Master of Information Technology

Year	2023
QUT code	IN20
CRICOS	083059E
Duration	1.5 - 2 years full time
Total credit points	192
International fee (indicative, subject to annual review)	2023: $35,800 per year full-time (96 credit points)
Course contact	Freecall: 07 3138 8339 (within Australia) Phone: +61 7 3138 8339 (outside Australia) Mon - Fri, 8am - 4pm
Start months	July, February

This PDF contains information about the course structure. For more information about the course see the course information PDF

Course structure

To meet the course requirements for the Master of Information Technology (Study Area A) you are required to complete 192 credit points of course units consisting of:

- 96 credit points of core units, which includes 48 credit points of IT foundation units, and 2 x 24 credit points of industry and research based project units.
- 60 credit points of discpline units from your selected Major.
- 36 credit points of IT related elective units selected from an approved list of units, which is drawn from units offered in each of the IT majors. The unit choices allow you to explore an area in more depth (e.g., Software Development, Data Science), or provide the opportunity for you to develop a breadth of understanding (e.g., Business Analysis, Computer Science).

Structures

- Standard First Semester Course Structure - February and July Entry
- Business Analysis Major
- Business Analysis Major (commenced prior 2023)
- Business Process Management Major
- Computer Science Major
- Cyber Security and Networks Major
- Data Science Major
- Data Science Major (commenced prior 2023)
- Enterprise Systems Major
- Executive IT Major
- Executive IT Major (commenced prior 2023)
- Software Development Major

Unit Lists

- MIT Elective Unit Options

Standard First Semester Course Structure - February and July Entry

Note: These Foundation Units are 6 credit points unit and are delivered in 5 week teaching period.

- 5 Week A runs from week 1 to 5 of semester 1
- 5 Week B runs from week 9 to 13 of semester 1
- 5 Week C runs from week 1 in semester 2
- 5 Week D runs from week 9 in semester 2.

1.5 Year Program Enrolment Information - IN17 pathway entrant or IT background entrant

For students entering the course with the eligibility of the 1.5 year program, these core IT Foundation Units IFN551-IFN558 (8x6cp) will not be available for enrolment as you are not required to take these units. Please proceed to the Major structure and refer to the 1.5 year Feb/July entry for your course progression guidance. Clarification can be sought from the Course Coordinators once admitted.

Code	Title
Year 1, Semester 1 or Semester 2	
IFN551	Computer Systems Fundamentals
IFN552	Systems Analysis and Design
IFN555	Introduction to Programming
IFN554	Databases
IFN553	Introduction to Security and Networking
IFN556	Object Oriented Programming

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Code	Title
IFN557	Rapid Web Development
IFN558	Management Information Systems

Business Analysis Major

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
- Business Analysis Unit Options
- Select 24 credit points from the Business Analysis Unit Options List:

Code	Title
February 2-year-entry/ July 1.5-year-entry commencements	
Year 1, Semester 2	
IFN561	Enterprise Systems Lifecycle Management
MIT Elective Unit	
MIT Elective Unit	
Business Analysis Options Unit	
Year 2, Semester 1	
IFN711	IT Industry Project
IFN619	Data Analytics for Strategic Decision Makers
IFN562	Advanced Business Analysis
Year 2, Semester 2	
IFN712	Research in IT Practice
IFN663	Advanced Enterprise Architecture
Business Analysis Options unit	
July 2-year-entry/ February 1.5-year-entry commencements	
Year 2, Semester 1	
IFN562	Advanced Business Analysis
IFN619	Data Analytics for Strategic Decision Makers
MIT Elective Unit	
Business Analysis option unit	
Year 2, Semester 2	
IFN712	Research in IT Practice
IFN663	Advanced Enterprise Architecture
IFN561	Enterprise Systems Lifecycle Management
Year 3, Semester 1	
IFN711	IT Industry Project
Business Analysis Option unit	
MIT Elective Unit	
Business Analysis Unit Options	
Select 24 credit points from the Business Analysis Unit Options List:	
IFN515	Fundamentals of Business Process Management
IFN521	Foundations of Decision Science
IFN619	Data Analytics for Strategic Decision Makers
IFN623	Human Information Interaction

Code	Title
IFN650	Business Process Analytics
IFN662	Enterprise Systems and Applications

Business Analysis Major (commenced prior 2023)

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
- Business Analysis Unit Options
- Select 24 credit point from the Business Analysis Major Unit Options List:

Code	Title
February 2-year-entry/ July 1.5-year-entry commencements	
Year 1, Semester 2	
IFN561	Enterprise Systems Lifecycle Management
IFN562	Advanced Business Analysis
MIT Elective Unit	
MIT Elective Unit	
Year 2, Semester 1	
IFN711	IT Industry Project
Business Analysis Options Unit	
Business Analysis Options Unit	
Year 2, Semester 2	
IFN712	Research in IT Practice
IFN663	Advanced Enterprise Architecture
MIT Elective Unit	
July 2-year-entry/ February 1.5-year-entry commencements	
Year 2, Semester 1	
IFN561	Enterprise Systems Lifecycle Management
IFN562	Advanced Business Analysis
MIT Elective Unit	
MIT Elective Unit	
Year 2, Semester 2	
IFN712	Research in IT Practice
IFN663	Advanced Enterprise Architecture
Business Analysis Options Unit	
Year 3, Semester 1	
IFN711	IT Industry Project
MIT Elective Unit	
Business Analysis Options Unit	
Business Analysis Unit Options	
Select 24 credit point from the Business Analysis Major Unit Options List:	
IFN515	Fundamentals of Business Process Management
IFN521	Foundations of Decision Science
IFN619	Data Analytics for Strategic Decision Makers

