THE UNIVERSITY OF QUEENSLAND
AUSTRALIA
CREATE CHANGE

Program Information for Master of Data Science suite

Acknowledgement of Country

The University of Queensland (UQ) acknowledges the Traditional Owners and their custodianship of the lands on which we meet.

We pay our respects to their Ancestors and their descendants, who continue cultural and spiritual connections to Country.

We recognise their valuable contributions to Australian and global society.

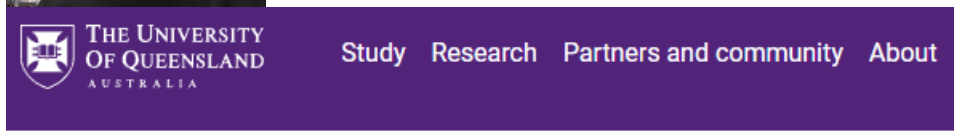
The Brisbane River pattern from *A Guidance Through Time* by Casey Coolwell and Kyra Mancktelow.

Program Convenors of MDataSc

Maths/Stats (SMP)

- Dr Slava Vaisman (Convenor)

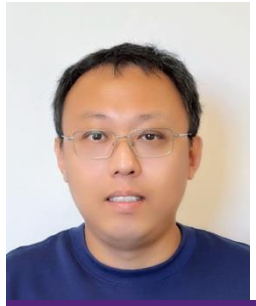
- DATA7901 Capstone Project



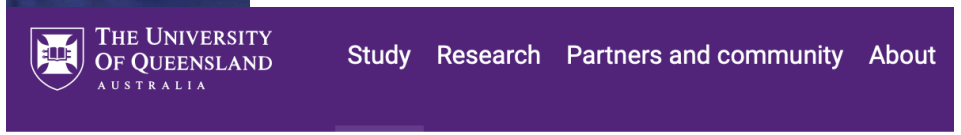
School of Mathematics and Physics

Data Science (EECS)

- A/Prof Sen Wang (Convenor)
- Academic advising by appointment
- https://itee.uq.edu.au/current-students/academic-advice/master-data-science



- INFS3208 (Sem 2)
- INFS3200 (Sem 1)



School of Electrical Engineering and Computer Science

Plan For Today's Session

Duration	Activity
10 minutes	Welcome and icebreaker activity
20 minutes	Program Information
10 minutes	Q&A
10-20 minutes	Team building activity
20 – 30 minutes	Networking
4:00pm – 5:30pm	Post Grad Social Mixer_refreshments available 47A-courtyard

Plan For Today's Session

Duration	Activity
3-3.15pm	Welcome and general information – Sen • Overview of some essential information to get you started • Find out where you can get help • Learn about ways you can get involved to make the most of your UQ journey
3.15-3.25pm	Introduction to Data Science – Sen • What is Data Science & Why Study Data Science
3.25-3.35pm	Introduction to Program Structure – Slava • How to study Data Science at UQ
3.35-3.45pm	Study Plan – Sen
3.45-3.55pm	Q&A
4:00–5:30pm	Post Grad Social Mixer_refreshments available 47A-courtyard

Faculty of Engineering, Architecture and Information Technology

School of
Chemical Engineering

School of Architecture, Design and Planning

School of Electrical Engineering and Computer Science

School of
Civil Engineering

School of Mechanical and Mining Engineering

Centre for Natural Gas

Centre for Water and Environmental Biotechnology

Resources to help you to get started:

- Getting Started at UQ : www.uq.edu.au/startingatuq
- EAIT essential information video: https://www.eait.uq.edu.au/orientation
- Engineering Resources: https://www.eait.uq.edu.au/current-students/information-new-students/get-started-engineering
  - Academic planning resources
  - Support
  - Preparing for semester
  - Getting involved

https://www.youtube.com/watch?v=oXZZvygHea8

- Basic UQ Terminology:
  - **Program** = degree you're studying, e.g. M. Data Science or dual degree
  - **Course** = subject
    - Each course has a course code (e.g. "DATA7001", "DATA7901")
  - **Unit** = measure of workload of a course
    - Most courses are 2 units (and assumes a minimum of 10-12hrs work per week)

Timetables, Changing & Dropping Courses

Class Allocation is via MyTimetable system via your my.UQ Dashboard: http://my.uq.edu.au/

1. Go to **'mySI-net'** to enrol in chosen course(s)

2. Go to **'My Timetable'** to use the Allocate+ system to preference class times **(Closed 27/01/2025)**

3. Classes are then allocated automatically with personal timetable released **12pm 03/02/2025**

4. **Class Adjustment (02/03/2025)**:
Didn't get the time you wanted, or now need to change times?

Use **'My Timetable'** to:

- Swap to other classes if there is space.
- Add your name to a waitlist to swap to preferred class
- Contact eait.mytimetable@uq.edu.au if you still have unavoidable clashes

Timetables, Changing & Dropping Courses

Need to **add** or **change** courses?

- Go to step (1) then (2) or (4) on the previous slide [depending on when you change].

  Adding courses is available till **Friday 7 March 2025**.

Need to **drop** a course?

- International students MUST discuss with EAIT faculty office before reducing below #8.
- Census date (last day to drop a course without financial liability): Monday 31st March 2025
- Last day to withdraw from a course without academic penalty: Wednesday 30th April 2025

Getting Help And Support

ASK EARLY!

