STUDY PLAN - BACHELOR OF SCIENCE

*Students who have not completed high school Mathematical Methods or equivalent must enrol in MA1020 Preparatory Maths as an elective level 1 subject at Term 1

COURSE STRUCTURE FOR BSCI (AQUACULTURE & TECHNOLOGY MAJOR)

6 General core subjects SC1101 & SC1102 SC2202 SC3008 or SC3901 SC3008 or SC3901 Plus 2 Skill Subjects

2 Breadth Subjects AND
8 Elective subjects including:
3 subjects from Level 2 or 3 or 5 Science subjects
1 subject from 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)

6 General core subjects SC1101 & SC1102 SC2202 SC3008 or SC3901 Plus 2 Skill Subjects

2 Breadth Subjects
AND
8 Elective subjects including:
8 abjects from Level 2 or 3 or 5 Science subjects
1 subject from 3 or 5 Science subjects
2 subjects from any Level 1, 2, 3 or 5 subjects
2 subjects from any Level 3 n

COURSE STRUCTURE FOR BSCI (INTERNET OF THINGS MAJOR)

6 General core subjects SC1101 & SC1102 SC2202 SC3008 or SC3901 Plus 2 Skill Subjects

8 core subjects under Internet of Things Major

AND

8 Elective subjects including:
3 subjects from Level 2 or 3 or 5 Science subjects
1 subject from 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

6 GENERAL CORE SUBJECTS For All Majors			Year 2024			Year 2025			
	Subject Code	Subject Name	Pre-requisites	SP51	TR2	TR3	TR1S	TR2	TR3
	SC1101	Science, Technology and Truth		√	√	√	√	√	4
	SC1102	Modelling Natural Systems	MA1020/Senior Maths or equivalent.	√	√	√	√	V	4
3 subjects Level 1 & 2	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)	4		4		V	
1 subject Level 3 to be selected from here	SC3008	Professional Placement	Offered every term. Completed 4 second year subs & enrolled in BSCI final year. To apply for this subject stu- to apply to Careers Office at least 1 term shaed claserer-singapore@jcu.edu.au). To extend 1 trimester of stu- Professional Internship is the last subject remaining					dent nee dies so	
	SC3901	Special Topic 1	Offised every term. To request enrollment in this subject shuder's should (1) attain approval from a research supervisor (susally 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.						
2 Skill Subject-List 2		net 2 Skill Subjects from List 2 (Refer to Appendix List of Skill Subjects in the right side) * Student with IOT major must take MA2000 in order to meet pre-requirement of core subject EE2201.							

18 SUBJECTS FOR Aqua		nce & Technology Major			Year 2024			Year 2025	
	Subject Code	Subject Name	Pre-requisite	SP51	TR2	TR3	TR1S	TR2	TR3
	BS1001	Introduction to Biological Processes	(Assumed Knowledge: Good understanding of English to Grade 12 or equivalents.)	4		V		√	
	BS1007	Introduction to Biodiversity	(Assumed Knowledge: Good understanding of English to Grade 12 (Queensland) or equivalent)		√		√		4
	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).)	4	7		V		٧
	MI2031	Diagnosis of Bacterial Diseases in Aquaculture		4			√		
	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:)	4		V		1	
8 core subjects	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.	4		V		V	
	AQ3003 OR	Aquaculture: Propagation	AQ2001 and at least 4 subjects of Level 2 science subjects. (Assumed Knowledge: Good understanding of basic biology and aquaculture principles.)	V		V		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.)		V		V		V
	AQ3015	Sustainable Aquaculture	4 Level 2 subjects		4		√		√
Plus 2 breadth subjects from List 1	Select any 2	subjects (except BS1001 & BS1007) from Breadth Subjects in Li	ist 1 - List of Breath Subjects at Appendix						
		acts from any Level 2, 3 or 5 Science subjects (See List of Science act from any Level 3 or 5 Science subjects (See List of Science							
Plus 8 elective subjects		ects from any Level 1, 2, 3 or 5 subjects- can choose from other n irrement. Students who have not completed high school Mathema							
	Select 2 subjective pre-requisite	ects from any Level 2,3 or Level 5 subjects-can choose from other requirement	r majors or refer to Study Plan of other undergraduate p	rogram e.c	. Business	, Arts, Psy	:hology)- m	ake sure yo	xu meet

