Master of Data Analytics

Current students

Year	2026
QUT code	IN27
CRICOS	098601J
Duration (full-time domestic)	1 - 2 years
Duration (full-time international)	1 - 2 years
Duration (part-time domestic)	2 - 4 years
Campus	Gardens Point
International fee (indicative)	2025: $42,300 per year full-time (96 credit points)
Total credit points	192
Credit points full-time sem.	48
Credit points part-time sem.	24
Course Coordinator	Associate Professor Yue Xu
Discipline Coordinator	+61 7 3138 2000 askqut@qut.edu.au

Course information

For students who commences the course from 2021 onwards:

To graduate with a Master of Data Analytics, you are required to complete 192 credit points of course units consisting of:

- Core units, including Capstone units
- Discpline units from your selected Major, or a range of units from across the majors if you choose not to nominate a major.
- Elective units selected from an approved list of units, which is drawn from units offered in each of the majors.

Study Areas:
Choose your major in the following specialisation areas -

- Biomedical Data Science;
- Computational Data Science;
- Statistical Data Science; or
- No Major option

For students who commenced the course prior to 2021:

To graduate with a Master of Data Analytics you are required to complete 192 credit points of course units consisting of:

- 48 credit points of Core Units
- 48 credit points of Professional Preparation Units
- 48 credit points of Advanced Units
- 48 credit points of Elective Units selected from an approved list

As a graduate of the Master of Data Analytics, you will emerge with skills in data analysis, data systems development, and data-driven decision making, where you may focus in specialising in one of these areas, while gaining the experience required to interface with other data professionals.

As a **data analyst,** you apply your data mining and modelling skills to perform analysis of data to inform evidence-based decision-making. You will be experienced in understanding and using statistical methods in this process. You will use appropriate tools to create data visualisations that effectively communicate data-driven insights to broader audiences. *Students may wish to select Professional Preparation units from: IFN554 (6cp)+IFN555 (6cp), IFN509, MXN500, MXN501; Advanced Units from: IFN646, IFN647, MXN600, MXN601; and Elective units from: AMN425, IFN645, MXN402, MXN442.*

As a **data-driven decision maker,** you will use insights provided by data analysts for forecasting future demand, risk assessment, and the development of business insights. Your broad knowledge of data science tools and techniques is employed to interpret results and design new solutions to drive business transformation. *Students may wish to include the following Professional Preparation units from: IFN555 (6cp)+IFN556 (6cp), IFN509, IFN515, MXN500; Advanced Units from: IFN645, IFN647, IFN650, MXN600; and Elective units from: AMN425, IFN552 (6cp)+IFN554 (6cp), IFN521, IFN623.*

As a **data systems development** professional, you will use highly technical skills to architect computationally efficient data analysis solutions to reveal insights that cannot be achieved with existing methods and tools. *Students may wish to include the following Professional Preparation units from: IFN552 (6cp)+IFN556 (6cp), IFN554 (6cp)+IFN555 (6cp), IFN509, MXN500; Advanced Units from: IFN645, IFN646, IFN647, MXN600; and Elective units from: CAB401, CAB420, IFN563 (6cp)+IFN564 (6cp), IFN666.*

The group of units are a suggestion, students may wish to pick and choose combination of units depending on their needs and interests.

The Masters of Data Analytics is located at level 9 of the Australian Qualifications Framework.

Career outcomes

Graduates from the Masters of Data Analytics will have the skills necessary to work in a range of industries including banking and finance, media and communications, health, education, information technology, engineering, agriculture and mining.

Study costs

Domestic students may need to pay the Student Services and Amenities Fee (SSAF).

- More information about study costs and paying fees.

Early exit

Early exit option with the IN26 Graduate Certificate in Data Analytics upon completion of the required units.

Pathways to further study

Completion with overall GPA of at least 5.0 on a 7-point scale for entry into IF49 Doctor of Philosophy

Eligible graduates may continue study in Doctor of Philosophy (Hosted by Faculty of Science)

Advanced standing (credit)

If you have been admitted to the 1.5 year program you can receive 48 credit points of advanced standing depending on your major and elective selections. For more information please view the following advanced standing precedents:

- Biomedical science pathway
- Information technology pathway
- Mathematics pathway

Please see next page for course structures and unit lists

Structure Information

Enrolment Information

In your first semester first year you will be starting your Major option. Please select your Major (this includes the 'No Major' option) before commencing your enrolment in your first semester.

Structures

- **IMPORTANT MESSAGE** Course structure: MDA Curriculum changes 2025 and onwards
- IN27 Master of Data Analytics - No Major option (commenced in 2025)
- IN27 Master of Data Analytics - No Major option (commenced in 2024)
- Biomedical Data Science Major (commenced in 2025)
- Biomedical Data Science Major (commenced in 2024)
- Biomedical Data Science Major - Math cognate entrant (commenced in 2025)
- Biomedical Data Science Major - Math cognate entrant (commenced in 2024)
- Biomedical Data Science Major - IT cognate entrant (commenced in 2025)
- Biomedical Data Science Major - IT cognate entrant (commenced in 2024)
- Biomedical Data Science Major - Biomed cognate entrant (commenced in 2025)
- Biomedical Data Science Major - Biomed cognate entrant (commenced in 2024)
- Computational Data Science Major (commenced in 2025)
- Computational Data Science Major (commenced in 2024)
- Computational Data Science Major - IT cognate entrant (commenced in 2025)
- Computational Data Science Major - IT cognate entrant (commenced in 2024)
- Computational Data Science Major - Math cognate entrant (commenced in 2025)
- Computational Data Science Major - Math cognate entrant (commenced in 2024)
- Statistical Data Science Major (commenced in 2025)
- Statistical Data Science Major (commenced in 2024)
- Statistical Data Science Major - IT cognate entrant (commenced in 2025)
- Statistical Data Science Major - IT cognate entrant (commenced in 2024)
- Statistical Data Science Major - Math cognate entrant (commenced in 2025)
- Statistical Data Science Major - Math cognate entrant (commenced in 2024)
- Biomedical Data Science Major - articulating from LV41 Bachelor of Biomedical Science in 2025

Unit Lists

- Biomedical Data Science Major Unit Options
- Computational Data Science Major Unit Options
- Statistical Data Science Major Unit Options
- Master of Data Analytics Electives Lists

IMPORTANT MESSAGE Course structure: MDA Curriculum changes 2025 and onwards

There are a number of changes to units and study areas which may affect your enrolment in 2025 or beyond. Table summarises the changes. *The below information is subject to change.*

Current Unit	Alternative (replacement) unit	Semester of offering
IFN555 *Intro to Programming* (6cps) and IFN556 *Object Oriented Programming* (6cps)	**IFN581** *Programming Fundamentals* (12cps)	Semester 1, Semester 2
IFN552 *Systems Analysis and Design* (6cps) and IFN554 (6cps) *Databases* (6cps)	**IFN582** *Rapid Web Development with Databases* (12cps)	Semester 1, Semester 2
IFN551 *Computer Systems Fundamentals* (6cps) and IFN553 *Introduction to Security and Networking* (6cps)	**IFN583** *Computer Systems and Security* (12cps)	Semester 1, Semester 2
IFN563 *Object Oriented Design* (6cps) and IFN564 *Data Structures and Algorithms* (6cps)	**IFN584** *Object Oriented Design & Development* (12cps)	Semester 1, Semester 2
IFN552 *Systems Analysis and Design* (6cps) and IFN558 *Management Information Systems* (6cps)	**IFN585** *Systems Innovation and Design* (12cps)	Semester 1, Semester 2
IFN541 *Information Security Management* (12cps)	**IFN635** *Cyber Security and Governance* (12cps)	Semester 1, Semester 2
IFN591 *Principles of User Experience* (12cps)	**IFN637** *Human-Centred Design of IT Systems* (12cps)	Semester 1, Semester 2
IFN507 *Network Systems* (12cps)	**IFN658** *Networks and Security* (12cps)	Semester 1, Semester 2

IFN703 (12cp) *Advanced Project* (12 cps) (Semester 1, Semester 2) and IFN704 *Advanced Project 2* (12cps) (Semester 1, Semester 2)	IFN711 *IT Industry Project* (24cps) **OR** IFN712 *Research in IT Practice* (24cps)	Semester 1 Semester 2

To see unit outlines of alternative (replacement) units, select unit from the list below.

Code	Title
Unit outlines of alternative (replacement) units.	
IFN581	Programming Fundamentals
IFN582	Rapid Web Development with Databases
IFN583	Computer Systems and Security
IFN584	Object-Oriented Design and Development
IFN585	Systems Innovation and Design
IFN635	Cyber Security and Governance
IFN637	Human-Centred Design of IT Systems
IFN658	Networks and Security
IFN711	IT Industry Project
IFN712	Research in IT Practice

IN27 Master of Data Analytics - No Major option (commenced in 2025)

Semesters

Code	Title
Semester 1 (February) commencements - Non cognate entrant	
Year 1, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
Professional Preparation Unit 1	
Professional Preparation Unit 2	
Elective Unit 1	
Year 1, Semester 2	
INN700	Introduction to Research
Professional Preparation Unit 3	
Professional Preparation Unit 4	
Advanced Unit 1	
Year 2, Semester 1	
IFN735	Industry Project (Phase 1)
Advanced Unit 2	
Elective Unit 2	
Elective Unit 3	
Year 2, Semester 2	
IFN736	Industry Project (Phase 2)
Advanced Unit 3	
Advanced Unit 4	
Semester 1 (February) commencements - Math cognate entrant	
Year 1, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
INN700	Introduction to Research
Professional Preparation Unit 1	
Elective List 1 Unit Option	
Year 1, Semester 2	
IFN735	Industry Project (Phase 1)
Advanced Option	
Advanced Option	
Professional Preparation Unit	
Year 2, Semester 1	
IFN736	Industry Project (Phase 2)
Advanced Option	
Advanced Option	
Semester 1 (February) commencements - IT cognate entrant	
Year 1, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
INN700	Introduction to Research
Professional Preparation Option	
Electives List 1 Unit Option	
Year 1, Semester 2	
IFN735	Industry Project (Phase 1)
Advanced Option	
Advanced Option	
Electives List 2 Unit Option	
Year 2, Semester 1	
IFN736	Industry Project (Phase 2)
Advanced Option	
Advanced Option	
Unit Sets	
Professional Preparations Units	
Select 48 credit points from the options list:	
IFN509	Introduction to Data Science
IFN515	Fundamentals of Business Process Management
IFN581	Programming Fundamentals
IFN582	Rapid Web Development with Databases
MXN500	Introduction to Statistics for Data Science
MXN501	Stochastic Modelling
Advanced Units	
Select 48 credit points from the options list:	
CAB420	Machine Learning
IFN645	Machine Learning at Scale
IFN646	Biomedical Data Science
IFN647	Machine Learning for Natural Language Processing
IFN650	Business Process Analytics
MXN600	Advanced Statistical Data Analysis

