

MASTER OF INFORMATION AND COMMUNICATIONS TECHNOLOGY/MASTER OF DATA SCIENCE (3780)

Western Sydney University Program Code: 3780

AQF Level: 9

This program applies to students who commenced in 2021 or later.

Data and Computation are the cornerstone of most jobs in this Digital Age. The Master of Information and Communications Technology / Master of Data Science (MICT / MDS) double degree provides course graduates with a mastery of both the ICT and Data Science disciplines, and also the breadth of knowledge from other select areas, allowing graduates to advance their career or open new avenues. With a strong practical focus, graduates of this course will be equipped with established theories, recent state-of-the-art developments and the work experience required to operate effectively in our information technology and data driven world. Students will be required to complete a work experience component and may choose a major, in addition to a number of core and elective subjects.

Early Exit

Students may exit this program on completion of 40 credit points with a 3751 Graduate Certificate in Data Science (<https://hbook.westernsydney.edu.au/archives/2021-2022/programs/graduate-certificate-data-science/>) or on completion of 80 credit points with a 3701 Graduate Certificate in Information and Communications Technology (<https://hbook.westernsydney.edu.au/archives/2021-2022/programs/graduate-certificate-information-communications-technology/>) or a 3750 Graduate Diploma in Data Science (<https://hbook.westernsydney.edu.au/archives/2021-2022/programs/graduate-diploma-data-science/>) or on completion of 120 credit points with a 3700 Graduate Diploma in Information and Communications Technology (<https://hbook.westernsydney.edu.au/archives/2021-2022/programs/graduate-diploma-information-communications-technology/>)

Study Mode

Three years full-time or six years part-time.

Program Advice

Program Advice (CDMS@westernsydney.edu.au)

Prospective students should visit the following websites for general enquiries about this program.

Enquire about this program (<https://enquiry.westernsydney.edu.au/courseenquiry/>) | Local Admission (<https://www.westernsydney.edu.au/future/>) | International Admission (<https://www.westernsydney.edu.au/international/home/apply/admissions/>) |

Location

Campus	Attendance	Mode	Advice
Parramatta Campus - Victoria Road	Full Time	Internal	See above
Parramatta Campus - Victoria Road	Part Time	Internal	See above

Accreditation

Professional accreditation with the Australian Computer Society (ACS) at Professional Level will be sought for this course.

Work Integrated Learning

Western Sydney University seeks to enhance student learning experiences by enabling students to engage in the culture, expectations and practices of their profession or discipline. This program includes a placement or other community-based unpaid practical experience.

There is a mandatory work component required for completion of this program. Please contact the Program Advisor listed above for information.

International students should also refer to the link below for more information and a link to the Commonwealth Register of Institutions and Courses for Overseas Students (CRICOS).

Work Integrated Learning (WIL) for international students (https://www.westernsydney.edu.au/currentstudents/current_students/services_and_facilities/international_student_support/working_in_australia/work_integrated_learning/)

Admission

This course has three Pathways (A, B and C) that vary in length and structure based on previous study.

Pathway A

Applicants must have successfully completed an undergraduate degree in a discipline other than computing, ICT or information systems.

Pathway B

Applicants must have successfully completed a Bachelors Honours or a Master qualification in a discipline other than computing, ICT or information systems.

Pathway C

Applicants must have successfully completed an undergraduate degree or higher in computing, ICT or information systems.

Additional information

Applicants seeking admission on the basis of work experience must support their application with a Statement of Service for all work experience listed on the application.

Statement of Service form (https://www.westernsydney.edu.au/content/dam/digital/pdf/Statement_of_Service.PDF)

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC). Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local and International applicants who are applying through the Universities Admissions Centre (UAC) will find details of minimum English proficiency requirements and acceptable proof on the UAC website. Local applicants applying directly to the University should also use the information provided on the UAC website.

<http://www.uac.edu.au/>
<https://westernsydney.uac.edu.au/ws/>

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and Western Sydney University.

Program Structure

The program length and structure varies based on the student's previous study background and level, and work experience.

Students are categorised into three Pathways based on their previous study background and work experience as indicated below and course structure and length is set accordingly. See individual sections for detailed program structure.

Recommended Sequence

Pathway A - Three years

Students who have been admitted with an undergraduate degree in a discipline other than computing, ICT or information systems are eligible to complete the three year Pathway below.

