

Master of Information Technology

Year	2026
QUT code	IN20
CRICOS	083059E
Duration	2 years full time 4 years part time
Total credit points	192
Start months	July, February
Domestic fee (indicative)	2026: CSP \$9,600 per year full-time (96 credit points)
Course contact	askqut@qut.edu.au 3138 2000

This PDF contains information about the course structure. For more information about the course see the [course information PDF](#)

Course structure

The Master of Information Technology consists of 192 credit points (cp), comprising:

- 48cp of Foundational Core Units,
- 60cp of Advanced Core units,
- 36cp of Capstone units,
- A 48cp Major

Available Majors:

- Computer Science
- Data Science
- Human-Centred design
- Internet of Things
- IT Management
- Process Analytics and Automation
- Software Development

Structures

- [Common First Semester – February and July Entry](#)
- [Computer Science Major February & July entry FT \(IN20 v4 & v5\)](#)
- [Human-Centred Design Major February & July entry FT \(IN20 v4 & v5\)](#)
- [Internet of Things Major February & July entry FT \(IN20 v4 & v5\)](#)
- [IT Management Major February & July entry FT \(IN20 v4 & v5\)](#)
- [Process Analytics and Automation Major February & July entry FT \(IN20 v4 & v5\)](#)
- [Software Development Major February & July entry FT \(IN20 v4 & v5\)](#)
- [Data Science Major February & July entry FT - commenced 2026](#)

Common First Semester – February and July Entry

Code	Title
Semester 1 (February) or Semester 2 (July) commencement	
Year 1, Semester 1 or Semester 2	
IFN581	Programming Fundamentals

Code	Title
IFN582	Rapid Web Development with Databases
IFN583	Computer Systems and Security
IFN585	Systems Innovation and Design

Computer Science Major February & July entry FT (IN20 v4 & v5)

Semesters

- [February 2-year-entry/ July 1.5-year-entry commencements](#)
- [Year 1, Semester 2](#)
- [Year 2, Semester 1](#)
- [Year 2, Semester 2](#)
- [July 2-year-entry/ February 1.5-year-entry commencements](#)
- [Year 2 Semester 1](#)
- [Year 2 Semester 2](#)
- [Year 3, Semester 1](#)
- [Computer Science Major Option Units](#)

Code	Title
February 2-year-entry/ July 1.5-year-entry commencements	
Year 1, Semester 2	
IFN580	Machine Learning
IFN637	Human-Centred Design of IT Systems
IFN636	Software Life Cycle Management
IFN584	Object-Oriented Design and Development
Year 2, Semester 1	
INN700	Introduction to Research
IFN664	Advanced Algorithms and Computational Complexity
Complete one Capstone Unit (12cps): either IFN735 or IFN737	
IFN735	Industry Project (Phase 1)
IFN737	Industry Research Project (Phase 1)

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Code	Title
Major Option Unit	
Year 2, Semester 2	
IFN635	Cyber Security and Governance
Complete one Capstone Unit (24cps): if you have completed IFN735, you must complete IFN736; if you have completed IFN737, you must complete IFN738	
IFN736	Industry Project (Phase 2)
IFN738	Industry Research Project (Phase 2)
Major Option Unit	
July 2-year-entry/ February 1.5-year-entry commencements	
Year 2 Semester 1	
IFN580	Machine Learning
IFN637	Human-Centred Design of IT Systems
IFN636	Software Life Cycle Management
IFN584	Object-Oriented Design and Development
Year 2 Semester 2	
INN700	Introduction to Research
Complete one Capstone Unit (12cps): either IFN735 or IFN737	
IFN735	Industry Project (Phase 1)
IFN737	Industry Research Project (Phase 1)
IFN635	Cyber Security and Governance
Major Option Unit	
Year 3, Semester 1	
Complete one Capstone Unit (24cps): if you have completed IFN735, you must complete IFN736; if you have completed IFN737, you must complete IFN738	
IFN736	Industry Project (Phase 2)
IFN738	Industry Research Project (Phase 2)
IFN664	Advanced Algorithms and Computational Complexity
Major Option Unit	
Computer Science Major Option Units	
CAB401	High Performance and Parallel Computing
CAB402	Programming Paradigms
CAB432	Cloud Computing
IFB452	Blockchain Technology
IFN509	Introduction to Data Science
IFN645	Machine Learning at Scale
IFN647	Machine Learning for Natural Language Processing
IFN648	Applied Cryptography
IFN649	Internet of Things
IFN657	Software Security
IFN658	Networks and Security
IFN666	Web and Mobile Application Development
IFN680	Advanced Machine Learning and Applications
IFN692	Interaction Design for Human Centred AI

Human-Centred Design Major February & July entry FT (IN20 v4 & v5)

Semesters

- [February 2-year-entry/ July 1.5-year-entry commencements](#)

- [Year 1, Semester 2](#)
- [Year 2, Semester 1](#)
- [Year 2, Semester 2](#)
- [July 2-year-entry/ February 1.5-year-entry commencements](#)
- [Year 2 Semester 1](#)
- [Year 2 Semester 2](#)
- [Year 3, Semester 1](#)
- [Human-Centred Design Major Option Units](#)