MXN601	Advanced Stochastic Modelling
Elective Units	
Please refer to the MDA Elective Unit Options structure under 'Unit Lists' section at the bottom of the page	

IN27 Master of Data Analytics - No Major option (commenced 2024)

Semesters

Code	Title
Semester 1 (February) commencements - Non cognate entrant	
Year 1, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
Professional Preparation Unit 1	
Professional Preparation Unit 2	
Elective Unit 1	
Year 1, Semester 2	
INN700	Introduction to Research
Professional Preparation Unit 3	
Professional Preparation Unit 4	
Advanced Unit 1	
Year 2, Semester 1	
IFN711	IT Industry Project
Advanced Unit 2	
Elective Unit 2	
Year 2, Semester 2	
Elective Unit 3	
Advanced Unit 3	
Advanced Unit 4	
Elective Unit 4	
Note: For students who wish to complete IFN712 in Semester 2, Elective Units 3 & 4 should be taken in Semester 1.	
IFN712	Research in IT Practice
Semester 2 (July) commencements - Non cognate entrant	
Year 1, Semester 2	
INN700	Introduction to Research
Professional Preparation Unit 1	
Professional Preparation Unit 2	
Elective Unit 1	
Year 2, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
Professional Preparation Unit 3	
Professional Preparation Unit 4	
Advanced Unit 1	
Year 2, Semester 2	
IFN712	Research in IT Practice
Advanced Unit 2	
Elective Unit 2	
Year 3, Semester 1	
Advanced Unit 3	
Advanced Unit 4	
Elective Unit 3	
Elective Unit 4	
Semester 1 (February) commencements - Math cognate entrant	
Year 1, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
INN700	Introduction to Research
Professional Preparation Unit 1	
Elective Unit	
Year 1, Semester 2	
Elective Unit	
Advanced Option	
Advanced Option	
Professional Preparation Unit	
Year 2, Semester 1	
IFN711	IT Industry Project
Advanced Option	
Advanced Option	
Semester 2 (July) commencements - Math cognate entrant	
Year 1, Semester 2	
INN700	Introduction to Research
Professional Preparation Option	
Professional Preparation Option	
Electives List 1 Unit Option	
Year 2, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
Electives List 2 Unit Option	
Advanced Option	
Advanced Option	
Year 2, Semester 2	
IFN712	Research in IT Practice
Advanced Option	
Advanced Option	
Semester 1 (February) commencements - IT cognate entrant	
Year 1, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
INN700	Introduction to Research
Professional Preparation Option	
Elective Unit	
Year 1, Semester 2	
Elective Unit	
Advanced Option	
Advanced Option	
Elective Unit	

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Year 2, Semester 1	
IFN711	IT Industry Project
Advanced Option	
Advanced Option	
Semester 2 (July) commencements - IT cognate entrant	
Year 1, Semester 2	
INN700	Introduction to Research
Professional Preparation Option	
Electives List 1 Unit Option	
Electives List 1 Unit Option	
Year 2, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
Electives List 2 Unit Option	
Advanced Option	
Advanced Option	
Year 2, Semester 2	
IFN712	Research in IT Practice
Advanced Option	
Advanced Option	
Unit Sets	
Core Units	
INN700	Introduction to Research
IFN619	Data Analytics for Strategic Decision Makers
IFN703	Advanced Project
IFN704	Advanced Project 2
Professional Preparations Units	
Select 48 credit points from the options list:	
IFN509	Introduction to Data Science
IFN515	Fundamentals of Business Process Management
IFN552	Systems Analysis and Design
IFN554	Databases
IFN555	Introduction to Programming
IFN556	Object Oriented Programming
MXN500	Introduction to Statistics for Data Science
MXN501	Stochastic Modelling
Advanced Units	
Select 48 credit points from the options list:	
CAB420	Machine Learning
IFN645	Machine Learning at Scale
IFN646	Biomedical Data Science
IFN647	Machine Learning for Natural Language Processing
IFN650	Business Process Analytics
MXN600	Advanced Statistical Data Analysis
MXN601	Advanced Stochastic Modelling
Elective Units	
Please refer to the MDA Elective Unit Options structure under 'Unit Lists' section at the bottom of the page	

Biomedical Data Science Major (commenced in 2025)

Semesters

- Semester 1 (February) commencement
- Year 1, Semester 1
- Year 1, Semester 2
- Year 2, Semester 1
- Year 2, Semester 2

Code	Title
Semester 1 (February) commencement	
Year 1, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
IFN581	Programming Fundamentals
IFN509	Introduction to Data Science
MXN500	Introduction to Statistics for Data Science
Year 1, Semester 2	
INN700	Introduction to Research
IFN582	Rapid Web Development with Databases
LQN203	Ethical, Legal and Social Issues in Genetics and Genomics
Elective unit	
Year 2, Semester 1	
IFN735	Industry Project (Phase 1)
Major option unit	
Elective unit	
Elective unit	
Year 2, Semester 2	
IFN736	Industry Project (Phase 2)
IFN646	Biomedical Data Science
LSN707	Advanced Biomedical Data Science Project

Biomedical Data Science Major (commenced in 2024)

Semesters

- Semester 1 (February) commencement
- Year 1, Semester 1
- Year 1, Semester 2
- Year 2, Semester 1
- Year 2, Semester 2
- Semester 2 (July) commencement
- Year 1, Semester 2
- Year 2, Semester 1
- Year 2, Semester 2
- Year 3, Semester 1

Code	Title
Semester 1 (February) commencement	
Year 1, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
IFN552	Systems Analysis and Design
IFN554	Databases
(note: IFN552 (6cp) and IFN554 (6cp) to be taken in pairs)	
IFN509	Introduction to Data Science
MXN500	Introduction to Statistics for Data Science
Year 1, Semester 2	
INN700	Introduction to Research
IFN555	Introduction to Programming
IFN556	Object Oriented Programming
(note: IFN555 (6cp) and IFN556 (6cp) to be taken in pairs)	
LQN203	Ethical, Legal and Social Issues in Genetics and Genomics

Elective unit	
Year 2, Semester 1	
Major option unit	
Elective unit	
Elective unit	
Elective unit	
Year 2, Semester 2	
IFN712	Research in IT Practice
IFN646	Biomedical Data Science
LSN707	Advanced Biomedical Data Science Project
Note: For students who wish to complete IFN711 in Semester 1, Elective Units 3 & 4 should be taken in Semester 2..	
IFN711	IT Industry Project
Semester 2 (July) commencement	
Year 1, Semester 2	
INN700	Introduction to Research
IFN509	Introduction to Data Science
LQN203	Ethical, Legal and Social Issues in Genetics and Genomics
IFN552	Systems Analysis and Design
IFN554	Databases
(note: IFN552 (6cp) and IFN554 (6cp) to be taken in pairs)	
Year 2, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
MXN500	Introduction to Statistics for Data Science
IFN555	Introduction to Programming
IFN556	Object Oriented Programming
(note: IFN555 (6cp) and IFN556 (6cp) to be taken in pairs)	
Elective unit	
Year 2, Semester 2	
IFN712	Research in IT Practice
IFN646	Biomedical Data Science
LSN707	Advanced Biomedical Data Science Project
Year 3, Semester 1	
Major option unit	
Elective unit	
Elective unit	
Elective unit	

Biomedical Data Science Major - Math cognate entrant (commenced in 2025)

Semesters

- Semester 1 (February) commencement
- Year 1, Semester 1
- Year 1, Semester 2
- Year 2, Semester 1

Code	Title
Semester 1 (February) commencement	
Year 1, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
INN700	Introduction to Research
IFN581	Programming Fundamentals
IFN509	Introduction to Data Science
Year 1, Semester 2	
IFN735	Industry Project (Phase 1)
IFN646	Biomedical Data Science
LQN203	Ethical, Legal and Social Issues in Genetics and Genomics
LSN707	Advanced Biomedical Data Science Project
Year 2, Semester 1	
IFN736	Industry Project (Phase 2)
IFN582	Rapid Web Development with Databases
Major option unit	

Biomedical Data Science Major - Math cognate entrant (commenced in 2024)

Semesters

- Semester 1 (February) commencement
- Year 1, Semester 1
- Year 1, Semester 2
- Year 2, Semester 1
- Semester 2 (July) commencement
- Year 1 Semester 2
- Year 2 Semester 1
- Year 2 Semester 2

Code	Title
Semester 1 (February) commencement	
Year 1, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
INN700	Introduction to Research
IFN552	Systems Analysis and Design
IFN554	Databases
IFN509	Introduction to Data Science
Year 1, Semester 2	
Elective Unit	
IFN646	Biomedical Data Science
LQN203	Ethical, Legal and Social Issues in Genetics and Genomics
LSN707	Advanced Biomedical Data Science Project
Year 2, Semester 1	
IFN711	IT Industry Project
IFN555	Introduction to Programming
IFN556	Object Oriented Programming
Major option unit	
Semester 2 (July) commencement	
Year 1 Semester 2	
INN700	Introduction to Research
LQN203	Ethical, Legal and Social Issues in Genetics and Genomics
IFN552	Systems Analysis and Design
IFN554	Databases
IFN509	Introduction to Data Science
Year 2 Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
IFN555	Introduction to Programming
IFN556	Object Oriented Programming
Major Option	

Electives List 2 Unit Option	
Year 2 Semester 2	
IFN712	Research in IT Practice
LSN707	Advanced Biomedical Data Science Project
IFN646	Biomedical Data Science

Biomedical Data Science Major - IT cognate entrant (commenced in 2025)

Semesters

- Semester 1 (February) commencement
- Year 1, Semester 1
- Year 1, Semester 2
- Year 2, Semester 1

Code	Title
Semester 1 (February) commencement	
Year 1, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
INN700	Introduction to Research
MXN500	Introduction to Statistics for Data Science
Electives List 1 Unit Option	
Year 1, Semester 2	
IFN735	Industry Project (Phase 1)
IFN646	Biomedical Data Science
LQN203	Ethical, Legal and Social Issues in Genetics and Genomics
LSN707	Advanced Biomedical Data Science Project
Year 2, Semester 1	
IFN736	Industry Project (Phase 2)
Major option unit	
Electives List 2 Unit Option	

Biomedical Data Science Major - IT cognate entrant (commenced in 2024)

Semesters

- Semester 1 (February) commencement
- Year 1, Semester 1
- Year 1, Semester 2
- Year 2, Semester 1
- Semester 2 (July) commencement
- Year 1, Semester 2
- Year 2, Semester 1
- Year 2, Semester 2