Master of Communications Technology/Master of Data Science - Pathway A - 3 year program

Qualification for this award requires the successful completion of 240 credit points which include twenty core subjects and five alternate subjects

Full-time start-year intake

Course	Title	Credit Points
Year 1		
Autumn session		
COMP 7024	Programming for Data Science	10
MATH 7016	The Nature of Data	10
ENGR 7017	Professional Practice and Communication	10
INFS 7007	Systems Analysis and Database Management Systems	10
Credit Points		40
Spring session		
COMP 7006	Data Science	10
COMP 7023	Predictive Analytics	10
COMP 7015	Programming Proficiency	10
COMP 7013	Network Technologies	10
Credit Points		40
Year 2		
Autumn session		
COMP 7003	Big Data	10
COMP 7016	Visualisation	10
INFO 7003	Advanced Topics in User System Interaction	10
NATS 7057	Research Preparation in Post Graduate Studies	10
Credit Points		40
Spring session		
INFO 7001	Advanced Machine Learning	10
MATH 7002	Advanced Statistical Methods	10
INFO 7005	IT Project Management	10
Select one subject from Foundation, Specialised or Multi-disciplinary subject lists		10
Credit Points		40

Year 3

Autumn session

INFO 7016	Postgraduate Project A	10
COMP 7025	Social Media Intelligence	10
MATH 7017	Probabilistic Graphical Models	10
Select one subject from Foundation, Specialised or Multi-disciplinary subject lists		10
Credit Points		40

Spring session

INFO 7017	Postgraduate Project B	10
Select three subjects from Foundation, Specialised or Multi-disciplinary subject lists		30
Credit Points		40
Total Credit Points		240

Full-time mid-year intake

Course	Title	Credit Points
Year 1		
Spring session		
MATH 7016	The Nature of Data	10
COMP 7024	Programming for Data Science	10
INFS 7007	Systems Analysis and Database Management Systems	10
ENGR 7017	Professional Practice and Communication	10
Credit Points		40
Autumn session		
COMP 7016	Visualisation	10
COMP 7015	Programming Proficiency	10
INFO 7003	Advanced Topics in User System Interaction	10
Select one subject from Foundation, Specialised or Multi-disciplinary subject lists		10
Credit Points		40
Year 2		
Spring session		
COMP 7006	Data Science	10
INFO 7005	IT Project Management	10
COMP 7023	Predictive Analytics	10
COMP 7013	Network Technologies	10
Credit Points		40
Autumn session		
COMP 7003	Big Data	10
COMP 7025	Social Media Intelligence	10
NATS 7057	Research Preparation in Post Graduate Studies	10
Select one subject from Foundation, Specialised or Multi-disciplinary subject lists		10
Credit Points		40
Year 3		
Spring session		
MATH 7002	Advanced Statistical Methods	10
INFO 7001	Advanced Machine Learning	10
INFO 7016	Postgraduate Project A	10
Select one subject from Foundation, Specialised or Multi-disciplinary subject lists		10
Credit Points		40

Autumn session

MATH 7017	Probabilistic Graphical Models	10
INFO 7017	Postgraduate Project B	10
Select two subjects from Foundation, Specialised or Multi-disciplinary subject lists		20
Credit Points		40
Total Credit Points		240

Students may also complete one of the listed majors below.

Artificial Intelligence, Testamur Major (<https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/artificial-intelligence-pg-testamur-major/>)

Cloud and Distributed Computing, Testamur Major (<https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/cloud-distributed-computing-pg-testamur-major/>)

Cybersecurity, Testamur Major (<https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/cybersecurity-pg-testamur-major/>)

Digital Futures, Testamur Major (<https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/digital-futures-pg-testamur-major/>)

Health Informatics, Testamur Major (<https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/health-informatics-pg-testamur-major/>)

Information Governance, Testamur Major (<https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/information-governance-pg-testamur-major/>)

Innovation and Entrepreneurship, Testamur Major (<https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/innovation-entrepreneurship-pg-testamur-major/>)

Management, Testamur Major (<https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/management-ug-pg-testamur-major/>)

Networking, Testamur Major (<https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/networking-pg-testamur-major/>)

Space Science, Testamur Major (<https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/space-science-testamur-major/>)

Web and Mobile Computing, Testamur Major (<https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/web-mobile-computing-pg-testamur-major/>)

Equivalent Subjects

The subjects listed below count towards completion of this program for students who passed these subjects in 2021 or earlier.

