



XIAMEN UNIVERSITY MALAYSIA

廈門大學 馬來西亞分校

PROGRAMME HANDBOOK

BACHELOR OF SCIENCE IN MARINE ENVIRONMENTAL CHEMISTRY (HONOURS)

ACADEMIC SESSION: 2026/09



Academic Affairs Office

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1. UNIVERSITY VISION AND MISSION

Vision

- Xiamen University Malaysia aspires to become a university with a distinct global outlook, featuring first-class teaching and research, and embracing cultural diversity.

Mission

- To nurture young talents with dignity and wisdom, turning them into fine citizens of the region who will contribute to the prosperity of the people and social progress of Malaysia, China and Southeast Asia.

2. PROGRAMME AIM

The Bachelor of Science in Marine Environmental Chemistry (Honours) aim is to produce graduate with positive attitudes towards society, knowledgeable, skilled and competent to become professional in the area of marine and environmental chemistry.

3. PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

The PEOs are to produce graduates who are:

PEO1

Graduates who are knowledgeable and technically competent in solving real and complex problems using appropriate digital and numerical applications, leading to success in their careers or professional practice in marine and environmental science related fields.

PEO2

Graduates who demonstrate ethical and personal leadership, practice effective communication, engage in decision-making using technological advancements, and are committed to sustainable development for the benefit of society and the environment.

PEO3

Graduates will pursue lifelong learning and interdisciplinary knowledge relevant to their careers, demonstrating a positive attitude, entrepreneurial mindset, and sustainable practices to enhance their technical competencies and professional growth in marine and environmental science related fields.

4. PROGRAMME LEARNING OUTCOMES (PLO)

At the end of the programme, graduates will be able to:

PLO1	Knowledge and Understanding	Demonstrate broad knowledge and fundamental understanding of marine and environmental science.
PLO2	Cognitive Skills	Integrate knowledge and concepts to address challenges in the field of marine and environmental science.
PLO3	Practical Skills	Apply practical and theoretical knowledge of laboratory-based techniques in the field of marine and environmental science.
PLO4	Interpersonal Skills	Collaborate effectively with different groups of people in the diverse communities.
PLO5	Communication Skills	Communicate effectively in both oral and writing with different groups in the society.
PLO6	Digital Skills	Apply appropriate digital skills to analyse, interpret and present data in solving real-world issues related to marine and environmental science.
PLO7	Numeracy Skills	Integrate numerical, graphical and visual data for further assessments in the field of marine and environmental science.
PLO8	Leadership, Autonomy and Responsibility	Demonstrate leadership, mutual respect and the ability to work collaboratively within diverse teams.
PLO9	Personal Skills	Perform self-directed lifelong learning to advance professional development in marine and environmental science while demonstrating flexibility and adaptability to industry changes.
PLO10	Entrepreneurial Skills	Develop entrepreneurial awareness, creativity and adaptability to explore business opportunities in the field of marine and environmental science.
PLO11	Ethics and Professionalism	Demonstrate ethical, legal and professional awareness in the field of marine and environmental science.

5. EXPECTED AREAS OF GRADUATE EMPLOYMENT

- Research, Teaching & Management: Work in universities, research institutes, or other educational organisations.
- Industry Careers: Take roles in environmental and marine monitoring, consultancy, protection, product development, or management.
- Further Studies: Pursue a Master's or PhD at leading universities in Malaysia or abroad.

6. CURRICULUM STRUCTURE

The minimum requirement for graduation will be **149** credits, with all the components meeting the minimum credit values specified in Table 1.

Table 1: Components of the Programme and its Value

	Course Classification	Credit Value	Percentage (%)
1	Compulsory courses/modules	12	8.1%
2	Core/Major(s)/Specialisation:		
	• Fundamental	24	16.1%
	• Core	67	45.0%
	• Final Year Project	11	7.4%
3	Optional/elective courses:		
	• Specialisation Elective	11	7.4%
	• General Elective	16	10.7%
4	Industrial training/Practicum	8	5.4%
	Total Credit Value	149	100.0%

Compulsory Courses

Compulsory Courses refer to *Mata Pelajaran Pengajian Umum (MPU)*, or General Studies, which is a compulsory component of undergraduate education in Malaysia as mandated by the Ministry of Higher Education (MoHE), as shown in Table 2a below.

MPU aims to develop well-rounded graduates by complementing academic studies with broader knowledge, essential skills, ethical values, and social responsibility. Through courses that promote critical thinking, effective communication, integrity, and community engagement, MPU prepares students to become responsible citizens and lifelong learners in an increasingly interconnected world.