Code	Title
February 2-year-entry/ July 1.5-year-entry commencements	
Year 1, Semester 2	
IFN580	Machine Learning
IFN635	Cyber Security and Governance
IFN637	Human-Centred Design of IT Systems
IFN623	Human Information Interaction
Year 2, Semester 1	
INN700	Introduction to Research
Complete one Capstone Unit (12cps): either IFN735 or IFN737	
IFN735	Industry Project (Phase 1)
IFN737	Industry Research Project (Phase 1)
IFN636	Software Life Cycle Management
Major Option Unit	
Year 2, Semester 2	
IFN692	Interaction Design for Human Centred AI
Complete one Capstone Unit (24cps): if you have completed IFN735, you must complete IFN736; if you have completed IFN737, you must complete IFN738	
IFN736	Industry Project (Phase 2)
IFN738	Industry Research Project (Phase 2)
Major Option Unit	
July 2-year-entry/ February 1.5-year-entry commencements	
Year 2 Semester 1	
INN700	Introduction to Research
IFN580	Machine Learning
IFN637	Human-Centred Design of IT Systems
IFN636	Software Life Cycle Management
Year 2 Semester 2	
Complete one Capstone Unit (12cps): either IFN735 or IFN737	
IFN735	Industry Project (Phase 1)
IFN737	Industry Research Project (Phase 1)
IFN692	Interaction Design for Human Centred AI
IFN623	Human Information Interaction
Major Option Unit	
Year 3, Semester 1	
Complete one Capstone Unit (24cps): if you have completed IFN735, you must complete IFN736; if you have completed IFN737, you must complete IFN738	
IFN736	Industry Project (Phase 2)
IFN738	Industry Research Project (Phase 2)
IFN635	Cyber Security and Governance
Major Option Unit	
Human-Centred Design Major Option Units	
IFN521	Trust and Artificial Intelligence

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Code	Title
IFN666	Web and Mobile Application Development
IFN694	Human Factors in Cyber Security

Internet of Things Major February & July entry FT (IN20 v4 & v5)

Semesters

- [February 2-year-entry/ July 1.5-year-entry commencements](#)
- [Year 1, Semester 2](#)
- [Year 2, Semester 1](#)
- [Year 2, Semester 2](#)
- [July 2-year-entry/ February 1.5-year-entry commencements](#)
- [Year 2 Semester 1](#)
- [Year 2 Semester 2](#)
- [Year 3, Semester 1](#)
- [Internet of Things Major Option Units](#)

Code	Title
February 2-year-entry/ July 1.5-year-entry commencements	
Year 1, Semester 2	
IFN580	Machine Learning
IFN635	Cyber Security and Governance
IFN636	Software Life Cycle Management
IFN658	Networks and Security
Year 2, Semester 1	
INN700	Introduction to Research
Complete one Capstone Unit (12cps): either IFN735 or IFN737	
IFN735	Industry Project (Phase 1)
IFN737	Industry Research Project (Phase 1)
IFN667	Enterprise IoT Systems
Major Option Unit	
Year 2, Semester 2	
Complete one Capstone Unit (24cps): if you have completed IFN735, you must complete IFN736; if you have completed IFN737, you must complete IFN738	
IFN736	Industry Project (Phase 2)
IFN738	Industry Research Project (Phase 2)
IFN637	Human-Centred Design of IT Systems
IFN649	Internet of Things
July 2-year-entry/ February 1.5-year-entry commencements	
Year 2 Semester 1	
IFN580	Machine Learning
IFN635	Cyber Security and Governance
IFN636	Software Life Cycle Management
IFN658	Networks and Security
Year 2 Semester 2	
INN700	Introduction to Research
Complete one Capstone Unit (12cps): either IFN735 or IFN737	
IFN735	Industry Project (Phase 1)
IFN737	Industry Research Project (Phase 1)
IFN649	Internet of Things
Major Option Unit	
Year 3, Semester 1	
Complete one Capstone Unit (24cps): if you have completed	

Code	Title
IFN735, you must complete IFN736; if you have completed IFN737, you must complete IFN738	
IFN736	Industry Project (Phase 2)
IFN738	Industry Research Project (Phase 2)
IFN637	Human-Centred Design of IT Systems
IFN667	Enterprise IoT Systems
Internet of Things Major Option Units	
ENN523	Advanced Network Engineering
ENN524	Mobile Network Engineering
IFB452	Blockchain Technology
IFN561	Enterprise Systems Lifecycle Management
IFN653	Business Process Automation

IT Management Major February & July entry FT (IN20 v4 & v5)

Semesters

- [February 2-year-entry/ July 1.5-year-entry commencements](#)
- [Year 1, Semester 2](#)
- [Year 2, Semester 1](#)
- [Year 2, Semester 2](#)
- [July 2-year-entry/ February 1.5-year-entry commencements](#)
- [Year 2 Semester 1](#)
- [Year 2 Semester 2](#)
- [Year 3, Semester 1](#)
- [IT Management Major Option Units](#)