- Help with your academic work?
  - Tutors in class; course coordinators; check course profile and website
  - UQ Library: workshops and support for finding information
  - UQ Student Services Learning advisors & Workshops
- Problems working out what courses to enrol in?
  - Academic Advisors: Book First Year Engineering Learning Centre
  - Academic Advisors available straight after this session
- Problems within your courses?
  - Contact the relevant school office
    - Level 4, General Purpose South (78), The University of Queensland, St Lucia QLD 4072, Australia
    - Office Hours: 8:30am – 4:30pm, Monday to Friday
    - Student enquiries: studentenquiries@itee.uq.edu.au or Phone: +61 7 3365 2097

No such thing as a silly question!

Getting Help And Support Continued

ASK EARLY!

- Problems with your program/degree?
  - Adding or changing courses (subjects) or changing your degree?
  - Interpreting or arranging your timetable?
  - Applying for credit for previous studies?

  Contact EAIT Faculty Office: 50-S204, https://www.eait.uq.edu.au/contact
- UQ Student Central: International advisers; Disability Advisers; Counsellors; Accommodation; Employment: https://my.uq.edu.au/contact/student-central
- Look after yourself: Sleep, exercise, eat well

No such thing as a silly question!

Email

All official communication is sent to your student email account

- You may choose to forward this to an alternative email address
- It is assumed such emails are received and read

If you email us (including your lecturers) always include:

- Your full name
- 8 digit student number
- Program (e.g. BE (Hons), BCompSc, MInfTech, etc.)
- Plan if applicable (e.g. Civil Engineering)
- Contact telephone number

More Information and Questions?

- Attend your orientation sessions:
  - https://www.eait.uq.edu.au/current-students/orientation
- See our New Students Resources Pages:
  - https://www.eait.uq.edu.au/current-students/new-student-information
- Got a Question or Need Help:
  - https://www.eait.uq.edu.au/current-students/find-support
  - Can’t find what your looking for? Get in touch with enquiries@eait.uq.edu.au

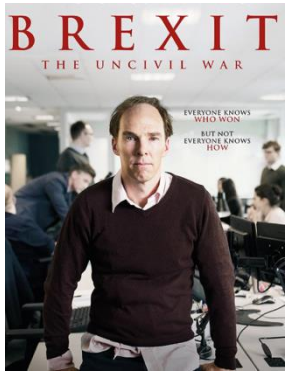
What is Data Science?

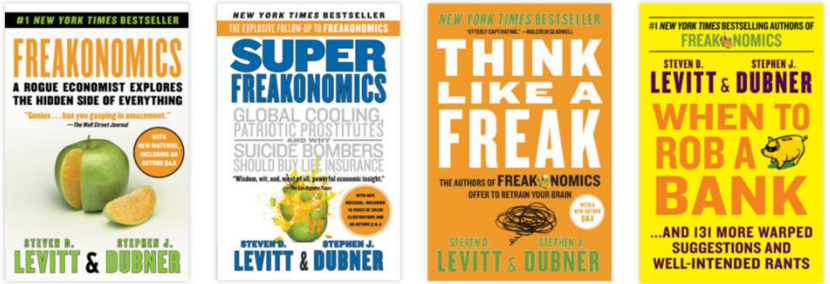
The computational, statistical and mathematical methods of solving “big data” problems define Data Science.

Questions for IT professionals:
Q1: What are the top 10 best-selling products on Amazon in 2023?
Q2: Who are the most influential people on social media?

Questions for Data Scientists:
Q1: What products can be recommended to the users who brought PS5 on Amazon in 2023?
Q2: How does a user feel towards a product/event?

Facebook–Cambridge Analytica data scandal





By Steven D. Levitt and **Stephen J. Dubner**.

Why Study Data Science?

Enormous opportunities for data scientists to revolutionise the way we work, live and communicate.

Skills shortage and marked increase in demand for competent data scientists.

FAANGM

BAT

Baidu

Alibaba Group

Tencent

Employment Situation

AVERAGE ANNUAL SALARY RANGE
Data Scientist
$115–$135K

AVERAGE ANNUAL SALARY RANGE
Data Engineer
$120–$140K

50 best jobs in the US for 2021 and 2022

	Job Title	Median Base Salary	Job Satisfaction	Job Openings
#1	Java Developer	$90,830	4.2/5	10,103
#2	Data Scientist	$113,736	4.1/5	5,971
#3	Product Manager	$121,107	3.9/5	14,515

2021

	Job Title	Median Base Salary	Job Satisfaction	Job Openings
#1	Enterprise Architect	$144,997	4.1/5	14,021
#2	Full Stack Engineer	$101,794	4.3/5	11,252
#3	Data Scientist	$120,000	4.1/5	10,071

