



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.



Plan For Today's Session

Duration	Activity
12:00pm - 12:15pm	Welcome & Introductions
12:15pm - 12:30pm	Icebreaker activity
12:30pm - 12:45pm	Program Information
12:45pm - 1:00pm	Q&A
1:00pm - 2:00pm	Expo & lunch @ UQ Centre

Program Convenors of MDataSc

Maths/Stats (SMP)

- Dr Slava Vaisman (Convenor)



- DATA7901 Capstone Project

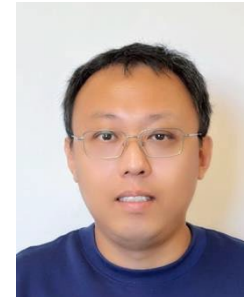


Study Research Partners and community About

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)



Study Research Partners and community About

School of Electrical Engineering and Computer Science

Faculty of Engineering, Architecture and Information Technology



**School of
Chemical Engineering**



**School of Architecture, Design and
Planning**



Centre for Natural Gas



**School of Electrical Engineering and
Computer Science**



**School of
Civil Engineering**



**School of Mechanical and Mining
Engineering**



**Centre for Water and
Environmental Biotechnology**

Getting Help And Support

- **Help with your academic work?**

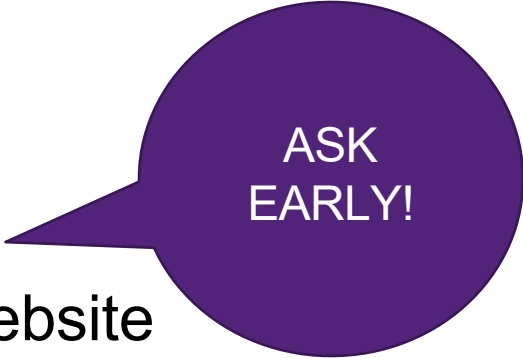
- Tutors in class; course coordinators; check course profile and website
- UQ Library: workshops and support for finding information
- UQ Student Services Learning advisors & Workshops

- **Problems working out what courses to enrol in?**

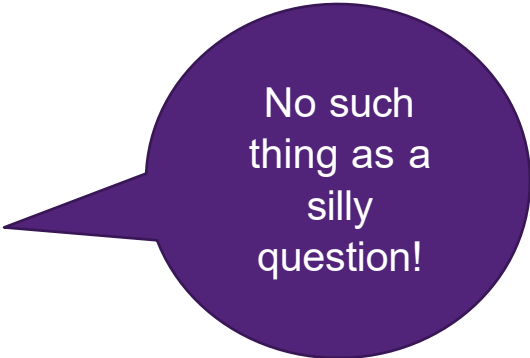
- Academic Advisors: Book First Year Engineering Learning Centre
- Academic Advisors available straight after this session

- **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



ASK
EARLY!



No such
thing as a
silly
question!

Getting Help And Support Continued

- **Problems with your program/degree?**

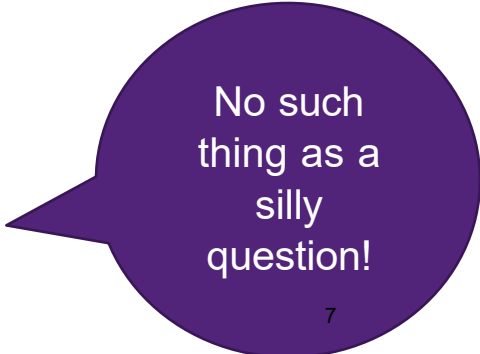
- Adding or changing courses (subjects) or changing your degree?
- Interpreting or arranging your timetable?
- Applying for credit for previous studies?

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



ASK
EARLY!



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question!

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

Icebreaker Activity: “Data Points About Me”

Form Small Groups (5-8 students each)

Each student introduces him/herself to the others:

- Name, Previous Degree:
- One data tool/technology I’ve used before:
- One area of data science I’m most excited about:
- One personal “fun fact”:
- *Example: “Hi, I’m Tom. I studied Electrical Engineering. I’ve used Matlab. I’m excited about Deep Learning in Healthcare. I love playing basketball!”*

After all group members share, each group is to select a “highlight data point” to share with the room

- e.g., “3 out of 5 of us are interested in Deep learning”.