Code	Title
February 2-year-entry/ July 1.5-year-entry commencements	
Year 1, Semester 2	
IFN580	Machine Learning
IFN635	Cyber Security and Governance
IFN636	Software Life Cycle Management
IFN561	Enterprise Systems Lifecycle Management
Year 2, Semester 1	
INN700	Introduction to Research
Complete one Capstone Unit (12cps): either IFN735 or IFN737	
IFN735	Industry Project (Phase 1)
IFN737	Industry Research Project (Phase 1)
IFN637	Human-Centred Design of IT Systems
IFN562	Advanced Business Analysis
Year 2, Semester 2	
Complete one Capstone Unit (24cps): if you have completed IFN735, you must complete IFN736; if you have completed IFN737, you must complete IFN738	
IFN736	Industry Project (Phase 2)
IFN738	Industry Research Project (Phase 2)
IFN631	IT Governance
Major Option Unit	
July 2-year-entry/ February 1.5-year-entry commencements	
Year 2 Semester 1	
IFN580	Machine Learning
IFN635	Cyber Security and Governance
IFN636	Software Life Cycle Management

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Code	Title
IFN562	Advanced Business Analysis
Year 2 Semester 2	
INN700	Introduction to Research
Complete one Capstone Unit (12cps): either IFN735 or IFN737	
IFN735	Industry Project (Phase 1)
IFN737	Industry Research Project (Phase 1)
IFN631	IT Governance
IFN561	Enterprise Systems Lifecycle Management
Year 3, Semester 1	
Complete one Capstone Unit (24cps): if you have completed IFN735, you must complete IFN736; if you have completed IFN737, you must complete IFN738	
IFN736	Industry Project (Phase 2)
IFN738	Industry Research Project (Phase 2)
IFN637	Human-Centred Design of IT Systems
Major Option Unit	
IT Management Major Option Units	
IAB402	IT Consulting and Leadership
IFN515	Fundamentals of Business Process Management
IFN619	Data Analytics for Strategic Decision Makers
IFN652	Enterprise Business Process Management
IFN654	Lean Six Sigma
IFN655	Advanced Business Intelligence Concepts for Enterprise Systems
IFN663	Enterprise and Security Architecture

Process Analytics and Automation Major February & July entry FT (IN20 v4 & v5) Semesters

- [February 2-year-entry/ July 1.5-year-entry commencements](#)
- [Year 1, Semester 2](#)
- [Year 2, Semester 1](#)
- [Year 2, Semester 2](#)
- [July 2-year-entry/ February 1.5-year-entry commencements](#)
- [Year 2 Semester 1](#)
- [Year 2 Semester 2](#)
- [Year 3, Semester 1](#)
- [Process Analytics and Automation Major Option Units](#)

Code	Title
February 2-year-entry/ July 1.5-year-entry commencements	
Year 1, Semester 2	
IFN580	Machine Learning
IFN635	Cyber Security and Governance
IFN636	Software Life Cycle Management
IFN515	Fundamentals of Business Process Management
Year 2, Semester 1	
INN700	Introduction to Research
Complete one Capstone Unit (12cps): either IFN735 or IFN737	
IFN735	Industry Project (Phase 1)
IFN737	Industry Research Project (Phase 1)

Code	Title
IFN650	Business Process Analytics
IFN637	Human-Centred Design of IT Systems
Year 2, Semester 2	
Complete one Capstone Unit (24cps): if you have completed IFN735, you must complete IFN736; if you have completed IFN737, you must complete IFN738	
IFN736	Industry Project (Phase 2)
IFN738	Industry Research Project (Phase 2)
IFN653	Business Process Automation
Major Option Unit	
July 2-year-entry/ February 1.5-year-entry commencements	
Year 2 Semester 1	
IFN580	Machine Learning
IFN635	Cyber Security and Governance
IFN636	Software Life Cycle Management
IFN515	Fundamentals of Business Process Management
Year 2 Semester 2	
INN700	Introduction to Research
Complete one Capstone Unit (12cps): either IFN735 or IFN737	
IFN735	Industry Project (Phase 1)
IFN737	Industry Research Project (Phase 1)
IFN637	Human-Centred Design of IT Systems
IFN653	Business Process Automation
Year 3, Semester 1	
Complete one Capstone Unit (24cps): if you have completed IFN735, you must complete IFN736; if you have completed IFN737, you must complete IFN738	
IFN736	Industry Project (Phase 2)
IFN738	Industry Research Project (Phase 2)
IFN650	Business Process Analytics
Major Option Unit	
Process Analytics and Automation Major Option Units	
IAB402	IT Consulting and Leadership
IFN509	Introduction to Data Science
IFN561	Enterprise Systems Lifecycle Management
IFN562	Advanced Business Analysis
IFN619	Data Analytics for Strategic Decision Makers
IFN631	IT Governance
IFN652	Enterprise Business Process Management
IFN654	Lean Six Sigma
IFN655	Advanced Business Intelligence Concepts for Enterprise Systems
IFN662	Software Engineering for Enterprise Systems
IFN663	Enterprise and Security Architecture
IFN680	Advanced Machine Learning and Applications

Software Development Major February & July entry FT (IN20 v4 & v5) Semesters

- [February 2-year-entry/ July 1.5-year-entry commencements](#)
- [Year 1, Semester 2](#)

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- [Year 2, Semester 1](#)
- [Year 2, Semester 2](#)
- [July 2-year-entry/ February 1.5-year-entry commencements](#)
- [Year 2, Semester 1](#)
- [Year 2, Semester 2](#)
- [Year 3, Semester 1](#)
- [Software Development Major Option Units](#)