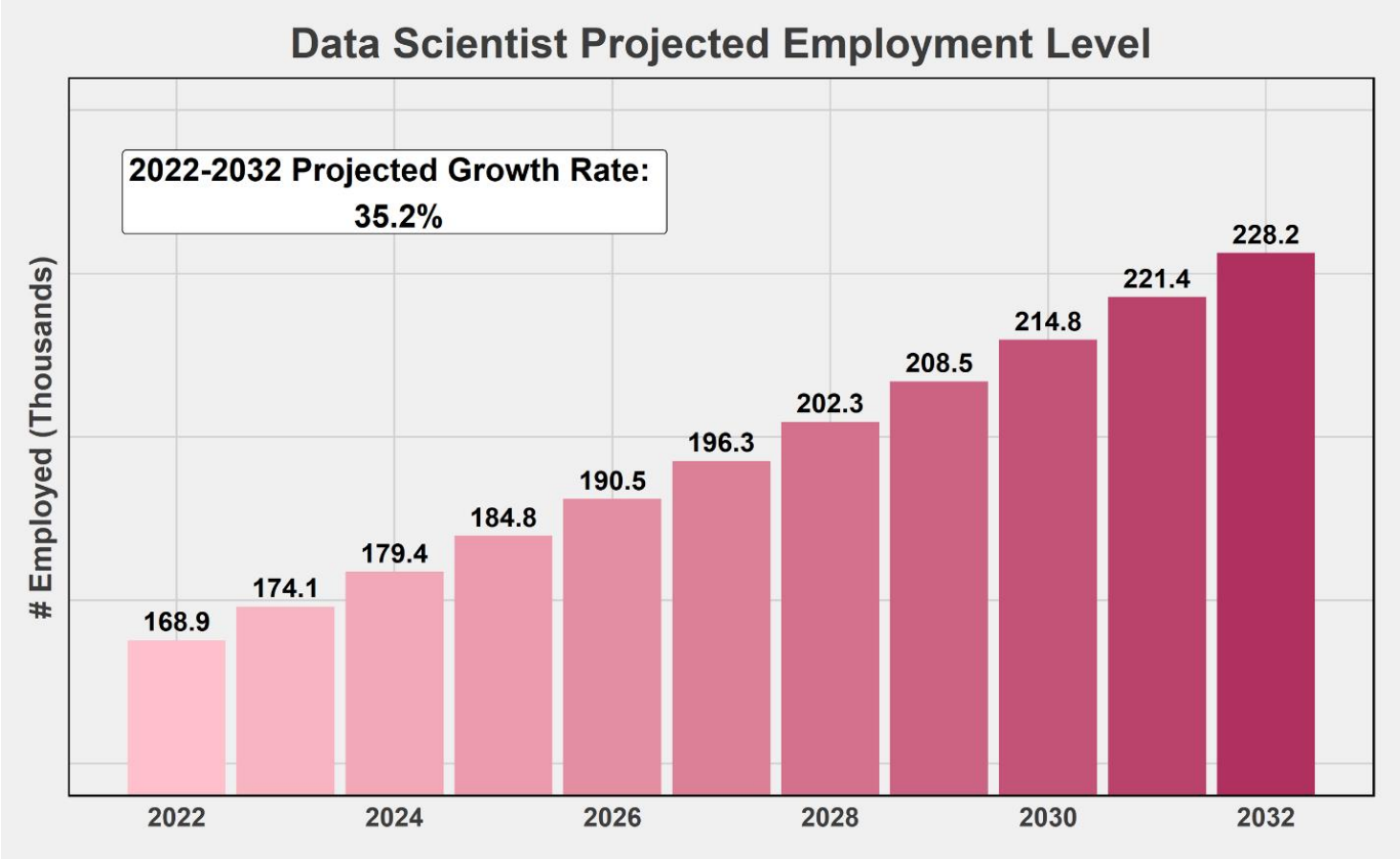
2022

https://www.glassdoor.com/List/Best-Jobs-in-America-LST_KQ0,20.htm
https://www.hays.com.au/it/blog/-/blogs/becoming-a-data-scientist-6-trends-to-know-about/

The average data scientist salary in Australia was more than $111,000 in 2016

11pc growth in data scientist jobs by 2025

Employment Growth



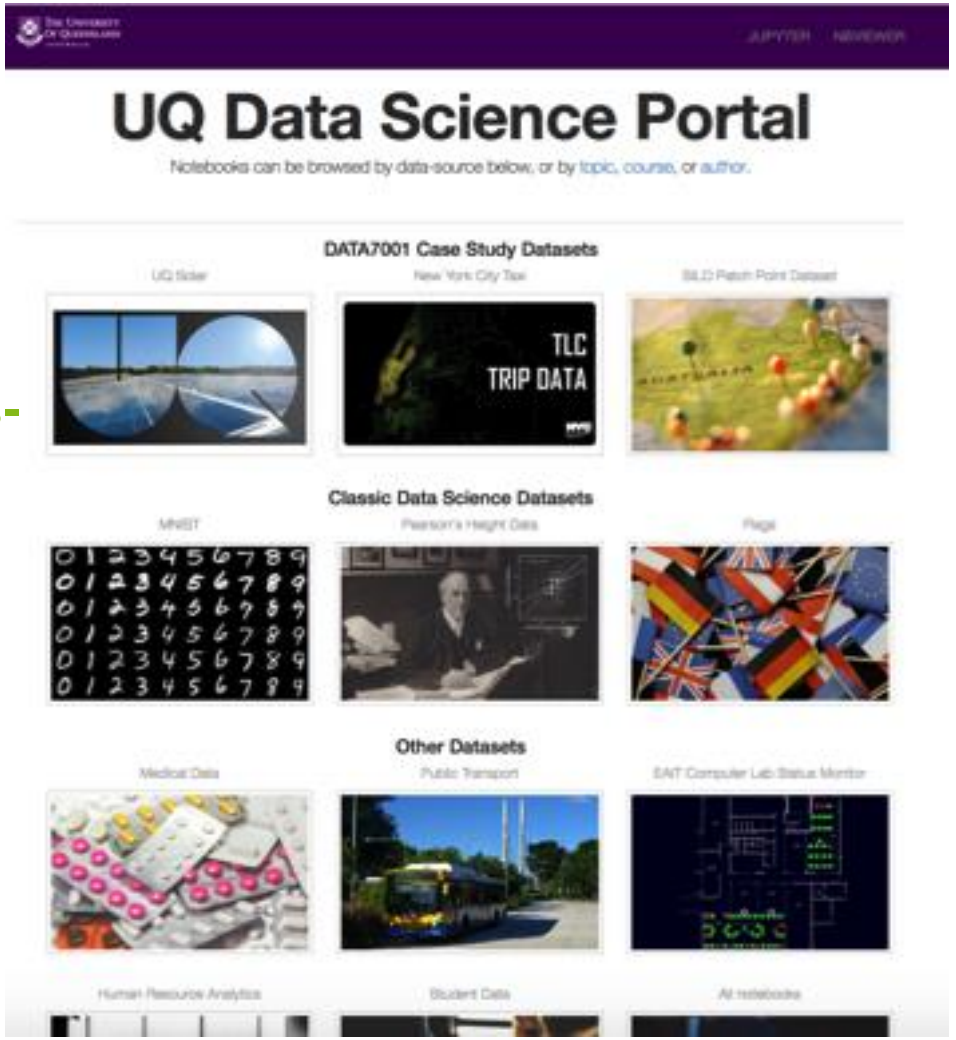
Source: *BLS Employment Projections*, interpolation of 2022-2032 projection by U.S. Bureau of Labor Statistics, https://www.visualizecuriosity.com/posts/data-science-job-market-2024

