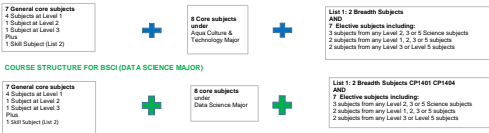# STUDY PLAN - BACHELOR OF SCIENCE

For student admitted from SP52 2022 onwards

Students commences in Carousel/Block intake(SP82, SP84, SP86) please refer to page 2 for subjects offering of the respective intake.

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
2 subjects from any Level 3 or Level 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
2 subjects from any Level 3 or Level 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	SP51	TR2	TR3	TR1S	TR2	TR3
5 Level 1, 2	CH1020 or any UG Level 1	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.		√			√	√
	MA1020 or any UG Level 1	Preparatory Mathematics		√	√	√	√	√	√
	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	SC3008 **OR** (Select 1)	Professional Placement	Offered every term. Completed 4 second year subs & enrolled in BSCI final year. To apply for this subject student need to apply to Careers Office at least 1 term ahead (careers-singapore@jcu.edu.sg). To extend 1 trimester of studies as Professional Internship is the last subject remaining						
	SC3901	Special Topic 1	Offered every term. To request enrolment in this subject student's 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	SP51	TR2	TR3	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).)		√		√		√
	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 **OR** (Select 1)	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		√		√		√
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	SP51	TR2	TR3	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 **OR** (Select 1)	Neural Network and Deep Learning	MA3405 and CP1404	√			√		√
	MA3212	Optimisation and Operations Research	MA2000 and MA2210		√		√		√
		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			√		√		√
Plus 2 breadth subjects-List 1	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 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	SP51	TR2	TR3	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		√		√		√
	EE2201	Circuit Theory	EG1012 & MA2000. Allow concurrent enrolment for MA2000.	√			√		√
	CC3003	Internet of Things Systems and Security	CC2003	√			√		√
	EE3001	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 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.							

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	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		√		√		√
MA1580	Foundations of Data Science	MA1000 or MA1020 or Maths B	√		√		√	√

2/. LIST 2-1

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

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.		√		√		√
MA2830	Data Visualisation			√		√		√

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

Subject Code	Subject Name	Pre-requisite	SP51	TR2	TR3	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, BZ, 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).)	√		√		√	
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 BU/BX 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.	√		√		√	
EE3001	Sensor Technologies	EE2201 and CC2003	√		√		√	
EV2011	The Case for Sustainability			√		√		
EV2502	Introduction to Geographic Information Systems	4 level 1 subjects	√		√		√	
EV3011	Sustainability in Practice		√		√		√	
EV3110	Environmental and Social Impact Assessment	4 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	√		√		√	

* To request enrolment in this subject student's 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.

Updated on 21 Mar 2024

SUBJECTS OFFERED IN CAROUSEL / BLOCK INTAKES (SP82,84,86)

(Applicable for students whose first study period is in Carousel/Block intake i.e. SP82 or SP84 or SP86)

General Information

1) 1 Subject is equal to 3 credit points

2) The subject's level is indicated in the subject code after the prefix, eg: CP1401 = Level 1

IMPORTANT NOTE:

Maximum enrolment load 2 subjects in Carousell intakes

From the second study period onwards, all students must enrol in Trimester intakes (for eg: TR2/24, TR3/24, TR1/25)
 - For students who commences in SP82/24 , second study period will be TR2/24, followed by TR3/24, TR1/25, etc.
 - For students who commences in SP84/24 , second study period will be TR3/24, followed by TR1/25, TR2/25, etc.
 - For students who commences in SP86/24 , second study period will be TR1/25, followed by TR2/25, TR3/25, etc.
Please refer to page 1 to check subjects offering in TR1, TR2, TR3 intakes

BACHELOR OF SCIENCE: CORE / BREADTH SUBJECTS			Year 2024
Subjects codes	Subject title	Pre-requisites	SP82, SP84, SP86
CP1401	Problem Solving and Programming I		✓
BACHELOR OF SCIENCE: ELECTIVE SUBJECTS			Year 2024
Subjects codes	Subject title	Pre-requisites	SP82, SP84, SP86
CU1022	Developing Academic Skills		✓
BU1104	Introduction to Management Concepts and Application		✓
BU1105	Professional and Academic Skills for Business		✓
SS1111	Introduction to Mental Health		✓

Notes:

Changes that are recently made will be highlighted in yellow and/or red fonts.

Subjects for 2025 will be made available by middle of 2024

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.

Updated on 26 December 2023