Code	Title
February 2-year-entry/ July 1.5-year-entry commencements	
Year 1, Semester 2	
IFN635	Cyber Security and Governance
IFN636	Software Life Cycle Management
IFN637	Human-Centred Design of IT Systems
IFN584	Object-Oriented Design and Development
Year 2, Semester 1	
INN700	Introduction to Research
IFN664	Advanced Algorithms and Computational Complexity
Complete one Capstone Unit (12cps): either IFN735 or IFN737	
IFN735	Industry Project (Phase 1)
IFN737	Industry Research Project (Phase 1)
Major option unit	
Year 2, Semester 2	
IFN580	Machine Learning
IFN663	Enterprise and Security Architecture
Complete one Capstone Unit (24cps): if you have completed IFN735, you must complete IFN736; if you have completed IFN737, you must complete IFN738	
IFN736	Industry Project (Phase 2)
IFN738	Industry Research Project (Phase 2)
July 2-year-entry/ February 1.5-year-entry commencements	
Year 2, Semester 1	
IFN635	Cyber Security and Governance
IFN636	Software Life Cycle Management
IFN637	Human-Centred Design of IT Systems
IFN584	Object-Oriented Design and Development
Year 2, Semester 2	
INN700	Introduction to Research
IFN580	Machine Learning
IFN663	Enterprise and Security Architecture
Complete one Capstone Unit (12cps): either IFN735 or IFN737	
IFN735	Industry Project (Phase 1)
IFN737	Industry Research Project (Phase 1)
Year 3, Semester 1	
IFN664	Advanced Algorithms and Computational Complexity
Capstone unit (24cps)	
IFN736	Industry Project (Phase 2)
IFN738	Industry Research Project (Phase 2)
Major option unit	
Software Development Major Option Units	
CAB402	Programming Paradigms
CAB432	Cloud Computing

Code	Title
IFN561	Enterprise Systems Lifecycle Management
IFN562	Advanced Business Analysis
IFN631	IT Governance
IFN653	Business Process Automation
IFN657	Software Security
IFN662	Software Engineering for Enterprise Systems
IFN666	Web and Mobile Application Development
IFN667	Enterprise IoT Systems

Data Science Major February & July entry FT - commenced 2026

Semesters

- [February commencement](#)
- [Year 1, Semester 1](#)
- [Year 1, Semester 2](#)
- [Year 2, Semester 1](#)
- [Year 2, Semester 2](#)
- [July commencements](#)
- [Year 1, Semester 2](#)
- [Year 2, Semester 1](#)
- [Year 2, Semester 2](#)
- [Year 3, Semester 1](#)
- [Data Science option units](#)
- [Advanced Data Science option units](#)

Code	Title
February commencement	
Year 1, Semester 1	
See the Common first Semester Progression	
Year 1, Semester 2	
IFN580	Machine Learning
IFN637	Human-Centred Design of IT Systems
IFN636	Software Life Cycle Management
IFN509	Introduction to Data Science
Year 2, Semester 1	
INN700	Introduction to Research
Complete one Capstone Unit (12cps): either IFN735 or IFN737	
IFN735	Industry Project (Phase 1)
IFN737	Industry Research Project (Phase 1)
Select a Data Science Option Unit	
Select a Advanced Data Science Option Unit	
Year 2, Semester 2	
IFN635	Cyber Security and Governance
Complete one Capstone Unit (24cps): if you have completed IFN735, you must complete IFN736; if you have completed IFN737, you must complete IFN738	
IFN736	Industry Project (Phase 2)
IFN738	Industry Research Project (Phase 2)
Select a Advanced Data Science Option Unit	
July commencements	
Year 1, Semester 2	
See the Common first Semester Progression	
Year 2, Semester 1	
IFN509	Introduction to Data Science
IFN580	Machine Learning

Master of Information Technology

Code	Title
IFN636	Software Life Cycle Management
Select a Advanced Data Science Option Unit	
Year 2, Semester 2	
IFN637	Human-Centred Design of IT Systems
INN700	Introduction to Research
Complete one Capstone Unit (12cps): either IFN735 or IFN737	
IFN735	Industry Project (Phase 1)
IFN737	Industry Research Project (Phase 1)
Select a Advanced Data Science Option Unit	
Year 3, Semester 1	
IFN635	Cyber Security and Governance
Complete one Capstone Unit (24cps): if you have completed IFN735, you must complete IFN736; if you have completed IFN737, you must complete IFN738	
IFN737	Industry Research Project (Phase 1)
IFN738	Industry Research Project (Phase 2)
Select a Advanced Data Science Option Unit	
Data Science option units	
IFN619	Data Analytics for Strategic Decision Makers
MXN500	Introduction to Statistics for Data Science
Advanced Data Science option units	
IFN645	Machine Learning at Scale
IFN646	Biomedical Data Science
IFN647	Machine Learning for Natural Language Processing
IFN650	Business Process Analytics
IFN655	Advanced Business Intelligence Concepts for Enterprise Systems
IFN680	Advanced Machine Learning and Applications

