DEGREE Master of Science **MAJOR** Marine Biology (MSC-MBY)

RECOMMENDED STUDY PLAN 2021-2022

NAME _____ **STUDENT NUMBER** _____

DEGREE Master of Science **MAJOR** Marine Biology (MBY)

Course information – Master of Science

The Master of Science degree is structured such that students take sets of (1) foundational '*knowledge*' specific to their major, (2) technical and / or analytical '*skills*' subjects, and (3) *elective* subjects.

Use this document to plan out what subjects you will take and when. Consult with your course advisor about the nature of subjects, research and internship pathways and any queries you may have. The course advisor for each major in the Master of Science programs is listed here. When you are ready to enrol in subjects proceed to your eStudent account.

Click here to see the relevant JCU Course handbook: https://www.jcu.edu.au/course-and-subject-handbook/courses/postgraduate-courses/master-of-science.

Students wishing to take a semester long internship or research project need to transfer to the MSc Professional degree. This should be done before you start your JCU course.

Marine Biology major structure

1. Take 3 of the following prescribed **Knowledge** subjects:
   - 1.1. MB5055 Biological Oceanography (SP1)
   - 1.2. MB5190 Coral Reef Ecology (SP2) **OR** MB5270 Coastal, Estuarine and Mangrove Ecosystems (SP2)
   - 1.3. MB5004 Marine Conservation Biology (SP2)
2. Take 4 **Skills** subjects:
   - 2.1. Take MB5300 Sampling and Experimental Design **OR** SC5502 Design and Analyses in Ecological Studies (SP3) ***(obligatory); Plus:***
   - 2.2. Take 1 of the following Advanced Skill subjects from List 1.
     - 2.2.1. BS5260 Modelling Ecological Dynamics (SP2)
     - 2.2.2. BZ5450 Ecological and Conservation Genetics (SP2)
     - 2.2.3. EV5110 Environmental and Social Impact Assessment (SP2)
     - 2.2.4. EV5502 Advanced Geographic Information Systems (SP11)
     - 2.2.5. EV5506 Remote Sensing (SP9 / SP11)
   - 2.3. And take 2 Additional Skills subjects from List 2
     - 2.3.1. SC5200 Professional Employability (SP1 and SP2)
       SC5200 is recommended for all students in their first semester of study & compulsory if you are planning on taking the internship program (SC5009) in the MSc Professional degree.
3. Take 5 **Elective** subjects from List 3.

Full subject descriptions and timings of all subjects can be found online using the *Subject Search* tool. Use this tool to explore your subject options. Each subject is usually only offered once per year, in the 'study period' stated on Subject Search. It is generally recommended to take 8 subjects per year,

with 3 or 4 in each main semester (Study Period 1 and 2), and additional subjects in the block mode (intensive) periods (SP3, SP7, SP10 /11) as necessary. An explanation to JCU's academic calendar can be found here.

Multiple subjects can be taken consecutively in a block mode period as long as the face to face teaching dates do not overlap. These dates are displayed on the Subject Search tool. For example a student can take SC5502 in SP3 followed by MB5310.

Please note that timings of some subjects occasionally change among years, due to JCU's operational requirements. While such changes are rare, students should check when a subject is being taught using the Subject Search tool above.

For any subject you need to have fulfilled the 'Assumed Knowledge' and / or Pre-requisites before you take them. These are listed in the subject's description. For example, EV5502 assumes you have already taken EV5505 or an equivalent at JCU or at your previous university. Speak with your course advisor for more assistance on this.

Where a subject includes overnight field trips this is noted in the subject's description on *Subject Search*. Additional fees apply to cover trip transport, accommodation and food expenses for these field trips.

