

BACHELOR OF COMPUTER SCIENCE (3506)

Approved Abbreviation: BCompSc

Western Sydney University Program Code: 3506

AQF Level: 7

CRICOS Code: 041105G

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 2019 to 2021 please refer to: 3506.9 - Bachelor of Computer Science (<http://handbook.westernsydney.edu.au/hbook/course.aspx?course=3506.9>)

For Commencement Year 2014 to 2016 please refer to: 3506.7 - Bachelor of Computer Science (<http://handbook.westernsydney.edu.au/hbook/course.aspx?course=3506.7>)

The Bachelor of Computer Science provides an in-depth technical understanding of computer software systems, underpinned by theoretical foundations and practical techniques. The program provides a solid foundation for computer science study in computer theory, software design, development, and applications. It provides you with the knowledge and skills to develop effective and innovative solutions to problems. A range of specialised majors are offered in Cyber Security, Artificial Intelligence, Systems Programming, Networked Systems, Technology Entrepreneurship and Cloud Computing. Students work on real world projects and complete an industry experience project giving them an edge to access excellent career opportunities as programmers, system or software developers, or AI engineers.

Study Mode

Three years full-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	Full Time	Internal	See above
Campus - Victoria Road			
Penrith Campus	Full Time	Internal	See above

Accreditation

The Bachelor of Computer Science currently is accredited with the Australian Computer Society at the professional level. Australian Computer Society accreditation for the Surabaya Campus offering will be sought.

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.

Admission

Assumed Knowledge: HSC Mathematics 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.

Sequence Current

This sequence below applies to students who commenced in 2024. If you commenced prior to 2024 please refer to the Sequence 2022-23 tab for details.

Qualification for this award requires the successful completion of 240 credit points which include the subjects listed in the recommended sequence below.

Full-time start-year intake

Course	Title	Credit Points
Year 1		
Autumn session		
MATH 1028	Statistical Decision Making	10
COMP 1005	Programming Fundamentals	10
INFO 1003	Professional Practice, Communication and Ethics	10

MATH 1006	Discrete Mathematics	10	Autumn session		
	Credit Points	40	COMP 2019 Systems Programming 1 10		
Spring session			COMP 2009 Data Structures and Algorithms 10		
COMP 2008	Computer Organisation	10	Select two electives or major or minor subjects 20		
COMP 2014	Object Oriented Programming	10			
INFS 2001	Database Design and Development	10			
COMP 2004	Computer Networking	10			
	Credit Points	40			
Year 2					
Autumn session					
COMP 2019	Systems Programming 1	10	INFO 3006 Information Security 10		
COMP 2009	Data Structures and Algorithms	10	INFS 3008 Formal Software Engineering 10		
Select two electives or major or minor subjects		20	COMP 3009 Distributed Systems and Programming 10		
	Credit Points	40	INFS 3003 Artificial Intelligence 10		
Year 3					
Spring session					
INFS 3003	Artificial Intelligence	10	Credit Points		
INFO 3006	Information Security	10	COMP 3018 Professional Experience 10		
COMP 3009	Distributed Systems and Programming	10	Select three electives or major or minor subjects 30		
INFO 3019	Project Management	10			
	Credit Points	40			
			Total Credit Points		
			240		
Accelerated Pathway - Summer Sessions					
Course	Title				
Year 1					
Autumn session					
Select four electives or major or minor subjects		40	MATH 1028 Statistical Decision Making 10		
	Credit Points	40	COMP 1005 Programming Fundamentals 10		
Spring session			INFO 1003 Professional Practice, Communication and Ethics 10		
COMP 3018	Professional Experience	10	MATH 1006 Discrete Mathematics 10		
INFS 3008	Formal Software Engineering	10			
Select two electives or major or minor subjects		20			
	Credit Points	40			
			Credit Points		
			40		
	Total Credit Points	240			
Full-time mid-year intake					
Course	Title				
Year 1					
Spring session					
COMP 1005	Programming Fundamentals	10	COMP 2008 Computer Organisation 10		
INFS 2001	Database Design and Development	10	COMP 2014 Object Oriented Programming 10		
COMP 2004	Computer Networking	10	COMP 2004 Computer Networking 10		
Select one elective or major or minor subject		10	INFO 3019 Project Management 10		
	Credit Points	40			
			Credit Points		
			40		
	Total Credit Points	240			
Year 2					
Autumn session					
MATH 1028	Statistical Decision Making	10	INFS 2001 Database Design and Development 10		
INFO 1003	Professional Practice, Communication and Ethics	10	Select one elective or major or minor 10		
MATH 1006	Discrete Mathematics	10			
Select one elective or major or minor subject		10			
	Credit Points	40			
			Credit Points		
			20		
Year 2					
Autumn session					
COMP 2009	Data Structures and Algorithms	10	INFS 2008 Formal Software Engineering 10		
COMP 2019	Systems Programming 1	10	INFO 3006 Information Security 10		
Select two electives or major or minor subjects		20	COMP 3009 Distributed Systems and Programming 10		
	Credit Points	40	INFS 3003 Artificial Intelligence 10		
Year 2					
Spring session					
COMP 2008	Computer Organisation	10	INFS 3003 Artificial Intelligence 10		
COMP 2014	Object Oriented Programming	10	INFO 3006 Information Security 10		
INFO 3019	Project Management	10	COMP 3009 Distributed Systems and Programming 10		
Select one elective or major or minor subject		10	INFS 3008 Formal Software Engineering 10		
	Credit Points	40			
			Credit Points		
			20		
Year 2					
Autumn session					
COMP 2009	Data Structures and Algorithms	10	Select two electives or major or minor subjects 20		
COMP 2019	Systems Programming 1	10			
Select two electives or major or minor subjects		20			
	Credit Points	40			
			Credit Points		
			20		