UQ’s Approach …

First in Australia to offer an **advanced** level of computing, statistics, mathematics and business knowledge applied in industry, government, social and scientific contexts.

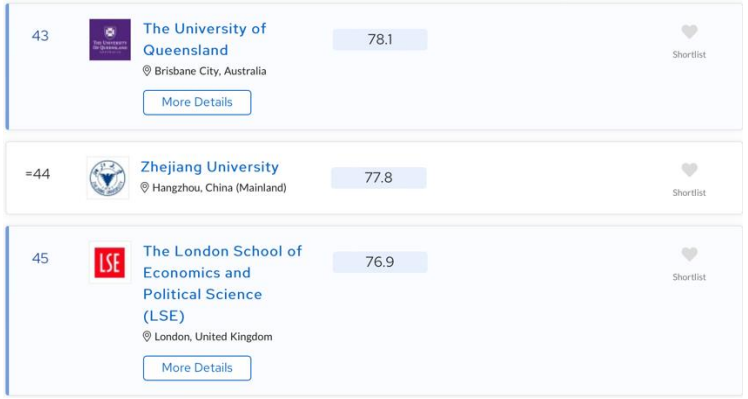
Emphasis on high level of graduate attributes through **cross-disciplinary curriculum** that includes ethical use of data, legal considerations for data science, and business communication.

Hands-on experience with big data tools and technologies, industry projects and placements, leading **to job-ready graduates**.



The UQ Advantage

- The program is taught by UQ's world leading researchers in Statistics and Information Systems. Both ranked ERA 5 - "well above world standard" in the 2015, 2018 Excellence in Research Round by ARC.
- UQ ranks 30-50 amongst the top 100 universities in the world. Our vast industry and alumni networks open global employment opportunities



The latest international university rankings highlight the excellence of the University of Queensland's research performance. The most prestigious and widely-recognised rankings of world universities rank UQ in the top 50 and top 100 globally.

The University of Queensland's rankings	World	Australia	Current result
Academic Ranking of World Universities	51	2	2021
THE World University Ranking	54	3	2022
QS World University Ranking	47	5	2022
NTU Performance Ranking of Scientific Papers for World Universities	38	3	2021
US News Best Global Universities Rankings	36	3	2021
Nature Index tables Top Academic Institutions*	69	1	2021
CWTS Leiden Ranking**	32	3	2021

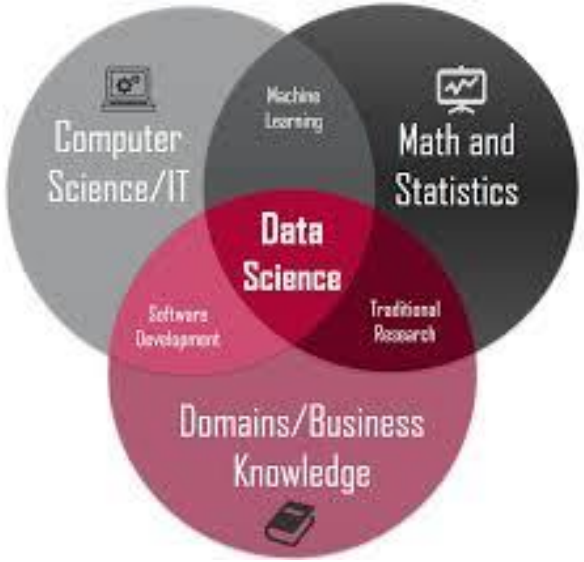
Institution	08 Information and Computing Sciences	0801 Artificial Intelligence and Image Processing	0802 Computation Theory and Mathematics	0803 Computer Software	0804 Data Format	0805 Distributed Computing	0806 Information Systems
The University of Queensland	4	4	n/a	4	n/a	n/a	5
Total UoEs evaluated	34	30	8	13	4	16	25

Institution	01 Mathematical Sciences	0101 Pure Mathematics	0102 Applied Mathematics	0103 Numerical and Computational Mathematics	0104 Statistics	0105 Mathematical Physics	0199 Other Mathematical Sciences
The University of Queensland	5	5	5	n/a	5	4	
Total UoEs evaluated	27	15	25	4	17	4	

https://dataportal.arc.gov.au/ERA/NationalReport/2018/pages/section5/index.html?for=08-information-and-computing-sciences
https://research.uq.edu.au/about/international-rankings
https://www.topuniversities.com/university-rankings/world-university-rankings/2025?&page=2

What will you study?

