STUDY PLAN - BACHELOR OF SCIENCE

For student admitted from SPS2 2022 onwards

COURSE STRUCTURE FOR BSCI (AQUACULTURE & TECHNOLOGY MAJOR)

7 General core subjects
4 Subjects at Level 1
1 Subject at Level 2
1 Subject at Level 3
Plus
1 Skill Subject (List 2)

+ **8 Core subjects under** Aqua Culture & Technology Major +

List 1: 2 Breadth Subjects
AND
7 Elective subjects including:
3 subjects from any Level 2, 3 or 5 Science subjects
2 subjects from any Level 1, 2, 3 or 5 subjects
2 subjects from any Level 3 or Level 5 subjects

COURSE STRUCTURE FOR BSCI (DATA SCIENCE MAJOR)

7 General core subjects
4 Subjects at Level 1
1 Subject at Level 2
1 Subject at Level 3
Plus
1 Skill Subject (List 2)

+ **8 core subjects under** Data Science Major +

List 1: 2 Breadth Subjects CP1401 CP1404
AND
7 Elective subjects including:
3 subjects from any Level 2, 3 or 5 Science subjects
2 subjects from any Level 1, 2, 3 or 5 subjects

COURSE STRUCTURE FOR BSCI (INTERNET OF THINGS MAJOR)

7 General core subjects
4 Subjects at Level 1
1 Subject at Level 2
1 Subject at Level 3
Plus
1 Skill Subject (List 2) : MA2000

+ **8 core subjects under** Internet of Things Major +

List 1: 2 Breadth Subjects MA1000, MA1003
AND
7 Elective subjects including:
3 subjects from any Level 2, 3 or 5 Science subjects
2 subjects from any Level 1, 2, 3 or 5 subjects

Important Note:
Students must successfully complete 18 credit points of Level 1 and 2 science subjects before attempting any Level 3 science subject.

7 GENERAL CORE SUBJECTS For All Majors

	Subject Code	Subject Name	Pre-requisites	Year 2025 TR1S	TR2	TR3	Year 2026 TR1S	TR2	TR3
5 Level 1, 2	CH1020	Preparatory Chemistry	Assumed Knowledge: If you have a high achievement or better in Senior Chemistry it is not recommended that you enrol in this subject.	√			√		
	or any UG Level 1								
	MA1020	Preparatory Mathematics	This subject is not suitable for anyone who has studied Mathematics Methods (Queensland, or equivalent).	√	√	√	√	√	√
	or any UG Level 1								
	SC1101	Science, Technology and Truth		√	√	√	√	√	√
	SC1102	Modelling Natural Systems	MA1020/Senior Maths or equivalent.	√	√	√	√	√	√
	SC2202	Quantitative Methods in Science	SC1102 OR Students from BBusEnvSc Program (Assume Knowledge: Good understanding of Level 1 science, including at least 2 Level 1 subjects)		√		√		
1 Level 3 subject	SC3078	Professional Placement	Offered every term. This is the Work Integrated Learning subject for multiple undergraduate science degrees in the final year of study. To apply for this subject student need to apply to Careers Office at least 1 term ahead (careers-singapore@jcu.edu.au). To extend 1 trimester of studies as Professional Internship is the last subject remaining.						
	OR								
	SC3003	SCIENCE RESEARCH INTERNSHIP	For students admitted before TRIS/2025: Not applicable. Students must enrol in SC3008. Offered every term. To request enrolment in this subject students should (1) attain approval from a research supervisor (usually an academic or research staff member in the College), (2) identify a project in consultation with the supervisor, and (3) email confirmation from supervisor and a brief description of the project to the subject coordinator.						
1 Skill Subject from List 2	Select 1 Skill Subject from List 2 (Refer to Appendix List of Skill Subjects)								
	Student from IOT major must select MA2000 in order to meet pre-req requirement of core subject EE2201.								