Year 3		PHIL 1008	Religion	5
Autumn session			Credit Points	80
COMP 3018	Professional Experience	10		
Select three electives or major or minor subjects		30		
	Credit Points	40		
	Total Credit Points	240		

Suggested Elective Subjects

Subject	Title	Credit Points		
COMP 3003	Cloud Computing Architecture	10		
COMP 3006	Computer Graphics	10		
COMP 3007	Computer Networks and Internets	10		
INFO 3002	Ethical Hacking Principles and Practice	10		
INFO 3015	Internet of Things and Smart Environments	10		
COMP 3012	Introduction to Cloud Computing	10		
COMP 2025	Introduction to Data Science	10		
COMP 3013	Mobile Applications Development	10		
INFO 3007	Network Security	10		
COMP 3014	Networked Systems Design	10		
COMP 3015	Operating Systems Programming	10		
COMP 3032	Machine Learning	10		
COMP 3033	Quantum Computing and Communication	10		
COMP 3027	Robotic Programming	10		
COMP 3020	Social Web Analytics	10		
COMP 2026	Visual Analytics	10		
COMP 3025	Wireless and Mobile Networks	10		

Surabaya Campus Indonesia September 2024 Intake

Course	Title	Credit Points		
Year 1				
Semester 1				
COMP 1005	Programming Fundamentals	10		
INFS 2001	Database Design and Development	10		
COMP 2004	Computer Networking	10		
CULT 1030	Pancasila	5		
Semester 2				
MATH 1028	Statistical Decision Making	10		
INFO 1003	Professional Practice, Communication and Ethics	10		
COMP 2004	Computer Networking	10		
PHIL 1008	Religion	5		
CULT 1031	Civic Education	5		
	Credit Points	80		
Year 2				
Semester 3				
MATH 1006	Discrete Mathematics	10		
INFO 1003	Professional Practice, Communication and Ethics	10		
COMP 3012	Introduction to Cloud Computing	10		
CULT 1031	Civic Education	5		
	Credit Points	80		
Year 2				
Semester 3				
COMP 2008	Computer Organisation	10		
COMP 2014	Object Oriented Programming	10		
INFO 3019	Project Management	10		
COMP 3032	Machine Learning	10		
LANG 1036	Indonesian Language	5		
Semester 4				
COMP 2019	Systems Programming 1	10		
COMP 2009	Data Structures and Algorithms	10		
INFO 3002	Ethical Hacking Principles and Practice	10		
COMP 2027	Cyber Security	10		
	Credit Points	80		
Year 3				
Semester 5				
INFO 3006	Information Security	10		
INFS 3008	Formal Software Engineering	10		
COMP 3009	Distributed Systems and Programming	10		
INFS 3003	Artificial Intelligence	10		
Semester 6				
COMP 3018	Professional Experience	10		
COMP 3007	Computer Networks and Internets	10		