1. **Core Courses** covering basic topics in Data Science, including a large industry-focused project.
2. **Capstone Projects** are opportunities for students to work on a project in collaboration with academics or industry on site throughout their course.
3. **Foundation** courses in computer science or mathematics and statistics.
4. **Discipline Elective Courses** (DECs) in advanced aspects of data science.
5. **Breadth Elective Courses** (BECs) in fields where Data Science is applied.



Programs and Courses Basics

Program and course requirements

Information for students commencing

2025

Complete 32 units for either of the following:

- **32** units for **MDataSc - 2 year duration**, or
- **32** units for **MDataSc - 1.5 year duration (24 units of study and 8 units for prior learning)**

Selected courses must include at most 8 units at level 3.

Selected courses must include at least 12 units at level 6 or higher.

Selected courses must include at least 8 units at level 7.

Expand all

MDataSc - 2 year duration

MDataSc - 1.5 year duration (24 units of study and 8 units for prior learning)

Additional Rules

1.Exit awards

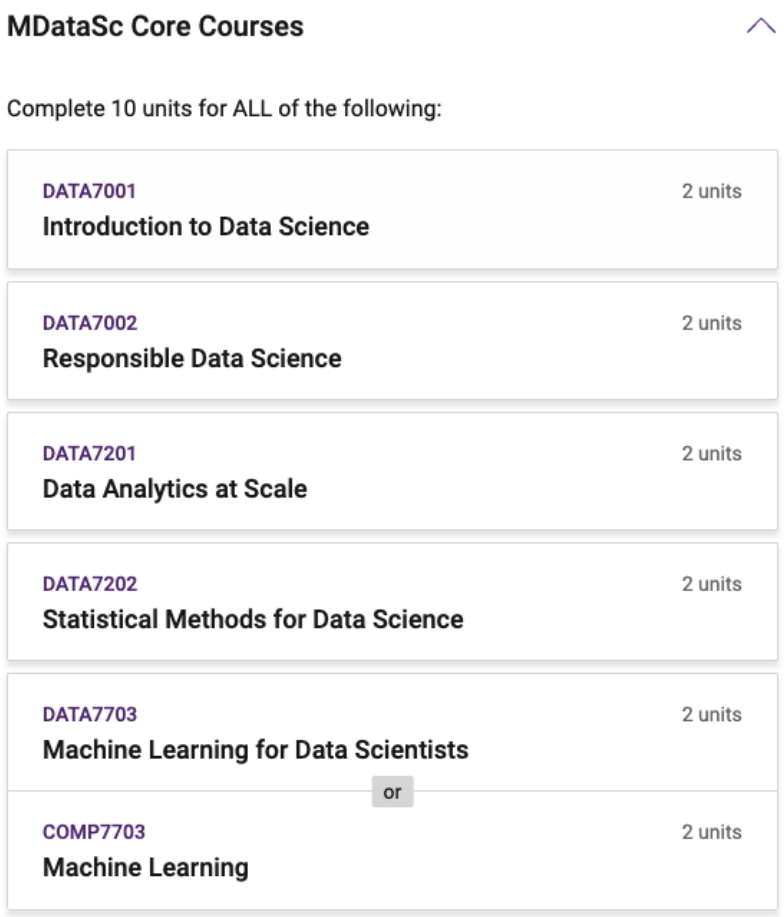
Award of the Graduate Certificate in Data Science

If you withdraw from this program after completing a combination of 8 units from core courses, capstone courses, foundation courses and discipline elective courses from the MDataSc course list (with at least 4 units of DATA coded courses, including DATA7001), you may apply to be awarded a Graduate Certificate in Data Science.

Note see Program Design Procedure regarding required postgraduate content.