Table 2a: Components of the **Compulsory** Courses and its Value

No.	Name of Course	Course Code	Credit Value	International	Malaysian
U1 (3 courses @ 2 credits per course) Philosophy, Values & History Appreciation					
1	Bahasa Melayu Komunikasi 2	MPU1012	2	√	-
2	Integriti dan Antirasuah (Integrity and Anti-Corruption)	MPU1022	2	√	√
3	Aspirasi Negara Bangsa (Malaysian Nation-State Aspiration)	MPU1032	2	-	√
4	Falsafah dan Cabaran Semasa	MPU1042	2	-	√
5	Citra Malaysia (Malaysian Citra)	MPU1052	2	√	-
U2 (1 course @ 2 credits) Soft Skills					
6	Bahasa Kebangsaan A	MPU2012	2	-	1. Fail Bahasa Melayu SPM OR 2. Scored below C/ without credit in Bahasa Melayu SPM
7	Writing for Professional Purposes	MPU2022	2	√	1. Malaysian students with a credit in BM at SPM OR 2. Took and Passed Bahasa Kebangsaan A in diploma level MUST take Writing for Professional Purposes.
U3 (1 course @ 2 credits) Knowledge About Malaysia					
8	Artificial Intelligence and Malaysia's Digital Economy	MPU3012	2	√	√
U4 (1 course @ 2 credits) Practical Course (Community Service, Motivational, Co-curriculum)					
9	Community Service	MPU4012	2	√	√
Total Credit Value (Compulsory Courses)			12		

General Elective Courses

General Elective Courses refer to courses designed to give students options beyond their major-related courses in order to diversify their scope of knowledge.

Students in Science field can choose courses they are interested in from Group I (Arts), Group II (Business) and Group IV (Artificial Intelligence) as shown in Table 2b. Students in Marine Environmental Chemistry shall achieve at least a total of 16 credits with each group meets the minimum requirement of 1 course.

Table 2b: Components of the **General Elective** Courses and its Value

No.	Name of Course	Course Code	Credit Value	Remarks
Group I (Arts)				
	Group I comprises general elective courses in the field of Arts such as <i>Art Appreciation, Basic Korean Language, and Communication Skills for Job Search.</i>	G01XX/ G11XX	2	Minimum 1 course
Group II (Business)				
	Group II comprises general elective courses in the field of Business such as <i>Introduction to Finance, Entrepreneurship and Sustainable Development, and Introduction to International Business</i>	G02XX	2	Minimum 1 course
Group IV (Artificial Intelligence)				
	Group IV comprises general elective courses in the field of Artificial Intelligence , comprising: • Discipline-based (Compulsory) • General (Optional)	G0404	2	Minimum 1 course
Total Credit Value (General Elective Courses)			16	

*Note: The courses listed are provided as examples for reference only. The actual general elective courses offered may vary each semester. Students should refer to the **General Elective Course Library** for the list of general elective courses available in a particular semester.*

Fundamental Courses

Fundamental Courses refer to essential courses offered for students to have a solid foundation for science exploration.

Table 2c: Components of the **Fundamental** Courses and its Value

No.	Name of Course	Course Code	Credit Value
1	Basic Biology and Laboratory	FSC114	5
2	General Chemistry and Laboratory	FSC115	5
3	Calculus I B	BSC122	3
4	Probability and Statistics B	BSC126	2
5	General Physics	FSC112	4
6	General Physics Experiments: Mechanics, Thermodynamics, Electromagnetism, and Optics	FSC110	2
7	Python Programming Language	BSC135	3
Total Credit Value (Fundamental Courses)			24

Core Courses

Core Courses refer to courses designed to meet the core educational objectives; each major has its own features.

Table 2d: Components of the **Core** Courses and its Value

No.	Name of Course	Course Code	Credit Value
1	Introduction to Marine Science	MBT101	2
2	Introduction to Environmental Science	MES101	2
3	Organic Chemistry and Laboratory	MBT104	5
4	Descriptive Oceanography	MBT201	2
5	Marine Ecology and Laboratory	MBT213	5
6	Environmental Pollution Control Technology	MES201	3
7	Marine Microbiology and Laboratory	MBT217	5
8	Integrated Coastal Zone Management (ICZM)	MBT406	3
9	Waste Management	MES204	3
10	Remote Sensing and Geographic Information System	MES205	4
11	Chemical Oceanography and Laboratory	MES206	5
12	Environmental Biology and Laboratory	MES301	3
13	Environmental Toxicology	MES302	3
14	Global Environmental Change	MES303	3
15	Environmental Ethics and Sustainability	MES304	3
16	Environmental Impact Assessment	MES305	3
17	Environmental Monitoring and Laboratory	MES306	4
18	Instrumental Analysis and Laboratory	MES307	4
19	Marine Environmental Modelling	MES308	5
Total Credit Value (Core Courses)			67

Table 2e: Components of the **Projects / Dissertation**

No.	Name of Course	Course Code	Credit Value
1	Final Year Project I	MES309	3
2	Final Year Project II	MES401	8
Total Credit Value (Projects / Dissertation)			11

Table 2f: Components of the **Industrial Training** and its Value

No.	Name of Course	Course Code	Credit Value
1	Industrial Training	MES402	8
Total Credit Value (Industrial Training)			8

Specialisation Elective Courses (courses marked with asterisk*)

Specialisation Elective Courses refer to courses designed to help students to identify their interested field or direction within the major, which enable them to be better prepared for their careers pathways.