17 SUBJECTS FOR Aquaculture Science & Technology Major

	Subject Code	Subject Name	Pre-requisite	Year 2025 TR1S	TR2	TR3	Year 2026 TR1S	TR2	TR3
8 core subjects	BS1001	Introduction to Biological Processes	(Assumed Knowledge: Good understanding of English to Grade 12 or equivalents.)		√		√		√
	BS1007	Introduction to Biodiversity	(Assumed Knowledge: Good understanding of English to Grade 12 (Queensland) or equivalent)	√		√		√	
	AQ2001	Introduction to Aquaculture	4 Level 1 Science subjects (Assumed Knowledge: Good understanding of level 1 biology, particularly zoology. A basic understanding of chemistry and statistics is highly recommended)		√		√		√
	BS2470	Evolution	BS1001 (Assumed Knowledge: Have completed 12 credit points of level 1 science subjects, have an understanding of the fundamentals of biology (BS1001 or equivalent).)	√		√		√	0
	MI2031	Diagnosis of Bacterial Diseases in Aquaculture		√					
	AQ3002	Aquaculture: Feeds and Nutrition	4 of Level 2 AQ, BC, BZ, BS, CH, EA, EV, MA, MB or PH science subjects and 1 of level 2 aquaculture subjects.		√		√		√
	AQ3003	Aquaculture: Propagation	AQ2001 and at least 4 subjects of Level 2 science subjects. (Assumed Knowledge: Good understanding of basic biology and aquaculture principles.)		√		√		√
	OR								
	Select 1								
	AQ3004	Aquaculture: Stock Improvement	At least 4 subjects of Level 2 science subjects and 1 subject of level 2 aquaculture subjects. (Assumed Knowledge: Good understanding of basic biology, physiology, genetics and aquaculture, and should have completed SC2202/SC2209 AND AQ2001 or equivalent.)	√		√		√	
	AQ3015	Sustainable Aquaculture	4 Level 2 subjects	√		√		√	
Plus 2 breadth subjects	Select 2 subjects of List 1- Breadth Subjects (See List 1 of Breath Subjects at Appendix)								
Plus 7 elective subjects	Select 3 subjects from any Level 2, 3 or 5 Science subjects (See List of Science Subjects Level 2, 3, 5 at Appendix)								
	Select 2 subjects from any Level 1, 2, 3 or 5 subjects. (Can choose from other majors or refer to Study Plan of other undergraduate program e.g. Business, Arts, Psychology) - Make sure you meet pre-requisite requirement.								
	Select 2 subjects from any Level 3 or Level 5 subjects (Can choose from other majors or refer to Study Plan of other undergraduate program e.g. Business, Arts, Psychology) - Make sure you meet pre-requisite requirement.								

17 SUBJECTS FOR Data Science Major

	Subject Code	Subject Name	Pre-requisite	Year 2025 TR1S	TR2	TR3	Year 2026 TR1S	TR2	TR3
8 core subjects	MA1580	Foundations of Data Science	MA1000 or MA1020 or Maths B	√		√	√		√
	MA1000	Mathematical Foundations	MA1020 OR Maths B OR Maths C	√	√	√	√	√	
	MA2405	Advanced Statistical Modelling	SC2202 AND MA1000	√		√		√	
	MA3405	Statistical Data Mining for Big Data	MA2405 or MA2000 or SC2202	√		√	√		√
	MA3831	Natural Language Processing, Web Scraping and Large Data Processing	CP1404 and/ MA3405		√		√		√
	MA3832	Neural Network and Deep Learning	MA3405 and CP1404		√			√	
	OR								
	MA3212	Optimisation and Operations Research	MA2000 and MA2210	√			√		
Plus 2 breadth subjects-List 1	Plus 2 subjects from below list (Don't select the subject that's already taken in List 2- Skill Subjects List).								
	CP2404	Database Modelling		√		√	√		√
	MA2210	Linear Algebra	MA1003. Recommended to complete MA2000.						√
	MA2211	Discrete Mathematics	Maths B or MA1020	√			√		
	MA2830	Data Visualisation		√		√		√	
	CP1401	Problem Solving and Programming I		√	√	√	√	√	√
	CP1404	Programming II	CP1401	√	√	√	√	√	√
Plus 7 elective subjects	Select 3 subjects from any Level 2, 3 or 5 Science subjects (See List of Science Subjects Level 2, 3, 5 at Appendix)								
	Select 2 subjects from any Level 1, 2, 3 or 5 subjects (Can choose from other majors or refer to Study Plan of other undergraduate program e.g. Business, Arts, Psychology) - Make sure you meet pre-requisite requirement. Note: Student must select MA1003 as an elective Level 1 in this option line if you wish to study MA2000, MA2210 & MA3212 (Student must meet pre-req of MA2000 & MA2210 before studying MA3212).								
	Select 2 subjects from any Level 3 or Level 5 subjects (Can choose from other majors or refer to Study Plan of other undergraduate program e.g. Business, Arts, Psychology) - Make sure you meet pre-requisite requirement.								

