



IPB University
Bogor Indonesia

Department of
Marine Science and Technology
Faculty of Fisheries and Marine Sciences

ACADEMIC PROGRAM BOOK

Marine Science and Technology
Undergraduate Program



@ico_ipb



global.ipb.ac.id



Bogor, Indonesia

LEARNING OUTCOME

1

Mastering theoretical concepts in the fields of marine hydrobiology, oceanography, underwater acoustics, marine instrumentation and robotics, remote sensing, and information systems, as well as artificial intelligence for problem solving related to marine resources and environment.

2

Apply the latest marine science and technology in order to explore marine resources and environment and contribute to growing the blue economy.

3

Initiate innovations for exploration, development of marine utilization and advancement, and sustainable development.



PROFILE

SNAPSHOTS



>1300

Total Alumni

*until 2023

31

14

of lecturers
have doctoral
degree

9

of lecturers
are
professors

8

of lecturers
have master's
degree



20

education personnel and
laboratory technicians

ACCREDITATION



Accredited by BAN-PT

International accredited by the
Institute of Marine Science in
Engineering, Science and
Technology (1MarEST) since
2013



ITK has the **best quality lecturers**
with **innovative research**

PROFILE

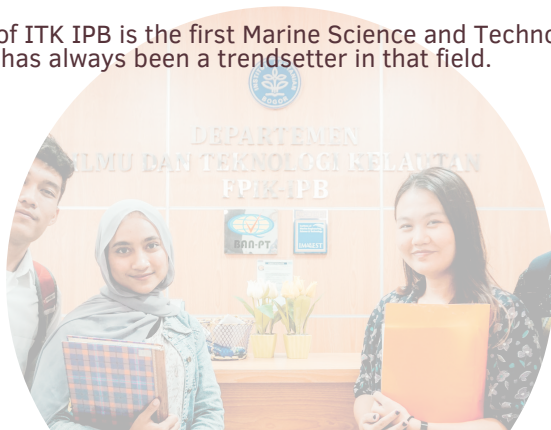
A Brief History

The Department of Marine Science and Technology is a working unit under the Faculty of Fisheries and Marine Science, IPB University (FPIK-IPB). The Department offers a Bachelor's degree with Honor (BSc. Hons) in Marine Science and Technology. The department consists of four academic divisions, including Marine Hydrobiology/B10, Oceanography/OS1, Ocean Acoustics, Instrumentation and Robotics/A1R, and Marine Remote Sensing and Geographic Information System/1SK.

The history of the Department of Marine Science and Technology (ITK) began with the initial establishment of the Study Program (PS) of Marine Sciences in the academic year 1986/1987. This was in response to the Circular of the Director General of Higher Education No. 1023/D/Q/1985 concerning the pioneering formation of a new marine science study program (new S1 (bachelor's degree) of marine science). Then the IPB Marine Science Study Program was officially confirmed by the Director General of Higher Education Decree No. 22/DIKTI/Kep/1988 with the principal objective of developing education and research in the field of marine biological resources exploration. Through the Directorate General of Marine Education Education Project (ADB loan No. 894-INO/895-INO (SF), the main facilities and infrastructure for academic and research activities were built, namely the Marine Center Building at Darmaga Bogor IPB Campus and the Marine Field Station at Pelabuhan Ratu Sukabumi, West Java.

Based on the Rector's Decree No. 073/K13.121/OT/2000 dated May 27, 2000 the status of the Study Program of Marine Sciences of IPB was upgraded to the Major of Marine Science and Technology with the mandate to develop marine science and technology to understand the characters, phenomena and processes of physics, chemistry, biology and marine geology by utilizing marine acoustic and remote sensing methods and technology to explore biological resources and the marine environment.

The Department of ITK IPB is the first Marine Science and Technology Department in Indonesia and has always been a trendsetter in that field.



CURRICULUM

Program Structure

Option 1

3 + 1 (3 year at IPB University and 1 year at partner University)

Option 2

3.5 + 0.5 (3 year at IPB University and half a year at partner University)

Option 3

4 + 0 (4 year at IPB University)



CURRICULUM

Course Mapping

Common Core Courses

Courses	Credit	Semester
Religion	3(2-1)	1
Bahasa Indonesia	2(1-1)	1
Innovative Agriculture	2(2-0)	1
Mathematics and Logical Thinking	3(2-1)	1
Physics of Science and Technology	3(2-1)	1
English	2(1-1)	1
Computational Thinking	2(2-0)	2
Pancasila Education	1(1-0)	2
Citizenship Education	1(1-0)	2
Basic Biology	3(2-1)	2
Sport and Art	1(0-1)	2
Chemistry of Science and Technology	3(2-1)	2
Sociology	2(2-0)	2
Economy	2(2-0)	2
Statistics and Data Analysis	3(3-0)	2
Introduction to Fisheries and Marine Science	2(2-0)	2

Independent Learning Program

Student Exchange
Internship/Work Practices
Teaching Assistance in the Education Unit
Researchj
Humanitarian Project
Entrepreneurial Activities
Independent Studies /Projects
Building Village/Thematic Student
Study Service (KKN)