Code	Title
Semester 1 (February) commencement	
Year 1, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
INN700	Introduction to Research
MXN500	Introduction to Statistics for Data Science
Electives List 1 Unit Option	
Year 1, Semester 2	
Electives List 1 Unit Option	
IFN646	Biomedical Data Science
LQN203	Ethical, Legal and Social Issues in Genetics and Genomics
LSN707	Advanced Biomedical Data Science Project
Year 2, Semester 1	
IFN711	IT Industry Project
Major option unit	
Electives List 2 Unit Option	
Semester 2 (July) commencement	
Year 1, Semester 2	
INN700	Introduction to Research
IFN646	Biomedical Data Science
LQN203	Ethical, Legal and Social Issues in Genetics and Genomics
Electives List 1 Unit Option	
Year 2, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
MXN500	Introduction to Statistics for Data Science
Major option	
Electives List 2 Unit Option	
Year 2, Semester 2	
IFN712	Research in IT Practice
LSN707	Advanced Biomedical Data Science Project
Electives List 1 Unit Option	

Biomedical Data Science Major - Biomed cognate entrant (commenced in 2025)

Semesters

- Semester 1 (February) commencement
- Year 1, Semester 1
- Year 1, Semester 2
- Year 2, Semester 1

Code	Title
Semester 1 (February) commencement	
Year 1, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
INN700	Introduction to Research
IFN509	Introduction to Data Science
IFN581	Programming Fundamentals
Year 1, Semester 2	
IFN735	Industry Project (Phase 1)
LSN707	Advanced Biomedical Data Science Project
IFN582	Rapid Web Development with Databases
IFN646	Biomedical Data Science
Year 2, Semester 1	
IFN736	Industry Project (Phase 2)
MXN500	Introduction to Statistics for Data Science
Major option unit	

Biomedical Data Science Major - Biomed cognate entrant (commenced in 2024)

Master of Data Analytics

Semesters

Code	Title
Semester 1 (February) commencement	
Year 1, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
INN700	Introduction to Research
IFN509	Introduction to Data Science
IFN552	Systems Analysis and Design
IFN554	Databases
Year 1, Semester 2	
Electives List 2 Unit Option	
LSN707	Advanced Biomedical Data Science Project
IFN555	Introduction to Programming
IFN556	Object Oriented Programming
IFN646	Biomedical Data Science
Year 2, Semester 1	
IFN712	Research in IT Practice
MXN500	Introduction to Statistics for Data Science
Major option unit	
Semester 2 (July) commencement	
Year 1, Semester 2	
INN700	Introduction to Research
IFN555	Introduction to Programming
IFN556	Object Oriented Programming
IFN509	Introduction to Data Science
IFN552	Systems Analysis and Design
IFN554	Databases
Year 2, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
MXN500	Introduction to Statistics for Data Science
Biomedical Data Science Major Option 1	
Electives List 2 Unit Option	
Year 2, Semester 2	
LSN707	Advanced Biomedical Data Science Project
IFN712	Research in IT Practice
IFN646	Biomedical Data Science

Computational Data Science Major (commenced in 2025)

Semesters

Code	Title
Semester 1 (February) commencement	
Year 1, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
IFN581	Programming Fundamentals
IFN582	Rapid Web Development with Databases
IFN509	Introduction to Data Science
Year 1, Semester 2	
INN700	Introduction to Research
IFN584	Object-Oriented Design and Development
Major option unit (List 1)	
Elective unit	
Year 2, Semester 1	
IFN735	Industry Project (Phase 1)
Major option unit (List 2)	
Elective unit	
Elective unit	
Year 2, Semester 2	
IFN736	Industry Project (Phase 2)
Major option unit (List 1)	
Major option unit (List 2)	

Computational Data Science Major (commenced in 2024)

Semesters

Code	Title
Semester 1 (February) commencement	
Year 1, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
IFN552	Systems Analysis and Design
IFN554	Databases
(note: IFN552 (6cp) and IFN554 (6cp) to be taken in pairs)	
IFN509	Introduction to Data Science
IFN555	Introduction to Programming
IFN556	Object Oriented Programming
(note: IFN555 (6cp) and IFN556 (6cp) to be taken in pairs)	
Year 1, Semester 2	
INN700	Introduction to Research
IFN563	Object Oriented Design
IFN564	Data Structures and Algorithms
(note: IFN563 (6cp) and IFN564 (6cp) to be taken in pairs)	
Major option unit (List 1)	
Elective unit	
Year 2, Semester 1	
Major option unit (List 2)	

Elective unit	
Elective unit	
Elective unit	
Year 2, Semester 2	
IFN712	Research in IT Practice
Major option unit (List 1)	
Major option unit (List 2)	
Note: For students who wish to complete IFN711 in Semester 1, Elective Units 3 & 4 should be taken in Semester 2.	
IFN711	IT Industry Project
Semester 2 (July) commencement	
Year 1, Semester 2	
INN700	Introduction to Research
IFN552	Systems Analysis and Design
IFN554	Databases
(note: IFN552 (6cp) and IFN554 (6cp) to be taken in pairs)	
IFN509	Introduction to Data Science
IFN555	Introduction to Programming
IFN556	Object Oriented Programming
(note: IFN555 (6cp) and IFN556 (6cp) to be taken in pairs)	
Year 2, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
IFN563	Object Oriented Design
IFN564	Data Structures and Algorithms
(note: IFN563 (6cp) and IFN564 (6cp) to be taken in pairs)	
Major option unit	
Elective unit	
Year 2, Semester 2	
Elective unit	
Major option unit	
Major option unit	
Major option unit	
Year 3, Semester 1	
IFN712	Research in IT Practice
Elective unit	
Elective unit	

Computational Data Science Major - IT cognate entrant (commenced in 2025)

Semesters

- Semester 1 (February) commencement
- Year 1, Semester 1
- Year 1, Semester 2
- Year 2, Semester 1

Code	Title
Semester 1 (February) commencement	
Year 1, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
INN700	Introduction to Research
Electives List 1 Unit Option	
Electives List 2 Unit Option	
Year 1, Semester 2	
Electives List 2 Unit Option	
Major Option Unit	
Major Option Unit	
IFN563	Object Oriented Design
IFN564	Data Structures and Algorithms
Year 2, Semester 1	
IFN711	IT Industry Project
Major Option Unit	
Major Option Unit	

Computational Data Science Major - IT cognate entrant (commenced in 2024)

Semesters

- Semester 1 (February) commencement
- Year 1, Semester 1
- Year 1, Semester 2
- Year 2, Semester 1
- Semester 2 (July) commencement
- Year 1, Semester 2
- Year 2, Semester 1
- Year 2, Semester 2

Code	Title
Semester 1 (February) commencement	
Year 1, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
INN700	Introduction to Research
Electives List 1 Unit Option	
Electives List 1 Unit Option	
Year 1, Semester 2	
Electives List 2 Unit Option	
Major Option List 1	
Major Option List 1	
IFN563	Object Oriented Design
IFN564	Data Structures and Algorithms
Year 2, Semester 1	
IFN711	IT Industry Project
Major Option List 2	
Major Option List 2	
Semester 2 (July) commencement	
Year 1, Semester 2	
INN700	Introduction to Research
Major Option List 1	
Electives List 1 Unit Option	
Electives List 2 Unit Option	
Year 2, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
Major Option List 1	
IFN563	Object Oriented Design
IFN564	Data Structures and Algorithms
Electives List 1 Unit Option	
Year 2, Semester 2	
IFN712	Research in IT Practice
Major Option List 2	
Major Option List 2	

Master of Data Analytics

Computational Data Science Major - Math cognate entrant (commenced in 2025)

Semesters

- Semester 1 (February) commencement
- Year 1, Semester 1
- Year 2, Semester 1
- Year 2, Semester 1

Code	Title
Semester 1 (February) commencement	
Year 1, Semester 1	
INN700	Introduction to Research
IFN509	Introduction to Data Science
IFN581	Programming Fundamentals
IFN619	Data Analytics for Strategic Decision Makers
Year 2, Semester 1	
IFN735	Industry Project (Phase 1)
IFN582	Rapid Web Development with Databases
Major Option Unit	
Major Option Unit	
Year 2, Semester 1	
IFN736	Industry Project (Phase 2)
Major Option Unit	
Major Option Unit	

Computational Data Science Major - Math cognate entrant (commenced in 2024)

Semesters

- Semester 1 (February) commencement
- Year 1, Semester 1
- Year 1, Semester 2
- Year 2, Semester 1
- Semester 2 (July) commencement
- Year 1, Semester 2
- Year 2, Semester 1
- Year 2, Semester 2

Code	Title
Semester 1 (February) commencement	
Year 1, Semester 1	
INN700	Introduction to Research
IFN509	Introduction to Data Science
IFN552	Systems Analysis and Design
IFN554	Databases
IFN619	Data Analytics for Strategic Decision Makers
Year 1, Semester 2	
IFN555	Introduction to Programming
IFN556	Object Oriented Programming
IFN563	Object Oriented Design
IFN564	Data Structures and Algorithms
Major Option List 1	
Major Option List 1	
Year 2, Semester 1	
IFN711	IT Industry Project
Major Option List 2	
Major Option List 2	
Semester 2 (July) commencement	
Year 1, Semester 2	
INN700	Introduction to Research
Major Option List 2	
IFN552	Systems Analysis and Design
IFN554	Databases
IFN509	Introduction to Data Science
Year 2, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
IFN555	Introduction to Programming
IFN556	Object Oriented Programming
Major Option List 1	
Major Option List 2	
Year 2, Semester 2	
IFN712	Research in IT Practice
IFN563	Object Oriented Design
IFN564	Data Structures and Algorithms
Major Option List 1	

Statistical Data Science Major (commenced in 2025)

Semesters

- Semester 1 (February) commencement
- Year 1, Semester 1
- Year 1, Semester 2
- Year 2, Semester 1
- Year 2, Semester 2

Code	Title
Semester 1 (February) commencement	
Year 1, Semester 1	
MXN500	Introduction to Statistics for Data Science
IFN619	Data Analytics for Strategic Decision Makers
IFN581	Programming Fundamentals
Elective unit	
Year 1, Semester 2	
MXN501	Stochastic Modelling
INN700	Introduction to Research
IFN509	Introduction to Data Science
Elective unit	
Year 2, Semester 1	
MXN601	Advanced Stochastic Modelling
IFN735	Industry Project (Phase 1)
Major option unit	
Elective unit	
Year 2, Semester 2	
MXN600	Advanced Statistical Data Analysis
IFN736	Industry Project (Phase 2)
Major option unit	

Statistical Data Science Major (commenced in 2024)