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Code	Title
IFN623	Human Information Interaction
IFN650	Business Process Analytics
IFN662	Enterprise Systems and Applications

Business Process Management Major

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
- Business Process Management Unit Options
- Select 12 credit points from the Business Process Management Unit Options List:

Code	Title
February 2-year-entry/ July 1.5-year-entry commencements	
Year 1, Semester 2	
IFN515	Fundamentals of Business Process Management
MIT Elective Unit	
MIT Elective Unit	
MIT Elective Unit	
Year 2, Semester 1	
IFN711	IT Industry Project
IFN650	Business Process Analytics
Business Process Management Option Unit	
Year 2, Semester 2	
IFN712	Research in IT Practice
IFN652	Enterprise Business Process Management
IFN653	Business Process Automation
July 2-year-entry/ February 1.5-year-entry commencements	
Year 2, Semester 1	
IFN515	Fundamentals of Business Process Management
MIT Elective Unit	
MIT Elective Unit	
MIT Elective Unit	
Year 2, Semester 2	
IFN712	Research in IT Practice
IFN652	Enterprise Business Process Management
IFN653	Business Process Automation
Year 3, Semester 1	
IFN711	IT Industry Project
IFN650	Business Process Analytics
Business Process Management Option Unit	
Business Process Management Unit Options	
Select 12 credit points from the Business Process Management Unit Options List:	
IFN521	Foundations of Decision Science
IFN562	Advanced Business Analysis
IFN619	Data Analytics for Strategic Decision Makers

Code	Title
IFN623	Human Information Interaction
IFN662	Enterprise Systems and Applications
IFN663	Advanced Enterprise Architecture

Computer Science Major

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 Unit Options
- Select 36 credit points from the Computer Science Unit Options List:

Code	Title
February 2-year-entry/ July 1.5-year-entry commencements	
Year 1, Semester 2	
IFN563	Object Oriented Design
IFN564	Data Structures and Algorithms
MIT Elective Unit	
MIT Elective Unit	
MIT Elective Unit	
Year 2, Semester 1	
IFN711	IT Industry Project
IFN664	Advanced Algorithms and Computational Complexity
Computer Science Option Unit	
Year 2, Semester 2	
IFN712	Research in IT Practice
Computer Science Option Unit	
Computer Science Option Unit	
July 2-year-entry/ February 1.5-year-entry commencements	
Year 2, Semester 1	
IFN563	Object Oriented Design
IFN564	Data Structures and Algorithms
MIT Elective Unit	
MIT Elective Unit	
MIT Elective Unit	
Year 2, Semester 2	
IFN712	Research in IT Practice
Computer Science Option Unit	
Computer Science Option Unit	
Year 3, Semester 1	
IFN711	IT Industry Project
IFN664	Advanced Algorithms and Computational Complexity
Computer Science Option Unit	
Computer Science Unit Options	
Select 36 credit points from the Computer Science Unit Options List:	

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Code	Title
CAB432	Cloud Computing
IFN507	Network Systems
IFN509	Data Exploration and Mining
IFN541	Information Security Management
IFN591	Principles of User Experience
IFN644	Network Operations and Security
IFN647	Text, Web and Media Analytics
IFN648	Applied Cryptography
IFN657	Principles of Software Security
IFN666	Web and Mobile Application Development
IFN680	Artificial Intelligence and Machine Learning
IFN692	Interaction Design for Emerging Technologies

Cyber Security and Networks Major

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
- Cyber Security and Networks Unit Options
- Select 12 credit points from the Cyber Security and Networks Unit Options List:

Code	Title
February 2-year-entry/ July 1.5-year-entry commencements	
Year 1, Semester 2	
IFN507	Network Systems
IFN541	Information Security Management
MIT Elective Unit	
MIT Elective Unit	
Year 2, Semester 1	
IFN711	IT Industry Project
IFN648	Applied Cryptography
Cyber Security and Networks Option Unit	
Year 2, Semester 2	
IFN712	Research in IT Practice
IFN649	Advanced Networks
MIT Elective Unit	
July 2-year-entry/ February 1.5-year-entry commencements	
Year 2, Semester 1	
IFN541	Information Security Management
MIT Elective Unit	
MIT Elective Unit	
MIT Elective Unit	
Year 2, Semester 2	
IFN712	Research in IT Practice
IFN507	Network Systems
IFN649	Advanced Networks
Year 3, Semester 1	
IFN711	IT Industry Project
IFN648	Applied Cryptography
Cyber Security and Networks Option Unit	
Cyber Security and Networks Unit Options	
Select 12 credit points from the Cyber Security and Networks Unit Options List:	
ENN523	Advanced Network Engineering
ENN524	Mobile Network Engineering
IFN591	Principles of User Experience
IFN657	Principles of Software Security

