

STUDY PLAN FOR BACHELOR OF SCIENCE

8 General core subjects (for ALL majors)

4 Subjects at Level 1
2 Subjects at Level 2
2 Subjects at Level 3

8 Core subjects of Major 1, Select from

Aqua Culture & Technology Major (8 Core), Or
Internet Of Things Major (8 Core), Or
Data Science Major (6 Core & 2 Elective)

8 Elective subjects (for ALL majors) including:

3 Science subjects Level 2/3/5
1 Science subject Level 3/5
2 subjects from any program, Level 2/3
2 subjects from any program, Level 1/2/3 **or** MA1020 + 1 sub from any program, Level 1/2/3 for students who haven't completed high school Maths Methods or equivalent).

Important Note: Must successfully complete 18 credit points of Level 1 and 2 science subjects before attempting any Level 3 science subject
Students who have not completed high school Mathematical Methods or equivalent must undertake MA1020 Preparatory Maths at Term 1

8 General Core subjects for All majors

Subject Code	Subject Name	Pre-requisites	SP51/21	SP52/21	SP53/21	SP51/22	SP52/22	SP53/22
SC1101	Science, Technology And Truth		✓	✓	✓	✓	✓	✓
SC1102	Modelling Natural Systems	MA1020/MA0020/Senior Maths or equivalent.	✓	✓	✓	✓	✓	✓
EV1005	Environmental Processes And Global Change			✓		✓		✓
EA1110	Evolution Of The Earth			✓		✓		✓
BS1001	Introduction To Biological Processes			✓		✓		✓
MA1000	Mathematical Foundations	MA1020 OR MA0020 OR Maths B OR Maths C		✓		✓	✓	
BS1007	Introduction To Biodiversity		✓		✓		✓	
MA1003	Mathematical Techniques	MA1000 OR MA1011 OR MA1009			✓		✓	
CP1401	Problem Solving And Programming 1		✓	✓	✓	✓	✓	✓
CP1404	OR Programming II	CP1401/CP1801	✓	✓	✓	✓	✓	✓
SC2202	Quantitative Methods In Science	SC1102 or MA1020 or Math B or Equivalent		✓		✓		✓
EV2502	Introduction To Geographic Information Systems	12 credit points of Level 1 subjects		✓		✓		✓
CP2404	Database Modelling					✓		✓
MA2210	Linear Algebra	MA1003. Recommended to complete MA2000.		✓		✓		✓
SC3008	Professional Placement	Completed 4 second year subs & enrolled in BSCI final year.				✓	✓	✓
SC3010	Sensors And Sensing For Scientists	SC2202 or SC2209				✓		✓

Data Science Major (8 Subjects)

Subject Code	Subject Name	Pre-requisite	SP51/21	SP52/21	SP53/21	SP51/22	SP52/22	SP53/22
MA1580	Foundations of Data Science	MA1000 or MA1020 or Maths B	✓		✓	✓		✓
MA1000	Mathematical Foundation	MA1020 or MATHEMATICS B or Maths C		✓		✓	✓	
CP1404	Programming II	CP1801 or CP1401 or CP1200	✓	✓	✓	✓	✓	✓
MA2405	Advanced Statistical Modelling	MA1401 or BZ2001 or MA2401 or SC2202 or SC2209 and MA1000			✓		✓	
MA3405	Statistical Data Mining for Big Data	MA2405 or MA2000 or SC2202 or SC2209					✓	
MA3831	Natural Language Processing, Web Scraping and Large Data Processing	CP1404				✓	✓	
MA3832	Neural Network and Deep Learning	MA3405 or MA5405 and CP1404					✓	✓
MA3212	Optimisation and Operations Research	MA2000 and (MA2210 or MA2201)					✓	
CP2404	Database Modelling		✓		✓		✓	
MA2210	Linear Algebra	MA1003. Recommended to complete MA2000.		✓		✓		✓
MA2211	Discrete Mathematics	Maths B			✓		✓	
MA2830	Data Visualisation				✓		✓	

Internet Of Things Major (8 subjects)

Subject Code	Subject Name	Pre-requisite	SP51/21	SP52/21	SP53/21	SP51/22	SP52/22	SP53/22
CC1003	Introduction to Microcontroller Programming				✓	✓	✓	
EG1012	Electric Circuits				✓		✓	✓
CC2003	Internet of Things Devices and Software	CC1003 and EG1012				✓		✓
EE2201	Circuit Theory	EG1012 & MA2000. Allow concurrent enrolment for MA2000.				✓		✓
MA2405	Advanced Statistical Modelling	MA1401 or BZ2001 or MA2401 or SC2202 or SC2209 and MA1000			✓		✓	
CC3003	Internet of Things Systems and Security	CC2003						✓
EE3901	Sensor Technologies	EE2201 and (CC2511 or CC2003)						✓
MA3405	Statistical Data Mining for Big Data	MA2405 or MA2000 or SC2202 or SC2209					✓	

STUDY PLAN FOR BACHELOR OF SCIENCE (CONTINUE)

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Internet Of Things Major (8 Core), Or
Data Science Major (6 Core & 2 Elective)

