



BACHELOR OF SCIENCE IN MARINE BIOTECHNOLOGY (HONOURS)

[R/0512/6/0004]03/28[MQA/FA5672]

DURATION**4 years****INTAKE****February/ April/ September****MEDIUM OF INSTRUCTION****English****ABOUT THE PROGRAMME**

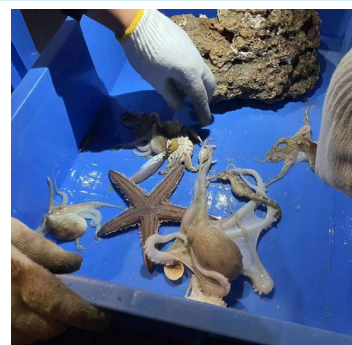
Xiamen University (XMU) started marine studies almost 100 years ago and is recognised as the cradle of China's marine studies. Its Department of Oceanography, established in 1946, is the first of its kind in China, while its College of Ocean and Earth Sciences has developed into one of China's best marine research institutions with a state key discipline in marine science, and has faculties that include an academican of the Chinese Academy of Sciences and a number of experts involved in "Thousand Talents Plan", China's Recruitment Programme of Global Experts. The college boasts excellent research platforms such as the State Key Laboratory of Marine Environmental Science, outstanding educational centers, such as National Experimental Centre for Education. In addition, its advanced general-purpose research vessel, the Tan Kah Kee (R/V TTK) 嘉庚号, is equipped with state-of-the-art scientific instruments and has supported interdisciplinary oceanographic cruises in international waters since 2016. In addition to the strong support from XMU, China-ASEAN College of Marine Sciences (CAMS) was developed as the first college of marine sciences established overseas under the sponsorship of the China-ASEAN Maritime Cooperation Fund provided by the Ministry of Foreign Affairs of China. Marine Biotechnology programme was set as the pioneer programme in the China-ASEAN College of Marine Sciences, Xiamen University Malaysia. Under this programme, students benefit from learning from experts in both Malaysia and China campus throughout the study. Moreover, the well-equipped facilities serving both teaching and research purposes in marine science and biotechnology fields provide the students with opportunities to conduct practical and research experiences in the programme. Thus, the Marine Biotechnology programme equips graduates with the necessary knowledge and skills to manage the capitalisation of aquatic resources through ecologically friendly methods of aquaculture production as well as to conduct research on marine biological resources, fisheries, aquaculture, and many other biotechnology related techniques. Graduates are also trained to be conscious of current environmental issues and broadly-defined marine biotechnology problem.

PROGRAMME HIGHLIGHTS

- Excellent educational resources from one of the most highly-respected and longest-established institutions in China for marine studies
- Fully equipped facilities funded by the Ministry of Foreign Affairs of China, utilised for teaching and research purposes in marine science and biotechnology fields
- Exciting and interactive approaches to teaching by experts in the fields from both Xiamen University China and Malaysia campuses
- Opportunities to collaborate with world-class Marine Biotechnology scientists from Malaysia, China, and other countries in various research activities

CAREER OPPORTUNITIES

- Further study:
 - XMUM Master programme
 - Local or oversea University
- Academic:
 - Lecturer
 - Research Officer
 - Lab executive
 - Marine-related/Mariculture/Biotechnology scientific research, teaching, and management work
 - Research and administrative work in Marine Environmental Monitoring departments or Environmental Protection departments
- Private Sectors:
 - Employment in relevant industries and services (marine, biotechnology, healthcare, food, consultancy, etc.)
- Start up your business:
 - Aquaculture business and marine/biotechnology-related product trading





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ENTRY REQUIREMENTS **For other equivalent qualifications, please consult our programme counsellor*

STPM	A pass in STPM with at least a Grade C (GP 2.0) in any 2 subjects AND a pass in SPM with 3 credits including Mathematics, 1 science subject and 1 other subject, or its equivalent
A-LEVEL	A pass in A-Level with at least a Grade C in any 2 subjects AND a pass in SPM with 3 credits including Mathematics, 1 science subject and 1 other subject, or its equivalent
UEC	A pass in UEC with at least a Grade B in any 5 subjects AND a pass in SPM with 3 credits including Mathematics, 1 science subject and 1 other subject, or its equivalent
Foundation/Matriculation (Science/in a relevant field)	A pass in Foundation/Matriculation with at least a CGPA of 2.0 out of 4.0 AND a pass in SPM with 3 credits including Mathematics, 1 science subject and 1 other subject, or its equivalent
Diploma (in a relevant field)	A pass in Diploma with at least a CGPA of 2.0 out of 4.0

NOTE: The credit requirement at SPM level can be waived should the grades obtained at the STPM/STAM/Diploma/Matriculation/Foundation level are equivalent or higher

MAIN COURSES

Year 1

- Introduction to Marine Science
- Basic Biology and Laboratory
- Basic Genetics
- General Chemistry and Laboratory
- Calculus 1B
- General Physics
- General Physics Experiments: Mechanics, Thermodynamics, Electromagnetism, and Optics
- Probability and Statistics B
- Python Programming Language

Year 2

- Organic Chemistry and Laboratory
- Descriptive Oceanography
- Marine Microbiology and Laboratory
- Marine Animal Biology and Laboratory
- Marine Ecology and Laboratory
- Marine Phycology and Laboratory
- Biochemistry and Laboratory
- Principles of Artificial Intelligence

Major Electives

- Calculus II
- Mariculture Water Chemistry and Laboratory
- Fish Resources and Fishery
- Marine Data Analysis
- Climate Change and Sustainable Development
- Marine Biological Resources and Utilisation
- Basic Immunology of Aquatic Animals
- Chemical Oceanography and Laboratory
- Environmental Management System

Year 3

- Marine Animal Physiology
- Cell Biology and Laboratory
- Molecular Biology and Laboratory
- Marine Ecosystems
- Field Experience in Marine Sciences
- Scientific Communication
- Industrial Training

Year 4

- Mariculture and Laboratory
- Marine Natural Product and Drug
- Final Year Project I
- Final Year Project II

Major Electives

- Aquatic Animal Nutrition and Formula Food
- Aquatic Animal Diseases and Prevention
- Integrated Coastal Zone Management (ICZM)
- Aquatic Food Processing
- Fermentation and Bioprocess Engineering

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