

BACHELOR OF SCIENCE Majoring in Data Science
- Structure and Subjects Offerings Information



COURSE STRUCTURE

51 credit points - 17
Core Subjects



21 credit points - 7 elective subjects

Links to Helpful Resources:

- To enrol subject(s) via the MyStudent portal: [Basic Steps to Self-enrol subjects](#)
- To withdraw subject(s) via the MyStudent portal: [Step to Withdraw subjects](#)
- [Course and Subject Handbook](#)
- [StudentFirst](#) (To check your timetable)

√ = Offered

17 Core Subjects (51 credit points)

Year 2026 **Year 2027**

Subject Code	Subject Name	Pre-requisites & Anti-requisites Note: 1 subject has 3 credit-point value	TR3	TR1S	TR2	TR3
SC1101	Science, Technology and Truth		√	√	√	√
SC1102	Modelling Natural System	MA1020 or MA0020 or Senior Mathematics or equivalent.	√	√	√	√
CH1020 Preparatory Chemistry Or Any level 1, 2, 3, or 5 subject if already satisfied via previous study		(Assumed Knowledge: Any student who has completed high school Senior Chemistry to the level of High Achievement or equivalent is not permitted to enrol)		√		
MA1020 Preparatory Mathematics Or Any level 1,2,3, or 5 subject if already satisfied via previous study			√	√	√	√
SC2202	Quantitative Methods in Science	SC1102 OR SC1109 OR ADMISSION TO BBEV	√		√	
Select 1 Skill subject from below list						
CP2404	Database Modelling		√	√		√
EV2502	Introduction to Geographic Information Systems	Pre-req: At least 9 CP of subjects at Level 1	√		√	
MA2830	Data Visualisation				√	√
Major's core subjects	MA1000	Mathematical Foundations MA1020 OR High school subjects: Mathematical Methods or Specialist Mathematics (or equivalent such as Maths B or Maths C)		√	√	
	CP1401	Problem Solving and Programming I	√	√	√	√
	CP1404	Programming II	√	√	√	√
	MA1580	Foundations of Data Science	√	√		√
	MA2405	Advanced Statistical Modelling		√	√	
	MA3405	Statistical Data Mining for Big Data	√		√	√
	MA3831	Natural Language Processing, Web Scraping and Large Data Processing	√	√		√
	MA3832	Neural Network and Deep Learning	√	√		√
Select 2 subjects List 1 from below (Don't select the subject that you have chosen for Skill subject)						
Select 2 subjects	CP2404	Database Modelling	√	√		√
	MA2211	Discrete Mathematics		√		
	MA2830	Data Visualisation			√	√
Select 1 Level 3 subject from below list						
Select 1 subject	SC3003	Science Research Internship 15 CP of Science Level 2 & GPA 5.5 or above 5.5 Students are responsible for securing their own supervisors prior to enrolment. Enrolment in the subject will only be permitted when confirmation of a supervisor is sent to the Enrolment team.	√	√	√	√
	SC3008	Professional Placement STUDENTS MUST HAVE SUCCESSFULLY COMPLETED 12 SECOND YEAR CREDIT POINTS. This subject is intended to be taken in the final year of the degree. Internship positions are to be confirmed in consultation with the JCU Student Career team. If students choose the Research stream, students are responsible for securing their own supervisors prior to enrolment. Enrolment in the subject will only be permitted when confirmation of a supervisor is sent to the JCU enrolment team.	√	√	√	√

7 Elective Subjects (21 credit points) including:

Two any elective subjects (6 credit points) level 1, 2, 3, or 5
see next page(s) for list of Science subjects
see this page for list of non-Science subjects

Three Science subjects (9 credit points) level 2, 3, or 5
see next page(s) for list of Science subjects

Two any elective subjects (6 credit points) level 3, or 5
see next page(s) for list of Science subjects
see this page for list of non-Science subjects

Disclaimer: The above information is correct as below date. Due to unforeseen situation/s, there might be change/s done in subject offerings before each trimester. Your understanding is greatly appreciated.