18 SUBJECTS FOR Data	Science Maj	or			Year 2024			Year 2025	
	Subject Code	Subject Name	Pre-requisite	SP51	TR2	TR3	TR1S	TR2	TR3
	MA1580	Foundations of Data Science	MA1000 or MA1020 or Maths B	4		4	V		4
OR	MA1000	Mathematical Foundations Select 1	MA1020 OR Maths B OR Maths C	4	√	4	4		4
_	CP1404	Programming II	CP1401	4	√	4	4	√	4
	MA2405	Advanced Statistical Modelling	SC2202 AND MA1000		√		√		√
	MA3405	Statistical Data Mining for Big Data	MA2405 or MA2000 or SC2202	4	√		√	√	
	MA3831	Natural Language Processing, Web Scraping and Large Data Processing	CP1404 and MA3405	4		√		√	
8 core subjects	MA3832	Neural Network and Deep Learning Select 1	MA3405 and CP1404	4		√		√	
	MA3212	Optimisation and Operations Research	MA2000 and MA2210		√		V		
	Plu	us 2 subjects from below list (Don't select CP2404 a	nd/or MA2210 if they are already taken in Si	kill Subje	cts List).				
	CP2404	Database Modelling		4	√		V		4
	MA2210	Linear Algebra	MA1003. Recommended to complete MA2000.	4		4		√	
	MA2211	Discrete Mathematics	Maths B or MA1020		4		4		4
	MA2830	Data Visualisation			√		V		4
	MA3331 Natural Language Processing, Web Scriping and Large Data CP1404 and MA3405 V V V V V V V V V	√	4						
Plus 2 breadth subjects		Mathematical Foundations Select 1	MA1020 OR Maths B OR Maths C	4	√	√	V		4
Plus 2 breadth subjects		Programming II	CP1401	4	√	4	√	√	√
	Select 3 subje Select 1 subje	cts from any Level 2, 3 or 5 Science subjects (See List of Science trom any Level 3 or 5 Science subjects (See List of Science	ce Subjects Level 2, 3, 5 at Appendix) Subjects Level 3, 5 at Appendix)						
Plus 8 elective subjects	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- requisitie requirement. Note 1: Situadrist who have not completed high school Methematical Methods or equivalent must enot in MA1020 Preparatory Maths as an elective level 1 subject at Term 1. Note 2: Nece Student must select MA1003 as an elective level 1 in this option line if you with to study MA2000, MA2210 & MA3212 (Student must enert pre-req of MA2000 & MA2210 before adapting MA2012.)								