#32/ #24 units: https://my.uq.edu.au/programs-courses/requirements/program/5660

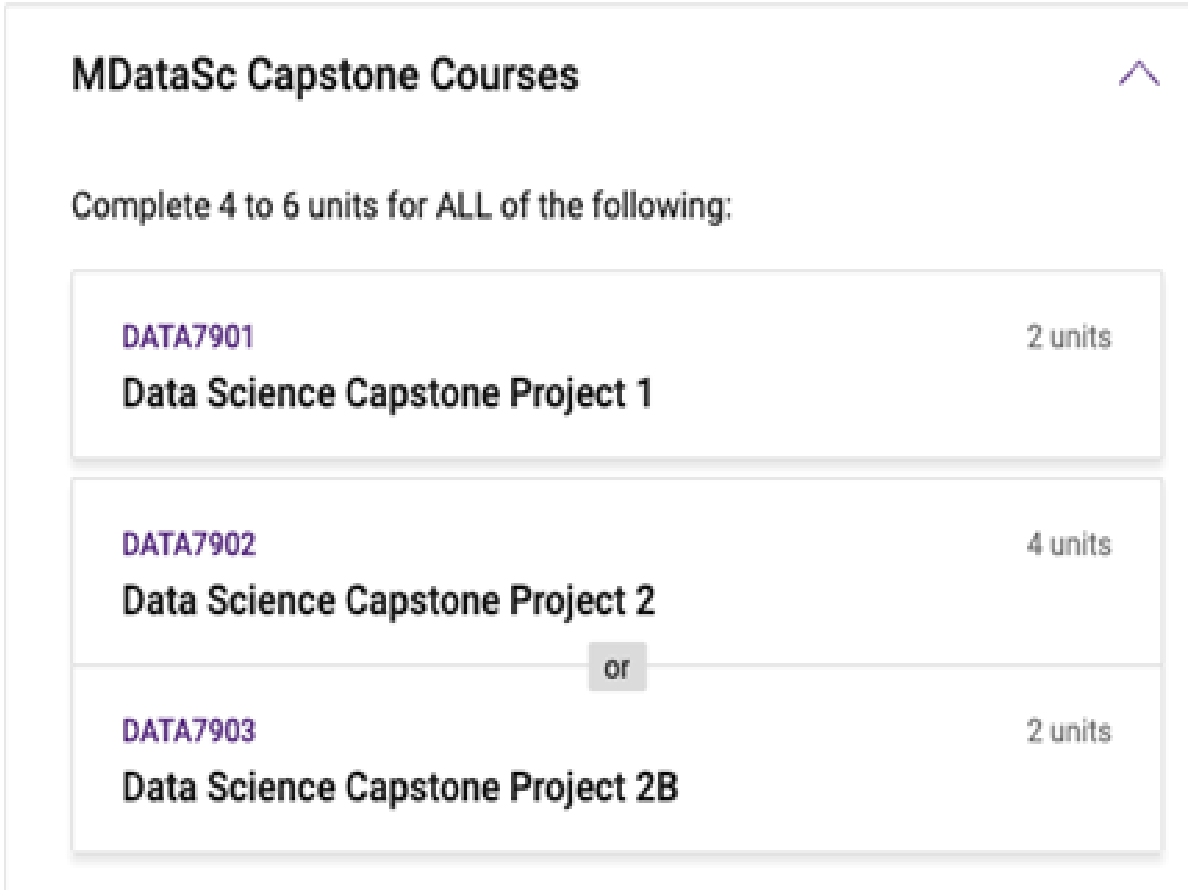
Core Courses



MDataSc-32 & MDataSC-24:

10 units for all MDataSc Core Courses

Capstone Courses



MDataSc-32 & MDataSC-24:

4 or 6 units for all MDataSc Capsone Courses

Please consider taking DATA7202 and/or
COMP7703 before or in parallel to DATA7901

DATA7902 and DATA7903 should be taken immediately after DATA7901

DATA7903 will allow to take additional elective courses

Foundation Courses

CSSE7030 Introduction to Software Engineering	2 units
INFS3200 Advanced Database Systems	2 units
INFS7901 Database Principles	2 units
MATH7501 Mathematics for Data Science 1	2 units
MATH7502 Mathematics for Data Science 2	2 units
STAT7203 Probability Models & Data Analysis	2 units

MDataSc-32 :

0 to 10 units

MDataSC-24:

0 to 4 units

Discipline Elective Courses

INFS7203 Data Mining	2 units
INFS7205 Advanced Techniques for High Dimensional Data	2 units
INFS7410 Information Retrieval and Web Search	2 units
INFS7450 Social Media Analytics	2 units
MATH3204 Numerical Linear Algebra & Optimisation	2 units
MATH7202 Further Topics in Operations Research	2 units
MATH7232 Operations Research & Mathematical Planning	2 units
STAT3006 Statistical Learning	2 units

MDataSc-32 :

4 to 16 units

MDataSC-24:

4 to 8 units

Breadth Elective Courses

Breadth Elective Courses explore fields where data science is used:

- Portfolio Management
- Fundamentals of Marketing
- Consumer and Buyer Behaviour
- Market and Consumer Research
- Principles of Econometrics
- Macro-econometrics for Economics and Finance
- Financial Econometrics

- Concepts in Bioinformatics
- Applications of Computational Statistics
- Advanced Bioinformatics
- Advanced Genome Informatics
- Epidemiology for Biostatisticians
- Longitudinal and Correlated Data

Breadth Elective Courses

ACCT7101 Accounting	2 units
BINF6000 Bioinformatics 1: Introduction	2 units
BINF6001 Introduction to Proteins & Nucleic Acids	2 units
BINF7000 Bioinformatics 2: Development & Research	2 units
BINF7001 Advanced Genome Informatics	2 units
COMP3702 Artificial Intelligence	2 units
COMP3710 Pattern Recognition and Analysis	2 units
COMP3820 Digital Health Software Project	2 units
COMP7500 Advanced Algorithms & Data Structures	2 units
COSC7500 Numerical Methods in Computational Science	2 units
COSC7502 High-Performance Computing	2 units
CSSE7023 Advanced Software Engineering	2 units
DECO7110 Design Thinking	2 units
ECON7310 Elements of Econometrics	2 units
ECON7350 Applied Econometrics for Macroeconomics and Finance	2 units
ECON7390 Financial Econometrics	2 units

MDataSc-32 :

4 to 16 units

MDataSC-24:

0 to 4 units

Breadth Elective Courses

FINM7401	Finance	2 units
FINM7403	Portfolio Management	2 units
MATH7039	Financial Mathematics	2 units
MATH7049	Computation in Financial Mathematics	2 units
MATH7091	Financial Calculus	2 units
MKTG7501	Fundamentals of Marketing	2 units
MKTG7503	Consumer & Buyer Behaviour	2 units
MKTG7510	Market & Consumer Research	2 units
PUBH7600	Introduction to Epidemiology	2 units

STAT3007	Deep Learning	2 units
STAT7301	Mathematical Statistics	2 units
STAT7304	Probability Models & Stochastic Processes	2 units
STAT7306	Statistical Analysis of Genetic Data	2 units
STAT7504	Advanced Probability & Stochastic Processes I	2 units
STAT7505	Advanced Probability & Stochastic Processes II	2 units
STAT7610	Longitudinal & Correlated Data	2 units