List 1. Advanced Skill Subjects (Select 1)

SP3 Jan – Feb	**SP1** Feb - June	**SP6 / SP7** June - July	**SP2** July - Nov	**SP9** Sept to Dec **SP10 / 11** Nov – Dec
			BZ5450:03 Ecological and Conservation Genetics	EV5502:03 Advanced Geographic Information Systems - TSV
			EV5110:03 Environmental and Social Impact Assessment	EV5506:03 Remote Sensing -CNS LTD (SP9: Sept to Nov)
			BS5260:03 Modelling Ecological Dynamics	

List 2. Additional Skill Subjects (Select 2)

SP3 Jan – Feb	**SP1** Feb - June	**SP6 / SP7** June - July	**SP2** July - Nov	**SP9** Sept to Dec **SP10 / 11** Nov - Dec
MB5300:03 Sampling and Experimental Design [1]	SC5200:03 Professional Employability	BZ5990:03 Toolkit for the Field Biologist *(Terrestrial work)*	SC5200:03 Professional Employability	AQ5004:03 Aquaculture: Stock Improvement
SC5502:03 Design and Analyses in Ecological Studies [1]	SC5202:03 Quantitative Methods in Science	EA5018:03 Field Studies in Tropical Land and Water Science [2]	BS5260:03 Modelling Ecological Dynamics	EV5502:03 Advanced Geographic Information Systems - TSV
	EV5020:03 Human Dimensions of Nature, Environment and Conservation	EA5330:03 Field Techniques [2]	BZ5450:03 Ecological and Conservation Genetics	EV5506:03 Remote Sensing - CNS (SP9 start)
		EA5044:03 Geological Mapping [2]	EV5110:03 Environmental and Social Impact Assessment	EA5640:03 Advanced Marine Geoscience Technologies and Applications
			EV5505:03 Introduction to Geographic Information Systems	
			CH5203:03 Analytical Chemistry (Advanced)	
			MA5405:03 Data Mining	
			BC5203:03 Advanced Bioinformatics	

[1] MB5300 and SC5502 are merged subjects in 2021. Students should have prior understanding of statistics, equivalent to SC5202.
[2] These are earth science and geology subjects.

List 3. Elective Subjects

You can take any Level 5 subject with a prefix subject code of: AQ, BS, BZ, CH, EA, EV, MA, MB, MI, SC or TV. Other subjects can also be approved by your advisor.

Use *Subject* Search to review the units and check the study period they are offered in.

Recommended elective subjects for MARINE BIOLOGY: These are our recommended and most popular units grouped by particular career pathways and/or study interests.

TOPIC	**STUDY PERIOD**
Coral Reef Science	
MB5400:03 Life History & Evolution of Reef Corals	1
EV5406:03 Coral Reef Geomorphology	1
MB5160:03 Evolution and Ecology of Reef Fishes	1
MB5190:03 Coral Reef Ecology	2

Marine Conservation & Management	
EV5020:03 Human Dimensions of Nature, Environment and Conservation	1
MB5204:03 Conserving Marine Wildlife: Sea Mammals, Birds and Reptiles	1
EV5701:03 Managing Coastal and Marine Environments	1
MB5270:03 Coastal, Estuarine & Mangrove Ecosystems	2
BZ5450:03 Ecological & Conservation Genetics	2
EV5209:03 Principles and Practices of Protected Area Management *Taught in Townsville in odd numbered years & in Galapagos in even years*	3 (TSV) 7 (Galapagos)
MB5310:03 Marine Reserves as Fisheries Management Tools	3
MB5014:03 Managing Tropical Fisheries	11
MB5001:03 Tropical Marine Ecology and Coastal Impacts	11 (Thailand)
Applied Marine Biology - Fisheries Science & Management	
MB5310:03 Marine Reserves as Fisheries Management Tools	3
MB5003:03 Fisheries Science	1
MB5260:03 Grand Challenges in Fisheries	1
MB5610:03 Fishing Gear and Technologies	2
MB5014:03 Managing Tropical Fisheries	11
Aquaculture studies	
AQ5015:03 Sustainable Aquaculture	3
AQ5006:03 Principles and Practices of Aquaculture	1
For more subjects search for 'AQ5' in Subject Search	
Marine Biology & Ecology specialisations	
MB5160:03 Evolution and Ecology of Reef Fishes	1
MB5400:03 Life History & Evolution of Reef Corals	1
MI5003:03 Advanced Marine Microbiology	1
MB5070:03 Marine Biogeography	1
MB5270:03 Coastal, Estuarine & Mangrove Ecosystems	2
MB5380:03 Invertebrate Biology	2
AQ5007:03 Aquatic Animal Ecophysiology	2
SC5810:03 Marine Ecology and Upwelling	7 (Galapagos)
BZ5450:03 Ecological & Conservation Genetics	2
Coastal Resource Management	
EV5406:03 Coral Reef Geomorphology	1
EV5020:03 Human Dimensions of Nature, Environment and Conservation	1
MB5204:03 Conserving Marine Wildlife: Sea Mammals, Birds and Reptiles	1
EV5701:03 Managing Coastal and Marine Environments	1
MB5270:03 Coastal, Estuarine & Mangrove Ecosystems	2
Foundations in Biology & Ecology recommended for students with no undergraduate background in biology & evolutionary ecology	
BS5470:03 Evolution	1
MB5380:03 Invertebrate Biology	2