Data Science Major

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
- Data Science Unit Options
- Select 48 credit point from the Data Science Major Unit Options List:

Code	Title
February 2-year-entry/ July 1.5-year-entry commencements	
Year 1, Semester 2	
IFN509	Data Exploration and Mining
MIT Elective Unit	
MIT Elective Unit	
MIT Elective Unit	
Year 2, Semester 1	
IFN711	IT Industry Project
IFN647	Text, Web and Media Analytics
Data Science Option Unit	
Year 2, Semester 2	
IFN712	Research in IT Practice
IFN645	Large Scale Data Mining
Data Science Option Unit	
July 2-year-entry/ February 1.5-year-entry commencements	
Year 2, Semester 1	
IFN509	Data Exploration and Mining
MIT Elective Unit	
MIT Elective Unit	
MIT Elective Unit	
Year 2, Semester 2	
IFN712	Research in IT Practice
IFN645	Large Scale Data Mining
Data Science Option Unit	
Year 3, Semester 1	
IFN711	IT Industry Project
IFN647	Text, Web and Media Analytics

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Code	Title
Data Science Option Unit	
Data Science Unit Options	
Select 48 credit point from the Data Science Major Unit Options List:	
IFN521	Foundations of Decision Science
IFN619	Data Analytics for Strategic Decision Makers
IFN645	Large Scale Data Mining
IFN646	Biomedical Data Science
IFN647	Text, Web and Media Analytics
IFN680	Artificial Intelligence and Machine Learning

Code	Title
Data Science Option Unit	
Data Science Unit Options	
Select 48 credit point from the Data Science Major Unit Options List:	
IFN521	Foundations of Decision Science
IFN619	Data Analytics for Strategic Decision Makers
IFN645	Large Scale Data Mining
IFN646	Biomedical Data Science
IFN647	Text, Web and Media Analytics
IFN680	Artificial Intelligence and Machine Learning

Data Science Major (commenced prior 2023)

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
- Data Science Unit Options
- Select 48 credit point from the Data Science Major Unit Options List:

Code	Title
February 2-year-entry/ July 1.5-year-entry commencements	
Year 1, Semester 2	
IFN509	Data Exploration and Mining
MIT Elective Unit	
MIT Elective Unit	
MIT Elective Unit	
Year 2, Semester 1	
IFN711	IT Industry Project
Data Science Option Unit	
Data Science Option Unit	
Year 2, Semester 2	
IFN712	Research in IT Practice
Data Science Option Unit	
Data Science Option Unit	
July 2-year-entry/ February 1.5-year-entry commencements	
Year 2, Semester 1	
IFN509	Data Exploration and Mining
MIT Elective Unit	
MIT Elective Unit	
MIT Elective Unit	
Year 2, Semester 2	
IFN712	Research in IT Practice
Data Science Option Unit	
Data Science Option Unit	
Year 3, Semester 1	
IFN711	IT Industry Project
Data Science Option Unit	

Enterprise Systems Major

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
- Enterprise Systems Unit Options
- Select 12 credit points from the Enterprise Systems Unit Options List:

Code	Title
February 2-year-entry/ July 1.5-year-entry commencements	
Year 1, Semester 2	
IFN561	Enterprise Systems Lifecycle Management
MIT Elective Unit	
MIT Elective Unit	
MIT Elective Unit	
Year 2, Semester 1	
IFN711	IT Industry Project
IFN662	Enterprise Systems and Applications
IFN667	Enterprise IoT Systems
Year 2, Semester 2	
IFN712	Research in IT Practice
IFN663	Advanced Enterprise Architecture
Enterprise Systems Option Unit	
July 2-year-entry/ February 1.5-year-entry commencements	
Year 2, Semester 1	
IFN561	Enterprise Systems Lifecycle Management
MIT Elective Unit	
MIT Elective Unit	
MIT Elective Unit	
Year 2, Semester 2	
IFN712	Research in IT Practice
IFN663	Advanced Enterprise Architecture
Enterprise Systems Option Unit	
Year 3, Semester 1	
IFN711	IT Industry Project
IFN662	Enterprise Systems and Applications

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Code	Title
IFN667	Enterprise IoT Systems
Enterprise Systems Unit Options	
Select 12 credit points from the Enterprise Systems Unit Options List:	
IFN515	Fundamentals of Business Process Management
IFN521	Foundations of Decision Science
IFN541	Information Security Management
IFN562	Advanced Business Analysis
IFN619	Data Analytics for Strategic Decision Makers
IFN623	Human Information Interaction

Executive IT Major

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
- Executive IT Unit Options
- Select 12 credit points from the Executive IT Unit Options List:

Code	Title
February 2-year-entry/ July 1.5-year-entry commencements	
Year 1, Semester 2	
IFN561	Enterprise Systems Lifecycle Management
IFN631	IT Governance
MIT Elective Unit	
MIT Elective Unit	
Year 2, Semester 1	
IFN711	IT Industry Project
IFN662	Enterprise Systems and Applications
IAB402	Information Systems Consulting
(note: IAB402: if you have completed this unit or equivalent unit, please refer to message above the structure and contact the faculty to have your Study Plan updated)	
Year 2, Semester 2	
IFN712	Research in IT Practice
MIT Elective Unit	
Executive IT Option Unit	
July 2-year-entry/ February 1.5-year-entry commencements	
Year 2, Semester 1	
IAB402	Information Systems Consulting
MIT Elective Unit	
MIT Elective Unit	
MIT Elective Unit	
Year 2, Semester 2	
IFN712	Research in IT Practice
IFN631	IT Governance
IFN561	Enterprise Systems Lifecycle Management
Year 3, Semester 1	

Code	Title
IFN711	IT Industry Project
IFN662	Enterprise Systems and Applications
Executive IT Option Unit	
Executive IT Unit Options	
Select 12 credit points from the Executive IT Unit Options List:	
IFN521	Foundations of Decision Science
IFN619	Data Analytics for Strategic Decision Makers
IFN623	Human Information Interaction
IFN652	Enterprise Business Process Management
IFN663	Advanced Enterprise Architecture
MGN565	Consulting and Change Management

Executive IT Major (commenced prior 2023)

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
- Executive IT Unit Options
- Select 12 credit point from the Executive IT Major Unit Options List:

Code	Title
February 2-year-entry/ July 1.5-year-entry commencements	
Year 1, Semester 2	
IFN631	IT Governance
MIT Elective Unit	
MIT Elective Unit	
MIT Elective Unit	
Year 2, Semester 1	
IFN711	IT Industry Project
IFN561	Enterprise Systems Lifecycle Management
IAB402	Information Systems Consulting
NOTE:	IAB402: if you have completed this unit or equivalent unit, please refer to message above the structure and contact the faculty to have your Study Plan updated.
Year 2, Semester 2	
IFN712	Research in IT Practice
IFN663	Advanced Enterprise Architecture
Executive IT Option Unit	
July 2-year-entry/ February 1.5-year-entry commencements	
Year 2, Semester 1	
IFN561	Enterprise Systems Lifecycle Management
MIT Elective Unit	
MIT Elective Unit	
MIT Elective Unit	
Year 2, Semester 2	
IFN712	Research in IT Practice
IFN631	IT Governance

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Code	Title
IFN663	Advanced Enterprise Architecture
Year 3, Semester 1	
IFN711	IT Industry Project
IAB402	Information Systems Consulting
NOTE	IAB402: if you have completed this unit or equivalent unit, please refer to message above the structure and contact the faculty to have your Study Plan updated.
Executive IT Option Unit	
Executive IT Unit Options	
Select 12 credit point from the Executive IT Major Unit Options List:	
IFN521	Foundations of Decision Science
IFN619	Data Analytics for Strategic Decision Makers
IFN623	Human Information Interaction
IFN652	Enterprise Business Process Management
IFN662	Enterprise Systems and Applications
MGN565	Consulting and Change Management

Software Development Major

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

Code	Title
February 2-year-entry/ July 1.5-year-entry commencements	
Year 1, Semester 2	
IFN563	Object Oriented Design
IFN564	Data Structures and Algorithms
MIT Elective Unit	
MIT Elective Unit	
MIT Elective Unit	
Year 2, Semester 1	
IFN711	IT Industry Project
IFN666	Web and Mobile Application Development
IFN664	Advanced Algorithms and Computational Complexity
Year 2, Semester 2	
IFN712	Research in IT Practice
CAB432	Cloud Computing
(note: CAB432 - if you have completed this unit or equivalent unit, please refer to message above the structure and contact the faculty to have your Study Plan updated)	
IFN692	Interaction Design for Emerging Technologies
July 2-year-entry/ February 1.5-year-entry commencements	
Year 2, Semester 1	
IFN563	Object Oriented Design
IFN564	Data Structures and Algorithms

Code	Title
MIT Elective Unit	
MIT Elective Unit	
MIT Elective Unit	
Year 2, Semester 2	
IFN712	Research in IT Practice
CAB432	Cloud Computing
(note: CAB432 - if you have completed this unit or equivalent unit, please refer to message above the structure and contact the faculty to have your Study Plan updated)	
IFN692	Interaction Design for Emerging Technologies
Year 3, Semester 1	
IFN711	IT Industry Project
IFN666	Web and Mobile Application Development
IFN664	Advanced Algorithms and Computational Complexity

MIT Elective Unit Options

Select 36 credit points from the MIT Elective Unit Options List:	
Code	**Title**
CAB432	Cloud Computing
ENN523	Advanced Network Engineering
ENN524	Mobile Network Engineering
IAB402	Information Systems Consulting
IFN507	Network Systems
IFN509	Data Exploration and Mining
IFN515	Fundamentals of Business Process Management
IFN521	Foundations of Decision Science
IFN541	Information Security Management
IFN554	Databases
IFN557	Rapid Web Development
IFN561	Enterprise Systems Lifecycle Management
IFN562	Advanced Business Analysis
IFN563	Object Oriented Design
IFN564	Data Structures and Algorithms
IFN591	Principles of User Experience
IFN619	Data Analytics for Strategic Decision Makers
IFN623	Human Information Interaction
IFN631	IT Governance
IFN649	Advanced Networks
IFN645	Large Scale Data Mining
IFN646	Biomedical Data Science
IFN647	Text, Web and Media Analytics
IFN648	Applied Cryptography
IFN650	Business Process Analytics
IFN652	Enterprise Business Process Management
IFN653	Business Process Automation
IFN657	Principles of Software Security
IFN662	Enterprise Systems and Applications
IFN663	Advanced Enterprise Architecture
IFN664	Advanced Algorithms and Computational Complexity
IFN665	Advanced Topic 1