CURRICULUM

Course Mapping

Academic Core Courses, Foundational Literacies, Capstone, & Final Task

Courses	Credit	Semester
Occupational Health and Safety at Sea	2(2-0)	3
Ocean Quantitative Method	2(2-0)	3
Marine Biology	2(2-0)	3
Introduction to Oceanography	2(2-0)	3
Fundamental of Ocean Instrumentation	2(2-0)	3
Fundamental of Ocean Remote Sensing	2(2-0)	3
Marine Practice 1	3(0-3)	3
Aquatic Ecology	3(2-1)	3
Ichthyology	3(2-1)	3
Tropical Marine Ecology	2(2-0)	4
Tropical Marine Ecology Practice	1(0-1)	4
Physical Oceanography	2(2-0)	4
Chemical Oceanography	2(2-0)	4
Oceanography Data Acquisition and Analysis	2(0-2)	4
Fundamental of Ocean Acoustics	2(2-0)	4
Marine Geographic Information System	2(2-0)	4
Marine Geographic Information System Practice	1(0-1)	4
Marine Practice 2	3(0-3)	4
Scientific Method	2(1-1)	4
Ocean & Fisheries Big Data Science	2(2-0)	5
Marine and Fisheries Geospatial Information	1(0-1)	4
Internship		
Thematic Student Service	4(1-3)	7
Seminar	1(0-1)	7
Comprehensive thesis proposal	1(0-1)	7
Undergraduate thesis	4(0-4)	7

In-depth Prodi Courses

Courses	Credit	Semester
Marine Frontiers	2(0-2)	
Marine Literacy	2(0-2)	
Marine Biodiversity	3(2-1)	5
Scientific Diving	3(1-2)	6
Marine Microbiology	3(2-1)	6
Marine Morphogenetics	3(2-1)	6
Marine Biogeography	3(2-1)	7

CURRICULUM

Course Mapping

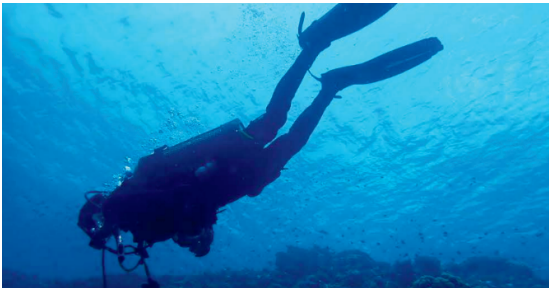
In-depth Prodi Courses

Courses	Credit	Semester
Marine Bioprospection	3(2-1)	7
Ecophysiology of Marine Organism	2(0-2)	7
Bio-Geological Oceanography	3(2-1)	5
Methods of Data Analysis and Marine Numerical Modeling	3(1-2)	6
Environmental Oceanography	3(2-1)	6
Fisheries Oceanography	3(2-1)	7
Operational Oceanography	3(2-1)	7
Marine Instrumentation	3(2-1)	6
Ocean Acoustics	3(2-1)	5
Signal Processing	3(2-1)	6
Underwater Detection Techniques	3(2-1)	6
Fisheries Acoustics	3(2-1)	7
Marine Robotics	3(2-1)	7
Marine & Fisheries Artificial Intelligence	3(2-1)	7
Image Processing	3(2-1)	5
Marine Bio-optics	3(2-1)	6
Marine Remote Sensing	3(2-1)	7
Marine Resource Surveying and Mapping	2(2-0)	5
Marine Resource Surveying and Mapping Practicum	1(0-1)	5
Thermal Remote Sensing	3(2-1)	6
Marine Algorithms and Programming	3(2-1)	7
Microwave Remote Sensing	3(2-1)	6

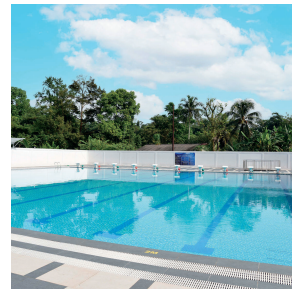
FACILITIES



Pelabuhan Ratu Field Laboratory



Tidung Island Field Laboratory



Aquatic Center



Ancol Marine Station



Departemen International Classroom



Marine Center Building

INTERNATIONAL COLLABORATION

List of International Collaboration

	Country/Region	Affiliated Partners
Universities	Malaysia	Universiti Malaysia Terengganu
	Taiwan	National Sun Yat Sen University
	Japan	Chiba University Yamaguchi University
	New Zealand	The Hong Kong University of Science Victoria University of Wellington



CONTACT

The Faculty Campus

The campus of the Department of Marine Science and Technology an Campus is located in Bogor City. The closest train station is Bogor Station. With easy access to neighboring cities, the campus is just 60 minutes from Jakarta on Commuter Line, making it convenient for students to commute from out of town. The rich natural surroundings provide students with an ideal environment to study.

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<https://ipb.university/itk-international-class>