BS5460:03 Fundamentals of Ecology	2
SC5202:03 Quantitative Methods in Science	1
Other	
SC5901:03 Special Topic * *Do a mini project with a research supervisor (130 hours)*	any
SC5008:03 Professional Placement* *Do a 130 hour work placement*	any

**enrolment is contingent upon project supervisor's approval*

DEGREE PROGRAM **Master of Science** **MAJOR** **Marine Biology (MBY)**

YOUR STUDY PLANNER

Fill in the cells below with your planned subjects. You can re-arrange when you take your skill and elective subjects contingent on when your preferred unit is taught. Aim to complete all your core & skill subjects in your first year of study. You will normally start your program in either SP1 or SP2, but can on request start in SP3 or SP7.

Year 1 Take 8 subjects (24 credit points) with 4 subjects per 6 month Teaching Period				
TEACHING PERIOD 1 (TP1 Jan – June)			**TEACHING PERIOD 2 (TP2 July – December)**	
SP3 Jan – Feb	**SP1** Feb - June	**SP6 / SP7** June - July	**SP2** July - Nov	**SP9** Sept to Dec **SP10 / 11** Nov - Dec
	Major core MB5055:03 Biological Oceanography		**Major core** MB5190:03 Coral Reef Ecology * OR MB5270:03 Coastal, Estuarine and Mangrove Ecosystems	**Advanced Skill Subject** EV5502:03 / EV5506:03 **OR Elective**
	Skill subject e.g. SC5200:03 Professional Employability [b] &/OR SC5202:03 Quantitative Methods in Science &/OR EV5020:03 Human Dimensions of Nature, Environment and Conservation.		**Major core** MB5004:03 Marine Conservation Biology	
	Elective e.g. MB5400 or MB5160 or MB5204		**Advanced Skill Subject** e.g. BS5260:03 Modelling Ecological Dynamics OR EV5110:03 Environmental and Social Impact Assessment	
	Elective e.g. MB5400 or MB5160 or MB5204		**Skill Subject** e.g. SC5200:03 Professional Employability OR EV5505:03 Introduction to Geographic Information Systems	

***Notes**:* Pink are core knowledge subjects, Grey are skills subjects, White are electives. Timings of skills and elective subjects are suggestions.

b. SC5200 unit is recommended for all students and should be taken in the first study period of your degree. It is offered in both SP1 and SP2.

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Year 2 Take 12 credit points in your 3rd semester.				
TEACHING PERIOD 1 (TP1 Jan – June)			**TEACHING PERIOD 2 (TP2 July – December)**	
SP3 Jan – Feb	**SP1** Feb - June	**SP6 / SP7** June - July	**SP2** July - Nov	**SP9** Sept to Dec **SP10 / 11** Nov - Dec
Core Skill * MB5300:03 Sampling & Experimental Design OR SC5502:03 Design and Analyses in Ecological Studies	**Elective**			
	Elective			
	Elective			

* MB5300 & SC5502 are joint subjects in 2021. Pre-requisite knowledge is a university level introductory statistics unit or SC5202.