8 Elective subjects (for ALL majors) including:

3 Science subjects Level 2/3/5
1 Science subject Level 3/5
2 subjects from any program, Level 2/3
2 subjects from any program, Level 1/2/3 **or** MA1020 + 1 sub from any program, Level 1/2/3 for students who haven't

Important Note: Must successfully complete 18 credit points of Level 1 and 2 science subjects before attempting any Level 3 science subject
Students who have not completed high school Mathematical Methods or equivalent must undertake MA1020 Preparatory Maths at Term 1

Aquaculture & Technology Major (8 subjects)

Subject Code	Subject Name	Pre-requisite	SP51/21	SP52/21	SP53/21	SP51/22	SP52/22	SP53/22
BS1001	Introduction To Biological Processes			✓		✓		✓
BS1007	Introduction To Biodiversity		✓		✓		✓	
AQ2001	Introduction to Aquaculture	4 Level 1 science subjects BZ, CH, EA, EV, MA, MB, PH or SC subjects.		✓		✓		✓
BS2470	Evolution	BZ1001 or BS1001 or BZ1005			✓		✓	
MI2031	Diagnosis Of Bacterial Diseases In Aquaculture					✓		✓
AQ3002	Aquaculture: Feeds and Nutrition	4 Level 2 science subjects and 1 Level 2 aquaculture subjects. Should have completed SC2202 or SC2209 and AQ2001 or equivalent.		✓		✓		✓
AQ3003	Aquaculture: Propagation	AQ2001 AND at least 12 credit points of Level 2 science AQ, BC, BS, BZ, CH, EA, EV, MA, MB, PH, or SC subjects.		✓		✓		✓
AQ3004	Aquaculture: Stock Improvement	4 Level 2 science subjects and 1 Level 2 aquaculture subjects. Should have completed SC2202 or SC2209 and AQ2001 or equivalent.	✓		✓		✓	
AQ3015	Sustainable Aquaculture	4 Level 2 subjects	✓		✓		✓	

8 ELECTIVE SUBJECTS FOR ALL MAJORS - Refer to course structure at top of this page - Don't select core subjects of your major

List of Science subs [level 2/3/5] :

Subject Code	Subject Name	Pre-requisite	SP51/21	SP52/21	SP53/21	SP51/22	SP52/22	SP53/22
AQ2001	Introduction to Aquaculture	4 Level 1 Science subjects		✓		✓		✓
AQ2002	Aquaculture of Tropical Species	4 Level 1 Science subjects	✓		✓		✓	
AQ3002	Aquaculture: Feeds and Nutrition	4 Level 2 science subjects and 1 Level 2 aquaculture subjects. Should have completed SC2202 or SC2209 and AQ2001 or equivalent.		✓		✓		✓
AQ3003	Aquaculture: Propagation	AQ2001 AND 4 Level 2 science AQ, BC, BS, BZ, CH, EA, EV, MA, MB, PH, or SC subjects.		✓		✓		✓
AQ3004	Aquaculture: Stock Improvement	4 Level 2 science subjects and 1 Level 2 aquaculture subjects. Should have completed SC2202 or SC2209 and AQ2001 or equivalent.	✓		✓		✓	
AQ3015	Sustainable Aquaculture	4 Level 2 subjects	✓		✓		✓	
AQ5016	Aquaculture in Practice	AQ2001 OR AQ5006						
BS2470	Evolution	BZ1001 OR BS1001 OR BZ1005;			✓		✓	
BS2460	Fundamentals of Ecology	2 Level 1 or 2 BZ/BS or EV subjects		✓		✓		✓
EE2201	Circuit Theory	EG1012 and MA2000. Allow concurrent enrolment for MA2000.				✓		✓
EE3901	Sensor Technologies	EE2201 and (CC2511 or CC2003)						✓
EV2011	The Case for Sustainability			✓		✓		✓
EV2502	Introduction to Geographic	4 Level 1 subjects		✓		✓		✓
EV3011	Sustainability in Practice			✓		✓		✓
EV3110	Environmental and Social Impact	4 Level 2 subjects		✓		✓		✓
MB3200	Marine Conservation Biology	SC2202 or BS2460 or MB2060	✓		✓		✓	
MB5001	Tropical Marine Ecology and Coastal Impacts	Available for third year students with minimum GPA at 5.0; passed BS1007 & MA1401; has taken MB2060 or BS2460 or enrolled in this subject.						✓
MI2031	Diagnosis of Bacterial Diseases in Aquaculture					✓		✓
SC2202	Quantitative Methods in Science	SC1102 or MA1020 or Math B or Equivalent		✓		✓		✓
SC3008	Professional Placement	4 second year subs & enrolled in BSCI final yr.					✓	✓
SC3010	Sensors and Sensing for Scientists	BZ2001 or SC2202 or SC2209 or SC2201				✓		✓
SC5008	Professional Placement	Available only with permission of sub coordinator	✓		✓	✓		✓
SC5901	Special Topic 1	Refer to note (*) as below.	✓	✓	✓	✓	✓	✓
SC5902	Special Topic 2	Refer to note (*) as below.	✓	✓	✓	✓	✓	✓

* 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.

Disclaimer: The study plan is applicable for students admitted in SP53 2020 onwards. The above information is correct as below date. JCU Singapore reserves the right to alter any changes to the above information without prior notice.