MDataSc-32 :

4 to 16 units

MDataSC-24:

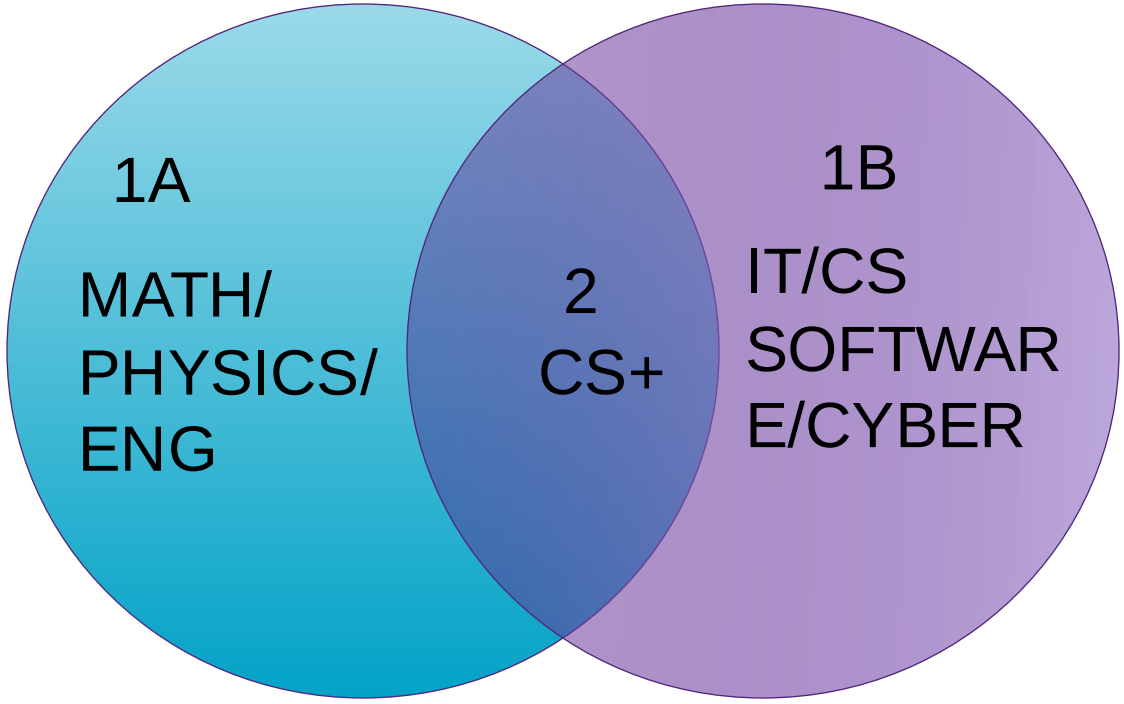
0 to 4 units

Make a Study Plan

Entry path 1A (non-ICT background): at least two first year university level calculus and linear algebra courses **(#32 units)**

Entry path 1B (ICT background): at least two first year university level programming and database courses **(#32 units)**

Entry path 2: both of 1A and 1B **(#24 units)**



Entry path 1A (#32, starting in first semester)

Sem 1 (Feb)	DATA7001 Introduction to Data Science (2 units)	CSSE7030 Introduction to Software Engineering (2 units)	INFS7901 Database Principles (2 units)	Discipline or Breadth Elective (2 units)
Sem 2 (July)	DATA7002 Responsible Data Science (2 units)	STAT7203 Probability Models & Data Analysis (2 units)	MATH7502 Mathematics for Data Science 2 (2 units)	Discipline or Breadth Elective (2 units)
Sem 1 (Feb)	DATA7201 Data Analytics at Scale (2 units)	DATA7202 Statistical Methods for Data Science (2 units)	COMP7703 Machine Learning (2 units)	DATA7901 Capstone Project 1 (2 units)
Sem 2 (July)	Discipline or Breadth Elective (2 units)	Discipline or Breadth Elective (2 units)	DATA7902 Capstone Project 2 (4 units)	

for students with maths or statistics background in their undergraduate qualification, such as calculus, linear algebra, or statistics courses

MDataSc Core Courses: 10 units
MDataSc Foundation Courses: 0-10 units
MDataSc Discipline Elective Courses: 4-16 units
MDataSc Breadth Elective Courses: 0-12 units
MDataSc Capstone Courses: 6 units

Entry path 1B (#32, starting in first semester)

Sem 1 (Feb)	DATA7001 Introduction to Data Science (2 units)	MATH7501 Mathematics for Data Science 1 (2 units)	Discipline or Breadth Elective (2 units)	INFS3200 Advanced Database Systems (2 units)
Sem 2 (July)	DATA7002 Responsible Data Science (2 units)	STAT7203 Probability Models & Data Analysis (2 units)	MATH7502 Mathematics for Data Science 2 (2 units)	Discipline or Breadth Elective (2 units)
Sem 1 (Feb)	DATA7201 Data Analytics at Scale (2 units)	DATA7202 Statistical Methods for Data Science (2 units)	COMP7703 Machine Learning (2 units)	DATA7901 Capstone Project 1 (2 units)
Sem 2 (July)	Discipline or Breadth Elective (2 units)	Discipline or Breadth Elective (2 units)	DATA7902 Capstone Project 2 (4 units)	

for students with a computing or IT background in their undergraduate qualification, such as programming, algorithms and database courses