Semesters

- Semester 1 (February) commencement
- Year 1, Semester 1

Master of Data Analytics

Code	Title
Semester 1 (February) commencement	
Year 1, Semester 1	
MXN500	Introduction to Statistics for Data Science
IFN619	Data Analytics for Strategic Decision Makers
IFN555	Introduction to Programming
IFN556	Object Oriented Programming
(note: IFN555 (6cp) and IFN556 (6cp) to be taken in pairs)	
Elective unit	
Year 1, Semester 2	
MXN501	Stochastic Modelling
INN700	Introduction to Research
IFN509	Introduction to Data Science
Elective unit	
Year 2, Semester 1	
Elective unit	
MXN601	Advanced Stochastic Modelling
Major option unit	
Elective unit	
Year 2, Semester 2	
IFN712	Research in IT Practice
MXN600	Advanced Statistical Data Analysis
Major option unit	
Semester 2 (July) commencement	
Year 1, Semester 2	
MXN501	Stochastic Modelling
INN700	Introduction to Research
IFN555	Introduction to Programming
IFN556	Object Oriented Programming
(note: IFN555 (6cp) and IFN556 (6cp) to be taken in pairs)	
Elective unit	
Year 2, Semester 1	
MXN500	Introduction to Statistics for Data Science
IFN619	Data Analytics for Strategic Decision Makers
IFN509	Introduction to Data Science
Elective unit	
Year 2, Semester 2	
MXN600	Advanced Statistical Data Analysis
Major option unit	
Elective unit	
Elective unit	
Year 3, Semester 1	
MXN601	Advanced Stochastic Modelling
IFN712	Research in IT Practice
Major option unit	

Statistical Data Science Major - IT cognate entrant (commenced in 2025)

Semesters

Code	Title
Semester 1 (February) commencement	
Year 1, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
INN700	Introduction to Research
MXN500	Introduction to Statistics for Data Science
Electives List 1 Unit Option	
Year 1, Semester 2	
IFN735	Industry Project (Phase 1)
MXN501	Stochastic Modelling
MXN600	Advanced Statistical Data Analysis
Major Option	
Year 2, Semester 1	
IFN736	Industry Project (Phase 2)
MXN601	Advanced Stochastic Modelling
Major Option	

Statistical Data Science Major - IT cognate entrant (commenced in 2024)

Semesters

Code	Title
Semester 1 (February) commencement	
Year 1, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
INN700	Introduction to Research
MXN500	Introduction to Statistics for Data Science
Electives List 1 Unit Option	
Year 1, Semester 2	
Electives List 2 Unit Option	
MXN501	Stochastic Modelling
MXN600	Advanced Statistical Data Analysis
Major Option	
Year 2, Semester 1	
IFN711	IT Industry Project
MXN601	Advanced Stochastic Modelling
Major Option	
Semester 2 (July) commencement	
Year 1, Semester 2	
INN700	Introduction to Research

MXN501	Stochastic Modelling
Major Option	
Electives List 1 Unit Option	
Year 2, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
MXN500	Introduction to Statistics for Data Science
MXN601	Advanced Stochastic Modelling
Major Option	
Year 2, Semester 2	
IFN712	Research in IT Practice
MXN600	Advanced Statistical Data Analysis
Electives List 2 Unit Option	

Statistical Data Science Major - Math cognate entrant (commenced in 2025)

Semesters

- Semester 1 (February) commencement
- Year 1, Semester 1
- Year 1, Semester 2
- Year 2, Semester 1

Code	Title
Semester 1 (February) commencement	
Year 1, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
INN700	Introduction to Research
MXN601	Advanced Stochastic Modelling
IFN581	Programming Fundamentals
Year 1, Semester 2	
IFN735	Industry Project (Phase 1)
IFN509	Introduction to Data Science
MXN600	Advanced Statistical Data Analysis
Elective List 2 unit option	
Year 2, Semester 1	
IFN736	Industry Project (Phase 2)
Major Option	
Major Option	

Statistical Data Science Major - Math cognate entrant (commenced in 2024)

Semesters

- Semester 1 (February) commencement
- Year 1, Semester 1
- Year 1, Semester 2
- Year 2, Semester 1
- Semester 2 (July) commencement
- Year 1, Semester 2
- Year 2, Semester 1
- Year 2, Semester 2

Code	Title
Semester 1 (February) commencement	
Year 1, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
INN700	Introduction to Research
MXN601	Advanced Stochastic Modelling
IFN555	Introduction to Programming
IFN556	Object Oriented Programming
Year 1, Semester 2	
Electives List 2 Unit Option	
IFN509	Introduction to Data Science
MXN600	Advanced Statistical Data Analysis
IFN552	Systems Analysis and Design
IFN554	Databases
Year 2, Semester 1	
IFN711	IT Industry Project
Major Option	
Major Option	
Semester 2 (July) commencement	
Year 1, Semester 2	
INN700	Introduction to Research
IFN509	Introduction to Data Science
MXN600	Advanced Statistical Data Analysis
IFN552	Systems Analysis and Design
IFN554	Databases
Year 2, Semester 1	
IFN619	Data Analytics for Strategic Decision Makers
MXN601	Advanced Stochastic Modelling
Major Option	
IFN555	Introduction to Programming
IFN556	Object Oriented Programming
Year 2, Semester 2	
IFN712	Research in IT Practice
Major Option	
Elective List 2 Unit Option	

Biomedical Data Science Major - articulating from LV41 Bachelor of Biomedical Science in 2025

Semesters

- Advanced standing from prior study (normally from LV41 Bachelor of Biomedical Science)
- Year 1, Semester 1
- Year 1, Semester 2

Code	Title
Advanced standing from prior study (normally from LV41 Bachelor of Biomedical Science)	
IFN509	Introduction to Data Science
IFN555	Introduction to Programming
IFN556	Object Oriented Programming
IFN646	Biomedical Data Science
INN700	Introduction to Research
Year 1, Semester 1	
MXN500	Introduction to Statistics for Data Science
IFN619	Data Analytics for Strategic Decision Makers
IFN582	Rapid Web Development with Databases
AND	
Elective unit	
OR	

IFN711	IT Industry Project
Year 1, Semester 2	
MXN600	Advanced Statistical Data Analysis
LSN707	Advanced Biomedical Data Science Project
IFN712	Research in IT Practice
OR	
IFN582	Rapid Web Development with Databases
AND	
Elective unit	

Biomedical Data Science Major Unit Options

Unit Set	
Code	Title
Select 12 credit points (1 unit) from the options list:	
CAB420	Machine Learning
IFN645	Machine Learning at Scale
MXN600	Advanced Statistical Data Analysis

Computational Data Science Major Unit Options

Unit Set	
Code	Title
Select 24 credit points (2 units) from the Major Unit Options List 1:	
IFN645	Machine Learning at Scale
IFN646	Biomedical Data Science
IFN647	Machine Learning for Natural Language Processing
Select 24 credit points (2 units) from the Major Unit Options List 2:	
CAB401	High Performance and Parallel Computing
CAB420	Machine Learning
CAB432	Cloud Computing

Statistical Data Science Major Unit Options

Unit Set	
Code	Title
Select 24 credit points (2 units) from the options list:	
CAB420	Machine Learning
MXN402	AMSI Unit 1
MXN403	AMSI Unit 2
MXN441	Advanced Statistical Inference and Modelling
MXN442	Modern Statistical Computing Techniques

Master of Data Analytics Electives Lists

In this list

- MDA Elective Unit Options
- Master of Data Analytics Elective Unit List
- Master of Data Analytics Advanced Elective Unit List

MDA Elective Unit Options	
Code	Title

Master of Data Analytics Elective Unit List	
Code	Title
Select 36cp from the Master of Data Analytics Elective Unit List	
AMN425	Digital Strategy and Analytics
CAB401	High Performance and Parallel Computing
CAB420	Machine Learning
CAB432	Cloud Computing
IFN521	Trust and Artificial Intelligence
IFN623	Human Information Interaction
IFN666	Web and Mobile Application Development
MXN402	AMSI Unit 1
MXN442	Modern Statistical Computing Techniques
MXN441	Advanced Statistical Inference and Modelling
MXN403	AMSI Unit 2
MXN500	Introduction to Statistics for Data Science
MXN501	Stochastic Modelling
IFN509	Introduction to Data Science
IFN515	Fundamentals of Business Process Management
IFN580	Machine Learning
MXN600	Advanced Statistical Data Analysis
MXN601	Advanced Stochastic Modelling
IFN645	Machine Learning at Scale
IFN646	Biomedical Data Science
IFN650	Business Process Analytics
IFN680	Advanced Machine Learning and Applications
IFN653	Business Process Automation

Master of Data Analytics Advanced Elective Unit List	
Code	Title
Select 12cp from the Master of Data Analytics Advanced Elective Unit List	
IFN645	Machine Learning at Scale
IFN646	Biomedical Data Science
MXN600	Advanced Statistical Data Analysis
MXN601	Advanced Stochastic Modelling
IFN647	Machine Learning for Natural Language Processing
IFN650	Business Process Analytics

Unit Synopses

AMN425 Digital Strategy and Analytics

Pre-requisites	(24 credit points of completed Postgraduate study) or (192cps in SV03 or IV04 or MV05 or BV06 or EV08)
Equivalents	AMX425
Credit Points	12
Availabilities	**Gardens Point** - SEM-2 **Online** - SEM-2 **External** - XCH-1, XCH-2

This course spans all the marketing communication disciplines and the practice of advertising, public relations and marketing to deliver a holistic approach to digital strategy. It introduces students to new digital skills that reflect the cutting edge of industry practice and important analytic understanding for decision-making. This unit satisfies the growing demand from industry for strategic thinking and planning, and the expectation of strong digital skills and a desire for evidence based solutions.

View unit details online (current students only)
View unit timetable

CAB401 High Performance and Parallel Computing

Pre-requisites	IFN584 or IFQ584 or (IFN563 and IFN564) or (IFQ563 and IFQ564) or CAB301
Credit Points	12
Availabilities	**Gardens Point** - SEM-2 **Online** - SEM-2 **External** - XCH-1

Building on your skills in "sequential" programming, this unit teaches you the tools and techniques needed to exploit multi-processor computer systems to achieve dramatic performance improvements for computationally intensive problems. This unit gives you both an understanding of why future computer hardware will be increasingly parallel, the challenges this poses for software development as well as a set of practical skills in creating high-performance programs using today's best tools and techniques.

View unit details online (current students only)
View unit timetable

CAB420 Machine Learning

Pre-requisites	(CAB201 or EGB202 or CAB202 or ITD121 or IFN501 or IFN556 or Admission to (EN50 or EN55 or EN52 or EN56 or EN57 or EN62 or EN72)) or (192cps in SV03 or IV04 or MV05 or EV08) or (144cps in EV10) or (enrolment in IV53 or IV54 or IV55 or IV56 or IV58).
Anti-requisites	IFN580
Credit Points	12
Availabilities	**Gardens Point** - SEM-1 **Online** - SEM-1 **External** - XCH-1, XCH-2

Machine learning is the science of getting computers to act without being explicitly programmed. This unit provides you with a broad introduction to machine learning and its statistical foundations. Topics include: definition of machine learning tasks; classification principles and methods; dimensionality reduction/subspace methods; and deep learning methods such as convolutional neural networks and transformers. The unit makes use of python, jupyterlab, git and state of the art machine learning libraries. In addition to addressing specific machine learning methods, we will consider the ethical implications of machine learning in applications where individuals or groups could be marginalised, and the computational cost of machine learning methods and ways to reduce the compute burden. Application examples are taken from areas such as computer vision, finance, market prediction and information retrieval.