MATH 7011 Predictive Analytics, replaced by COMP 7023 Predictive Analytics
 MATH 7012 Programming for Data Science, replaced by COMP 7024 Programming for Data Science
 MATH 7014 Social Media Intelligence, replaced by COMP 7025 Social Media Intelligence

Pathway B - Two and a half years

Students who have been admitted with an Bachelors Honours or a Master qualification in a discipline other than computing, ICT or information systems are eligible to complete the two and a half year Pathway below.

Master of Information and Communication Technology/Master of Data Science - Pathway B - 2.5 Year program

Qualification for this award requires the successful completion of 200 credit points which include twenty core subjects and one alternate subject

Full-time start-year intake

Course	Title	Credit Points
Year 1		
Autumn session		
COMP 7024	Programming for Data Science	10
MATH 7016	The Nature of Data	10
ENGR 7017	Professional Practice and Communication	10
INFS 7007	Systems Analysis and Database Management Systems	10
Credit Points		40
Spring session		
COMP 7006	Data Science	10
COMP 7023	Predictive Analytics	10
COMP 7015	Programming Proficiency	10
COMP 7013	Network Technologies	10
Credit Points		40
Year 2		
Autumn session		
COMP 7003	Big Data	10
COMP 7016	Visualisation	10
INFO 7003	Advanced Topics in User System Interaction	10
NATS 7057	Research Preparation in Post Graduate Studies	10
Credit Points		40
Spring session		
INFO 7001	Advanced Machine Learning	10
MATH 7002	Advanced Statistical Methods	10
INFO 7005	IT Project Management	10
INFO 7016	Postgraduate Project A	10
Credit Points		40
Year 3		
Autumn session		
COMP 7025	Social Media Intelligence	10
MATH 7017	Probabilistic Graphical Models	10
INFO 7017	Postgraduate Project B	10
Select one subject from Foundation, Specialised or Multi-disciplinary subject lists		10
Credit Points		40
Total Credit Points		200

Full-time mid-year intake

Course	Title	Credit Points
Year 1		
Spring session		
MATH 7016	The Nature of Data	10
COMP 7024	Programming for Data Science	10
INFS 7007	Systems Analysis and Database Management Systems	10

ENGR 7017	Professional Practice and Communication	10
Credit Points		40
Autumn session		
COMP 7016	Visualisation	10
COMP 7015	Programming Proficiency	10
INFO 7003	Advanced Topics in User System Interaction	10
NATS 7057	Research Preparation in Post Graduate Studies	10
Credit Points		40
Year 2		
Spring session		
COMP 7006	Data Science	10
INFO 7005	IT Project Management	10
COMP 7023	Predictive Analytics	10
COMP 7013	Network Technologies	10
Credit Points		40
Autumn session		
COMP 7003	Big Data	10
MATH 7017	Probabilistic Graphical Models	10
COMP 7025	Social Media Intelligence	10
INFO 7016	Postgraduate Project A	10
Credit Points		40
Year 3		
Spring session		
MATH 7002	Advanced Statistical Methods	10
INFO 7001	Advanced Machine Learning	10
INFO 7017	Postgraduate Project B	10
Select one subject from Foundation, Specialised or Multi-disciplinary subject lists		10
Credit Points		40
Total Credit Points		200

Equivalent Subjects

The subjects listed below count towards completion of this program for students who passed these subjects in 2021 or earlier.

MATH 7011 Predictive Analytics, replaced by COMP 7023 Predictive Analytics

Pathway C - Two and a half years

Students who have been admitted with an undergraduate degree or higher in computing, ICT or information systems are eligible to complete the two and a half year Pathway below.

Master of Communications Technology/Master of Data Science - Pathway C -2.5 yr program

Qualification for this award requires the successful completion of 200 credit points which include seventeen core subjects and four alternate subjects

Course	Title	Credit Points
Year 1		
Autumn session		
COMP 7024	Programming for Data Science	10
MATH 7016	The Nature of Data	10
COMP 7013	Network Technologies	10

ENGR 7017	Professional Practice and Communication	10
Credit Points		40
Spring session		
COMP 7006	Data Science	10
COMP 7023	Predictive Analytics	10
INFO 7005	IT Project Management	10
NATS 7057	Research Preparation in Post Graduate Studies	10
Credit Points		40
Year 2		
Autumn session		
COMP 7003	Big Data	10
COMP 7016	Visualisation	10
COMP 7025	Social Media Intelligence	10
Select one subject from Foundation, Specialised or Multi-disciplinary subject lists		10
Credit Points		40
Spring session		
INFO 7001	Advanced Machine Learning	10
MATH 7002	Advanced Statistical Methods	10
INFO 7016	Postgraduate Project A	10
Select one subject from Foundation, Specialised or Multi-disciplinary subject lists		10
Credit Points		40
Year 3		
Autumn session		
MATH 7017	Probabilistic Graphical Models	10
INFO 7017	Postgraduate Project B	10
Select two subjects from Foundation, Specialised or Multi-disciplinary subject lists		20
Credit Points		40
Total Credit Points		200

Equivalent Subjects

The subjects listed below count towards completion of this program for students who passed these subjects in 2021 or earlier.