1	8 SUBJECTS FOR Intern	et Of Thing	s Major (IOT)			Year 2024	ı		Year 2025				
		Subject Code	Subject Name	Pre-requisite	SP51	TR2	TR3	TR1S	TR2	TR3			
	EG1012	Electric Circuits	Assumed Knowledge: This subject requires prior knowledge of Senior Mathematics B or MA1020 (or equivalent) OR Senior Mathematics C.		٧			√					
l		CC1003	Introduction to Microcontroller Programming			4		√		4			
8 core subjects Plus 2 breadth subjects-List	CC2003	Internet of Things Devices and Software	CC1003 and EG1012	√		√		√					
	EE2201	Circuit Theory	EG1012 & MA2000. Allow concurrent enrolment for MA2000.	√		4		√					
	CC3003	Internet of Things Systems and Security	CC2003	√				√					
	EE3901	Sensor Technologies	EE2201 and CC2003	√		4	4		4				
l		MA2405	Advanced Statistical Modelling	SC2202 AND MA1000		V		√		4			
	MA3405	Statistical Data Mining for Big Data	MA2405 or MA2000 or SC2202	√	4		√	√					
	Plus 2 breadth subjects-List 1	*Students adr	cts of Breadth Subjects List 1 (See List of Breath Subjects at Ap nitted before SP51/22 in IOT major must Not select MA1000 & I itted in SP51 22 must take MA1000 & MA1003 so you can take	MA1003 in List 1 of Breath Subjects.									
ľ		MA1000	Mathematical Foundations	MA1020 OR Maths B OR Maths C	√	√	4	4		4			
l		MA1003	Mathematical Techniques	MA1000		4		4		4			
l		MA2000	Mathematics for Scientists and Engineers	MA1003	√		√		√				
	MA1003 + MA2000 +	MA2210	Linear Algebra	MA1003. Recommended to complete MA2000.	√		√		√				
		Select 1 subje	cts from any Level 3 or 5 Science subjects (See List of Science	Subjects Level 3, 5 at Appendix)									
	Plus 2 breadth subjects-List Plus MA1003 + MA2000 + MA2210 + 4 elective subjects (For Students admitted before SP51/22) SELECT 1 Plus 8 elective subjects (For Students admitted before SP51/22)	Select 1 subje requisite requi	Select 1 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- equisite requirement. Students who have not completed high school Mathematical Methods or equivalent must errol in MA1020 Preparatory Matha as an elective level 1 subject at Term 1.										
MA1000 + MA1003 + MA2000 + MA2210 + 4 elective subjects (For Students admitted before SP51/22) SELECT 1	Select 2 subjects from any Level 2,3 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												
		ets from any Level 2, 3 or 5 Science subjects (See List of Science ets from any Level 3 or 5 Science subjects (See List of Science											
		Select 2 subje requisite	ects from any Level 1, 2, 3 or 5 subjects- can choose from other n requirement. Students who have not completed high school Mat	najors or refer to Study Plan of other undergraduate pro hematical Methods or equivalent must enrol in MA1020	ogram e.g. O Preparato	Business, ory Maths a	Arts, Psych s an electiv	ology)- mak e level 1 sul	e sure you bject at Te	meet pre			
ĺ	5. 522 5)	Select 2 subjects from any Level 2,3 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											

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 OF BREADTH SUBJECTS

Reminder:

1. All students must select 2 subjects from this list.

-For IOT major: students admitted Defore SP8122 must select any 2 subjects from this list except MA1000 & MA1003 which are already core of your major; students admitted in SP8122 must select MA1000 & MA1003.

-For Data Science major: students must select CP1401 & CP1404 or MA1000.

-For Data Science major: students must select CP1401 & CP1404 or MA1000.

-For Applications: A Technology major students must select CP1401 & CP1404 or MA1000.

				Year 2024		Year 2025			
Subject Code	Subject Name	Pre-requisites	SP51	TR2	TR3	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	√	√	√	√	√	√	
EA1110	Evolution of the Earth				√				
EV1005	Environmental Processes and Global Change		√		√		√		
MA1000	Mathematical Foundations	MA1020 OR Maths B OR Maths C	√	√	√	√		√	
MA1003	Mathematical Techniques	MA1000		√		√		4	

2/. LIST 2 OF SKILL SUBJECTS

Reminder: All students must select 2 subjects from this list.				Year 2024		Year 2025			
Subject Code	Subject Name	Pre-requisite	SP51	TR2	TR3	TR1S	TR2	TR3	
CP2404	Database Modelling		√	√		√		√	
EV2502	Introduction to Geographic Information Systems	4 level 1 subjects	√		√		√		
MA2000	Mathematics for Scientists and Engineers	MA1003	√		√		√		
MA2210	Linear Algebra	MA1003. Recommended to complete MA2000.	V		√		√		
MA2830	Data Visualisation			٧		√		√	