For specialisation elective courses, students are required to choose designated courses based on table below:

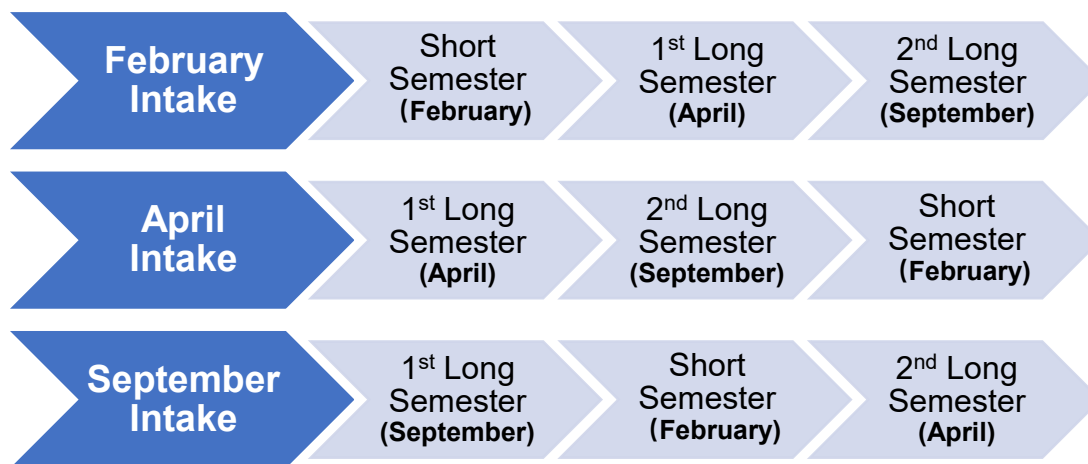
Table 2g: Components of the **Specialisation Elective** Courses and its Value

No.	Name of Course	Course Code	Credit Value
1	Marine Conservation Planning	MES202*	3
2	Marine Environmental Policy	MES203*	3
3	Scientific Communication	MBT318*	2
4	Principle of Artificial Intelligence	SOF106*	3
5	Calculus II	BSC123*	5
6	Fundamentals of Environmental Economics	MES310*	3
7	Environmental Management System	MES311*	3
Total Credit Value (Specialisation Elective Courses)			11

*Note: The courses listed are provided as examples for reference only. The actual Specialisation elective courses offered may vary each semester. Students should refer to the **Major Elective Course Library** for the list of Specialisation elective courses available in a particular semester.*

7. LIST OF COURSES OFFERED FOR EACH ACADEMIC YEAR

There are three (3) semesters in each academic year: two (2) long semesters and one (1) short semester. The sequence of course registration varies according to the intake:



Students should be aware that the total number of credits shall not exceed **20** for long semester and **7** for a short semester.

It is important to note that the arrangement of courses for each academic year listed below is subject to change based on programme needs or institutional requirements.

Year	Semester	Course Name	Course Code	Classification	Credit
Year 1	1 st Long Semester	Basic Biology and Laboratory	FSC114	Fundamental	5
		General Chemistry and Laboratory	FSC115	Fundamental	5
		General Physics	FSC112	Fundamental	4
		Introduction to Marine Science	MBT101	Core	2
		Introduction to Environmental Science	MES101	Core	2
		Total Credit Value			
	2 nd Long Semester	Bahasa Melayu Komunikasi 2 / Aspirasi Negara Bangsa (Malaysian Nation-State Aspiration)	MPU1012/ MPU1032	Compulsory	2
		Calculus I B	BSC122	Fundamental	3
		Python Programming Language	BSC135	Fundamental	3
		Organic Chemistry and Laboratory	MBT104	Core	5
		Descriptive Oceanography	MBT201	Core	2
		Marine Ecology and Laboratory	MBT213	Core	5
		Total Credit Value			