17 SUBJECTS FOR Internet Of Things Major (IOT)

	Subject Code	Subject Name	Pre-requisite	Year 2025 TR1S	TR2	TR3	Year 2026 TR1S	TR2	TR3
8 core subjects	EG1012	Electric Circuits	Assumed Knowledge: This subject requires prior knowledge of Senior Mathematics B or MA1020 (or	√			√		
	CC1003	Introduction to Microcontroller Programming		√		√		√	
	CC2003	Internet of Things Devices and Software	CC1003 and EG1012		√		0	√	
	EE2201	Circuit Theory	EG1012 & MA2000. Allow concurrent enrolment for MA2000.		√			√	
	CC3003	Internet of Things Systems and Security	CC2003			√			√
	EE3901	Sensor Technologies	EE2201 and CC2003	√		√			√
	MA2405	Advanced Statistical Modelling	SC2202 AND MA1000	√		√		√	
	MA3405	Statistical Data Mining for Big Data	MA2405 or MA2000 or SC2202	√		√	√		√
Plus 2 breadth subjects-List 1	MA1000	Mathematical Foundations	MA1020 OR Maths B OR Maths C	√	√	√	√	√	
	MA1003	Mathematical Techniques	MA1000	√		√	√	√	
Plus 7 elective subjects	Select 3 subjects from any Level 2, 3 or 5 Science subjects (See List of Science Subjects Level 2, 3, 5 at Appendix).								
	Select 3 subjects from any Level 2, 3 or 5 Science subjects (See List of Science Subjects Level 2, 3, 5 at Appendix).								
	Select 2 subjects from any Level 3 or Level 5 subjects (Can choose from other majors or refer to Study Plan of other undergraduate program e.g. Business, Arts, Psychology) - Make sure you meet pre-requisite requirement.								

Note: Changes that are recently made will be highlighted in yellow and/or red font.

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.

APPENDIX

1/. LIST 1- LIST OF BREADTH SUBJECTS (STUDENTS MUST SELECT 2)

Reminder:
1/. Students from Data Sci Major can only select CP1401 and CP1404.
2/. Students from IOT Major can only select MA1000 and MA1003.

Subject Code	Subject Name	Pre-requisites	Year 2025 TR1S	TR2	TR3	Year 2026 TR1S	TR2	TR3
BS1001	Introduction to Biological Processes	(Assumed Knowledge: Good understanding of English to Grade 12 or equivalents.)		√		√		√
BS1007	Introduction to Biodiversity	(Assumed Knowledge: Good understanding of English to Grade 12 (Queensland) or equivalent)	√		√		√	
CP1401	Problem Solving and Programming I		√	√	√	√	√	√
CP1404	Programming II	CP1401	√	√	√	√	√	√
EV1005	Environmental Processes and Global Change			√		√		√
MA1000	Mathematical Foundations	MA1020 OR Maths B OR Maths C	√	√	√	√	√	
MA1003	Mathematical Techniques	MA1000	√		√	√		
MA1580	Foundations of Data Science	MA1000 or MA1020 or Maths B	√		√	√		√

2/. LIST 2-LIST OF SKILL SUBJECTS (STUDENTS MUST SELECT 1)

Reminder: Students from IOT Major MUST only select MA2000 for the Skill subjects

Subject Code	Subject Name	Pre-requisite	Year 2025 TR1S	TR2	TR3	Year 2026 TR1S	TR2	TR3
CP2404	Database Modelling		√		√	√		√
EV2502	Geographic Information Systems	4 level 1 subjects		√		√		√
MA2000	Mathematics for Scientists and Engineers	MA1003		√			√	
MA2210	Linear Algebra	MA1003. Recommended to complete MA2000.						√
MA2830	Data Visualisation		√		√		√	

