivalent.
 - Mathematics or Statistics
 - Computer Science
 - Information Systems
 - Engineering
 - Physics
 - Finance or Economics
 - Science
 - Actuarial Science
2. Two years of professional working experiences.
3. Met the university's English-language requirements.

Meeting these requirements does not guarantee selection.

Ideally, you have completed a sequence of two or three undergraduate or graduate statistics courses that include probability theory and regression analysis, but demonstrated mathematical preparation and quantitative aptitude may suffice.

In ranking applications, the Selection Committee will consider:

- a. Prior academic performance;
- b. An interview for short-listed applicants; and
- c. Professional working experiences

Fellowships

Each year, a number of fellowships are offered for the Full-time Master of Business Analytics program. All applications received by the application closing dates are considered (no additional application required). Additional interviews may be requested to determine awardees.

Student Fellowship Program

The Centre for Business Analytics appoints a select group of Student Fellows from the incoming cohort of Full-time Master of Business Analytics students each year. The Student Fellows work on business analytics research and various data related projects during the academic year. These hands-on projects will allow the Student Fellows to apply the skills learnt in the classroom and provide valuable exposure to senior executives and academics looking to solve business analytics challenges. The Student Fellowship will involve up to 250 hours of work during the academic year.

The Forethought-Roberts Prize

Ken Roberts, Chief Executive Officer of Forethought Research, is proud to award the Forethought-Roberts Prize to the top student in the Full-time Master of Business Analytics program.

The \$5,000 prize and medal is awarded at the end of each year and recognises the outstanding skills and achievements of one student.

Centre for Business Analytics

The Centre for Business Analytics was founded by Melbourne Business School in 2014 to address the worldwide demand for analytics research and knowledge. The vision of this multi-disciplinary centre is to 'Transform Decision Making through Business Analytics'. The Centre investigates how data – small or big – can drive organisational success through fact-based, data-driven, proactive decision making. With a mission to be a key catalyst in helping Australian businesses gain a distinctive competitive advantage through harnessing the trilingual insights of business, mathematics and technology; it achieves this by creating collaboration amongst students, faculty, and industry leaders to deliver both academic and business impact.

The central purpose of the Centre is to contribute broadly and deeply to knowledge and practice of analytics. To aid this purpose, we facilitate joint research projects between our Academic Fellows and industry partners. The Academic Fellows of the Centre have expertise in econometrics, statistics, marketing, operations, supply chains, finance, and organisational behaviour, and hence can support projects in a wide range of applications of business analytics. We also deliver executive education programs catered towards senior executives as well as general managers on various topics, including data mindset, diagnostic, predictive, causal, and prescriptive analytics.

Engagement with the business community

The Centre is guided by an Industry Advisory Board, from a cross-section of business, which brings diversity and depth of experience to developing and guiding the Centre's strategy. They are acknowledged leaders in driving the use and influence of business analytics in industry and government. Further, the Centre has a number of corporate partners who facilitate research; provide challenging business opportunities to students as part of the Analytics Lab module; and sponsor scholarships and prizes. It is through this depth of engagement that MBS can ensure the continued relevance of the Part-time Master of Business Analytics degree and the availability of meaningful learning opportunities.

Events

The Centre for Business Analytics hosts regular industry events as well as an annual flagship conference providing opportunities to engage with leading global analytics academics, leaders and practitioners.



Corporate partners

Centre for Business Analytics Advisory Board Members



Centre for Business Analytics Corporate Members



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