We are excited to be bringing the new Bachelor of Applied Data Science, and the Bachelor of Applied Data Science (Honours) to Monash University.

Research and analysis with big datasets are making a positive impact on our daily lives across a very wide range of disciplines.

Our new Applied Data Science programs, available from 2020, will deal with the challenges that large bodies of data present to research, industries, and society.

These courses represent a key component of broader cross-faculty data science initiatives at Monash.

Data Science is one of the hottest topics in technology and is a highly in-demand field, but there is a shortage of skilled, qualified data scientists worldwide.

Our world-class staff and teaching environment will provide you with a globally recognised education and the skills to make a difference in the world of Data Science.

**Professor Jordan Nash**
Dean of Science

Data Science plays a vital role in helping organisations make sense of the massive amounts of data collected in every industry, from space exploration to fashion.

Graduates who understand data analytics are in great demand by industry and government.

These courses take an interdisciplinary approach to Data Science to ensure you have both the technical and domain-specific skills to land your dream job.

We encourage you to join Monash and learn from the strongest group of data scientists of any university in the Asia-Pacific region. Prepare yourself for a future at the forefront of this exciting field.

**Professor Jon Whittle**
Dean of Information Technology
“In this data-dominated era, everything and everyone produces a digital paper trail. If businesses want to gain an edge, they need to be able to tap into those large, elusive data sets to make better decisions about how products are built, markets are found, clients and employees are supported, and sales are generated. Hence the need for data scientists.”

– Forbes

Upon successful completion of the degree, possible careers for graduates could include:

- Data scientist
- Business intelligence analyst
- Data mining engineer
- Data architect

In a range of industries, including:

- Digital humanities
- Consulting
- Cybersecurity
- Law
- Scientific research
- Marketing
- Robotics
- Engineering
- Business analytics
- Banking
BACHELOR OF APPLIED DATA SCIENCE

If you’re interested in mastering big data and helping others to understand it, this is the course for you. This program of study will provide you with the skills necessary to solve a wide range of problems.

This is a specialist course which will develop your technical know-how in being able to approach data challenges.

Through selected streams, you’ll develop your passion for the physical sciences, sociological or anthropological studies, business or engineering. Working in groups and on individual projects, you’ll bring together key skills in IT and mathematics, and apply these to real-life projects.

PREREQUISITES

**VCE**

**English:** Units 3 and 4: a study score of at least 30 in English (EAL) or 25 in English other than EAL.

**Maths:** Units 3 and 4: a study score of at least 25 in Mathematical Methods (any) or Specialist Mathematics.

**IB**

**English:** At least 4 in English SL or 3 in English HL or 5 in English B SL or 4 in English B HL.

**Maths:** At least 4 in Mathematics SL or 3 in Mathematics HL or 3 in Further Mathematics HL.

**Our VTAC Subject Adjustment Bonus**

This rewards students studying more than one of the following Year 12 science subjects; Algorithms (HESs), Biology, Chemistry, Environmental Science or Physics – this could improve your ranking and eligibility by providing additional points towards your ATAR aggregate.
# Course structure

<table>
<thead>
<tr>
<th>YEAR 1</th>
<th>Semester 1</th>
<th>ADS1001</th>
<th>MAT1830</th>
<th>MTH1020</th>
<th>Applied studies</th>
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<tr>
<td>Data challenges 1</td>
<td>Discrete mathematics for computer science</td>
<td>Analysis of change or MTH1030 Techniques for modelling or MTH1035 Techniques for modelling (advanced)</td>
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<td>Semester 2</td>
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<td>MTH1030</td>
<td>Applied studies</td>
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<td>Techniques for modelling or MTH2040 Mathematical modelling</td>
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<tr>
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<td>Modelling for data analysis</td>
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<tr>
<td>YEAR 3</td>
<td>Semester 1</td>
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<td>FIT3181</td>
<td>MTH3241</td>
<td>Free elective</td>
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<td>Advanced data analysis</td>
<td>Applied deep learning</td>
<td>Random processes in the sciences and engineering or MTH3320 Computational linear algebra</td>
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<td>ADS3001</td>
<td>MTH3330</td>
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<td>Advanced data challenges (12 points)</td>
<td>Optimisation and operations research</td>
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| A | Data challenges |
| B | Techniques for data science |
| C | Applied studies |
| D | Free elective |
BACHELOR OF APPLIED DATA SCIENCE ADVANCED (HONOURS)

This is an advanced degree program for those passionate about Data Science.

This four-year specialist course brings together studies in IT and mathematics in a series of interdisciplinary problem-solving challenges.

Research and analysis into big data have the capacity to make a positive impact on our daily lives. This degree will give you the skills necessary to provide solutions to a wide range of problems.

Through selected streams, you’ll develop your passion for the physical sciences, sociological or anthropological studies, business or engineering. Working in groups and on individual projects, you’ll bring together key skills in IT and mathematics, and apply these to real-life projects.

PREREQUISITES

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**Maths**: Units 3 and 4: a study score of at least 30 in Mathematical Methods (any) or Specialist Mathematics.

IB

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**Maths**: At least 5 in Mathematics SL or 4 in Mathematics HL or 4 in Further Mathematics HL.
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<th>Course Title</th>
<th>Description</th>
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<td>MTH2051 Introduction to computational mathematics</td>
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<td>FIT3181 Applied deep learning</td>
<td>MTH3241 Random processes in the sciences and engineering or MTH3320 Computational linear algebra</td>
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**A** Data challenges  
**B** Techniques for data science  
**C** Applied studies  
**D** Advanced practice  
**E** Free elective