3/. LIST OF SCIENCE SUBJECTS LEVEL 2,3,5

Subject Code	Subject Name	Pre-requisite	Year 2025 TR1S	TR2	TR3	Year 2026 TR1S	TR2	TR3
AQ2001	Introduction to Aquaculture	4 Level 1 Science subjects (Assumed Knowledge: Good understanding of level 1 biology, particularly zoology. A basic understanding of chemistry and statistics is highly recommended)		√		√		√
AQ2002	Aquaculture of Tropical Species	4 Level 1 Science subjects (Assumed Knowledge: Good understanding of basic biology)	√		√		√	
AQ3002	Aquaculture: Feeds and Nutrition	4 of Level 2 AQ, BC, BZ, BS, CH, EA, EV, MA, MB or PH science subjects and 1 of level 2 aquaculture subjects.		√		√		√
AQ3003	Aquaculture: Propagation	AQ2001 and at least 4 subjects of Level 2 science subjects. (Assumed Knowledge: Good understanding of basic biology and aquaculture principles.)		√		√		√
AQ3004	Aquaculture: Stock Improvement	At least 4 subjects of Level 2 science subjects and 1 subject of level 2 aquaculture subjects. (Assumed Knowledge: Good understanding of basic biology, physiology, genetics and aquaculture, and should have completed SC2202/SC2209 AND AQ2001 or equivalent.)	√		√		√	
AQ3015	Sustainable Aquaculture	4 Level 2 subjects	√		√		√	
BS2460	Fundamentals of Ecology	2 Level 1 or 2 BZ/BS/EV subjects (Assumed Knowledge: Good understanding of level 1 biology or environmental science and are also recommended to have completed some introductory statistics prior to enrolling)	√		√		√	
BS2470	Evolution	BS1001 (Assumed Knowledge: Have completed 12 credit points of level 1 science subjects, have an understanding of the fundamentals of biology (BS1001 or equivalent).)	√		√		√	0
CP2403	Information Processing and Visualisation	Minimum 12 credit points of subjects. (Inadmissible with CP3413)	√		√	√		√
CP2404	Database Modelling		√		√	√		√
CP2405	Collective Intelligence and Entrepreneurship	Minimum 24 credit points.	√		√	√		√
CP2406	Programming III	CP1404	√		√	√		√
CP2408	Design Thinking II	CP1403	√	√	√	√	√	√
CP2409	Network Forensics and Data Communications	CP1402	√		√			
CP2410	Algorithms and Data Structures	6 credit points of CP subjects				√		√
CP2411	3D Modelling and Animation	6 credit points of CP subjects		√		√		
CP2412	Game Design and Technologies	6 credit points of CP subjects		√		√		
CP2414	Network Security	For BBUS Student: 3 credit points of CP subjects; For Student in other Program CP1402	√		√	√		√
CP2421	Machine Learning for Cybersecurity	CP1401 and MA1580		√		√		
CP2422	Cloud and Data Centre Security	CP1401		√	√		√	√
CP2423	Cybersecurity Infrastructure and Management	CP1401 and CP1410		√	√		√	√
CP2424	Cybersecurity Risk Management	12 credit points of CP subjects including CP1410	√			√		
CP3401	e-Strategic Management	Minimum of 24 credit points		√			√	
CP3402	Content Management Systems	CP1404 and CP1406 and 24 credit points of CP subjects	√		√		√	
CP3403	Data Mining	(CP2403 and CP2404) or (18 credit points of subjects including 6 credit points of CP subjects).Inadmissible Subject : CP5634	√	√		√		√
CP3404	Information Security	(CP2414) or (18 credit points of subjects including CP1402)	√		√	√		√
CP3405	Design Thinking III	CP2408	√	√	√	√	√	√
CP3406	Mobile Computing	CP1404 and 18 credit points of CP subjects	√		√		√	
CP3407	Advanced Software Engineering	CP1404 and 18 credit points of CP subjects	√	√		√	√	
CP3408	Game Engine and Simulation	CP1404 and 18 credit points of CP subjects		√			√	
CP3413	Information Processing and Visualisation	12 credit points of BUSX subjects (Inadmissible with CP2403)	√		√	√		√
CP3414	Ethical Hacking	CP2422, CP2423	√	√	√		√	√
CP3415	Strategy and Governance	CP2424		√				
CP3416	Behavioural Cybersecurity	36 credit points of CP or MA subjects			√	√		√
CP3417	Cybersecurity for Operational Technology	CP2423	√		√		√	
CP3418	Best Practices in Cybersecurity	CP3414	√	√	√	√		√
EE2201	Circuit Theory	EG1012 & MA2000. Allow concurrent enrolment for MA2000.		√			√	
EE3901	Sensor Technologies	EE2201 and CC2003	√		√			√
EV2301	Urban Geography	At least 9 credit points at level 1			√		√	
EV2502	Geographic Information Systems	4 level 1 subjects		√		√		√
EV3404	Field Studies in Tropical Geography	At least 15 credit points at Level 2			√		√	
EV3110	Environmental and Social Impact Assessment	3 level 2 subjects		√		√		√
MA2000	Mathematics for Scientists and Engineers	MA1003		√			√	
MA2210	Linear Algebra	MA1003. Recommended to complete MA2000.						√
MA2211	Discrete Mathematics	Maths B or MA1020	√			√		
MA2405	Advanced Statistical Modelling	SC2202 AND MA1000	√		√		√	
MA2830	Data Visualisation		√		√		√	
MA3212	Optimisation and Operations Research	MA2000 and MA2210	√			√		
MA3405	Statistical Data Mining for Big Data	MA2405 or MA2000 or SC2202	√		√	√		√
MA3831	Natural Language Processing, Web Scraping and Large Data Processing	CP1404 and/ MA3405		√		√		√
MA3832	Neural Network and Deep Learning	MA3405 and CP1404		√			√	
MB3200	Marine Conservation Biology	SC2202 or BS2460	√		√	√		√
MB5001	Tropical Marine Ecology and Coastal Impacts	Available to undergraduate students in their third year with a GPA >5 (Assumed Knowledge: students are assumed to have a basic understanding of ecological principles and techniques as well as some background in statistics and sampling design. A basic understanding of marine biodiversity is also assumed)			√			√
MI2031	Diagnosis of Bacterial Diseases in Aquaculture		√			√		
MA2011	Discrete Mathematics for Computing	Algebra and arithmetic to a year 10 standard		√	√		√	√

Updated on 19 Aug 2025