

MASTER OF DATA ENGINEERING (3802)

Western Sydney University Program Code: 3802

AQF Level: 9

CRICOS Code: 114849C

This program applies to students who commenced in Spring 2024 or later.

The Master of Data Engineering offers students comprehensive training in data infrastructure design, construction, and maintenance. With a blend of theoretical study and hands-on projects, students cultivate technical prowess and problem-solving aptitude for intricate data issues in diverse sectors. Industry involvement is stressed, facilitating collaborations with professionals for real-world experience. Graduates of this program will have the opportunity for careers in technology, finance, healthcare, e-commerce, and consulting domains, where data engineering is pivotal for insights' extraction.

Early Exits

Students may exit this program on completion of 40 credit points with a Graduate Certificate in Data Science (3751) (<https://hbook.westernsydney.edu.au/archives/2024-2025/programs/graduate-certificate-data-science/#text>) or on completion of 80 credit points with a Graduate Diploma in Data Science (3750) (<https://hbook.westernsydney.edu.au/archives/2024-2025/programs/graduate-diploma-data-science/#text>).

Study Mode

Two years full-time or four 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 - Victoria Road	Full Time	Internal	See above
Parramatta - Victoria Road	Part Time	Internal	See above
Surabaya Campus Indonesia	Full Time	Internal	See above

Work Integrated Learning

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.

Applicants must have successfully completed an undergraduate degree, or higher, in any discipline.

Additional Information

Previous experience of statistics or computer programming will be an advantage but is not essential.

Applicants with the following may be eligible to receive credit for prior learning up to 80 credit points:

- an undergraduate degree in data science and 2 years full-time equivalent managerial / professional work experience in roles relating to data science, machine learning, statistician, data analyst or associated roles

OR

- a graduate certificate, or higher, in data science.

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 may be made via the Universities Admissions Centre (UAC) or directly through the Western Portal. Use the links below to apply via UAC or Western Sydney University. Applications made directly to Western Sydney do not have an application fee.

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

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Local 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/>

All other International applicants must apply directly to the University via the International Office.

International students applying to the University through the International Office can find details of minimum English proficiency requirements and acceptable proof on their website.

International Office (<http://www.westernsydney.edu.au/international/>)

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 Sequence 2025

This sequence applies to students who commenced in Autumn 2025 or later.

Qualification for this award requires the successful completion of 160 credit points which include the subjects listed in the recommended sequence below.

Start Year Intake

Course	Title	Credit Points	INFO 6003	Postgraduate Research Project	10
	Select one elective				10
			Credit Points		40
Total Credit Points					160

Year 1**Autumn session**

MATH 7016	The Nature of Data	10
COMP 7024	Programming for Data Science	10
COMP 7003	Big Data	10
COMP 7016	Visualisation	10
	Credit Points	40

Spring session

COMP 7023	Predictive Analytics	10
ENGR 7017	Professional Practice and Communication	10
INFS 7007	Systems Analysis and Database Management Systems	10
COMP 7026	Data Engineering Fundamentals	10
	Credit Points	40

Year 2**Autumn session**

COMP 7004	Cloud Computing	10
COMP 7027	Advanced Data Engineering	10
Select two electives		20
	Credit Points	40
	Total Credit Points	160

Spring session

INFO 6001	IT Project Management	10
INFO 6003	Postgraduate Research Project	10
Select two electives		20
	Credit Points	40
	Total Credit Points	160

Mid-year Intake

Course	Title	Credit Points	COMP 7024	Programming for Data Science	10
			ENGR 7017	Professional Practice and Communication	10
			INFS 7007	Systems Analysis and Database Management Systems	10
			COMP 7026	Data Engineering Fundamentals	10
			MATH 7016	The Nature of Data	10

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 7003	Big Data	10
COMP 7016	Visualisation	10
Select two electives		20
	Credit Points	40
	Total Credit Points	160

Year 2**Spring session**

INFO 6001	IT Project Management	10
COMP 7023	Predictive Analytics	10
COMP 7026	Data Engineering Fundamentals	10
Select one elective		10
	Credit Points	40

Autumn session

COMP 7027	Advanced Data Engineering	10
COMP 7004	Cloud Computing	10

Surabaya Campus Indonesia

This program sequence for Surabaya students ONLY and will apply from September 2025.

