Master of Marine Biology MAJOR Research*

STREAM Select a STREAM

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

Note-Your first subject in this degree will be MB5000 in SP3 (Jan-Feb).

Year 1

STUDY PERIOD 1	STUDY PERIOD 2
Course **MB5350**:03 Evidence and Controversy in Marine Science	Course Select 3 credit points of subjects from your **STREAM** Availabilities in SP7, SP2 and SP10-11-See STREAM Tables below
Course Select 3 credit points of Advanced Quantitative Skills-**List 1** Availabilities in multiple study periods	
Course Select 3 credit points of subjects from your chosen **STREAM** Availabilities in multiple study periods-See STREAM Tables below	
Course Select 3 credit points of subjects from your chosen **STREAM** Availabilities in multiple study periods-See STREAM Tables below	
Elective Select 3 credit points of any Level 5 Science subjects Availabilities in multiple study periods *RECOMMENDED-SC5202:03 Quantitative Methods in Science-if missing statistics from your undergraduate degree.*	Elective Select 3 credit points of any Level 5 Science subjects Availabilities in multiple study periods

STUDY PERIOD 3 (Jan-Feb)	STUDY PERIOD 7 (Jun-Jul)	STUDY PERIOD 10-11 (Nov-Jan)
Course **MB5000**:03 Advances in Marine Biology		

Note-ELECTIVES have been mapped in this plan to SP1 and SP2, but are available in multiple study periods, so you may move them if you would like. Keep in mind that international students must maintain enrolment in 4 subjects in both teaching periods.

Teaching Period 1= SP3, SP1 and SP82 *Teaching Period 2= SP7, SP2, SP9, SP10-SP11, and SP86*

	STUDY PERIOD 1	STUDY PERIOD 2
Year 2	Major **SC5055**:03 Research Methods and Communication Skills	Course **SC5200**:03 Career Planning
	Major **MB5900**:09 Marine Biology Thesis 1 *PREREQ: MB5000, MB5350 and Prior Approval* Major **MB5900**:09 Marine Biology Thesis 1 *PREREQ: MB5000, MB5350 and Prior Approval*	Major MB5901:09 Marine Biology Thesis 2 *PREREQ: MB5900, SC5055*

Note: *Ongoing enrolment in Year 2 of the Research major will require completion of 24 credit points with a minimum GPA of 5.5 and confirmation of a research supervisor and project for MB5900 and MB5901

ADDITIONAL INFORMATION

2023 Master of Marine Biology Handbook
Research Major

Coral Reef Stream	
STUDY PERIOD 1	**STUDY PERIOD 2**
EV5406:03 Coral Reef Geomorphology	MB5004:03 Marine Conservation Biology
MB5055:03 Biological Oceanography *ASSUMED KNOWLEDGE: They should have a good understanding of basic biological principles and marine systems and have completed a statistics subject (SC5202 or equivalent).*	MB5190:03 Coral Reef Ecology *ASSUMED KNOWLEDGE: Students enrolling in this subject should have a broad knowledge of biology and ecology (not necessarily for coral reef organisms), a high degree of competency in data manipulation and biological statistics (i.e. able to independently perform ANOVA, Chi-square, and Regression analyses), and comprehensive understanding of major considerations for designing ecological sampling programs and experiments.*
MB5160:03 Evolution and Ecology of Reef Fishes *ASSUMED KNOWLEDGE: Students must have an excellent understanding of EVOLUTIONARY BIOLOGY which includes knowledge of biogeography, marine organisms and vertebrate anatomy as well as a good understanding of STATISTICS and ECOLOGY of marine systems. (MB5070 or MB2070) AND (SC5202 or SC2202 or SC2209) AND (BS5460 or BS2460) or will have acquired equivalent knowledge through industry or previous study.*	
MB5400:03 Life History and Evolution of Reef Corals *ASSUMED KNOWLEDGE: They should have an excellent understanding of biometrics, ecological principles and invertebrate biology, and should have completed SC5202 or equivalent.*	

STUDY PERIOD 3 **(Jan-Feb)**	**STUDY PERIOD 7** **(Jun-Jul)**	**STUDY PERIOD 11** **(Nov-Jan)**
MB5310:03 Marine Reserves as Fisheries Management Tools *ASSUMED KNOWLEDGE: They should have an excellent understanding of level 3 science and should have completed SC5202 or equivalent, and have an excellent understanding of ecological principles.*	SC5810:03 Marine Ecology and Upwelling *REQUISITE: Prior Approval* *ASSUMED KNOWLEDGE: Prior knowledge of marine biology, statistics and sampling designs.* *Note-This subject has an overseas fieldtrip to Galapagos.*	MB5001:03 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.*

