Master of Science (Professional)

MAJOR Aquaculture Science & Technology

This study plan should be used as a general guide for your course. We recommend you consult with your CSE Course/Major Advisor and particularly if your intended enrolment varies from this plan.

The information in the study plan is current at the time of creation and may be subject to future change. If you would prefer a part-time study plan, please adjust the below study planner; reviewing subject prerequisites to ensure you are on track for course completion.

Useful study planning/enrolment resources:

To search for information on subjects: Subject Search
To register for your classes: Class Registration
For important dates check: Academic Calendars
Further enrolment resources: Enrolment Resources

	STUDY PERIOD 1	STUDY PERIOD 2
Year 1		**Major** **SC5200:03** Career Planning
		Major Select a SKILL subject from **List 1**
		Elective *Select 3 credit points of any level 5 science subject*
		Elective *Select 3 credit points of any level 5 science subject*

Year 2

STUDY PERIOD 1	STUDY PERIOD 2
Major AQ5002:03 Aquaculture: Feeds and Nutrition	**Course** Select: **Option 1** – Research Stream (12cp) SC5912:06 Research Project (Part 1 of 2) SC5913:06 Research Project (Part 2 of 2) ***See Course Notes below regarding eligibility criteria for Option 1.*** **OR** **Option 2** – Professional Employability Stream (12cp) SC5009:12 Postgraduate Internship
Major AQ5006:03 Aquaculture: Principles and Practices	
Elective *Select 3 credit points of any level 5 science subject* *RECOMMENDED-SC5202:03 Quantitative Methods in Science recommended if you have not completed statistics in your undergraduate degree. SC5202 can count as a SKILL subject-List 1.*	

STUDY PERIOD 3 (Jan-Feb)	STUDY PERIOD 7 (Jun-Jul)	STUDY PERIOD 10 (Nov-Jan)
	Major **AQ5003:03** Aquaculture: Propagation	

Year 3

STUDY PERIOD 1	STUDY PERIOD 2
Major AQ5012:06* Aquaculture: Hatchery Techniques **Note-AQ5012 is worth 6cp, so equivalent to 2 subjects.*	
Elective *Select 3 credit points of any level 5 science subject*	
Elective *Select 3 credit points of any level 5 science subject*	

STUDY PERIOD 3 (Jan-Feb)
Major **AQ5015:03** Sustainable Aquaculture

COURSE NOTES

Option 1 – Research Stream
To be eligible for this stream, students must attain a GPA of 5.5 or above from their preceding 24 credit points of JCU level 5 subjects, or approval of the Course Coordinator.

Option 2 – Professional Employability Stream
To be eligible for this stream, students must satisfactorily complete the pre-requisite subject SC5200 Career Planning and at least 24 credit points of level 5 JCU subjects.

ADDITIONAL INFORMATION

2023 Master of Science (Prof) Handbook
Aquaculture Science and Technology Major

SKILL SUBJECTS - List 1	
STUDY PERIOD 1	**STUDY PERIOD 2**
BS5260:03 Modelling Ecological Dynamics *ASSUMED KNOWLEDGE: It would be advantageous for students to have a basic understanding of ECOLOGY and MATH.* *Postgraduate subject equivalent to: BS5460; undergraduate subject equivalent to: BS2460 plus any university math; or equivalent industry experience.*	SC5502:03 Design and Analyses in Ecological Studies *ASSUMED KNOWLEDGE: Students must have a good understanding of STATISTICS which includes knowledge of basic probability, t-tests, ANOVA and ability to use R for data analysis (or have done the JCU R Bootcamp). SC5202 or SC2202 or SC2209 or equivalent industry experience.* *Note: Not available in Tropical Biology, Fisheries or Global Change Biology Majors (it's already built into major)*
SC5202:03 Quantitative Methods in Science *ASSUMED KNOWLEDGE: It would be advantageous for students to have a familiarity with how to use R (or have done the "Getting Started with R module" within the JCU R Bootcamp).*	BC5203:03 Advanced Bioinformatics *ASSUMED KNOWLEDGE: Students must have a basic understanding of STATISTICS which includes knowledge of basic probability and ability to use R for data analysis (or have done the JCU R Bootcamp). SC5202 or SC2202 or SC2209 or will have acquired equivalent knowledge through industry experience.*
CH5041:03 Environmental Chemistry *ASSUMED KNOWLEDGE: Students must have a basic understanding of CHEMISTRY. They will have passed a university chemistry subject or will have acquired equivalent knowledge through industry experience.*	BZ5450:03 Ecological and Conservation Genetics *ASSUMED KNOWLEDGE: Students must have a good understanding of GENETICS and EVOLUTION which includes knowledge of DNA structure, microevolutionary processes, genetics of populations and genes and heredity. BS5470 or BC5101 or BS2470 or BC3101 or BC2023 or will have acquired equivalent knowledge through industry experience.*
	CH5203:03 Analytical Chemistry *ASSUMED KNOWLEDGE: Students must have a good understanding of CHEMISTRY which includes knowledge of atomic structure, bonding, periodicity, acids and bases. It would be advantageous for students to have a basic understanding of MATH. CH1001 and any university math or will have acquired equivalent knowledge through industry experience.*
	EV5110:03 Environmental and Social Impact Assessment
	EV5505:03 Introduction Geographic Information Systems
	MA5405:03 Data Mining *ASSUMED KNOWLEDGE: Students must have a good understanding of STATISTICS which includes knowledge of basic probability, hypothesis testing, law of large numbers, central limit theorum and ability to use R for data analysis (or have done the JCU R Bootcamp). SC5202 or SC2202 or SC2209 or will have acquired equivalent knowledge through industry experience.*
	BZ5225:03 Technological Applications in Ecology *ASSUMED KNOWLEDGE: Students must have a basic understanding of STATISTICS which includes knowledge of basic probability, t-tests, regression and ability to use R for data analysis (or have done the JCU R Bootcamp). SC5202 or SC2202 or SC2209 or will have acquired equivalent knowledge through industry experience.*