COMP 3027	Robotic Programming	10	Cyber Security, Major (0066) (https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/cyber-security-major/)
COMP 2025	Introduction to Data Science	10	Networked Systems, Major (0065) (https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/networked-systems-major/)
	Credit Points	80	
	Total Credit Points	240	

Surabaya Campus Indonesia September 2025 Intake - Artificial Intelligence Major Sequence

Course	Title	Credit Points	
Year 1			
Semester 1			
MATH 1028	Statistical Decision Making	10	
COMP 1005	Programming Fundamentals	10	
INFS 2001	Database Design and Development	10	
LANG 1036	Indonesian Language	5	
CULT 1030	Pancasila	5	
Semester 2			
MATH 1006	Discrete Mathematics	10	
INFO 1003	Professional Practice, Communication and Ethics	10	
COMP 2004	Computer Networking	10	
PHIL 1008	Religion	5	
CULT 1031	Civic Education	5	
	Credit Points	80	
Year 2			
Semester 3			
COMP 2008	Computer Organisation	10	
COMP 2014	Object Oriented Programming	10	
INFO 3019	Project Management	10	
COMP 3032	Machine Learning	10	
Semester 4			
COMP 2019	Systems Programming 1	10	
COMP 2009	Data Structures and Algorithms	10	
COMP 3006	Computer Graphics	10	
COMP 3012	Introduction to Cloud Computing	10	
	Credit Points	80	
Year 3			
Semester 5			
INFO 3006	Information Security	10	
INFS 3008	Formal Software Engineering	10	
COMP 3009	Distributed Systems and Programming	10	
INFS 3003	Artificial Intelligence	10	
Semester 6			
COMP 3018	Professional Experience	10	
COMP 2026	Visual Analytics	10	
COMP 3027	Robotic Programming	10	
COMP 2025	Introduction to Data Science	10	
	Credit Points	80	
	Total Credit Points	240	

Majors

The majors listed below have been designed specifically for this program and are recommended for Bachelor of Computer Science students.

Artificial Intelligence, Major (0031) (<https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/artificial-intelligence-major/>)

Systems Programming, Major (0064) (<https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/systems-programming-major/>)

Technology Entrepreneurship, Major (0261) (<https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/technology-entrepreneurship-major/>)

Minor

Cloud Computing, Minor (0128) (<https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/cloud-computing-minor/>)

Note: students may use some of their elective space to complete a Major or the Minor

Major and Minor elective spaces

Elective subjects may be used toward obtaining an additional approved major (80 credit points) or minor (40 credit points). Western Sydney University offers majors and minors in a range of areas including Sustainability and Indigenous Studies.

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

Indigenous Australian Studies Major (<https://hbook.westernsydney.edu.au/majors-minors/indigenous-australian-studies-major/>)

Indigenous Australian Studies Minor (<https://hbook.westernsydney.edu.au/majors-minors/indigenous-australian-studies-minor/>)

Western Sydney University also offers the following innovative transdisciplinary Challenge Minors (https://www.westernsydney.edu.au/educational_partnerships_and_quality/home/challenge_minors/) which we encourage those students who have elective space to consider.

Equitable Technologies (<https://hbook.westernsydney.edu.au/majors-minors/equitable-technologies-minor/>)

Urban Evolution (<https://hbook.westernsydney.edu.au/majors-minors/urban-evolution-minor/>)

Migration and Global Change (<https://hbook.westernsydney.edu.au/majors-minors/migration-global-change-minor/>)

Personal Innovation (<https://hbook.westernsydney.edu.au/majors-minors/personal-innovation-minor/>)

Innovating, Creating and Problem Solving (<https://hbook.westernsydney.edu.au/majors-minors/innovating-creating-problem-solving-minor/>)

Eco-Socially Conscious Design and Manufacturing (<https://hbook.westernsydney.edu.au/majors-minors/eco-socially-conscious-design-manufacturing-minor/>)