Marine Conservation and Management Stream	
STUDY PERIOD 1	**STUDY PERIOD 2**
EV5701:03 Coastal and Marine Management and Conservation	MB5004:03 Marine Conservation Biology
MB5204:03 Conserving Marine Wildlife: Sea Mammals, Birds, Reptiles	MB5270:03 Coastal, Estuarine and Mangrove Ecosystems *ASSUMED KNOWLEDGE: Students should have an excellent understanding of Level 3 science and should have completed SC5202 or equivalent, and an excellent understanding of ecological principles.*
MB5620:03 Grand Challenges in Fisheries	

STUDY PERIOD 3 **(Jan-Feb)**	**STUDY PERIOD 7** **(Jun-Jul)**	**STUDY PERIOD 11** **(Nov-Jan)**
EV5020:03 Human Dimensions of Nature, Environment and Conservation		MB5001:03 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.*
		MB5014:03 Managing Tropical Fisheries *ASSUMED KNOWLEDGE: A basic understanding of natural resource management principles, the marine environment and fishing is assumed for students undertaking this subject.*

Marine Genomics Stream	
STUDY PERIOD 1	**STUDY PERIOD 2**
BC5101:03 Advanced Genes, Genomes and Development *ASSUMED KNOWLEDGE: This subject assumes a basic level of understanding of cell biology and molecular genetics.*	AQ5007:03 Aquatic: Animal Ecophysiology *ASSUMED KNOWLEDGE: Students should have an excellent understanding of science subjects including basic biology, chemistry, aquaculture and statistics.*
BS5470:03 Evolution *ASSUMED KNOWLEDGE: Students must have a basic understanding of GENETICS and EVOLUTION which includes knowledge of the fundamentals of biology, DNA structure, the principles of inheritance and microevolutionary processes. Students will have completed an undergraduate subject equivalent to BS1001 or will have acquired equivalent knowledge through industry experience.*	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.*
MB5070:03 Marine Biogeography *ASSUMED KNOWLEDGE: Students should have an excellent understanding of science subjects, particularly biology, geological processes and ecological principles.*	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.*
	MB5004:03 Marine Conservation Biology

STUDY PERIOD 3 **(Jan-Feb)**	**STUDY PERIOD 7** **(Jun-Jul)**	**STUDY PERIOD 10** **(Nov-Jan)**
		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.*

Fisheries Science Stream	
STUDY PERIOD 1	**STUDY PERIOD 2**
AQ5006:03 Aquaculture: Principles and Practices *ASSUMED KNOWLEDGE: Previous degree in Biology required.*	
MB5003:03 Fisheries Science *ASSUMED KNOWLEDGE: Students enrolling in this subject should have an excellent understanding of biometrics, ecological principles and marine biology, and should have completed SC5202 or equivalents.*	
MB5620:03 Grand Challenges in Fisheries	

STUDY PERIOD 3 **(Jan-Feb)**	**STUDY PERIOD 7** **(Jun-Jul)**	**STUDY PERIOD 11** **(Nov-Jan)**
AQ5015:03 Sustainable Aquaculture	~~MB5610:03 Fishing Gear and Technologies~~ *Note-Not on offer in 2023. Proposed to reoffer in 2024 in SP7.*	MB5014:03 Managing Tropical Fisheries *ASSUMED KNOWLEDGE: A basic understanding of natural resource management principles, the marine environment and fishing is assumed for students undertaking this subject.*
EV5020:03 Human Dimensions of Nature, Environment and Conservation		
MB5310:03 Marine Reserves as Fisheries Management Tools *ASSUMED KNOWLEDGE: Students enrolling in this subject should have an excellent understanding of level 3 science and should have completed SC5202 or equivalent, and have an excellent understanding of ecological principles.*		

ADVANCED QUANTITATIVE SKILL-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. (BS5460 or BS2460) and any university math or will have acquired equivalent knowledge through industry experience.* *NOTE-Not available in Geology Major*	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.*
	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.*
	SC5502:03 Design and Analyses in Ecological Studies *ASSUMED KNOWLEDGE: Students must have a basic 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 will have acquired equivalent knowledge through industry experience.*

STUDY PERIOD 3 (Jan-Feb)	STUDY PERIOD 7 (May-Jul)	STUDY PERIOD 9 (Sept-Nov)
		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.*
		STUDY PERIOD 11 **(Nov-Jan)**
		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.*
STUDY PERIOD 82 **(Mar-Apr)**	**STUDY PERIOD 84** **(Jul-Aug)**	**STUDY PERIOD 86** **(Oct-Dec)**
MA5801:03 Essential Mathematics for Data Science		MA5801:03 Essential Mathematics for Data Science