



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-marine science, and has faculties that include an academican of the Chinese Academy of Sciences and a number of experts involved in "Thousand Talents Plant", 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 Center for Education, as well as an advanced general-purpose research vessel Jiageng (嘉庚号) equipped with state-of-the-art scientific instruments, which serving the interdisciplinary oceanographic cruises conducted 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 sponsored by the China-ASEAN Maritime Cooperation Fund provided by 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 enjoy the benefits to learn from experts in both Malaysia and China campus throughout the study. Moreover, the well-equipped facilities serving for both teaching and research purposes in marine science and biotechnology fields provide the students with opportunities to conduct practical and research experiments even during the bachelor study. Thus, the Marine Biotechnology programme equips graduates with the necessary knowledge and skills to manage the capitalization of aquatic resources through ecologically friendly methods of aquaculture production as well as to conduct research on marine biological, resources, fisheries, aquaculture, and even many other biotechnology related techniques. Graduates are also trained to be conscious of current environmental issues and broadly-defined marine biotechnology problems. Students who would like to pursue further studies in this area are welcome to apply for postgraduate programmes at XMU Malaysia and China campuses.

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:
 - Working at relevant enterprises (Marine, biotechnology, healthcare, food industry, etc)
- Start up your business:
 - Aquaculture business, marine/biotechnology related product trading





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

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| 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

- Basic Biology
- Basic Biology Laboratory
- General Chemistry (Part 1 and Part 2)
- General Chemistry Laboratory
- General Physics
- General Physics Experiments: Mechanics, Thermodynamics, Electromagnetism, and Optics
- Programming in Language C
- Probability and Statistics
- Calculus I B
- Calculus II
- Introduction to Marine Science

Year 2

- Organic Chemistry
- Organic Chemistry Laboratory
- Descriptive Oceanography
- Marine Animal Biology
- Marine Ecology
- Marine Ecology Laboratory
- Marine Phycology
- Biochemistry and Molecular Biology
- Biochemistry and Molecular Biology Laboratory

Major Electives (Choose 1)

- Mariculture Water Chemistry
- Fish Resources and Fishery

Year 3

- Marine Microbiology
- Marine Microbiology Laboratory
- Marine Animal Physiology
- Cellular and Developmental Biology
- Cellular and Developmental Biology Laboratory
- Genetics
- Field Experience in Marine Sciences
- Scientific Communication
- Industrial Training

Major Electives (Choose 1)

- Marine Biological Resources and Utilisation
- Basic Immunology of Aquatic Animals
- Marine Ecosystems

Year 4

- Mariculture
- Mariculture Laboratory
- Marine Natural Product and Drug
- Capstone Experience in Marine Biotechnology

Major Electives (Choose 3)

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

XIAMEN UNIVERSITY MALAYSIA DULN009(B)

TEL: +603 7610 2079

E-MAIL: enquiry@xmu.edu.my

WEBSITE: www.xmu.edu.my

CAMPUS ADDRESS: Jalan Sunsuria, Bandar Sunsuria, 43900 Sepang, Selangor Darul Ehsan, Malaysia

xmu.edu.my



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