ICEBREAKER ACTIVITY

Data Points About Me

Name:

Previous Degree:

One data tool/technology I've used before:

One area of data science I'm most excited about:

One personal "fun fact"



Share with your group!

What is Data Science?

Data Science is the discipline of extracting actionable insights from data using advanced analytical techniques, including statistical methods, machine learning, and data engineering.



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?

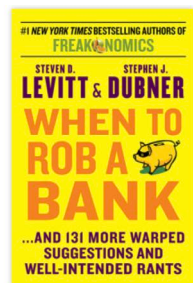
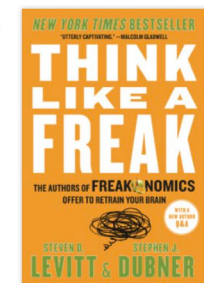
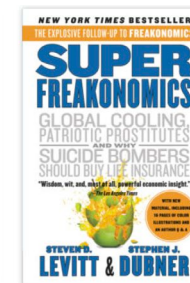
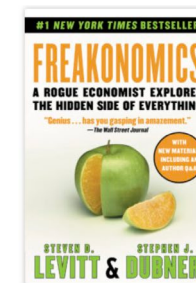
Questions for Data Scientists:

Q1: What products can be recommended to the users who bought PS5 Pro on Amazon in 2023?

Q2: How does a user feel towards a product/event?



Facebook-Cambridge Analytica data scandal
Information Session | 2025



By Steven D. Levitt and Stephen J. Dubner.

Why Study Data Science?

Skills shortage and marked increase in demand for competent data scientists - Top Skills in Demand (2024–2025):

- Generative AI
- Machine Learning Ops (MLOps)
- Cloud-native Data Engineering (e.g., AWS Glue, Google BigQuery, Snowflake)
- Explainable AI (XAI) & Responsible AI

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

- AI Product Analyst at Meta
- Data Engineer at Tencent
- ML Research Engineer at Amazon
- Public Policy Data Analyst at QLD Government



[Tesla, Nvidia, and AI: Dan Ives' 2025 Top Tech Stock Picks](#) by Bloomberg Technology



Employment Situation

50 best jobs in the US for 2021 and 2022

AVERAGE ANNUAL SALARY RANGE

Data Scientist

\$115–\$135K

AVERAGE ANNUAL SALARY RANGE

Data Engineer

\$120–\$140K

	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
	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