Select 36 credit points from the MIT Elective Unit Options List:	
IFN666	Web and Mobile Application Development
IFN667	Enterprise IoT Systems
IFN680	Artificial Intelligence and Machine Learning
IFN690	Advanced User Centred Design
IFN692	Interaction Design for Emerging Technologies
MGN565	Consulting and Change Management
Note: Other units subject to approval of Course Coordinator	

Unit Synopses

CAB432 Cloud Computing

Pre-requisites	CAB301 or CAB302 or INB370 or INB371 or IFN666
Equivalents	INB356
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 | View unit timetable

ENN523 Advanced Network Engineering

Pre-requisites	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 | View unit timetable

ENN524 Mobile Network Engineering

Pre-requisites	IFN507 or IFQ507 or Admission to EN50 or EN55
Anti-requisites	INN353
Credit Points	12

Wireless communications, mobile networks and navigation 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 wide area networks, vehicular networks and Internet of Things with focus on selected standards and network protocols. The unit also provides an overview for satellite navigation systems, wireless positioning technologies and location-based services.

View unit details online | View unit timetable

IAB402 Information Systems Consulting

Pre-requisites	IAB204 or admission to IN20
Equivalents	INB322 IAB302
Credit Points	12

In IAB402 Information Systems Consulting, you will gain an appreciation of the management of consulting practices and an understanding of the consulting sector generally. Having developed business requirements analysis skills in IAB305 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 be beneficial to students 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 | View unit timetable

IFN507 Network Systems

Pre-requisites	(IFN551 and IFN553) or (IFQ551 and IFQ553) or IFN503 or Admission to IN15, or IN16
Anti-requisites	INN350, INN251, INN351
Equivalents	IFQ507
Credit Points	12

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. The ability to understand, analyse, design, configure and manage computer networks and network services is a requirement for a range of graduate entry information technology positions. The unit provides the necessary knowledge and skills for further study in networks, cyber security, computer science and other relevant

areas. Other advanced-level networks and cyber security units build on this unit by extending your fundamental understanding of computer networks for more complex needs and various network application requirements.

View unit details online | View unit timetable

IFN509 Data Exploration and Mining

Pre-requisites	IFN554 or IFQ554 or Admission to IN15. IFN554 may be studied in the same teaching period as IFN509. IN20 students who commenced prior to 2020 should apply for a requisite waiver.
Anti-requisites	INN342, INN343
Equivalents	IFQ509
Credit Points	12

This fundamental data science unit addresses the core concepts, techniques and practices of data exploration and mining. In the information age, with astronomical amounts of data produced and made available every minute, data exploration and mining becomes necessary for individuals and organisations who need to make decisions. With the advancements in data storage technology and the need for automation, data analytics skills are now essential. Data analytics methods enable users to manage, interpret, understand, process and analyse the data to find useful insight. This unit will introduce you to a wide range of data analytics methods and theories to manipulate, model and analyze data. This is an introductory unit and the knowledge and skills developed in this unit are relevant to both computer science and non-computer science majors.

View unit details online | View unit timetable

IFN515 Fundamentals of Business Process Management

Anti-requisites	INN321
Equivalents	IFQ515
Credit Points	12

This unit provides an in-depth introduction towards 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.

View unit details online | View unit timetable

IFN521 Foundations of Decision Science

Equivalents	IFQ521
Credit Points	12

Human beings engage in information environments of ever increasing complexity both within organizations and socially. In these environments, human beings interact with information in various ways. This unit introduces principles of cognitive science relevant to understanding how human beings process information and make decisions. In addition, the unit presents relevant frameworks to understand what information really is. Understanding both of these aspects is necessary for modern organizations to be able to exploit their data for effective decision making. IFN623 builds on this unit introducing relevant technologies to support human interactions with information.

View unit details online | View unit timetable

IFN541 Information Security Management

Pre-requisites	IFN503 or (IFN551 and IFN553) or (IFQ551 and IFQ553) or Admission to IN15, IN16, or IN17. IN20 students who commenced prior to 2020 should apply for a requisite waiver.
Anti-requisites	IFN511
Equivalents	IFQ541
Credit Points	12

This unit builds upon the fundamental information security concepts introduced in IFN553 by exploring the challenges and solutions for information security management in organisations. This is important contextual knowledge that can be built upon through later, more specialised units. In this unit, you will learn how careful planning, implementation and improvement of information security controls in the areas of people, process and technology can be an enabling force to help organizations achieve their business goals. Effective information security risk management is a crucial component of organizational risk management. Information security is a digital life skill. This unit provides relevant, real-world examples of information security vulnerabilities, threats, attacks and the controls to manage them, that all information technology professionals should understand to protect themselves, the organisations they work for and to advance their careers.