Water for Life (<https://hbook.westernsydney.edu.au/majors-minors/water-life-minor/>)

Climate Justice (<https://hbook.westernsydney.edu.au/majors-minors/climate-justice-minor/>)

Creative and Visual Communication (<https://hbook.westernsydney.edu.au/majors-minors/creative-visual-communication-minor/>)

Global Workplaces (<https://hbook.westernsydney.edu.au/majors-minors/global-workplaces-minor/>)

Innovating For Humans (<https://hbook.westernsydney.edu.au/majors-minors/innovating-humans-minor/>)

Creative Living for Cultural Wellbeing (<https://hbook.westernsydney.edu.au/majors-minors/creative-living-cultural-wellbeing-minor-/>)
 Ideate. Strategise. Innovate. (<https://hbook.westernsydney.edu.au/majors-minors/ideate-strategise-innovate-minor/>)
 Humanising Data (<https://hbook.westernsydney.edu.au/majors-minors/humanising-data-minor/>)

For more information, visit the Challenge Minor (https://www.westernsydney.edu.au/educational_partnerships_and_quality/home/challenge_minors/) website.

Search for majors and minors (<https://hbook.westernsydney.edu.au/majors-minors/>)

Students can apply for an elective major or minor via Western Now.

[WesternNow](https://www.westernsydney.edu.au/westernnow/) (<https://www.westernsydney.edu.au/westernnow/>)

Sequence 2022-2023

This sequence below applies to students who commenced in 2023 or earlier. If you commenced in 2024 or later please refer to the Sequence 2024 tab for details.

Qualification for this award requires the successful completion of 240 credit points which include the subjects listed in the recommended sequence below.

Full-time start-year intake

Course	Title	Credit Points	
Year 1			
Autumn session			
COMP 1005	Programming Fundamentals	10	
INFS 2008	Formal Software Engineering	10	
Select two electives		20	
		Credit Points	40
		Total Credit Points	240
Full-time mid-year intake			
Course	Title	Credit Points	
Year 1			
Spring session			
COMP 1005	Programming Fundamentals	10	
INFS 2001	Database Design and Development	10	
COMP 2004	Computer Networking	10	
Select one elective		10	
		Credit Points	40
Autumn session			
MATH 1028	Statistical Decision Making	10	
COMM 1026	Principles of Professional Communication	10	
1			
INFO 1003 replaces COMM 1026 from Autumn 2023			
MATH 1006	Discrete Mathematics	10	
Select one elective		10	
		Credit Points	40
Year 2			
Spring session			
COMP 2008	Computer Organisation	10	
COMP 2014	Object Oriented Programming	10	
Select two electives		20	
		Credit Points	40
Autumn session			
COMP 2019	Systems Programming 1	10	
COMP 2009	Data Structures and Algorithms	10	
INFO 3008	Professional Development	10	
Select one elective		10	
		Credit Points	40
Year 3			
Spring session			
INFO 3006	Information Security	10	
INFS 3008	Formal Software Engineering	10	
COMP 3009	Distributed Systems and Programming	10	
INFS 3003	Artificial Intelligence	10	
		Credit Points	40
Autumn session			
COMP 3018	Professional Experience	10	
Select three electives		30	
		Credit Points	40
		Total Credit Points	240
Year 3			
Autumn session			
INFO 3008	Professional Development	10	

