BACHELOR OF DATA SCIENCE (3769)

Approved Abbreviation: BDataSc
Western Sydney University Program Code: 3769
AQF Level: 7

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 Laurence Park (l.park@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

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

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

Course	Title	Credit Points
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	10
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

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 3035	Discovery Project	10
COMP 3020	Social Web Analytics	10
Select two major, minor or elective subjects		20
	Credit Points	**40**

Autumn session

INFO 3008	Professional Development	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

Majors (80 credit points)

Health Informatics, Major (0037) (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/health-informatics-major/)

Technology Entrepreneurship, Major (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/technology-entrepreneurship-major/)

Minors (40 credit points)

Artificial Intelligence, Minor (0031) (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/artificial-intelligence-minor/)

Astroinformatics, Minor (0096) (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/astroinformatics-minor/)

Creative Leadership, Minor (0286) (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/creative-leadership-minor/)

Critical and Systems Thinking, Minor (0287) (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/critical-systems-thinking-minor/)

Cybersecurity Networking, Minor (0274) (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/cybersecurity-networking-minor/)

Cybersecurity Systems, Minor (0277) (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/cybersecurity-systems-minor/)

Digital Cultures, Minor (0070) (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/digital-cultures-minor/)

Exercise Science, Minor (0279) (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/exercise-science-minor/)

Global Sustainability, Minor (0196) (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/global-sustainability-minor/)

International Business, Minor (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/international-business-minor/)

Macroeconomics, Minor (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/macroeconomics-minor/)

Management, Minor (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/management-minor/)

Marketing, Minor (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/marketing-minor/)

Mathematics, Minor (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/mathematics-minor/)

Property, Minor (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/property-minor/)

Robotics, Minor (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/robotics-minor/)

Statistics, Minor (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/statistics-minor/)

Video Games, Minor (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/video-games-minor/)

Minor elective spaces

Elective subjects may be used toward obtaining an additional approved minor (40 credit points). Western Sydney University offers minors in a range of areas including Sustainability and Indigenous Studies.

Global Sustainability Minor (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/global-sustainability-minor/)
Indigenous Australian Studies Minor (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/indigenous-australian-studies-minor/)

Western Sydney University also offers the following innovative transdisciplinary minors which we encourage those students who have elective space to consider.

Equitable Technologies (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/equitable-technologies-minor/)
Urban Evolution (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/urban-evolution-minor/)
Migration and Global Change (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/migration-global-change-minor/)
Personal Innovation (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/personal-innovation-minor/)
Innovating, Creating and Problem Solving (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/innovating-creating-problem-solving-minor/)
Eco-Socially Conscious Design and Manufacturing (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/eco-socially-conscious-design-manufacturing-minor/)
Water for Life (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/water-life-minor/)
Climate Justice (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/climate-justice-minor/)
Global Workplaces (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/global-workplaces-minor/)
Innovating For Humans (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/innovating-humans-minor/)

Search for majors and minors (https://hbook.westernsydney.edu.au/archives/2021-2022/majors-minors/)

Students can apply for an elective minor via MySR.

MyStudentRecords (MySR) (https://student-selfservice.westernsydney.edu.au/StudentSelfService/ssb/studentCommonDashboard/)

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