View unit details online | View unit timetable

IFN551 Computer Systems Fundamentals

Anti-requisites	IFN503
Equivalents	IFQ551
Credit Points	6

This unit introduces the core concepts of a computer system, in particular how modern computer systems work, how they are structured, and how they operate. You will work with simulation software that allows you will build your own small computer system. The unit teaches you how to work effectively with modern computer environments and gain sufficient knowledge to be able to adapt to the evolution of computer systems in the future. The unit provides the necessary knowledge and skills for further study in areas such as networking, security, data science and software development.

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IFN552 Systems Analysis and Design

Equivalents	IFQ552
Credit Points	6

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.

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IFN553 Introduction to Security and Networking

Equivalents	IFQ553
Credit Points	6

Cyber security breaches - network infiltration, malware, theft of personal or corporate information - are commonplace. The rise of the internet means that malicious actions of individuals may have global impact. This unit introduces essential information security concepts such as confidentiality, integrity, and availability. The Open Systems Interconnection (OSI) model is used to understand network communications. Threats and vulnerabilities are identified, for both stored and transmitted data. An overview of cyber security measures - preventing, detecting and correcting actions that result in harm - is provided. The limitations of such measures are noted, allowing you to develop an understanding of the trade-offs involved in protecting information. You can take this unit as a stand-alone course to raise your awareness of information security issues in networked systems, or as the start of a pathway into further cyber security and networking units.

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IFN554 Databases

Equivalents	IFQ554
Credit Points	6

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.

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IFN555 Introduction to Programming

Anti-requisites	IFN501
Equivalents	IFQ555
Credit Points	6

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.

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IFN556 Object Oriented Programming

Pre-requisites	IFN555 or IFQ555
Anti-requisites	IFN501
Equivalents	IFQ556
Credit Points	6

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.

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IFN557 Rapid Web Development

Pre-requisites	IFN501 or IFN555 or IFQ555
Anti-requisites	IAB207
Equivalents	IFQ557
Credit Points	6

This is a foundational unit addressing web application development through a guided process by using well known frameworks such as Bootstrap, and Python-Flask. It introduces the development of a web application, covering development life-cycle phases of design, development, and deployment. The unit provides a working and "hands-on" introduction to different aspects of building an interactive and dynamic application. The knowledge and skills involved in developing web applications are indispensable for all IT professionals. This applies not only for programmers but also for roles such as business analyst and solution architect, which require a strong understanding of development for systems analysis and design practices.

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IFN558 Management Information Systems

Equivalents	IFQ558
Credit Points	6

Organisations are continuously transforming to leverage the potential of information systems. To be able to effectively transform an organisation, its leadership must be made aware of what an information system actually is, how to manage the components of information systems effectively, and how to make informed decisions based on the data present in the information system. The purpose of this unit is to provide insights into how information systems can be effectively leveraged by organisations. Drawing on case studies, concepts related to the following will be discussed: digital transformation of organisations, business analytics and data visualisation, design

cycle approach for digital solutions, as well as ethical, cultural, and privacy implications. The knowledge and skills taught in this unit will help make you a well-rounded IT professional and prepare you for careers related to business analytics and management.

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IFN561 Enterprise Systems Lifecycle Management

Pre-requisites	IFN558 or admission to IN23
Equivalents	IFQ561
Credit Points	12

This is a transitionary 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.

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IFN562 Advanced Business Analysis

Pre-requisites	IFN500 or (IFN552 and IFN558) or (IFQ552 and IFQ558) or Admission to IN14 or IQ14 or IN17 or IN23 or IN25
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.

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IFN563 Object Oriented Design

Pre-requisites	IFN501 or (IFN555 and IFN556) or (IFQ555 and IFQ556) or Admission to IN15, IN16 or IN17
Anti-requisites	IFN505
Equivalents	IFQ563
Credit Points	6

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.

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IFN564 Data Structures and Algorithms

Pre-requisites	IFN501 or (IFN555 and IFN556) or (IFQ555 and IFQ556) or IFN563 or Admission to IN15, IN16 or IN17
Anti-requisites	IFN505
Equivalents	IFQ564
Credit Points	6

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.

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IFN591 Principles of User Experience

Pre-requisites	IFN500 or (IFN552 and IFN558) or (IFQ552 and IFQ558) or Admission to IN15, IN16 or IN17
Equivalents	IFQ591
Credit Points	12

User Experience (UX) describes how we engage with technology, including how we use, feel, think, and talk about it. It is widely recognized as a key success factor for digital technologies and services that shape how we live, work, socialize, learn, play, and manage our health. In this introduction to User Experience you will learn methods and theories to understand and characterize what experiences matter to people, to generate ideas and create prototypes, and to evaluate the experiences that people have with technology prototypes. Understanding how to create positive experiences with digital technologies will give students an edge in the market place for jobs as user experience professionals, IT developers, and

interaction designers.