Course	Title	Credit Points

Year 1

Semester 1			
COMP 7024	Programming for Data Science	10	
ENGR 7017	Professional Practice and Communication	10	
INFS 7007	Systems Analysis and Database Management Systems	10	
MATH 7016	The Nature of Data	10	

Semester 2			
COMP 7003	Big Data	10	
COMP 7016	Visualisation	10	
COMP 7026	Data Engineering Fundamentals	10	
COMP 7004	Cloud Computing	10	

Credit Points			
			80

Year 2

Semester 3			
COMP 7019	Applied Machine Learning	10	
COMP 7023	Predictive Analytics	10	
COMP 7027	Advanced Data Engineering	10	
INFO 6001	IT Project Management	10	

Credit Points			
			80

Total Credit Points			
			160

Elective Spaces

Students may select their electives from any program offered by the university, provided any requisite requirements are met. Elective subjects must be at Postgraduate Level.

Students may use their elective subjects towards obtaining one of the approved Majors. Alternatively, students may use their elective subjects towards completing 40 credit points from one of the following Master of Business Administration AACSB approved Majors.

Artificial Intelligence, Testamur Major (T002) (<https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/artificial-intelligence-pg-testamur-major/>)

Cybersecurity, Testamur Major (T003) (<https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/cybersecurity-pg-testamur-major/>)

Digital Health, Testamur Major (T089) (<https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/digital-health-testamur-major/>)

Finance, Major (0226) (<https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/finance-pg-major/>)

Health Informatics, Testamur Major (T007) (<https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/health-informatics-pg-testamur-major/>)

Health Science Modelling and Research, Testamur Major (T141) (<https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/health-science-modelling-research-testamur-major/>)

Information and Communications Technology, Major (0232) (<https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/information-communications-technology-pg-major/>)

Innovation and Entrepreneurship, Major (0038) (<https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/innovation-entrepreneurship-pg-major/>)

Logistics and Supply Chain Management, Major (0235) (<https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/logistics-supply-chain-management-pg-major/>)

Management, Major (0136) (<https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/management-pg-major/>)

Marketing, Major (0137) (<https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/marketing-pg-major/>)

Public Health, Testamur Major (T021) (<https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/public-health-ug-testamur-major/>)

Space Science, Testamur Major (T030) (<https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/space-science-testamur-major/>)

Program Sequence 2024

This sequence applies to students who commenced in Spring 2024.

Qualification for this award requires the successful completion of 160 credit points which include the subjects listed in the recommended sequence below.

Start Year Intake

Course	Title	Credit Points
Year 1		
Autumn session		
MATH 7016	The Nature of Data	10
COMP 7024	Programming for Data Science	10
COMP 7003	Big Data	10
COMP 7016	Visualisation	10
	Credit Points	40
Spring session		
COMP 7023	Predictive Analytics	10
ENGR 7017	Professional Practice and Communication	10
INFS 7007	Systems Analysis and Database Management Systems	10
Select one elective		10
	Credit Points	40
Year 2		
Autumn session		
COMP 7004	Cloud Computing	10
INFO 6003	Postgraduate Research Project	10
Select two electives		20
	Credit Points	40
Total Credit Points		
160		

Select one elective	10
Credit Points	40
Total Credit Points	160

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 7003	Big Data	10
COMP 7016	Visualisation	10
COMP 7026	Data Engineering Fundamentals	10
Select one elective		10
	Credit Points	40
Year 2		
Spring session		
INFO 6001	IT Project Management	10
COMP 7023	Predictive Analytics	10
COMP 7027	Advanced Data Engineering	10
Select one elective		10
	Credit Points	40
Autumn session		
COMP 7004	Cloud Computing	10
INFO 6003	Postgraduate Research Project	10
Select two electives		20
	Credit Points	40
Total Credit Points		
160		
Majors		
Artificial Intelligence, Testamur Major (T002) (https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/artificial-intelligence-pg-testamur-major/)		
Cybersecurity, Testamur Major (T003) (https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/cybersecurity-pg-testamur-major/)		
Digital Health, Testamur Major (T089) (https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/digital-health-testamur-major/)		
Finance, Major (0226) (https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/finance-pg-major/)		
Health Informatics, Testamur Major (T007) (https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/health-informatics-pg-testamur-major/)		
Health Science Modelling and Research, Testamur Major (T141) (https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/health-science-modelling-research-testamur-major/)		
Information and Communications Technology, Major (0232) (https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/information-communications-technology-pg-major/)		
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Management, Major (0136) (<https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/management-pg-major/>)

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Space Science, Testamur Major (T030) (<https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/space-science-testamur-major/>)