Note: SKILL SUBJECTS-List 1 continued on next page

SKILL SUBJECTS - List 1 *continued*

STUDY PERIOD 3 (Jan-Feb)	STUDY PERIOD 6-7 (May-Jul)	STUDY PERIOD 9 (Sept-Nov)
EV5020:03 Human Dimensions of Nature, Environment and Conservation	BZ5990:03 Toolkit for the Field Biologist *ASSUMED KNOWLEDGE- Students must have a basic understanding of STATISTICS which includes knowledge of basic probability, experimental design, data distributions, statistical inferences from data and ability to use R for data analysis (or have done the JCU R Bootcamp). SC5202 or SC2202 or SC2209 or will have acquired equivalent knowledge through industry experience.*	EV5506:03 Remote Sensing *ASSUMED KNOWLEDGE: Students must have a basic understanding of GIS which includes knowledge of cartography. EV5505 or EV2502 or will have acquired equivalent knowledge through industry experience.*
	EA5018:03 Field Studies in Tropical Land and Water Science-SP6 *ASSUMED KNOWLEDGE: Students must have a good understanding of EARTH SCIENCE which includes knowledge of hydrology, soil science, geomorphology and ability to use Excel or R to do simple calculations (area, volume, rate calculations) and to plot graphs. (EV5016 or EA2006) and (EV5017 or EA2007 or EA3207) or will have acquired equivalent knowledge through industry experience.*	**STUDY PERIOD 10-11 (Nov-Jan)**
	EA5044:03 Geological Mapping-SP6 *COREQ: Must enrol together with EA5045* *ASSUMED KNOWLEDGE: Students must have a good understanding of EARTH SCIENCE which includes knowledge of structural geology, metamorphic, igneous and sedimentary geology. EA5330 or EA5048 or EA3210 or EA2220 or will have acquired equivalent knowledge through industry experience.* *MUST BE TAKEN WITH:* *EA5045:03 Field Techniques in Geology* *COREQ: Must enrol together with EA5044* *ASSUMED KNOWLEDGE: Same assumed knowledge as EA5044.*	AQ5004:03 Aquaculture: Stock Improvement *ASSUMED KNOWLEDGE- Students must have a good understanding of GENETICS and EVOLUTION which includes knowledge of DNA structure, microevolutionary processes, genetics of populations and genes and heredity. It would be advantageous for students to have a basic understanding of AQUACULTURE which includes knowledge of aquatic organism physiology and an overview of aquaculture. (BS5470 or BC5101 or BS2470 or BC3101 or BC2023) and (AQ5006 or AQ2001) or will have acquired equivalent knowledge through industry experience.*
		EA5640:03 Advanced Marine Geoscience Technologies and Applications *ASSUMED KNOWLEDGE- It would be advantageous for students to have a basic understanding of GIS and be able to use R for data analysis (or have done the JCU R Bootcamp). EV5505 or EV2502 or will have acquired equivalent knowledge through industry experience.*
	EA5330:03 Introductory Outback Field Geology *ASSUMED KNOWLEDGE: Students must have a basic understanding of EARTH SCIENCE which includes knowledge of rocks and minerals. EA1110 or will have acquired equivalent knowledge through industry experience.*	EV5502:03 Advanced Geographic Information Systems *ASSUMED KNOWLEDGE: Students must have a good understanding of GIS which includes knowledge of cartography, co-ordinate systems, basic spatial analysis, geography and be able to use standard GIS software. EV5505 or EV2502 or will have acquired equivalent knowledge through industry experience.*