View unit details online (current students only)
View unit timetable

CAB432 Cloud Computing

Pre-requisites	CAB301 or CAB302 or INB370 or INB371 or IFN666 or IFQ666 or (IFN582 and IFN584) or (IFQ582 and IFQ584)
Equivalents	CAZ432
Credit Points	12
Availabilities	**Gardens Point** - SEM-2 **Online** - SEM-2 **External** - XCH-1, XCH-2

Cloud Computing is among the most important developments in the IT industry in recent years, and one which has received enormous attention. Cloud is a natural progression from earlier trends in service and infrastructure outsourcing and virtualisation, but is distinguished by its elasticity and scale: service and infrastructure provisioning may change rapidly in response to variations in demand, allowing clients to cater for unexpected spikes in load without tying up capital in expensive and potentially underutilised assets. Cloud services and technologies are becoming increasingly diverse and sophisticated, moving rapidly from the original 'bare metal' offerings and providing a rich set of options and APIs. This unit provides a technically oriented introduction to Cloud Computing, giving you experience in developing modern cloud applications and deploying them to the public clouds of the major vendors.

View unit details online (current students only)
View unit timetable

IFN509 Introduction to Data Science

Pre-requisites	(IFN554 or IFQ554 or IFN581 or IFN555 or IFQ555 or IFN582) OR (192cps in IV04 or IV05 or EV08 or EV07 or LV41) OR (admission into IV54 or IV59 or IV58 or IV60) OR (admission into IN15 or IN17 or EN72 or EN75 or EN76 or EN77) IFN554, IFQ554, IFN555 and IFQ555 or IFN581 or IFN582 can be enrolled in the same teaching period as IFN509.
Anti-requisites	INN342, INN343
Equivalents	IFQ509
Credit Points	12
Availabilities	**Gardens Point** - SEM-1, SEM-2

This fundamental data science unit addresses the core concepts, techniques and practices in data science. In the information age, with large amounts of data produced and made available every minute, data exploration and mining have become necessary for individuals and organisations to unlock the power of data. This unit will introduce you to various data exploration and mining methods to manipulate, model and analyse data. You will explore the complete data science lifecycle and also the importance of data ethics and privacy, and issues of fairness and diversity in data collection, analysis, and algorithmic decision-making.This is an introductory unit and the knowledge and skills developed in this unit are relevant to both data science and non-data science majors. This unit also allows you to review your personal values, attitudes, and goals set for

data science learning including consideration of sustainability concerns.

View unit details online (current students only)
View unit timetable

IFN515 Fundamentals of Business Process Management

Pre-requisites	(192cps in SV04 or IV04 or IV05 or MV05 or MV06 or BV06 or BV07 or EV08 or EV07) OR (admission into IV57 or IV54 or IV59 or IV55 or IV52 or IV56 or IV51 or IV58 or IV60) OR (admission into IN10 or IN14 or IN17 or IN19 or IN20 or IN23 or IN25 or IN26 or IN27 or IN31or PM20 or PV20 or PV21 or EN75 or EN76 or EN77).
Anti-requisites	INN321
Equivalents	IFQ515, IFZ515
Credit Points	12
Availabilities	**Gardens Point** - SEM-1, SEM-2 **External** - XCH-1, XCH-2

This unit provides an in-depth introduction to the management of business processes. It takes you through the fundamental lifecycle phases of a typical business process improvement initiative, from process identification to process monitoring, covering process modelling, analysis, improvement, and automation. The techniques learned include Aboriginal and Torres Strait Islander process views and sustainable practices for waste management as defined by the UN (Goal 12 and Goal 8) in designing robust process solutions. The unit emphasises a practical approach, integrating real-world examples through case vignettes, detailed studies, and industry talks. Assessment is centred on a real-world case study, enabling the application of learned concepts to real-life scenarios. Additionally, we showcase the career journeys and successes of former students, illustrating how the unit aids career advancement and offers mentoring opportunities for your benefit.

View unit details online (current students only)
View unit timetable

IFN521 Trust and Artificial Intelligence

Pre-requisites	(192cps in SV03 or SV04 or IV04 or IV05 or MV05 or MV06 or BV06 or BV07 or EV08 or EV07) OR (admissions into IV53 or IV57 or IV54 or IV59 or IV55 or IV52 or IV56 or IV51 or IV58 or IV60) OR (admission into IN14 or IN17 or IN23 or IN20 or IN19 or IN28 or IN29 or IN30 or IN26 or IN27 or IN31 or BS11 or DE99).
Equivalents	IFQ521
Credit Points	12
Availabilities	**Gardens Point** - SEM-1

Human beings engage in information environments which are increasingly being powered by AI. Trust plays an important role in the use of AI and collaboration in human-AI systems. This unit covers two aspects within this context 1) the social and cognitive principles and processes surrounding trust between humans and intelligent agents, machines, algorithms, and/or other emergent technologies, (2) how interactions with AI shape human beliefs, perceptions, attitudes, and behaviours.

View unit details online (current students only)
View unit timetable

IFN552 Systems Analysis and Design

Pre-requisites	(Admission to IN20 or IN18 or IN19 or IN27 or IN26 or BS11 or IV53 or IV55 or IV56 or IV58) or (192cps in SV03 or MV05 or BV06 or EV08)
Equivalents	IFQ552
Credit Points	6
Availabilities	Last run in 2024

The unit outlines the process of clarifying business problems that an IT system can help to resolve, and provides a working knowledge of principles, contexts and methods that IT experts use, either individually or in a group, to analyse and design an IT system. The knowledge and skills (both hard skills such as the modelling techniques and soft skills such as team work) that you learn in this unit will be used extensively in your professional life following graduation. The unit builds your skills towards any career related to operational analysis and design of a specific business scope, including Business Analyst, Solution Architect and Project Manager.

View unit details online (current students only)
View unit timetable

IFN554 Databases

Pre-requisites	(Admission to IN20 or IN18 or IN19 or IN23 or IN27 or IN26 or BS11 or KC88 or IV53 or IV55 or IV56 or IV58) or (192cps in SV03 or MV05 or BV06 or EV08).
Equivalents	IFQ554
Credit Points	6
Availabilities	Last run in 2024

This is a foundational unit addressing the core concepts, principles and skills required for understanding, designing and managing databases. It introduces a conceptual approach to modeling the data aspect of business domains, how to transform a conceptual data model into a relational database design, and how to retrieve and manipulate data through standard database querying techniques. Relevant societal and ethical aspects of database management are also covered. The knowledge and skills involved in developing and managing databases effectively are essential for IT Professional, Business Analyst, and Data Scientist nowadays.

View unit details online (current students only)
View unit timetable

IFN555 Introduction to Programming

Pre-requisites	(Admission to IN20, IN19, IN18, IN27, IN26) or (192 credit points in LV41)) or (192cps in SV03 or IV04 or MV05 or BV06 or EV08) or (admission to IV53 or IV54 or IV55 or IV56 or IV58) or (admission to PH71 or PH80)

Anti-requisites	IFN501
Equivalents	IFQ555
Credit Points	6
Availabilities	Last run in 2024

This unit is designed for those who have never programmed before. It introduces the basic building blocks of algorithms: sequence, selection and iteration and how algorithmic thinking is used to decompose problems into simpler steps. The C# language is used for expressing those steps in a programming language. It introduces an imperative style of programming in which a sequence of statements change the program's state. The program's state consists of a set of variables that contain data of various types. We introduce basic data types including numbers, text strings and lists. Students are also introduced to processes for debugging and testing programs to ensure their correctness and the forms of professional communication associated with software development.

View unit details online (current students only)
View unit timetable

IFN556 Object Oriented Programming

Pre-requisites	IFN555 or IFQ555
Anti-requisites	IFN501
Equivalents	IFQ556
Credit Points	6
Availabilities	Last run in 2024

In this unit you will learn how the principles of Object-Oriented programming can help combat complexity when developing larger programs. The key concepts are abstraction and encapsulation. Abstraction is the processing of giving a name to something plus generalization – the process of ignoring differences and instead identifying common properties of a collection of objects. Encapsulation is the process of "putting things in a box" – selectively exposing some aspects of what's in the box, but deliberately hiding much of what is in the box. In object-oriented programming languages classes and methods provide the principle mechanism for abstraction and encapsulation.

View unit details online (current students only)
View unit timetable

IFN563 Object Oriented Design

Pre-requisites	(IFN501 or (IFN555 and IFN556) or (IFQ555 and IFQ556) or Admission to IN15 or IQ15 or IN16 or IQ16 or IN17) or (192cps in IV04 or EV08) or (admission to IV54 or IV58).
Anti-requisites	IFN505
Equivalents	IFQ563
Credit Points	6
Availabilities	Last run in 2024

Builds upon the concepts that you have learned in IFN556, introducing methods of Object Oriented Design which will allow you to solve more complex, real world problems. In this unit you will learn how to identify potential objects and classes by examining the real-world context that the programming is modelling. By basing our software design on entities that exist in the real world, we maximise the chances that our software architecture will age and evolve gracefully - i.e. we won't need to restructure our application completely as the requirements change. This is because our choice of objects is stable - the entities that an organisation needs to deal with (for example Customers, Invoices, Vehicles and Projects) will not change completely overnight. You will also learn about and apply several standard software design principles and patterns. Finally, you will learn how such designs are professionally communicated and used as part of object-oriented software design processes.

View unit details online (current students only)
View unit timetable

IFN564 Data Structures and Algorithms

Pre-requisites	(IFN501 or (IFN555 and IFN556) or (IFQ555 and IFQ556) or IFN563 or Admission to IN15 or IN16 or IQ16 or IN17) or (192cps in IV04 or EV08) or (admission to IV54 or IV58).
Anti-requisites	IFN505
Equivalents	IFQ564
Credit Points	6
Availabilities	Last run in 2024

In this unit you will work with some of the fundamental data structures of computer science, including lists, stacks, queues and trees, including the binary search tree. You will learn and implement the algorithms commonly used for searching, sorting and processing these data. You will learn how to assess the efficiency of such algorithms, allowing you to distinguish between those which can process large amounts of data efficiently, and those that run unacceptably slowly as the size of the input grows.