Unit Synopses

CAB401 High Performance and Parallel Computing

Pre-requisites	IFN584 or IFQ584 or (IFN563 and IFN564) or (IFQ563 and IFQ564) or CAB301
Credit Points	12

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](#)

CAB402 Programming Paradigms

Pre-requisites	IFN584 or ((CAB201 or ITD121) and (CAB203 or CAB220 or DSB100 or MZB127)) or (IFN563 and IFN564) or (IFQ563 and IFQ564)
Credit Points	12

This advanced unit exposes you to special-purpose programming languages that operate under different paradigms than the conventional "imperative" languages you have used in the course so far. This unit will expose you to new ways of thinking about and expressing software solutions, exploring advanced programming language constructs, principles for the sound design of new languages and how they evolve. The unit provides both a deep theoretical foundation for programming languages by abstracting them to basic mathematical forms as well as showcasing practical application of those advanced principles for software development in the real world.

[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

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](#)

ENN523 Advanced Network Engineering

Pre-requisites	IFN658 or (IFN507 or IFQ507) or Admission to EN50 or EN55
Anti-requisites	INB352, INN352
Credit Points	12

This is an advanced-level networks unit highlighting the systems approach and top-down method for service-oriented planning and design of large-scale computer networks. It introduces the theory and methodology to assemble various network technologies in a cohesive fashion for network planning and design to address the connectivity, scalability, reliability, security, quality-of-service, cloud data centres, and other recent developments of networks. Computer networks have become an integrated part of the fundamental infrastructure in modern industries and societies. Building new networks or upgrading existing networks requires a deep understanding of the concepts and principles of advanced network engineering and particularly network architecture. This advanced network engineering unit helps develop such a deep understanding. The knowledge and skills developed from this unit are relevant to networks and cybersecurity, and other related majors.

[View unit details online](#) (current students only)

[View unit timetable](#)

ENN524 Mobile Network Engineering

Pre-requisites	IFN658 or Admission to EN50 or EN55
Anti-requisites	INN353
Credit Points	12

Wireless communications, mobile networks and Internet of Things have been widely deployed and integrated into various mobile platforms for value-added services. This unit highlights the recent advances in wireless local area and wireless wide area networks, vehicular networks and Internet of Things with focus on basic principles, selected standards and protocols. The unit also provides an overview for mobile satellite systems and navigation satellite systems and applications

[View unit details online](#) (current students only)

[View unit timetable](#)

IAB402 IT Consulting and Leadership

Pre-requisites	IAB204 OR (192cps in SV03 or SV04 or IV04 or IV05 or MV05 or MV06 or BV06 or BV07 or EV08 or EV07) OR (Admission to IN20 or IN27 or IN31 or IV53 or IV57 or IV54 or IV59 or IV55 or IV52 or IV56 or IV51 or IV58 or IV60)
Credit Points	12

In IAB402 IT Consulting and Leadership, you will gain an appreciation of the management of consulting practices and an understanding of the consulting sector generally. Leveraging skills/knowledge in developing business requirements analysis to identify systems problems or opportunities and specify solution-approaches, Business Analysts and other IT professionals must be able to convincingly communicate these (problems, opportunities, requirements, solution-approach) to managers, colleagues and clients in the form of a proposal. Many roles benefit from such specialised proposal writing and communication capabilities. Organisations are increasingly moving to flatter, project-oriented team structures, akin to consulting firms. A better appreciation of the consulting process will benefit you working in these modern organisations as IT professionals. The unit will provide information on establishing a consulting practice and techniques to engage clients successfully.

[View unit details online](#) (current students only)

[View unit timetable](#)

IFB452 Blockchain Technology

Pre-requisites	((IFB103 or ITD103) and (IFB104 or ITD104) and (IFB240 or ITD240)) OR (((IFN581 or (IFN555 or IFQ555) and (IFN556 or IFQ556))) and (IFN583 or ((IFN551 or IFQ551) and (IFN553 or IFQ553))) and (IFN585 or ((IFN552 or IFQ552) and (IFN558 or IFQ558))))
Credit Points	12

The unit introduces you to blockchain technology, an emerging technology that underpins major cryptocurrencies and has applications in many industry sectors. It will provide you with a

background of the different aspects of applications that can benefit from blockchain, such as supply chains, energy trading, and connected vehicles, and prominent blockchain platforms in use, including bitcoin, Ethereum and Hypeledger Fabric. Based on this background, you will learn how to critically assess applications for blockchain technologies, design blockchain applications, and effectively utilise advanced features of blockchain technology.

[View unit details online](#) (current students only)

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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

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.

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[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 IN31 or PM20 or PV20 or PV21 or EN75 or EN76 or EN77).
Anti-requisites	INN321
Equivalents	IFQ515, IFZ515
Credit Points	12

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

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](#)

IFN561 Enterprise Systems Lifecycle Management

Pre-requisites	((IFN552 and IFN558) or IFN585) OR (admission to IN14 or IN17 or IN23 or IN25 or PM20 or PV20 or PQ20 or PV21)
Equivalents	IFQ561
Credit Points	12

This is a transitional unit, providing students with fundamental information systems skills relating to different practices in managing information systems in large, enterprise-level organisations. Information systems and enterprises are becoming inextricably interwoven. It has become nearly impossible to talk meaningfully about enterprises that are not dependent on information systems of one type or another. An important role of managers is to understand what type of information system they should use to achieve the business strategic objectives or to improve existing business capabilities. This unit provides students with fundamental skills that business analysts or IT managers are required to have in order to be able to analyse business strategies, evaluate how information systems may enable enterprises to achieve strategic

objectives, and understand how such an information system can be developed and implemented within an enterprise.