J. E.O.	OF SCIENCE SUBJECTS LEVEL 2,3,5			Year 2024		Year 2025		
Subject Code	Subject Name	Pre-requisite	SP51	TR2	TR3	TR1S	TR2	TI
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)	4		V		4	
AQ2002	Aquaculture of Tropical Species	4 Level 1 Science subjects (Assumed Knowledge: Good understanding of basic biology)		V		V		
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.	V		V		√	
AQ3003	Aquaculture: Propagation	AQ2001 and at least 4 subjects of Level 2 science subjects. (Assumed Knowledge: Good understanding of basic biology and	V		V		√	
AQ3004	Aquaculture: Stock Improvement	aquaculture principles.) At reast 4 subjects or Lever 2 science subjects and 1 subject or lever 2 aquaculture subjects. (Assumed Knowledge: Good understanding of basic biology,		√		√		
AQ3015	Sustainable Aquaculture	4 Level 2 subjects		√		V		
BS2460	Fundamentals of Ecology	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.)	4		V	√		
BS2470	Evolution	some introductory statistics prior to enrolling) BS1001 (Assumed Knowledge: Have completed 12 credit points of level 1	√	V		V		
CP2403	Information Processing and Visualisation	science subjects. have an understanding of the fundamentals of Minimum 12 credit points of subjects. (Inadmissible with CP3413)		V	V		V	
CP2404	Database Modelling	,	√	√		√		
CP2405	Collective Intelligence and Entrepreneurship	Minimum 24 credit points.	√	V		√		
CP2406	Programming III	CP1404	√		√	√		
CP2408	Design Thinking II	CP1403	√	√	√	√		
CP2409	Network Forensics and Data Communications	CP1402		V		√		
CP2410	Algorithms and Data Structures	6 credit points of CP subjects		√		√		
CP2411	3D Modelling and Animation	6 credit points of CP subjects	√		V		√	
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	√		V		√	
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 (CP2403 and CP2404) or (18 credit points of subjects including 6		V		√		
CP3403	Data Mining	credit points of CP subjects).Inadmissible Subject : CP5634	√	√		√	√	
CP3404	Information Security	(CP2414) or (18 credit points of subjects including CP1402)		√		√		L
CP3405	Design Thinking III	CP2408	√	√	√	√	√	
CP3406 CP3407	Mobile Computing Advanced Software Engineering	CP1404 and 18 credit points of CP subjects CP1404 and 18 credit points of CP subjects	V	√	√	√ √	√	
CP3408	Game Engine and Simulation	CP1404 and 18 credit points of CP subjects			√			
CP3413	Information Processing and Visualisation			V	V		√	
	Information Processing and Visualisation	12 credit points of BU/BX subjects (Inadmissable with CP2403)						<u> </u>
CP3414	Ethical Hacking	CP2422, CP2423	√	V	√	√	√	
CP3415	Strategy and Governance	CP2424	√		√		√	
CP3416	Behavioural Cybersecurity	36 credit points of CP or MA subjects	V		V		V	
CP3417	Cybersecurity for Operational Technology	CP2423		V		√		
CP3418	Best Practices in Cybersecurity	CP3414	√	V	√	√	٧.	
EE2201	Circuit Theory	EG1012 & MA2000. Allow concurrent enrolment for MA2000.	٧		√ 		√	┡
EE3901 EV2011	Sensor Technologies The Case for Sustainability	EE2201 and CC2003	√	J.	√ √	٧	√	
EV2011	Introduction to Geographic Information Systems	4 level 1 subjects	√		V		V	H
EV2502	Sustainability in Practice		v .	l	V	_	V	H
EV3110	Environmental and Social Impact Assessment	4 level 2 subjects	√		√		√	
MA2000	Mathematics for Scientists and Engineers	MA1003	√		√		V	
MA2210	Linear Algebra	MA1003. Recommended to complete MA2000.	√		√		√	L
MA2211	Discrete Mathematics	Maths B or MA1020		V		√		
MA2405	Advanced Statistical Modelling	SC2202 AND MA1000		٧.		√.		
MA2830 MA3212	Data Visualisation Optimisation and Operations Research	MA2000 and MA2210		√ √		√ √		H
			.,				.,	-
MA3405 MA3831	Statistical Data Mining for Big Data Natural Language Processing, Web Scraping and	MA2405 or MA2000 or SC2202 CP1404 and' MA3405	√ √	√	√	√	√ √	-
MA3831 MA3832	Large Data Processing Neural Network and Deep Learning	CP1404 and MA3405 MA3405 and CP1404	√ √		٧		√ √	
13032			*	V	'	√	,	-
MD2000	Marine Conservation Biology	SC2202 or BS2460 Available to undergraduate students in their third year with a GPA >5		N N		· ·		
MB3200 MB5001	Tropical Marine Ecology and Coastal Impacts	(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)			V			
	Tropical Marine Ecology and Coastal Impacts Diagnosis of Bacterial Diseases in Aquaculture	understanding of ecological principles and techniques as well as some background in statistics and sampling design. A basic understanding	V		√	√		