View unit details online (current students only)
View unit timetable

IFN580 Machine Learning

Pre-requisites	(IFN581 or IFN509 or IFN556 or IFQ556 or IFN555 or IFQ555) OR (192cps in IV04 or IV05 or EV08 or EV07) OR (admission into IV54 or IV59 or IV58 or IV60) OR (admission into IN17).
Credit Points	12
Availabilities	**Gardens Point** - SEM-1, SEM-2

Machine Learning, a core discipline in data science, powers everyday products such as movie selection, spam filters, and social media feeds. Machine learning involves automatically constructing models to explain and generalise datasets, integrating elements of statistics and algorithm development. Initially rooted in Artificial Intelligence, it encompasses various learning approaches. This unit provides students with the fundamental principles of machine learning, enabling them to apply supervised, unsupervised and semi-supervised learning methods, explore basic deep learning principles, and gain practical experience in solving industry-relevant data-driven problems. This introductory unit is suitable for students with diverse backgrounds in data science and other majors. It provides hands-on experience and empowers you with the essential skills and knowledge necessary to excel in an era

driven by data and Artificial Intelligence.

View unit details online (current students only)
View unit timetable

IFN581 Programming Fundamentals

Pre-requisites	(192cps in SV03 or SV04 or IV04 or IV05 or MV05 or MV06 or BV06 or BV07 or EV08 or EV07) OR (admission into IV53 or IV57 or IV54 or IV59 or IV55 or IV52 or IV56 or IV51 or IV58 or IV60) OR 192cps in LV41 OR (admission into IN31 or IN20 or IN19 or IN18 or IN25 or IN26 or IN27 or or IN28 or IN29 or IN30 or PH71 or PH80 or KC88 or BS11 or DE99)
Anti-requisites	IFN555 or IFN556 or IFQ555 or IFQ556
Credit Points	12
Availabilities	**Gardens Point** - SEM-1, SEM-2

This unit provides a hands-on introduction to computer programming for students with no prior coding experience. It introduces the basic building blocks of algorithms: sequence, selection and iteration and how algorithmic thinking is used to decompose problems into simpler steps. The Python language is used for expressing these concepts in a programming language, which is widely used in the industry. The unit introduces an imperative style of programming in which a sequence of statements changes the program's state using variables that contain data of various types. The unit introduces the processes for debugging and testing programs and the forms of professional communication associated with software development. The principles of object oriented programming is introduced to help overcome complexity when developing larger programs. The concepts of abstraction and encapsulation are introduced.by using classes, objects and methods.

View unit details online (current students only)
View unit timetable

IFN582 Rapid Web Development with Databases

Pre-requisites	(192cps in SV03 or SV04 or IV04 or IV05 or MV05 or MV06 or BV06 or BV07 or EV08 or EV07) OR (admission into IV53 or IV57 or IV54 or IV59 or IV55 or IV52 or IV56 or IV51 or IV58 or IV60) OR (admission into IN18 or IN19 or IN20 or IN28 or IN29 or IN25 or IN30 or IN31 or IN27 or IN26 or DE99 or BS11 or KC88)
Anti-requisites	IFN554 or IFN557 or IFQ554 or IFQ557
Credit Points	12
Availabilities	**Gardens Point** - SEM-1, SEM-2

This foundational unit covers both database management and web application development. It explores core concepts, principles, and skills essential for understanding, designing, and effectively managing databases. You will learn how to transform a conceptual model into a relational database design as well as how to use database querying techniques for data retrieval and manipulation. You will apply your data skills by designing and building an interactive dynamic web application using well-known frameworks such as Bootstrap, and Python-Flask while generating effective, ethical, and culturally sensitive solutions.

View unit details online (current students only)
View unit timetable

IFN583 Computer Systems and Security

Pre-requisites	(192cps in SV03 or SV04 or IV04 or IV05 or MV05 or MV06 or BV06 or BV07 or EV08 or EV07) OR (admission into IV53 or IV57 or IV54 or IV59 or IV55 or IV52 or IV56 or IV51 or IV58 or IV60) OR (admission into IN18 or IN19 or IN20 or IN28 or IN29 or IN31 or IN27 or IN26 or DE99 or BS11 or KC88)
Anti-requisites	IFN551 or IFN553 or IFQ551 or IFQ553
Credit Points	12
Availabilities	**Gardens Point** - SEM-1, SEM-2

This unit addresses the core concepts of a computer system: how modern computer systems work, how they are structured, and how they operate. Additionally, the unit teaches you about modern computer environments including networks as well as introducing the fundamental concepts of cyber security in the context of computer systems. In particular, you will learn about controls and countermeasures to mitigate identified security risks, considering the threats, vulnerabilities and security goals of an organization. Understanding the fundamental concepts enables you to adapt with the evolution of computer systems in the future.

View unit details online (current students only)
View unit timetable

IFN584 Object-Oriented Design and Development

Pre-requisites	IFN581or IFN555 or IFQ555 or IFN556 or IFQ556 OR (192cps in IV04 or IV05 or EV07 or EV08) OR (admission into IV54 or IV59 or IV58 or IV60)
Anti-requisites	IFN563 or IFN564 or IFQ563 or IFQ564
Credit Points	12
Availabilities	**Gardens Point** - SEM-1, SEM-2

Object orientation is a program design principle applicable to software at various scales. In this unit you will extend your knowledge of small-scale object-oriented programming to large-scale systems in which the classes and objects mirror their real-world counterparts in the business-level processes the software supports (e.g., customers, orders, products, projects, etc). To do so you will learn about and apply several standard software design principles and patterns applicable to large-scale IT systems, and you will learn how such designs are communicated professionally and used as part of object-oriented software development processes. You will then implement those designs in an industry-standard object-oriented programming language, making use of its various library modules. Depending on the nature of the practical projects you complete this could require implementing user interfaces, executing concurrent threads, interacting with databases, and so on.

View unit details online (current students only)
View unit timetable

IFN585 Systems Innovation and Design

Pre-requisites	(192cps in SV03 or SV04 or IV04 or IV05 or MV05 or MV06 or BV06 or BV07 or EV08 or EV07) OR (admission into IV53 or IV57 or IV54 or IV59 or IV55 or IV52 or IV56 or IV51 or IV58 or IV60) OR (admission into IN18 or IN20 or IN19 or IN28 or IN29 or IN31 or IN25 or KC88 or EN72 or DE99 or BS11)
Anti-requisites	IFN552 or IFN558 or IFQ552 or IFQ558
Credit Points	12
Availabilities	**Gardens Point** - SEM-1, SEM-2

Organisations are continuously transforming to leverage the potential of information systems. Effective transformation requires leadership to clearly define business problems that information systems can help address. This unit focuses on two key components that support such transformation: data analysis and visualisation, and systems innovation and design. The first component introduces you to data analysis and visualisation, enabling you to explore patterns, generate insights, and communicate findings that support evidence-based decision-making. The second component introduces system dynamics modelling, equipping you with tools to understand and design complex systems through feedback loops and scenario analysis. Together, these approaches enable you to analyse problems, model solutions, and support informed organisational decisions through the strategic use of information systems.

View unit details online (current students only)
View unit timetable

IFN619 Data Analytics for Strategic Decision Makers

Pre-requisites	IFN581 or IFN555 or IFQ555 or IFN556 or IFQ556 or IFN582 or IFN554 or IFQ554 or IFN557 or IFQ557 OR (192cps in IV04 or IV05 EV08 or EV07) OR (admission into IV54 or IV59 or IV58 or IV60) OR (admission into IN10 or IN14 or IN23 or IN27 or PM20 or PV20 or PV21 or EN75 or EN76 or EN77). IFN619 can be enrolled in the same teaching period as IFN581 or IFN582.
Equivalents	IFQ619
Credit Points	12
Availabilities	**Gardens Point** - SEM-1

This unit offers students a practical introduction to the field of data analytics, and its application to making strategic organisational decisions. Students will learn common methods for computational data analytics, through which they can gain an overview of key concepts, skills, and technologies for sourcing data, performing data analysis, and producing appropriate visualisations. While the course covers relevant technologies for data analytics and information visualisation, the focus is on asking and addressing good questions that have practical value for organisations. Students will work with both structured and unstructured data, and will be encouraged to work with open data to address real-world problems in ways that align with ethical principles and good data governance.

View unit details online (current students only)
View unit timetable

IFN623 Human Information Interaction

Pre-requisites	(192cps in SV03 or SV04 or IV04 or IV05 or MV05 or MV06 or BV06 or BV07 or EV08 or EV07) OR (admission into IV53 or IV57 or IV54 or IV59 or IV55 or IV52 or IV56 or IV51or IV58 or IV60) OR (admission into IN10 or IN14 or IN19 or IN20 or IN21 or IN23 or IN27 or IN31 or KC88)
Credit Points	12
Availabilities	**Gardens Point** - SEM-2

In contemporary societies, Humans often interact with information by means of technologically driven systems. As our information environment becomes ever more complex, these interactions are becoming more and more diverse. While much is understood about the systems side of this picture, much less is understood about how humans interact with technology-mediated information. Students will investigate cognitive, technological and theoretical perspectives of how humans interact with and process information when interacting with contemporary information technologies (e.g. conversational agents, wearable technologies, generative AI). This understanding will be translated into conceptual frameworks and associated design principles for critiquing and curating effective interactions and exploring broader implications.

View unit details online (current students only)
View unit timetable

IFN635 Cyber Security and Governance

Pre-requisites	IFN583 OR ((IFN551 or IFQ551) and (IFN553 or IFQ553)) OR admission to IN17
Equivalents	IFN541
Credit Points	12
Availabilities	**Gardens Point** - SEM-1, SEM-2

Cybersecurity is the practice of safeguarding an organisation's critical infrastructure from cyber threats, including ransomware, malware, and phishing. Critical infrastructure encompasses IT components (software, platforms, computing infrastructure, networks, devices) and physical spaces. Infrastructure attacks have increased the need for cyber risk management skills. This unit builds on Computer Systems and Security (IFN583) and offers a broad introduction to cybersecurity and governance frameworks, covering security practices across people, processes, and technology. Topics include threat assessment, risk management, incident response, security compliance, awareness initiatives, and cloud security. You will learn from real-world case studies to prepare for roles as cybersecurity professionals, gaining theoretical knowledge and practical skills to detect, investigate, and remediate cyberattacks. This unit also prepares you for advanced studies in the cybersecurity major.

View unit details online (current students only)
View unit timetable

IFN637 Human-Centred Design of IT Systems

Pre-requisites	IFN585 or ((IFN552 or IFQ552) and (IFN558 or IFQ558)) or admission to IN17
Equivalents	IFN591, IFQ591
Credit Points	12
Availabilities	**Gardens Point** - SEM-1, SEM-2

Human-centred design is an approach to developing interactive technology that puts the people we are designing for at the heart of the process. in this unit, you will learn human-centred design by working collaboratively with end users and organisations to understand their needs and contexts, define the problem, develop technology ideas and prototypes, and evaluate them. This process is widely recognised as a key success factor for interactive technologies that shape how we live, work, socialise, learn, play, and manage our wellbeing. understanding how to design technologies in a human-centred way will give you an edge in the marketplace for jobs as User Experience professional, IT Developer or Interaction Designer.