[View unit details online](#) (current students only)
[View unit timetable](#)

IFN562 Advanced Business Analysis

Pre-requisites	(IFN585 or (IFN552 and IFN558) or (IFN552 and IFN554) or (IFQ552 and IFQ558) or (IFQ552 and IFQ554)) OR (admission into IN14 or IN17 or IN23 or IN25 or PM20 or PQ20 or PV20 or PV21)
Equivalents	IAB204, IFQ562
Credit Points	12

Business Analysis is a fast-developing domain. With the increased usage of digital technologies, IT graduates need to have multidisciplinary skills in Business, Process & Project Management and be able to devise innovative business solutions that align with the needs and values of the corporation. The Advanced Business Analysis unit aims to develop knowledge in using digital technologies, as well as skills in interpreting and reflecting the different perspectives – both internal and external to the organisation. The unit focuses on building problem-solving ability, analytical and communication skills, and technical capabilities. This unit is balanced with theoretical and practical aspects of business analysis. The unit is fundamental for future business analysts.

[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

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)
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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 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

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)
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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

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)
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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

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)
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IFN584 Object-Oriented Design and Development

Pre-requisites	IFN581 or 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

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)
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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

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)
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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

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.

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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 IV51 or 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

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)
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IFN631 IT Governance

Pre-requisites	IFN585 or IFN502 or (IFN552 and IFN558) or (IFQ552 and IFQ558) or admission into IN14 or IQ14
Credit Points	12

This executive-focused Information Technology (IT) unit addresses the core concepts, frameworks and methods for IT leaders (e.g. CIOs, IT Managers) to support their organizations in creating and delivering business value with information and technology through business-IT alignment. Three main outcomes that can be expected after successfully adopting IT governance are benefits realization, risk optimization, and resource optimization. The unit takes an enterprise-wide, managerial perspective on how IT executives can facilitate the transition towards digital business and set the executive agenda for IT in larger organizations by addressing traditional IT governance topics such as the enterprise governance of IT, benefits management and risk management as well as contemporary digital governance topics such as digital transformation, big data, artificial intelligence and cybersecurity.

[View unit details online](#) (current students only)
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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

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)

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IFN636 Software Life Cycle Management

Pre-requisites	IFN585 or ((IFN552 or IFQ552) and (IFN558 or IFQ558)) or admission to IN17
Credit Points	12

Software development is not an isolated technical activity, but instead involves working with multiple stakeholders and infrastructures to develop solutions of general applicability and lasting value. This unit gives you hands-on experience with management techniques and technical tools used for designing, developing, deploying and maintaining substantial IT systems. It provides knowledge and skills of the software life cycle in which applications are developed from conception to release by multi-disciplinary teams of analysts, architects, developers and managers. It exposes you to the critical stages of the software life cycle: requirements and design, development and testing, and Cloud performance and scalability tuning. You will see different techniques and tools supporting different stages, delivered through a modern, agile methodology. At its core, the unit provides you with fundamental programming and critical problem-solving skills in real-world systems contexts.

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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

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)

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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

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)

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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

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.

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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

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.

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IFN648 Applied Cryptography

Pre-requisites	IFN635
Equivalents	IFQ648
Credit Points	12

As a society, we are increasingly dependent on interconnected electronic systems for storage and transmission of information.

However, there are many threats to the security of information assets, and security controls are required. Cryptographic algorithms enable practical security services such as confidentiality and integrity assurance for stored or transmitted data, and authentication of entities and data. This unit will provide an in-depth understanding of cryptographic algorithms, and the application of modern cryptographic techniques to protect information in a range of situations. It will also provide an understanding of the limitations of these cryptographic techniques, and the need for effective key management. This unit follows IFN583 Computers and Security, and IFN635 Cyber Security and Governance, and is a detailed examination of a set of cryptographic mechanisms using mathematical and analytical algorithms to protect information assets.

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IFN649 Internet of Things

Pre-requisites	IFN507 or IFQ507 or IFN658
Equivalents	IFQ649
Credit Points	12

This unit is designed for graduate students in the Masters of IT. Students will learn the theory, architecture, hardware/software, and programming of networks, including network services, Internet-of-Things (IoT), as well the security, trust, and privacy considerations in these networks. You will learn the theory and practice of building, monitoring, and tailoring computer networks to applications, including core network functions and services such as routing. You will also learn about the theory and practice of IoT networks that underpin the 'fourth industrial revolution'. There are two main components of the unit: collaborative learning activities covering the principles involved, and practical assignments in which you will build your own miniature networks using free open source software on virtual servers and on IoT devices.

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IFN650 Business Process Analytics

Pre-requisites	IFN515 or IFQ515. IFN515 may be studied in the same teaching period as IFN650.
Credit Points	12

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.