Year	Semester	Course Name	Course Code	Classification	Credit	
Year 2	Short Semester	Citra Malaysia (Malaysian Citra) / Falsafah dan Cabaran Semasa	MPU1052 / MPU1042	Compulsory	2	
		Integriti dan Antirasuah (Integrity and Anti-Corruption)	MPU1022	Compulsory	2	
		Select from Table 2b	Gxxxx	General Elective	2	
		Total Credit Value				6
	1 st Long Semester	Bahasa Kebangsaan A / Writing for Professional Purposes	MPU2012/ MPU2022	Compulsory	2	
		Artificial Intelligence and Malaysia's Digital Economy	MPU3012	Compulsory	2	
		Probability and Statistics B	BSC126	Fundamental	2	
		General Physics Experiments: Mechanics, Thermodynamics, Electromagnetism, and Optics	FSC110	Fundamental	2	
		Integrated Coastal Zone Management (ICZM)	MBT406	Core	3	
		Environmental Pollution Control Technology	MES201	Core	3	
		*Students can choose 1 out of 2 specialisation elective courses to fulfill the required 3 credits:				
		Marine Conservation Planning	MES202*	Specialisation Elective	3	
		Marine Environmental Policy	MES203*	Specialisation Elective	3	
		Total Credit Value				17
		2 nd Long Semester	Marine Microbiology and Laboratory	MBT217	Core	5
			Waste Management	MES204	Core	3
			Remote Sensing and Geographic Information System	MES205	Core	4
	Chemical Oceanography and Laboratory		MES206	Core	5	
	General Elective Course (Select from Table 2b)		Gxxxx	General Elective	2	
	Total Credit Value				17	
	Short Semester	General Elective Course (Table 2b - Group IV Compulsory)	Gxxxx	General Elective	2	
		General Elective Course (Select from Table 2b)	Gxxxx	General Elective	2	
		General Elective Course (Select from Table 2b)	Gxxxx	General Elective	2	
		Total Credit Value				6
Year 3	1 st Long Semester	Environmental Biology and Laboratory	MES301	Core	3	
		Environmental Toxicology	MES302	Core	3	
		Global Environmental Change	MES303	Core	3	
		Environmental Ethics and Sustainability	MES304	Core	3	
		Environmental Impact Assessment	MES305	Core	3	
		*Students can choose from the specialisation elective courses to fulfill the required 5 credits:				
		Scientific Communication	MBT318*	Specialisation Elective	2	

Year 4		Principle of Artificial Intelligence	SOF106*	Specialisation Elective	3
		Calculus II	BSC123*	Specialisation Elective	5
		Total Credit Value			20
	2 nd Long Semester	Environmental Monitoring and Laboratory	MES306	Core	4
		Instrumental Analysis and Laboratory	MES307	Core	4
		Marine Environmental Modelling	MES308	Core	5
		Final Year Project I	MES309	Core (Final Year Project)	3
		*Students can choose from the specialisation elective courses to fulfill the required 3 credits			
		Fundamentals of Environmental Economics	MES310*	Specialisation Elective	3
		Environmental Management System	MES311*	Specialisation Elective	3
	Total Credit Value			19	
	Short Semester	General Elective Course (Select from Table 2b)	Gxxxx	General Elective	2
		Community Service	MPU4012	Compulsory	2
		Total Credit Value			4
1 st Long Semester	Final Year Project II	MES401	Core (Final Year Project)	8	
	Total Credit Value			8	
	2 nd Long Semester	Industrial Training	MES402	Core (Industrial Training)	8
		Total Credit Value			8
	Short Semester	General Elective Course (Select from Table 2b)	Gxxxx	General Elective	2
		General Elective Course (Select from Table 2b)	Gxxxx	General Elective	2
		Total Credit Value			4
Grand Total				149	

8. PREREQUISITE COURSES

A prerequisite is a course that must be completed before taking a more advanced course.

Course Code	Course Name	Prerequisites
FSC110	General Physics Experiments: Mechanics, Thermodynamics, Electromagnetism, and Optics	FSC112 General Physics
MBT312	Marine Microbiology and Laboratory	FSC114 Basic Biology and Laboratory
SOF106*	Principle of Artificial Intelligence	BSC135 Python Programming Language
BSC123*	Calculus II	BSC122 Calculus I B
MES309	Final Year Project I	Completed 100 credits
MES401	Final Year Project II	MES309 Final Year Project I
MES402	Industrial Training	Completed 120 credits

9. IMPORTANT NOTE

Threshold Requirement

A grade threshold refers to the minimum number of marks that a student needs to obtain in a particular component of the course.

Marine Environmental Chemistry students must obtain a threshold mark of 40 in all assessment components, including the final examination, and an overall mark of 55 or above to pass a core / major / elective course.

Note: The above information is subject to change as new information becomes available in accordance with the guiding standards and requirements set by relevant authorities.