View unit details online (current students only)
View unit timetable

IFN645 Machine Learning at Scale

Pre-requisites	(IFN509 or IFQ509 or IFN580) OR (192cp in IV04) OR (admission into IV54)
Equivalents	INN312
Credit Points	12
Availabilities	**Gardens Point** - SEM-2

The data that modern data scientists have access to is larger and more complex than in previous generations. Dealing with these data requires specialised algorithms and the use of a higher performance or cloud computing environment. This unit outlines the challenges and opportunities associated with big data and introduces machine learning algorithms that scale to large datasets. This unit will expand on the material presented in earlier data science units and students will use their programming knowledge to implement machine learning algorithms to address real world problems.

View unit details online (current students only)
View unit timetable

IFN646 Biomedical Data Science

Pre-requisites	((IFN580 or IFN509 or IFQ509) OR (192cps in IV04) OR (admission into IV54) OR (192 cps in LV41 and admission into LV41)
Credit Points	12
Availabilities	**Gardens Point** - SEM-2

Biology and medicine are becoming data-intensive disciplines. From new sequencing technologies to electronic health records and wearable devices, it has never been easier or cheaper to generate biomedical data. This provides a great opportunity to study complex biological systems, to offer better patient care, etc., but working with this data is not trivial. This advanced unit will teach you how to handle and analyse biomedical data, as well as gain an appreciation of its strengths, limitations and complexities so that you can understand and critically interpret measurements and analyses. The unit aims to provide you with knowledge of modern biomedical technologies and the associated data science methodologies, building on what you have learned in IFN509.

View unit details online (current students only)
View unit timetable

IFN647 Machine Learning for Natural Language Processing

Pre-requisites	(IFN509 or IFQ509 or IFN580) OR (192cp in IV04) OR (admission into IV54)
Equivalents	CAB431
Credit Points	12
Availabilities	**Gardens Point** - SEM-1

This unit provides an understanding of the principles and techniques underlying the development of Text Analysis and Machine Learning solutions to some of the varied and complex problems that involve big data. It teaches you data preprocessing techniques to represent and analyse text, web and social media data. It also includes machine learning and its applications in Web Search, information filtering, text classification, clustering, sentiment analysis, topic modelling and generative AI techniques to understand the text data. It teaches you the methods of text analysis and machine learning algorithms for dealing with both the structured and un-structured information embedded within documents, web pages and social media platforms. This unit is motivated by the ubiquity of unstructured big data in our society and the need for future professionals and researchers to develop skills and knowledge in emerging data science approaches.

View unit details online (current students only)
View unit timetable

IFN650 Business Process Analytics

Pre-requisites	IFN515 or IFQ515. IFN515 may be studied in the same teaching period as IFN650.
Credit Points	12
Availabilities	**Gardens Point** - SEM-1

This unit introduces a number of process analysis techniques used during the design, execution, and post-execution stages of the Business Process Management (BPM) life cycle. BPM provides organisations with the ability to save money and time by systematically documenting, managing, automating, and optimising their business processes. To unlock the true benefits of a process-aware organisation, it is essential that process modelling efforts do not purely remain paper-based but act as the prelude to automated support. The last decade has seen an increased uptake of process automation and workflow technology, which has increased the potential for real, evidence-based analysis associated with the execution of various business processes. By applying techniques such as process verification, process simulation, and process mining, we can gain insights into both the current and future business operations of an organisation, which in turn can lead to continuous process improvement.

View unit details online (current students only)
View unit timetable

IFN653 Business Process Automation

Pre-requisites	IFN515 or IFQ515. IFN515 can be enrolled in the same teaching period as IFN653.
Equivalents	IFZ653
Credit Points	12
Availabilities	**Gardens Point** - SEM-2

This unit provides a detailed technical and practical exposition of modern business process automation. In order to fully realise the benefits of Business Process Management, it is essential to have the ability to transform business process models into executable process instances. These processes can be designed, executed, monitored, analysed and improved using Business Process Management Systems. The application of these systems can lead to significant cost reductions to an organisation and provide it with the flexibility to rapidly adapt to an ever-changing environment. Major themes of the unit include the theoretical and operational underpinnings of process automation, a detailed discussion on workflow patterns, runtime process flexibility and exception handling, and the design, implementation and deployment of process specifications using a state-of-the-art business process automation environment.

View unit details online (current students only)
View unit timetable

IFN658 Networks and Security

Pre-requisites	IFN635. IFN635 can be studied concurrently with IFN658.
Equivalents	IFN507, IFQ507
Credit Points	12
Availabilities	**Gardens Point** - SEM-1, SEM-2

Networking allows us to connect all sorts of devices and gain access to a wide range of applications and services. However, our heavy reliance on networking technology means the security of our networks is critical for both enterprise and individuals to avoid disruption to services that are essential for day-to-day activities in a connected world. This unit introduces the core concepts of computer networks and the Internet, in particular layered network architecture and models, hardware and software, TCP/IP protocol stack, addressing and routing, wireless networks, network security, and network services and applications. It teaches you how modern computer networks and the Internet work, how they are structured, and how they operate. Additionally, we will explore the challenges associated with securing a network. We will consider attack scenarios along with security controls for addressing network security vulnerabilities.

View unit details online (current students only)
View unit timetable

IFN666 Web and Mobile Application Development

Pre-requisites	IFN581 or ((IFN555 or IFQ555) and (IFN556 or IFQ556)) OR (192cps in IV04 or IV05 or EV08 or EV07) OR (admission into IV54 or IV59 or IV58 or IV60) OR (admission into IN10 or IN15)
Equivalents	
Credit Points	12
Availabilities	**Gardens Point** - SEM-1

This unit provides a technical introduction to web and mobile application development and the software patterns which support them. We will introduce you to JavaScript on both the client and the server side, and you will build applications targeting desktops and mobile devices using modern standards and frameworks such as React and React Native. You will design and implement clean and responsive user interfaces, taking account of accessibility and internationalisation. We will introduce you to server side web computing using node.js and Express. You will understand security threats and their mitigation, and gain practical experience of HTTPS deployment.

View unit details online (current students only)
View unit timetable

IFN680 Advanced Machine Learning and Applications

Pre-requisites	IFN580 or IFQ580 or CAB420
Credit Points	12
Availabilities	**Gardens Point** - SEM-2

This is a specialisation unit in the area of computer science and data analytics. The aim of this unit is to provide you with the knowledge and skills required to design and implement modern machine learning solutions that can effectively and efficiently solve complex problems. The main advantage of intelligent systems is that they can combine the traditional computer's capacity to remember millions of facts with the human being's cognitive skills, including learning and refining the existing body of knowledge, solving problems with reasoning, helping businesses with strategic planning, diagnosing mechanical faults or human diseases, playing games, and so on. This unit will provide you with an understanding of the principles and basic techniques to understand and develop the latest machine learning techniques, as well as an understanding of the strengths and limitations of these algorithms.

View unit details online (current students only)
View unit timetable

IFN703 Advanced Project

Pre-requisites	((IFN600 or INN700) and 96cps of completed study) AND (IFN619 or ((192cps in SV03 or IV04 or MV05 or BV06 or EV08 or LV41) or (Admission to IV53 or IV54 or IV55 or IV56 or IV58)))
Credit Points	12
Availabilities	Last run in 2024

The project addresses a research question or a practical problem through the application of Data Analytics theories, tools and techniques. It allows you to apply the knowledge of the research skills and practices used to undertake specific Data Analytics activities. It provides an opportunity to individualise

your studies by concentrating on a specific problem domain.

View unit details online (current students only)
View unit timetable

IFN704 Advanced Project 2

Pre-requisites	((IFN600 or INN700) and 96cps of completed study) AND (IFN619 or ((192cps in SV03 or IV04 or MV05 or BV06 or EV08 or LV41) or (Admission to IV53 or IV54 or IV55 or IV56 or IV58)))
Credit Points	12
Availabilities	Last run in 2024

The project addresses a research question or a practical problem through the application of Data Analytics theories, tools and techniques. It allows you to apply the knowledge of the research skills and practices used to undertake specific Data Analytics activities. It provides an opportunity to individualise your studies by concentrating on a specific problem domain.

View unit details online (current students only)
View unit timetable

IFN711 IT Industry Project

Pre-requisites	Completion of 96cp from (IN20 or IN27) or (Admission to IN23 and Completion of 48cp)
Anti-requisites	IFN702
Credit Points	24
Availabilities	**Gardens Point** - SEM-1

The aim of this unit is to help you apply skills previously attained in your degree in an advanced problem domain and to enable you to conduct a well-defined project with specific outcomes. The project addresses an industry problem through the application of IT theories, tools and techniques. You will develop project management skills to lead teams in complex and changing environments. This unit introduces a range of traditional and contemporary project management approaches.

View unit details online (current students only)
View unit timetable

IFN712 Research in IT Practice

Pre-requisites	Completion of 96cp from (IN20 or IN27) or (Admission to IN23 and Completion of 48cp)
Anti-requisites	IFN701
Credit Points	24
Availabilities	**Gardens Point** - SEM-2

As a professional, regardless of your discipline or context, you will be required to gather the best available evidence to make decisions, solve problems, and establish best practice, as well as innovate and develop. This unit will develop your understanding and higher order thinking related to the key concepts, principles, methodologies regarding research and provide the skills required in to perform research within professional settings and professional practice.

View unit details online (current students only)
View unit timetable

IFN735 Industry Project (Phase 1)

Pre-requisites	Completion of 84 credit points from IN20, IN28, IN29, IN31, IV51, IV52, IV57, IV58, IV59, or IV60, and (INN700 or EGH404). INN700 or EGH404 can be enrolled in the same teaching period as IFN735.
Anti-requisites	IFN737
Credit Points	12
Availabilities	**Gardens Point** - SEM-1, SEM-2

The aim of this unit is to help you integrate and apply your advanced generalist and specialist knowledge and skills attained from your degree, to a challenging real-world team-based project conducted with a real industry client. In this unit, you will be expected to plan, initiate and project manage the early phases of the project, which will be continued in the partner unit IFN736 Industry Project - Part 2. The project will require you to address an industry problem or realise an industry opportunity through the application of professional and research skills, disciplinary theories, tools, and techniques. The unit provides you with the opportunity to develop your project management skills, to lead teams in complex and changing environments as well as to develop your social, sustainability, ethical awareness, professional skills and attitudes.

View unit details online (current students only)
View unit timetable

IFN736 Industry Project (Phase 2)

Pre-requisites	IFN735
Credit Points	24
Availabilities	**Gardens Point** - SEM-1, SEM-2

The aim of this unit is to help you integrate and apply your advanced generalist and specialist knowledge and skills attained from your degree, to a challenging real-world team-based project conducted with a real industry client. In this unit, you will continue work on the same project commenced IFN735 in the previous semester, with the same team and industry client. The project will require you to address an industry problem or realise an industry opportunity through the application of professional and research skills, disciplinary theories, tools, and techniques. The unit provides you with the opportunity to develop your project management skills, to lead teams in complex and changing environments as well as to develop your social, sustainability, ethical awareness, professional skills and attitudes.