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IFN652 Enterprise Business Process Management

Pre-requisites	IFN515 or IFQ515, IFN515 or IFQ515 can be studied in the same semester with IFN652
Equivalents	INN327
Credit Points	12

The unit provides a rich overview of key factors that impact the enterprise-wide deployment of Business Process Management (BPM). It covers how the current status of enterprise-wide Business Process Management (E-BPM) can be assessed and how to design and action roadmaps for E-BPM capability enhancements. The aim is to ensure that BPM within an organisation is strategically aligned and well governed by creating the right culture, applying the optimal mix of BPM methods and maximising and using emerging technologies in the design and management of business processes.

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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

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)
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IFN654 Lean Six Sigma

Pre-requisites	IFN515 or IFQ515. IFN515 or IFQ515 can be studied in the same semester as IFN654
Credit Points	12

This unit provides a comprehensive introduction to Lean Six Sigma, a rigorous and disciplined methodology, widely used in practice, that uses organisational data and statistical analysis to measure and improve the performance of an organisation's business processes. As a specialisation unit of BPM, it aims to develop learners' knowledge about different process improvement methodologies and develop specific intermediate skills in solving real-world business problems. The unit

addresses the key concepts, methods and techniques in LSS including inclusive design, and the Aboriginal and Torres Strait Islander perspectives on sustainability and waste. In particular, it focuses on introducing the Six Sigma approach known as DMAIC while incorporating the principles of Lean Management. The unit content is aligned with the universally accepted Lean Six Sigma Body of Knowledge for Green Belts, developed by the International Association for Six Sigma Certification.

[View unit details online](#) (current students only)

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IFN655 Advanced Business Intelligence Concepts for Enterprise Systems

Pre-requisites	(IFN581 or ((IFN555 or IFQ555) and (IFN556 or IFQ556)) and (IFN585 or ((IFN552 or IFQ552) and (IFN558 IFQ558)))
Credit Points	12

This unit elevates the Business Intelligence (BI) expertise for enterprise systems by focusing on sophisticated use of data science and machine learning in enterprise settings. BI represents a process fuelled by technology, focusing on the analysis of data and the delivery of actionable insights, crucial for the planning and decision-making activities carried out by executives, managers, and staff. This unit involves AI-driven analytics, data science, machine learning techniques and tools, and advanced IoT analytics, thereby preparing students for high-level managerial decision-making. To support this, you will learn advanced predictive modelling, real-time analytics, and complex data visualization. The unit also covers data Ops, security, and governance. The unit provides a rich exposure to real-world BI platforms, integrating advanced BI skills from data analysis to strategic decision support, ensuring graduates are adept in both technology and its business applications.

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IFN657 Software Security

Pre-requisites	IFN635 or IFN581 or ((IFN555 or IFQ555) and (IFN556 or IFQ556))
Equivalents	IFQ657
Credit Points	12

A software system is secure if it satisfies a specified or implied security objective related to the confidentiality, integrity and availability requirements for the system's data and functionality. A security failure is a scenario where the software system does not achieve its security objective. They can often be attributed to poor software design and implementation, including poor understanding of code-level security requirements, inadequate handling of exceptional cases, incomplete descriptions of the interface between components for secure interactions, and insufficient care in the use of programming languages. This Software Security unit provides a structured overview of known categories of software vulnerabilities, and of techniques that can be used to prevent or detect such vulnerabilities, or to mitigate their exploitation.

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IFN658 Networks and Security

Pre-requisites	IFN635. IFN635 can be studied concurrently with IFN658.
Equivalents	IFN507, IFQ507
Credit Points	12

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.

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IFN662 Software Engineering for Enterprise Systems

Pre-requisites	IFN581 or ((IFN555 or IFQ555) and (IFN556 or IFQ556))
Credit Points	12

This unit provides the knowledge on advanced concepts and methodologies in software engineering, tailored for the design, development, configuration, and maintenance of Enterprise Systems. Enterprise Systems (ES) represent the backbone of modern organizational operations, such as customer management, managing suppliers, production control, and more. This unit is structured to deepen your understanding of intricate business requirements and to master the art of designing and implementing large scale software systems for real-world enterprises. To support this, you will master a range of advanced topics including, complex software design patterns, methods to develop scalable, robust solutions, contemporary approaches for software development, advanced testing strategies, DevOps practices, scaled agile frameworks, emerging technologies for ES and AI-driven development. By the end of this unit, you will become proficient at advanced software development for large enterprises.

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IFN663 Enterprise and Security Architecture

Pre-requisites	IFN635 or (IFN551 and IFN553)
Credit Points	12

This unit provides knowledge and skills for modelling IT systems, at the whole-of-enterprise level, using enterprise and security architecture. Enterprise architecture supports the capture of IT systems and how they align with business operations. Security architecture concerns systems and processes which protect IT systems from unauthorised access and cyberattacks. Both are

critical for the planning, design, investment and governance of IT, given that cyberphysical landscapes, spanning organisations and IT, are now recognised as 'critical infrastructure'. You will learn how to capture enterprise and security architecture using the multi-layered modelling method, Archimate, used in the widely framework, TOGAF (The Open Group Architecture Framework). Based on this higher-level architectural context, you will learn how to provide architectures of individual software applications through components, interactions and secure communications. .

