BACHELOR OF DATA SCIENCE (3769)

Approved Abbreviation: BDataSc
Western Sydney University Program Code: 3769

CRICOS Code: 089203J

This program applies to students who commenced in 2022 or later.

Students should follow the program structure for the session start date relevant to the year they commenced.

For commencement year 2021, please refer to: 3769.1 Bachelor of Data Science (http://handbook.westernsydney.edu.au/hbook/course.aspx?course=3769.1)

Data is ubiquitous in this digital age and plays an important role in all careers. A Data Scientist has the required expertise to convert all forms of data into valuable information. This degree equips its graduates with the skills and knowledge for designing experimental studies, building and fitting models for analysis, visualisation, estimation and prediction, machine learning for prediction, analysis of complex data relationships, storage and retrieval of big data. These skills are essential for the analysis of customer transactions and behaviour, scientific investigations, financial trends, and online behaviour.

Study Mode

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

Program Advice

Dr Gizem Intepe (g.intepe@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
Surabaya Campus Indonesia	Full Time	Internal	See above

Accreditation

Australian Computer Society accreditation for the Surabaya Campus offering will be sought.

Admission

Assumed Knowledge: HSC Mathematics Advanced and any two units of HSC English.

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.

International students currently completing an Australian Year 12 in or outside Australia, an International Baccalaureate in Australia or a New Zealand National Certificate of Educational Achievement (NCEA) level 3 must apply via UAC International.

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.

Qualification for this award requires the completion of 240 credit points.

Students must complete 160 credit points of core units listed in the recommended sequence below.

Additionally, students must complete

- one major from the list below, OR
- two minors from the list below, OR
- one minor from the list below AND 40 credit points of electives

Students at Surabaya Campus, Indonesia please refer to the program sequence below for your program requirements.

Recommended sequence

Full-time start-year intake

Course	Title	Credit Points
Year 1		
Autumn session		
NATS 1019	Scientific Literacy	10
COMP 1014	Thinking About Data	10
MATH 1006	Discrete Mathematics	10
COMP 1005	Programming Fundamentals	10
	Credit Points	**40**
Spring session		
MATH 1014	Mathematics 1A	10
COMP 2025	Introduction to Data Science	10
Select two major, minor or elective subjects		20
	Credit Points	**40**

Year 2		
Autumn session		
COMP 1013	Analytics Programming	10
COMP 2026	Visual Analytics	10
Select two major, minor or elective subjects		20
	Credit Points	**40**
Spring session		
COMP 3032	Machine Learning	10
INFS 2001	Database Design and Development	10
COMP 3020	Social Web Analytics	10
COMP 2023	Mathematical Programming	10
	Credit Points	**40**
Year 3		
Autumn session		
COMP 3002	Applications of Big Data	10
MATH 3011	Probabilistic Models and Inference	10
INFO 3008	Professional Development	
From Spring 2024 INFO 3008 replaced by INFO 3019		10
INFO 3019	Project Management	
Select one major, minor or elective subjects		10
	Credit Points	**40**
Spring session		
COMP 3035	Discovery Project	10
Select three major, minor or elective subjects		30
	Credit Points	**40**
	Total Credit Points	**240**

Equivalent Subjects

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

MATH 1033 Thinking About Data, replaced by COMP 1014 Thinking About Data

MATH 2009 Introduction to Data Science, replaced by COMP 2025 Introduction to Data Science

MATH 1002 Analytics Programming, replaced by COMP 1013 Analytics Programming

MATH 2014 Visual Analytics, replaced by COMP 2026 Visual Analytics

The subjects listed below count towards completion of this program for students who passed these subjects in 2023 or earlier.

INFO 3008 Professional Development replaced by INFO 3019 Project Management

Full-time mid-year intake

Course	Title	Credit Points
Year 1		
Spring session		
MATH 1014	Mathematics 1A	10
NATS 1019	Scientific Literacy	10
COMP 1005	Programming Fundamentals	10
COMP 1014	Thinking About Data	10
	Credit Points	**40**
Autumn session		
MATH 1006	Discrete Mathematics	10
COMP 1013	Analytics Programming	10
COMP 2026	Visual Analytics	10
Select one major, minor or elective subject		10
	Credit Points	**40**
Year 2		
Spring session		
INFS 2001	Database Design and Development	10
COMP 2023	Mathematical Programming	10
COMP 3032	Machine Learning	10
COMP 2025	Introduction to Data Science	10
	Credit Points	**40**
Autumn session		
COMP 3002	Applications of Big Data	10
MATH 3011	Probabilistic Models and Inference	10
Select two major, minor or elective subjects		20
	Credit Points	**40**
Year 3		
Spring session		
COMP 3020	Social Web Analytics	10
Select three major, minor or elective subjects		30
	Credit Points	**40**
Autumn session		
INFO 3008	Professional Development	
From Spring 2024 INFO 3008 replaced by INFO 3019		10
INFO 3019	Project Management	
COMP 3035	Discovery Project	10
Select two major, minor or elective subjects		20
	Credit Points	**40**
	Total Credit Points	**240**

Equivalent Subjects

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

MATH 1033 Thinking About Data, replaced by COMP 1014 Thinking About Data

MATH 2009 Introduction to Data Science, replaced by COMP 2025 Introduction to Data Science

MATH 1002 Analytics Programming, replaced by COMP 1013 Analytics Programming

MATH 2014 Visual Analytics, replaced by COMP 2026 Visual Analytics

The subjects listed below count towards completion of this program for students who passed these subjects in 2023 or earlier.