2021

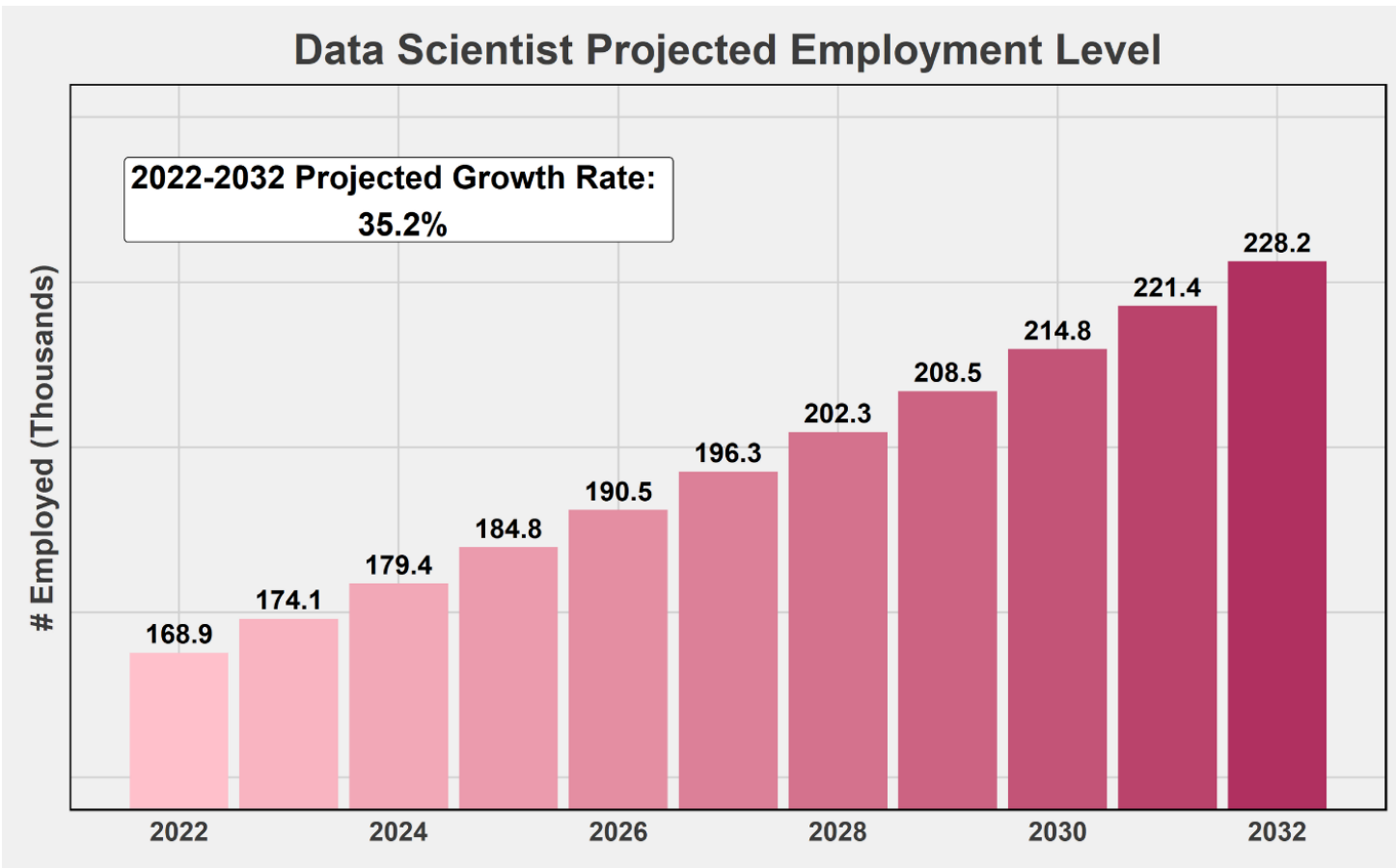
2022

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

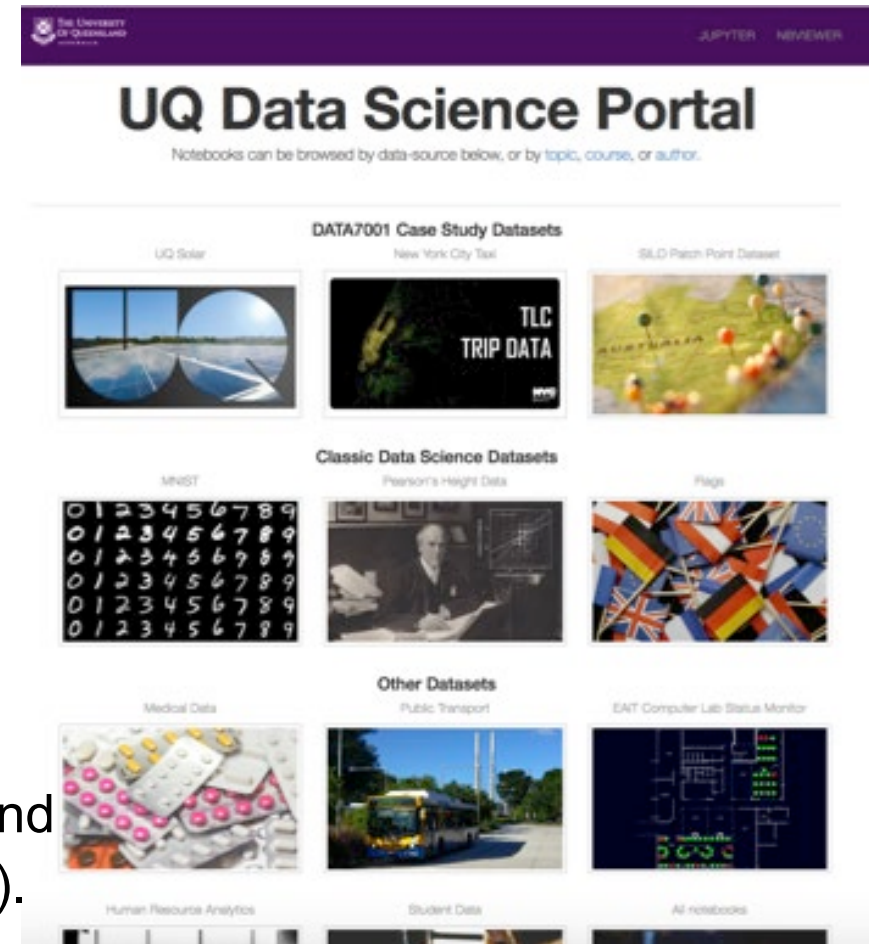


- **Data Engineer** is #3 fastest-growing role in Australia.
- **AI/ML Specialist** ranks #5 globally.

Source: [BLS Employment Projections](https://www.visualizecuriosity.com/posts/data-science-job-market-2024), 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 a high level of graduate attributes through a **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**.
 - Real-world projects with industry partners (e.g., Queensland Health, AWS, GCP, Brisbane/Logan/Redland City Council).
 - Access to advanced resources: NVIDIA GPUs via UQ HPC



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

43		The University of Queensland Brisbane City, Australia	78.1	Shortlist
More Details				
=44		Zhejiang University Hangzhou, China (Mainland)	77.8	Shortlist
More Details				
45		The London School of Economics and Political Science (LSE) London, United Kingdom	76.9	Shortlist
More Details				

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	15