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IFN619 Data Analytics for Strategic Decision Makers

Pre-requisites	IFN501 or (IFN555 and IFN556) or (IFQ555 and IFQ556) or IFN503 or (IFN551 and IFN553) or (IFQ551 and IFQ553) or Admission to IN14 or IQ14 or IN23 or IN26 or IN27
Equivalents	IFQ619
Credit Points	12

This unit offers students a practical introduction to the field of data analytics, and its application to making decisions. Students will learn common methods for quantitative and computational 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 the right questions and solving related problems which are driven from the business/organisational perspective. Students will work with both structured and unstructured data, and will be encouraged to work with open data to address real-life problems in ways that align with ethical principles and good data governance.

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IFN623 Human Information Interaction

Pre-requisites	IFN502 or (IFN552 and IFN558) or (IFQ552 and IFQ558) or IFN554 or IFQ554 or Admission to IN14 or IN23
Credit Points	12

Humans usually interact with and retrieve 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 information. The foundation of this unit is an understanding how humans process information from the viewpoint of cognitive psychology. This understanding will be translated into conceptual frameworks and associated design principles for creating effective interactions. This grounding is then mapped to contemporary technological solutions (e.g. conversational agents) which are used to augment human intelligence in highly interactive contexts. Methods to evaluate and critique both interaction effectiveness and implications for society will therefore also be covered in detail.

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IFN631 IT Governance

Pre-requisites	IFN500 or (IFN552 and IFN558) or (IFQ552 and IFQ558) or IFN502 or Admission to IN14
Credit Points	12

This is a foundational executive Information Technology (IT) unit addressing 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 successful adoption of 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. This unit builds on IFN528 Management of Information Systems, which introduces you to a foundational understanding of information systems and their role in transforming organizations.

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IFN644 Network Operations and Security

Pre-requisites	IFN507 or IFQ507
Credit Points	12

Modern corporate networks face a number of challenges, amongst which possibly the most severe are deliberate attacks by a number of actors. This unit focuses on building networks designed for security. You will learn the theory and practice of building, securing, monitoring and repairing corporate networks, including core network functions and services such as routing, DNS, web, and email. There are two main components of the unit: lectures and written assignments covering the principles involved, and practical assignments in which you will build your own miniature corporate network using free open source software on virtual servers. You will also connect your network to those of other students, defend your network against attacks, and attack other networks.

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IFN645 Large Scale Data Mining

Pre-requisites	IFN509 or IFQ509
Equivalents	INN342
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 data mining algorithms that scale to large datasets. This unit will expand on the material presented in earlier data mining units and students will use their programming knowledge to implement data mining algorithms in high-performance computing environments.

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IFN646 Biomedical Data Science

Pre-requisites	IFN509 or IFQ509
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, buildingon what you have learned in IFN509.

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IFN647 Text, Web and Media Analytics

Pre-requisites	IFN509 or IFQ509
Equivalents	CAB431
Credit Points	12

This unit provides an understanding of the principles and techniques underlying the development of Text, Web and social media analysis solutions to some of the varied and complex problems that involve big data. It covers data preprocessing techniques to represent and analyse text, web and social media data. It includes text classification, text clustering and topic modelling methods to understand the text data. It includes web log, structure and content mining to better organise and retrieve data from websites. It teaches you the methods of social network analysis dealing with both the structural and content information embedded within these networks such as sentiment mining, review analysis, etc. This unit is motivated by the ubiquity of unstructured big data in text, Web and social data for which it provides to future professionals and researchers in computer science and data science complimentary approaches to traditional systems

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IFN648 Applied Cryptography

Pre-requisites	IFN541, IFQ541 or IFN511. IFN541 may be studied in the same teaching period as IFN648.
Anti-requisites	CAB340, IFN642
Credit Points	12

This advanced unit will provide an in-depth understanding of cryptographic algorithms and their applications. Cryptographic algorithms enable practical security services such as confidentiality and integrity assurance for stored or transmitted data, and authentication of entities. As a society, we are increasingly dependent on electronic systems, often interconnected, for storage and transmission of information. However, there are many threats to the security of information. This unit will explore the application of modern cryptographic techniques to protect information in a range of situations, and also provide an understanding of their limitations. This unit follows IFN553 Introduction to Security, and IFN541 Information SecurityManagement, and is a more detailed examination of a particular set of control mechanisms that make use of mathematical and analytical algorithms to protect information assets.

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IFN649 Advanced Networks

Pre-requisites	IFN507 or IFQ507
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, DHCP and DNS. 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 you to 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 increased uptake of process automation/workflow technology that 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 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 and IFN556
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.

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IFN657 Principles of Software Security

Pre-requisites	IFN501 or (IFN555 and IFN556) or (IFQ555 and IFQ556) or IFN503 or (IFN551 and IFN553) or (IFQ551 and IFQ553) or Admission to IN15 or IN16
Equivalents	IFQ657
Credit Points	12

Many security vulnerabilities and threats arise at the software level. 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 unit provides an overall understanding of software security from a programming perspective in a security context, with the aim of improving your ability in designing, implementing and analysing security-critical programs. In this unit, you will learn about secure programming techniques that can be used to detect vulnerabilities in software and defend against attacks such as buffer overflows, SQL injection and cross-site scripting. The module also covers common mistakes made in using programming languages, libraries and frameworks, and how they can be avoided.