View unit details online (current students only)
View unit timetable

INN700 Introduction to Research

Pre-requisites	(192cps in SV03 or SV04 or IV04 or IV05 or MV05 or MV06 or BV06 or BV07 or EV08 or EV07 or LV41) OR (admission into IV53 or IV57 or IV54 or IV59 or IV55 or IV52 or IV56 or IV51 or IV58 or IV60) OR (admission into IF49 or IF80 or IN10 or IN20 or IN28 or

	IN29 or IN27 or IN31).
Anti-requisites	ENN541
Equivalents	ITN100
Credit Points	12
Availabilities	**Gardens Point** - SEM-1, SEM-2

This unit is aimed at students commencing a research project, a main purpose being to shepherd them through production of their first detailed research proposal/report in the topic area of their intended research, while also serving to orient them in their research efforts. Quality control and good project management are encouraged throughout the research project as is close attention to scope and issues management. Main items of assessment pertain to each student's unique, research project. Students review literature related to their research in depth and prepare a detailed proposal outlining the research problem, research question, research methodology, the significance of the research and the new knowledge that will be produced. There are guest speakers on information searching and research in industry.

View unit details online (current students only)
View unit timetable

LQN203 Ethical, Legal and Social Issues in Genetics and Genomics

Pre-requisites	(192cps in IV04 or MV05 or BV06 or EV08) or (enrolment in IV54 or IV57 or IV55 or IV56 or IV58 or LS72 or LS81 or IN27 or IN31)
Credit Points	12
Availabilities	**Online** - SEM-2

This unique interdisciplinary unit is specifically designed for students to gain in-depth perspectives of the ethical implications of genetics and genomics including the additional considerations which apply to genetic testing related to Aboriginal and Torres Strait Islander Peoples. In this unit, you will explore the ethical, legal, and social implications surrounding the practice of clinical genetics, medical testing, and scientific research. By examining these crucial issues, you will gain valuable insights into the complexities that govern the field and understand how you can contribute to shaping responsible and equitable practices in genetics.

View unit details online (current students only)
View unit timetable

LSN707 Advanced Biomedical Data Science Project

Pre-requisites	(IFN600 or INN700 and IFN619 and 96cp of completed study) OR (IFN619 and INN700) and (192cps in IV04 or IV05 or MV05 or MV06 or BV06 or BV07 or EV08 or EV07 or SV04) OR (IFN619 and INN700) and (admission into IV54 or IV57 or IV59 or IV55 or IV52 or IV56 or IV51 or IV58 or IV60 or IN27 or IN31).
Credit Points	12
Availabilities	**Kelvin Grove**
	- SEM-2

Biomedical data analytics is a growing field servicing diagnostics and therapeutics, patient medicine, preventative and precision medicine, health economics, telehealth, and medical research. Historically, graduates were trained in single discipline areas, meaning you studied biomedical science or data analytics. However, now that much of the data generated in biomedical science represents big data, there is an increasing demand for employees who can analyse data in a contextually relevant way. As a biomedical data analyst, you will combine your knowledge, skills, and experience as a laboratory-trained biomedical scientist with advanced data analytics training, which means you can design experiments and deliver results to take projects from the wet lab through the data analysis pipeline, asking and answering the right questions of the data to deliver results in a biologically meaningful way.

View unit details online (current students only)
View unit timetable

MXN402 AMSI Unit 1

Pre-requisites	((MXN601 or admission into MS10) and Unit Coordinator approval. MXN601 can be studied in the same teaching period as MXN402) OR (admission into IF80).
Other requisites	Unit Coordinator approval is required to enrol.
Assumed Knowledge	null
Credit Points	12
Availabilities	**Gardens Point** - SEM-1, SEM-2

This unit is designed to provide you with access to external Honours coursework units delivered by other Australian universities. These units are administered by the Australian Mathematical Sciences Institute (AMSI) either online via the Advanced Collaborative Environment (ACE) or face-to-face via the AMSI Summer School. This advanced level unit provides you with the opportunity to acquire knowledge and skills in a specialised topic in the mathematical sciences that is not covered in another QUT Bachelor of Mathematics (Honours) coursework unit. Permission to enrol in this unit must be obtained from the Unit Coordinator.

View unit details online (current students only)
View unit timetable

MXN403 AMSI Unit 2

Pre-requisites	((MXN601 or admission into MS10) and Unit Coordinator approval. MXN601 can be studied in the same teaching period as MXN403) OR (admission into IF80).
Other requisites	Unit Coordinator approval is required to enrol.
Assumed Knowledge	null
Credit Points	12
Availabilities	**Gardens Point** - SEM-1, SEM-2

This unit is designed to provide you with access to external Honours coursework units delivered by other Australian universities. These units are administered by the Australian Mathematical Sciences Institute (AMSI) either online via the Advanced Collaborative Environment (ACE) or face-to-face via the AMSI Summer School. This advanced level unit provides you with the opportunity to acquire knowledge and skills in a specialised topic in the mathematical sciences that is not covered in another QUT Bachelor of Mathematics (Honours) coursework unit. Permission to enrol in this unit must be obtained from the Unit Coordinator.

View unit details online (current students only)
View unit timetable

MXN441 Advanced Statistical Inference and Modelling

Pre-requisites	((MXN601 or admission into MS10) and Unit Coordinator approval. MXN601 can be studied in the same teaching period as MXN441) OR (admission into IF80).
Other requisites	Unit Coordinator approval is required to enrol.
Assumed Knowledge	null
Credit Points	12
Availabilities	Last run in 2022

This is an advanced statistics unit providing you with theoretical and computational methods for modelling and inference. It introduces important approaches used in industry and research to describe and draw conclusions about modern, complex problems that cannot be solved by using standard approaches. This is an honours level unit, and the knowledge and skills developed in this unit are designed to complement a research project in statistics. Further studies in statistics at the Masters or PhD level will most likely build on this unit by extending your modelling and inference skills in industry or research-based projects.

View unit details online (current students only)
View unit timetable

MXN442 Modern Statistical Computing Techniques

Pre-requisites	((MXN601 or admission into MS10) and Unit Coordinator approval. MXN601 can be studied in the same teaching period as MXN442) OR (admission into IF80).
Other requisites	Unit Coordinator approval is required to enrol.
Assumed Knowledge	null
Credit Points	12
Availabilities	**Gardens Point** - SEM-2

This unit is intended to provide you with skills in advanced computational methods and algorithms for handling complex and computationally demanding problems in statistics. Topics will be selected from Monte Carlo methods for estimating quantities of interest under an assumed complex (possibly Bayesian) statistical model, statistical machine learning methods for analysing challenging data, and techniques for optimally selecting the values of controllable variables in order to reduce the expected costs of running a statistical experiment. The unit is designed to complement a research project in statistics and is oriented to enable you to proceed to a variety of workplaces, or to further professional development, or to research.

View unit details online (current students only)
View unit timetable

MXN500 Introduction to Statistics for Data Science

Pre-requisites	(192cps in SV03 or SV04 or IV04 or IV05 or MV05 or MV06 or BV06 or BV07 or EV08 or EV07) OR (admission into IV53 or IV57 or IV54 or IV59 or IV55 or IV52 or IV56 or IV51 or IV58 or IV60) OR (admission into EN55 or EN75 or EN76 or EN77 or IN19 or IN20 or IN21 or IN26 or IN27 or IN28 or IN29 or IN30 or IN31).
Equivalents	MXQ500
Credit Points	12
Availabilities	**Gardens Point** - SEM-1

Statistics forms the foundation of many tools and techniques used in data analytics. Therefore, appropriate application of statistical methods is essential in many quantitative roles and data science applications. The focus of this unit is on applying statistical methods in real-world contexts. You will look for meaningful patterns and model data to increasing levels of complexity. We will cover data and variables, visualisation, introductory probability, hypothesis testing, and linear regression. You will also learn how to select and apply appropriate quantitative methods using software such as R, an open-source statistical software. You will practice your quantitative skills using real data from scientists, business, and governments. This unit is appropriate for those requiring an introduction to, or a refresher in, statistics. The concepts in this unit are extended upon in MXN600.

View unit details online (current students only)
View unit timetable

MXN501 Stochastic Modelling

Pre-requisites	Completion of 144 credit points in EU50 Master of Teaching (Secondary) OR (192cps in SV03 or SV04 or IV04 or IV05 or BV06 or BV07 or EV08 or EV07) OR (admission into IV53 or IV57 or IV54 or IV59 or IV52 or IV56 or IV51 or IV58 or IV60) OR (admission into IN20 or IN27 or IN31)
Credit Points	12
Availabilities	**Gardens Point** - SEM-2

This unit introduces probability and shows you how to apply its concepts to solve practical problems. The unit will lay the foundations for further studies in probability, statistics and other areas of mathematics and help you to develop your problem-solving and modelling skills. The topics covered include: basic probability rules, conditional probability and independence,

discrete and continuous random variables, bivariate distributions, Markov chains and Poisson processes. This unit is appropriate for those requiring an introduction to, or a refresher in, probability. The concepts in this unit will be extended in MXN601.

View unit details online (current students only)
View unit timetable

MXN600 Advanced Statistical Data Analysis

Pre-requisites	(MXN500) or (144cps in EU50) OR (192cps in SV03 or SV04 or MV05 or MV06) OR (admission into IV53 or IV57 or IV55 or IV52)
Credit Points	12
Availabilities	**Gardens Point** - SEM-2

This advanced statistics unit will introduce modern statistical methods of data analytics that are frequently used in industry and government to solve real-world problems. It introduces modelling techniques that can be used when it is unreasonable to assume the data are continuous random variables from a normal distribution and/or that the expected value of the random variable can be modelled as a linear combination of regression parameters. This is a Masters level unit, and the knowledge and skills developed in this unit are relevant to those studying advanced data analytics. Further studies in data analytics and data science will most likely build on this unit by extending your analytical skills through industry or research-based projects.

View unit details online (current students only)
View unit timetable

MXN601 Advanced Stochastic Modelling

Pre-requisites	(MXN501) or (192cps in SV03 or SV04 or MV05 or MV06) OR (admission into IV53 or IV57 or IV55 or IV52)
Credit Points	12
Availabilities	**Gardens Point** - SEM-1

This unit covers advanced statistical models and methods required for a mathematically trained data scientist. This unit will develop skills in statistical modelling and parameter estimation methods to extract insights from small and large datasets collected from complex systems. Developing an understanding of stochastic processes will provide skills for building statistical models of complex real world processes including areas from communication systems and networks to traffic to law to biology to financial analysis linking with other modern areas of mathematics. This unit introduces advanced statistical inference techniques that are important tools in describing data and developing models. Indeed, such methods are essential when drawing conclusions from a data generation process that is subject to random variability. This unit also provides a statistical basis for further advanced units in statistics.

View unit details online (current students only)
View unit timetable