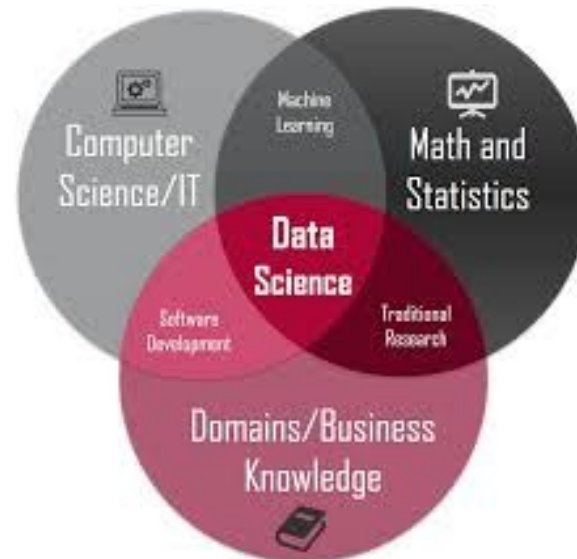
<https://dataportal.arc.gov.au/ERA/NationalReport/2018/pages/section5/index.html?for=08-information-and-computing-sciences>

<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.

Core Courses

MDataSc Core Courses

Complete 10 units for ALL of the following:

DATA7001 Introduction to Data Science	2 units
DATA7002 Responsible Data Science	2 units
DATA7201 Data Analytics at Scale	2 units
DATA7202 Statistical Methods for Data Science	2 units
DATA7703 Machine Learning for Data Scientists	2 units
or	
COMP7703 Machine Learning	2 units

MDataSc-32 & MDataSC-24:

10 units for all MDataSc Core Courses

Capstone Courses

MDataSc Capstone Courses

Complete 4 to 6 units for ALL of the following:

DATA7901

2 units

Data Science Capstone Project 1

DATA7902

4 units

Data Science Capstone Project 2

or

DATA7903

2 units

Data Science Capstone Project 2B

MDataSc-32 & MDataSC-24:

4 or 6 units for all MDataSc Capstone 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
DEC07110 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:

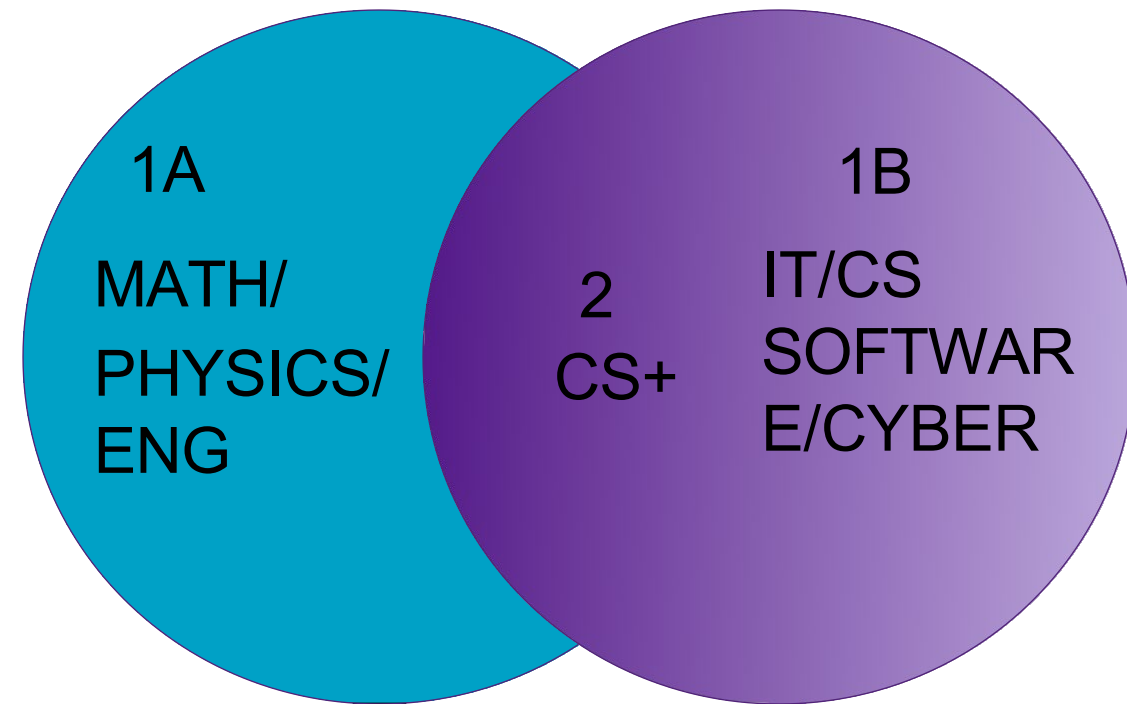
0 to 4 units

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 second semester)

Sem 2 (July)	DATA7001 Introduction to Data Science (2 units)	CSSE7030 Introduction to Software Engineering (2 units)	STAT7203 Probability Models & Data Analysis (2 units)	MATH7502 Mathematics for Data Science 2 (2 units)
Sem 1 (Feb)	DATA7202 Statistical Methods for Data Science (2 units)	COMP7703 Machine Learning (2 units)	INFS7901 Database Principles (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)	INFS3200 Advanced Database Systems (2 units)	DATA7902 Capstone Project 2 (4 units)	

For **non-ICT background** 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 second semester)

Sem 2 (July)	DATA7001 Introduction to Data Science (2 units)	INFS3208 Cloud Computing (2 units)	Discipline or Breadth Elective (2 units)	Discipline or Breadth Elective (2 units)
Sem 1 (Feb)	DATA7201 Data Analytics at Scale (2 units)	MATH7501 Mathematics for Data Science 1 (2 units)	Discipline or Breadth Elective (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)	DATA7901 Capstone Project 1 (2 units)
Sem 1 (Feb)	DATA7202 Statistical Methods for Data Science (2 units)	COMP7703 Machine Learning (2 units)	DATA7902 Capstone Project 2 (4 units)	

For **ICT background** 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 second semester)

Sem 2 (July)	DATA7001 Introduction to Data Science (2 units)	INFS3208 Cloud Computing (2 units)	STAT7203 Probability Models & Data Analysis (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)	DATA7002 Responsible Data Science (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

Academic Integrity and Plagiarism

The University takes academic integrity very seriously.

You must:

- **Not** use the work of others without appropriate referencing and citation
- **Not** share code for individual assignments
- Know when group work is appropriate and not appropriate
- **Not** let others use your work or answers
- Ask your lecturer (**before** the due date) if you're not sure
- Very effective Electronic detection of plagiarism is used; and *severe penalties* apply!

Compulsory Information and Online Learning Module: <https://tinyurl.com/uqintegritymodule>

University Conduct Guidelines: <https://tinyurl.com/uqmisconduct>

School Conduct Guidelines: <https://tinyurl.com/eecsmisconduct>

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?