Accelerated Pathway - Summer Sessions

Course	Title	Credit Points		
Year 1				
Autumn session				
MATH 1028	Statistical Decision Making	10	COMP 3013	Mobile Applications Development
COMP 1005	Programming Fundamentals	10	INFO 3007	Network Security
COMM 1026	Principles of Professional Communication 1	10	COMP 3014	Networked Systems Design
INFO 1003 replaces COMM 1026 from Autumn 2023			COMP 3015	Operating Systems Programming
MATH 1006	Discrete Mathematics	10	MATH 3007	Predictive Modelling
	Credit Points	40		From Spring 2022 MATH 3007 Predictive Modelling is replaced by COMP 3032 Machine Learning
Spring session			COMP 3032	Machine Learning
COMP 2008	Computer Organisation	10	COMP 3033	Quantum Computing and Communication
COMP 2014	Object Oriented Programming	10	COMP 3027	Robotic Programming
INFS 2001	Database Design and Development	10	COMP 3020	Social Web Analytics
COMP 2004	Computer Networking	10	COMP 2020	Technologies for Web Applications
	Credit Points	40	COMP 2026	Visual Analytics
Summer A session			INFS 3017	Web Systems Development
Select two electives		20	COMP 3025	Wireless and Mobile Networks
	Credit Points	20		
Year 2				
Autumn session				
COMP 2009	Data Structures and Algorithms	10		Replaced Subjects
COMP 2019	Systems Programming 1	10		The subjects listed below count towards completion of this program for students who passed these subjects in 2021 or earlier.
Select two electives		20		MATH 2014 Visual Analytics, replaced by COMP 2026 Visual Analytics
	Credit Points	40		
Spring session				
INFO 3006	Information Security	10		Majors
INFS 3008	Formal Software Engineering	10		The majors listed below have been designed specifically for this program and are recommended for Bachelor of Computer Science students.
COMP 3009	Distributed Systems and Programming	10		Artificial Intelligence, Major (0031) (https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/artificial-intelligence-major/)
INFS 3003	Artificial Intelligence	10		Cyber Security, Major (0066) (https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/cyber-security-major/)
	Credit Points	40		Networked Systems, Major (0065) (https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/networked-systems-major/)
Summer A session				Systems Programming, Major (0064) (https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/systems-programming-major/)
INFO 3008	Professional Development	10		Technology Entrepreneurship, Major (0261) (https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/technology-entrepreneurship-major/)
Select one elective		10		
	Credit Points	20		
Year 3				
Autumn session				
COMP 3018	Professional Experience	10		Minor
Select three electives		30		Cloud Computing, Minor (0128) (https://hbook.westernsydney.edu.au/archives/2024-2025/majors-minors/cloud-computing-minor/)
	Credit Points	40		
	Total Credit Points	240		
				Note: students may use some of their elective space to complete a Major or the Minor
Suggested Elective Subjects				
Subject	Title	Credit Points		
COMP 3003	Cloud Computing Architecture	10		Minor elective spaces
COMP 3006	Computer Graphics	10		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.
COMP 3007	Computer Networks and Internets	10		Global Sustainability Minor (https://hbook.westernsydney.edu.au/majors-minors/global-sustainability-minor/)
INFO 3002	Ethical Hacking Principles and Practice	10		Indigenous Australian Studies Minor (https://hbook.westernsydney.edu.au/majors-minors/indigenous-australian-studies-minor/)
INFO 3015	Internet of Things and Smart Environments	10		
COMP 3012	Introduction to Cloud Computing	10		
MATH 2009	Introduction to Data Science	10		
	From 2022 MATH 2009 Introduction to Data Science is replaced by COMP 2025 Introduction to Data Science			

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Personal Innovation (<https://hbook.westernsydney.edu.au/majors-minors/personal-innovation-minor/>)

Innovating, Creating and Problem Solving (<https://hbook.westernsydney.edu.au/majors-minors/innovating-creating-problem-solving-minor/>)

Eco-Socially Conscious Design and Manufacturing (<https://hbook.westernsydney.edu.au/majors-minors/eco-socially-conscious-design-manufacturing-minor/>)

Water for Life (<https://hbook.westernsydney.edu.au/majors-minors/water-life-minor/>)

Climate Justice (<https://hbook.westernsydney.edu.au/majors-minors/climate-justice-minor/>)

Creative and Visual Communication (<https://hbook.westernsydney.edu.au/majors-minors/creative-visual-communication-minor/>)

Global Workplaces (<https://hbook.westernsydney.edu.au/majors-minors/global-workplaces-minor/>)

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Creative Living for Cultural Wellbeing (<https://hbook.westernsydney.edu.au/majors-minors/creative-living-cultural-wellbeing-minor-/>)

Ideate.Strategise.Innovate. (<https://hbook.westernsydney.edu.au/majors-minors/ideate-strategise-innovate-minor/>)

Humanising Data (<https://hbook.westernsydney.edu.au/majors-minors/humanising-data-minor/>)

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