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IFN664 Advanced Algorithms and Computational Complexity

Pre-requisites	IFN584 or (IFN563 and IFN564) or (IFQ563 and IFQ564)
Equivalents	IFQ664
Credit Points	12

This unit teaches you data structures, algorithms, and algorithm analysis. When faced with a challenging software problem to solve, it is important to be familiar with a range of clever, but general algorithms and data structures that others in the field have already developed. When no ready-made solution exists, it is important to understand and be guided by the general principles of algorithm design, and to draw upon the experience of the profession in creating new methods. You will learn how to analyse the time efficiency of new and existing algorithms, to determine their suitability for the task at hand. And most importantly, you will learn how to apply your knowledge to solve practical real-world problems.

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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

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)

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IFN667 Enterprise IoT Systems

Pre-requisites	IFN636 or IFN561 or IFQ561
Credit Points	12

This is a foundational unit addressing the key technologies, industry examples and case studies, systems concepts and architecture techniques related to Enterprise IoT systems. It aims to provide you with technological expertise in IoT-enabled enterprise systems which supports the integration of business operations and real-time resource management. You will gain an exposure to key technologies, case studies as well as critical practitioner skills involving systems analysis, design and architecture. These are essential for meeting the demands on IT professionals, for this contemporary and competitive area of IT underpinning the strategic 'Industry 4.0' vision for IT seen, for example, in the advanced industrial manufacturing, connected airports, provenance supply chains, smart transportation and other applications. The unit focuses on how IoT technologies transforming modern enterprise systems.

[View unit details online](#) (current students only)

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IFN680 Advanced Machine Learning and Applications

Pre-requisites	IFN580 or IFQ580 or CAB420
Credit Points	12

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)

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IFN692 Interaction Design for Human Centred AI

Pre-requisites	IFN637 or IFN591 or IFQ591 or IFN556 or IFQ556 or IFN581
Credit Points	12

In IFN692 you will learn how to use Interaction Design to imagine, prototype, evaluate, and critique AI based services and applications such as conversational systems, autonomous transport, social robots, and more. Interaction Design and User Centred methods allow to look beyond the new technologies, to the new experiences, business practices, and forms of social interactions that these technologies will make possible, which is key to leading design innovation. IFN692 builds on the methods and principles encountered in IFN637 - Understanding the User Experience - and will add tools, methods, knowledge and critical skills that you will apply in the context of a design project, from exploring the social and cultural context of the design intervention, to envisioning possible futures for, with, and by

users, up to prototyping and testing the interaction with artificial intelligence in a realistic setting.

[View unit details online](#) (current students only)

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IFN694 Human Factors in Cyber Security

Pre-requisites	IFN635
Credit Points	12

This unit provides knowledge and skills essential for understanding Cyber Security (CS) from the perspective of human behaviour, which is critical for CS consultants, analysts, and programmers. Human-centric CS focuses on individuals' actions, decisions, interpretations, and psychological factors, complementary to the technological aspects of CS. You will be exposed to the psychological, social, and organizational aspects that shape cyber security. To support this, you will learn how to identify, design and analyse: human-centric cyber threats and security measures; security awareness and incident response; psychology of cyber criminals; cybercrime business models; and organizational impact on cyber security practices. In addition, you will learn advanced topics including user-centric privacy and data protection, AI and ML for human-centric security. This will be applied through a set of comprehensive cyber security frameworks and practices applied to real-world organizations.

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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

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.

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IFN736 Industry Project (Phase 2)

Pre-requisites	IFN735
Credit Points	24

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)

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IFN737 Industry Research Project (Phase 1)

Pre-requisites	Grade Point Average (GPA) of 5 or greater and completion of 84 credit points from IN20, IQ20, 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 IFN737.
Anti-requisites	IFN735
Credit Points	12

The aim of IFN737 unit is to provide you with the opportunity to apply both your broad and specialised knowledge and skills gained from your degree to a real-world research project, in collaboration with an industry client and academic mentor who will form your research team. The unit IFN737 focuses on the initial stages of the research process, such as conducting a literature review, formulating research questions, and developing a strategic research plan. The completion of the entire research process and project takes place in the partner unit IFN738. By successfully completing this unit, you will possess a high level of research capability, allowing you to plan research and contribute to various professional settings. Additionally, the unit will help to prepare you for undertaking a PhD and research-oriented roles in public and private organisations, including positions as research-active staff and technical personnel supporting research activities.

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IFN738 Industry Research Project (Phase 2)

Pre-requisites	IFN737
Credit Points	24

The aim of IFN738 is to provide you with the opportunity to integrate and apply your broad and specialised knowledge and skills gained from your degree to conduct real-world industry research project, in collaboration with an industry client and academic mentor who will form your research team. IFN738 builds upon its partner unit IFN737. In IFN738 you will further develop your understanding of research principles and methodologies, and enhance your skills in data analysis, problem-solving, and communicating research outcomes. At the end of this unit, you will have a high level of research capability, allowing you to conduct research and contribute to various professional settings. Additionally, the unit aims to produce graduates who are well-prepared for PhD research positions in

universities and research-oriented roles in public organisations, and private corporations, including positions as research-active staff and technical personnel supporting research activities.

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introduction to, or a refresher in, statistics. The concepts in this unit are extended upon in MXN600.

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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

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.

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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

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