Updated on 30 Sep 2026

LIST OF UNDERGRADUATE SCIENCE SUBJECTS Subjects Offerings Information

Links to Helpful Resources:
 - To enrol subject(s) via the MyStudent portal: [Basic Steps to Self-enrol subjects](#)
 - To withdraw subject(s) via the MyStudent portal: [Step to Withdraw subjects](#)
 - [Course and Subject Handbook](#)
 - [StudentFirst](#) (To check your timetable)



✓ = Offered

Science subjects level 1, 2, 3, 5

	Subject Code	Subject Name	Pre-requisites & Anti-requisites Note: 1 subject has 3 credit-point value	Year 2026		Year 2027	
				TR3	TR1S	TR2	TR3
Level 1 subjects	CP1401	Problem Solving and Programming I		✓	✓	✓	✓
	CP1402	Internet Fundamentals		✓	✓	✓	✓
	CP1403	Design Thinking I		✓	✓	✓	✓
	CP1404	Programming II	CP1401	✓	✓	✓	✓
	CP1406	Web Design and Development		✓	✓	✓	✓
	CP1407	Introductory Machine Learning and Data Science		✓	✓	✓	✓
	CP1409	Operating Systems and Shell Scripting		✓	✓	✓	✓
	CP1410	Cybersecurity and Cryptography Fundamentals	CP1402 and CP1409	✓	✓	✓	✓
	BS1001	Introduction to Biological Processes		✓	✓	✓	✓
	BS1007	Introduction to Biodiversity			✓	✓	✓
	CH1020	Preparatory Chemistry	(Assumed Knowledge: Any student who has completed high school Senior Chemistry to the level of High Achievement or equivalent is not permitted to enrol)		✓		
	EV1005	Environmental Processes and Global Change		✓		✓	
	EV1008	Human Geography			✓		✓
	MA1000	Mathematical Foundations	MA1020 OR High school subjects: Mathematical Methods or Specialist Mathematics (or equivalent such as Maths B or Maths C)		✓	✓	
Level 2 subjects	MA1003	Mathematical Techniques	Pre-requisite: MA1000		✓		
	MA1020	Preparatory Mathematics		✓	✓	✓	✓
	MA1580	Foundations of Data Science		✓	✓	✓	✓
	SC1101	Science, Technology and Truth		✓	✓	✓	✓
	SC1102	Modelling Natural System	MA1020 or MA0020 or Senior Mathematics or equivalent.	✓	✓	✓	✓
	AQ2001	Introduction to Aquaculture	6 credit points of Level 1 science BS, EV, MA, MB, SC subjects.	✓		✓	
	AQ2002	Aquaculture of Tropical Species	6 credit points of Level 1 science BS, EV, MA, MB, SC subjects		✓		✓
	BS2460	Fundamentals of Ecology	6 credit points of level 1 or 2 BS or EV subjects.	✓	✓		✓
	BS2470	Evolution	BS1001		✓		✓
	CP2403	Information Processing and Visualisation	12 credit points of subjects	✓		✓	
	CP2404	Database Modelling		✓	✓		✓
	CP2405	Collective Intelligence and Entrepreneurship	24 credit points of subjects			✓	
	CP2406	Programming III	CP1404	✓	✓	✓	
	CP2408	Design Thinking II	CP1403 or Admission to Bachelor of Cybersecurity	✓	✓	✓	✓
Level 3, 5 subjects	CP2409	Network Forensics and Data Communications	CP1402 Anti-requisite: CP5601		✓		✓
	CP2410	Algorithms and Data Structures	6 credit points of CP subjects	✓		✓	
	CP2411	3D Modelling and Animation	6 credit points of CP subjects Anti-requisite: CP5608			✓	
	CP2412	Game Design and Technologies	6 credit points of CP subjects Anti-requisite: CP5604			✓	
	CP2414	Network Security	CP1402 OR Admission to Bachelor of Business and 3 credit points of CP subjects	✓	✓		✓
	CP2421	Machine Learning for Cybersecurity	CP1401 and MA1580			✓	
	CP2422	Cloud and Data Center Security	CP1401	✓		✓	✓
	CP2423	Cybersecurity Infrastructure and Management	CP1401 and CP1410 Anti-requisite: CP2412	✓		✓	✓
	CP2501	Cloud Computing	Anti-requisite: CP3511 and CP5501	✓	✓		✓
	EV2301	Urban Geography and Design		✓	✓		✓