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IFN662 Enterprise Systems and Applications

Pre-requisites	IFN504, IFN561 or IFQ561 or Admission to IN14
Equivalents	INN312
Credit Points	12

This unit offers an introduction to enterprise systems. It covers core concepts about planning and implementation, main processes and data structures in an enterprise system and the theoretical. You will explore practical guidance on best practices in systems configuration, following SAP Enterprise Systems modules: financials (FI), controlling (CO), materials management (MM), sales and distribution (S&D) and production planning and control (PP). These core modules will also provide an overview of the fundamentals and capabilities of an Enterprise System. This unit is in the development stage of your course and builds on the work you learnt in Corporate Information Systems. It will provide some fundamental knowledge of the business processes that would be useful in Advanced Process Modelling or Business Process Case Studies.

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IFN663 Advanced Enterprise Architecture

Credit Points	12

IFN663 is an advanced unit on Enterprise Architecture (EA). The unit looks into the ways in which business and IT systems are planned using modelling techniques. It introduces how business and IT aligns and supports the scoping of IT solution architectures of individual systems and principles of enterprise architecture. It covers how to develop a multi-layered EA based on state-of-the-art modelling techniques in TOGAF Archimate and UML and provides skills for IT professional and senior roles. The unit builds upon pre-requisite knowledge from IFN500 Design Thinking for IT. Units such as IFN662 Enterprise Systems and Applications are highly related to this unit.

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IFN664 Advanced Algorithms and Computational Complexity

Pre-requisites	IFN505 or (IFN563 and IFN564) or (IFQ563 and IFQ564)
Credit Points	12

This unit builds on the intermediate level Data Structures and Algorithms unit, progressing to advanced graduate level topics in data structures, algorithms and complexity analysis that would not normally be seen in an undergraduate curriculum. 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 computational complexity 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.

View unit details online | View unit timetable

IFN665 Advanced Topic 1

Pre-requisites	IFN600
Credit Points	12

This advanced level unit offers the opportunity to undertake an in-depth examination of an advanced topic to acquire expertise in a discipline area. The skills gained in this unit are developed and refined through activities relevant to the discipline and topic. Such skills are essential to effectively take your place as an emerging expert in your discipline area.

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IFN666 Web and Mobile Application Development

Pre-requisites	IFN501 or (IFN555 and IFN556) or (IFQ555 and IFQ556)
Anti-requisites	CAB230
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.

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IFN667 Enterprise IoT Systems

Pre-requisites	IFN504 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 students with technological expertise in IoT-enabled enterprise systems which supports the integration of business operations and real-time resource management. Students 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 builds on IFN561 Enterprise Systems Lifecycle Management and focuses on IoT technologies transforming modern enterprise systems.

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IFN680 Artificial Intelligence and Machine Learning

Pre-requisites	IFN509 or IFQ509
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 artificial intelligence and machine learning solutions that can effectively and efficiently solve complex problems which traditional approaches often fail to handle. 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. It is important for information technology professionals to understand the concepts and techniques for building intelligent systems. This unit is to provide you with an understanding of the principles and basic techniques to develop .....

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IFN690 Advanced User Centred Design

Credit Points	12

Theories and frameworks help us to understand how people interact with computers and devices and with other people. In particular, theories that are well grounded in studies of the contexts and cultures of human interaction give us ideas for how to design for those contexts and cultures. This unit introduces various theories and frameworks of human-computer interaction and recognizes the significance of theory for designing human-computer interaction. You will critically discuss and evaluate human-computer interaction theories. You will establish a reflective practice of observation, questioning, design intervention and evaluation. This practice will support you to use human-computer interaction theories in the workplace to support effective work and to guide effective user-centred design and research.

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IFN692 Interaction Design for Emerging Technologies

Pre-requisites	IFN591 or IFQ591 or IGB283 or IFN556 or IFQ556
Credit Points	12

In IFN692 you will learn how to use Interaction Design to imagine, prototype, evaluate, and critique Future and Emerging Technologies such as the Internet of Things, Augmented and Virtual Reality, Artificial Intelligence, Machine Learning, and Social Robotics. 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 IFN591 – 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 emerging technologies in a realistic setting.

View unit details online | View unit timetable

IFN711 IT Industry Project

Pre-requisites	Completion of 96cp from MIT or (Admission to IN23 and Completion of 48cp)
Anti-requisites	IFN702
Credit Points	24

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.

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IFN712 Research in IT Practice

Pre-requisites	Completion of 96cp from MIT or (Admission to IN23 and Completion of 48cp)
Anti-requisites	IFN701
Credit Points	24

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.

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MGN565 Consulting and Change Management

Pre-requisites	24 credit points of completed study
Equivalents	MGZ505 MGN505
Credit Points	12

Technological shifts, social change, uncertain economic conditions, and the emergence of new business models have created a highly competitive and dynamic business environment. In this new era, the effective management of change has become essential for sustained organisational success and has become an essential competency for management professionals. In this unit you will explore the complexities of change management, develop practical competencies in planning organisational change and the use of change management technologies. Upon completion of this unit, you will be equipped with practical tools and road maps for managing organisational change.

View unit details online | View unit timetable