MDataSc Core Courses: 10 units
MDataSc Foundation Courses: 0-10 units
MDataSc Discipline Elective Courses: 4-16 units
MDataSc Breadth Elective Courses: 0-12 units
MDataSc Capstone Courses: 6 units

Entry path 2 (#24, starting in first semester)

Sem 1 (Feb)	DATA7001 Introduction to Data Science (2 units)	COMP7703 Machine Learning (2 units)	DATA7202 Statistical Methods for Data Science (2 units)	Discipline or Breadth Elective (2 units)
Sem 2 (July)	DATA7002 Responsible Data Science (2 units)	Discipline or Breadth Elective (2 units)	Discipline or Breadth Elective (2 units)	DATA7901 Capstone Project 1 (2 units)
Sem 1 (Feb)	DATA7201 Data Analytics at Scale (2 units)	Discipline or Breadth Elective (2 units)	DATA7902 Capstone Project 2 (4 units)	

MDataSc Core Courses: 10 units
MDataSc Foundation Courses: 0-4 units
MDataSc Discipline Elective Courses: 4-8 units
MDataSc Breadth Elective Courses: 0-4 units
MDataSc Capstone Courses: 4-6 units

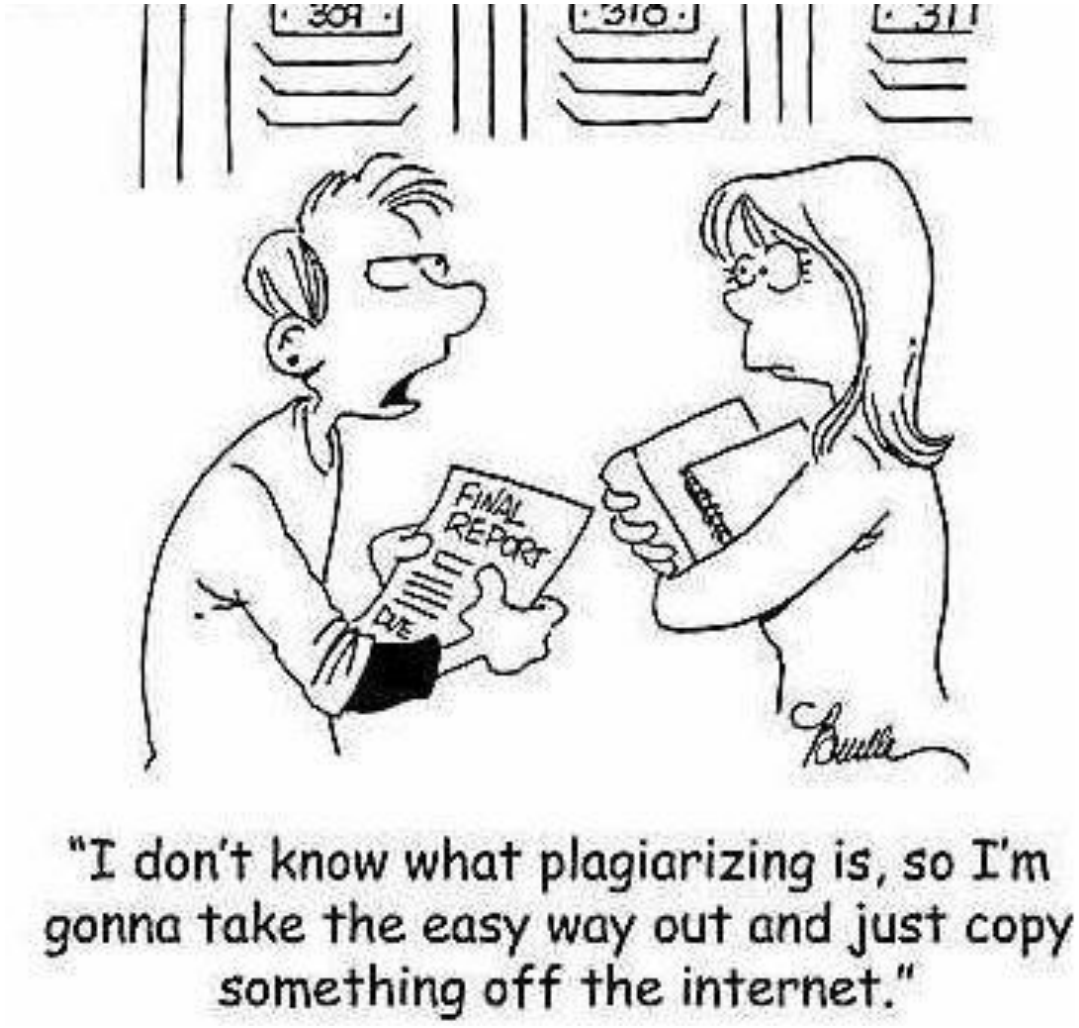


Image source: https://www.pinterest.com.au/wassef87/academic-dishonesty-and-integrity/

Ignorance is not a defense!

Get familiar with Academic Integrity at UQ

Don't risk getting on the academic misconduct register

https://www.uq.edu.au/integrity/

Key Takeaways

- Get familiar with UQ, Faculty, School, and Program (available resources)
- Make a study plan ASAP that gives you graduation eligibility in the semester you plan to finish
- Note program rules and conditions on the different parts
- Consider your background (prior knowledge and/or course pre-requisites) and timetable. Okay to *check out* courses and/or make an appointment with course coordinator
- Pay special attention if you are part time (International students need to maintain full time student status i.e. 4 courses per semester)

Academic Advising sessions: by appointments throughout the semester

Questions?