	EV2502	Introduction to Geographic Information Systems	9 credit points of subjects at Level 1	✓		✓	
	MA2000	Mathematics for Scientists and Engineers	MA1003			✓	
	MA2011	Discrete Mathematics for Computing	Algebra and arithmetic to a year 10 standard	✓		✓	✓
	MA2211	Discrete Mathematics	Maths B OR MA1020 OR MA0020		✓		
Level 3, 5 subjects	MA2405	Advanced Statistical Modelling	MA1000 and SC2202		✓	✓	
	MA2830	Data Visualisation				✓	✓
	SC2202	Quantitative Methods in Science	SC1102 OR ADMISSION TO BBEV	✓		✓	
	AQ3002	Aquaculture: Feeds and Nutrition	6 credit points of Level 2 AQ, BC, EV, MA, MB, MI, SC science subjects including 3 credit points of level 2 aquaculture subjects.	✓		✓	
	AQ3003	Aquaculture: Propagation	AQ2001 AND 6 credit points of Level 2 science AQ, EV, MA, MB, SC subjects.	✓		✓	
	AQ3015	Sustainable Aquaculture	6 credit points of Level 2 AQ, EV, MA, MB, MI, SC science subjects including 3 credit points of level 2 aquaculture subjects.		✓		✓
	CP3402	Content Management Systems	CP1404 AND 24 CREDIT POINTS OF CP SUBJECTS Anti-requisite: CP5637		✓		✓
	CP3403	Data Mining	(CP2403 AND CP2404) OR (18 CREDIT POINTS OF UNDERGRADUATE SUBJECTS INCLUDING 6 CREDIT POINTS OF CP SUBJECTS) Anti-requisite: CP3300 CP5634	✓	✓		✓
	CP3404	Information Security	CP2414 OR CC3501 OR (18 CREDIT POINTS OF SUBJECTS INCLUDING CP1402) Anti-requisite: CP3302 CP5603	✓	✓		✓
	CP3405	Design Thinking III	CP2408	✓	✓	✓	✓
	CP3406	Mobile Computing	CP1404 AND 18 CREDIT POINTS OF CP SUBJECTS Anti-requisite: CP3307 CP5307	✓		✓	✓
	CP3407	Advanced Software Engineering	CP1404 AND 18 CREDIT POINTS OF CP SUBJECTS Anti-requisite: CP2013 CP3110 CP5507		✓	✓	
	CP3413	Information Processing and Visualisation	MINIMUM OF 12 CREDIT POINTS OF BU AND/OR BX SUBJECTS Anti-requisite: CP2403 Note: For BBUS students only	✓		✓	✓
	CP3414	Ethical Hacking	CP2422 and CP2423 Anti-requisite: CP5614	✓	✓	✓	✓
Level 3, 5 subjects	CP3416	Behavioral Cybersecurity	36 CREDIT POINTS OF CP OR MA SUBJECTS WITHIN THE DEGREE	✓	✓		✓
	CP3417	Cybersecurity for Operational Technology	CP2423		✓		✓
	CP3418	Best Practices in Cybersecurity	CP3414	✓		✓	✓
	CP3501	Deep Learning	Anti-requisite: CP5701		✓	✓	
	CP3511	Cloud Computing	Anti-requisite: CP2501 and CP5501 Note: For BBUS students only	✓	✓		✓
	EV3110	Environmental and Social Impact Assessment	At least 9 CP of subjects at Level 2	✓		✓	
	EV3404	Field Studies in Tropical Geography	At least 9 CP of subjects at Level 2			✓	
	MA3405	Statistical Data Mining for Big Data	MA2405 OR MA2000 OR SC2202	✓		✓	✓
	MA3831	Natural Language Processing, Web Scraping and Large Data Processing	CP1404 & MA3405	✓	✓		✓
	MA3832	Neural Network and Deep Learning	CP1404 & MA3405	✓	✓		✓
	MB3200	Marine Conservation Biology	BS2460 OR SC2202	✓	✓		✓
	MB5001	Tropical Marine Ecology and Coastal Impacts	Approval by Subject Coordinator required	✓			✓
	SC5901	Special Topic 1	Approval by Subject Coordinator required Note: For BSc & BBEV students only	✓	✓	✓	✓
	SC5902	Special Topic 2	Approval by Subject Coordinator required Note: For BSc & BBEV students only	✓	✓	✓	✓

Disclaimer: The above information is correct as below date. Due to unforeseen situation/s, there might be change/s done in subject offerings before each trimester. Your understanding is greatly appreciated.

Updated on 30 September 2026