INFO 3008 Professional Development replaced by INFO 3019 Project Management

Surabaya Campus Indonesia

Course	Title	Credit Points
Year 1		
Semester 1		
MATH 1014	Mathematics 1A	10
NATS 1019	Scientific Literacy	10
COMP 1005	Programming Fundamentals	10
COMP 1014	Thinking About Data	10
CULT 1030	Pancasila	5
Semester 2		

MATH 1006	Discrete Mathematics	10
COMP 1013	Analytics Programming	10
COMP 2026	Visual Analytics	10
INFO 1003	Professional Practice, Communication and Ethics	10
CULT 1031	Civic Education	5
	Credit Points	**90**
Year 2		
Semester 3		
INFS 2001	Database Design and Development	10
COMP 2023	Mathematical Programming	10
COMP 2025	Introduction to Data Science	10
COMP 2004	Computer Networking	10
LANG 1036	Indonesian Language	5
Semester 4		
COMP 2020	Technologies for Web Applications	10
COMP 3002	Applications of Big Data	10
COMP 3012	Introduction to Cloud Computing	10
PHIL 1008	Religion	5
	Credit Points	**80**
Year 3		
Semester 5		
COMP 3032	Machine Learning	10
INFO 3019	Project Management	10
COMP 3020	Social Web Analytics	10
INFO 3007	Network Security	10
Semester 6		
INFO 3002	Ethical Hacking Principles and Practice	10
MATH 3011	Probabilistic Models and Inference	10
COMP 3035	Discovery Project	10
	Credit Points	**70**
	Total Credit Points	**240**

Majors (80 credit points)

Health Informatics

Technology Entrepreneurship, Major (0261) (https://hbook.westernsydney.edu.au/majors-minors/technology-entrepreneurship-major/)

Minors (40 credit points)

Artificial Intelligence, Minor (0031) (https://hbook.westernsydney.edu.au/majors-minors/artificial-intelligence-minor/)

Astroinformatics, Minor (0096) (https://hbook.westernsydney.edu.au/majors-minors/astroinformatics-minor/)

Creative Leadership, Minor (0286) (https://hbook.westernsydney.edu.au/majors-minors/creative-leadership-minor/)

Critical and Systems Thinking, Minor (0287) (https://hbook.westernsydney.edu.au/majors-minors/critical-systems-thinking-minor/)

Cybersecurity Networking, Minor (0274) (https://hbook.westernsydney.edu.au/majors-minors/cybersecurity-networking-minor/)

Cybersecurity Systems, Minor (0277) (https://hbook.westernsydney.edu.au/majors-minors/cybersecurity-systems-minor/)

Digital Cultures, Minor (0070) (https://hbook.westernsydney.edu.au/majors-minors/digital-cultures-minor/)

Exercise Science, Minor (0279) (https://hbook.westernsydney.edu.au/majors-minors/exercise-science-minor/)

Global Sustainability, Minor (0196) (https://hbook.westernsydney.edu.au/majors-minors/global-sustainability-minor/)

International Business, Minor (0290) (https://hbook.westernsydney.edu.au/majors-minors/international-business-minor/)

Macroeconomics, Minor (0293) (https://hbook.westernsydney.edu.au/majors-minors/macroeconomics-minor/)

Management, Minor (0292) (https://hbook.westernsydney.edu.au/majors-minors/management-minor/)

Marketing, Minor (0291) (https://hbook.westernsydney.edu.au/majors-minors/marketing-minor/)

Mathematics, Minor (0059) (https://hbook.westernsydney.edu.au/majors-minors/mathematics-minor/)

Property, Minor (0289) (https://hbook.westernsydney.edu.au/majors-minors/property-minor/)

Robotics, Minor (0275) (https://hbook.westernsydney.edu.au/majors-minors/robotics-minor/)

Statistics, Minor (0148) (https://hbook.westernsydney.edu.au/majors-minors/statistics-minor/)

Video Games, Minor (0276) (https://hbook.westernsydney.edu.au/majors-minors/video-games-minor/)

In cases where the major or the sub major subjects are the same as the core subjects, students will have to either select alternate subjects within the major or minor, or do additional elective subjects to make up the credit points required to complete their program.

Replaced Majors and Minors

The minors listed below count towards completion of this program for students who began studying these minors prior to the years indicated below.

SM3089 Statistics, Minor (http://handbook.westernsydney.edu.au/hbook/specialisation.aspx?unitset=SM3089.1), discontinued from 2020