MATH 7011 Predictive Analytics, replaced by COMP 7023 Predictive Analytics

Additional Completion Requirements

Students must complete a four week full-time or part-time equivalent industry placement as a Work Integrated Learning (WIL) component and must enrol in the ICT Practicum unit to receive recognition for WIL.

INFO 7004 ICT Practicum

Foundation Subjects

Note: Subjects in this list may be included in the program structure as Core Subjects and cannot be selected as one of the list subjects

Subject	Title	Credit Points
INFO 7003	Advanced Topics in User System Interaction	10
INFS 7004	Content Management Systems and Web Analytics	10
INFO 7005	IT Project Management	10
COMP 7013	Network Technologies	10
ENGR 7017	Professional Practice and Communication	10

COMP 7015	Programming Proficiency	10	COMM 7013	Ideate, Develop: Makerspace 1	10
NATS 7057	Research Preparation in Post Graduate Studies	10	BUSM 7072	New Venture Finance	10
INFS 7008	Systems and Network Security	10	COMM 7011	Researching Convergent Media	10
INFS 7007	Systems Analysis and Database Management Systems	10	BUSM 7084	Start-up	10
INFS 7009	Web Technologies	10	BUSM 7086	Strategic Business Management	10
			BUSM 7099	Understanding Contemporary Organisations	10

Specialised Subjects

Note: Subjects in this list may be included in the course structure as Core Subjects and cannot be selected as one of the list subjects.

Subject	Title	Credit Points
COMP 7018	Advanced Cloud Computing	10
PUBH 7001	Advanced Health Classifications and Coding	10
INFS 7001	Advanced Healthcare Data Environments	10
INFS 7002	Advanced Healthcare Software and Systems	10
INFO 7001	Advanced Machine Learning	10
INFO 7002	Advanced Topics in Artificial Intelligence	10
INFO 7014	Advanced Topics in Cybersecurity	10
INFS 7003	Advanced Topics in ICT	10
COMP 7002	Advanced Topics in Networking	10
INFO 7015	Applied Cybersecurity	10
COMP 7019	Applied Machine Learning	10
COMP 7020	Artificial Intelligence Ethics and Organisations	10
COMP 7004	Cloud Computing	10
INFO 7018	Cloud Systems Development	10
COMP 7007	Information Security Management	10
COMP 7008	Internet of Things	10
COMP 7021	Knowledge Representation and Reasoning	10
COMP 7009	Mobile Computing	10
COMP 7011	Multimedia Communication Systems	10
COMP 7022	Natural Language Understanding	10
COMP 7012	Network Management	10
INFO 7017	Postgraduate Project B	10
INFS 7006	Software Testing and Automation	10
INFO 7013	Web Engineering	10
COMP 7017	Wireless Networking	10

Multi-disciplinary Subjects

A maximum of four subjects are allowed from this list.

Subject	Title	Credit Points
BUSM 7018	Contemporary People Management	10
HUMN 7012	Cyber Justice (PG)	10
ECON 7001	Economics	10
BUSM 7028	Entrepreneurial Management Capabilities	10
ACCT 7015	Financial Reports for Decision Making	10
COMM 7003	Foundations of Media Arts Production (PG)	10
CULT 7004	Global Digital Futures	10
BUSM 7040	Governance, Ethics and Social Entrepreneurship	10
LAWS 7015	Information and Data Governance Law and Policy	10
BUSM 7048	Innovation, Creativity and Foresight	10
BUSM 7046	Innovation for New Markets	10
BUSM 7045	Innovation Through Digital Technology	10
MKTG 7019	Marketing Systems	10
COMM 7009	Mobile Media	10

Replaced Subjects

The subjects listed below count towards completion of this program for students who passed these subjects in 2021 or earlier.

ENRG 7018 - Research Preparation in Post Graduate Studies, replaced by NATS 7057 Research Preparation in Post Graduate Studies

COMM 7007 - Media Project Proposal, replaced by COMM 7013 Ideate, Develop: Makerspace 1