

Curriculum for Doctoral Students of the International Graduate Program of Marine Science and Technology

Approved by the 3rd College Course Curriculum Committee Meeting on November 11, 2021, 1st Semester of School Year 110.
 Approved by the 2nd University Course Curriculum Committee Meeting on December 7, 2021, 1st Semester of School Year 110.
 Approved by the 170th Academic Affairs Meeting on December 28, 2021.

Note: The curricula of the Master’s programs are located in the webs of the Departments and Institutes of the College of Marine Sciences

This curriculum consists of three parts: **Part I**, the core courses - module A; **Part II**, the core courses - module B; and **Part III**, the elective courses of each Division.

Doctoral students in this program are required to complete a minimum of 6 credits of Independent Study and 4 credits of Seminar/Colloquium from the Part I; a minimum of 2 courses from the Part II and a minimum of 9 credits of the elective courses from the Part III offered by his/her Division before thesis defense. The minimal requirement of the coursework for graduation is 24 credits.

Part I: Core courses – module A

Course	Credit	Instructor
Independent Study (or equivalent, offered by each Division)	3 (or 2, offered by some academic units)	TBA (Consult your advisor which course to take)
Seminar/Colloquium (offered by each Division)	1	TBA (Consult your advisor which course to take)

Part II: Core courses – module B

Course	Credits	Instructor/Affiliation
Special Topics on Oceanography	3	Dr. Yu-Shih Lin/ Dept of Oceanography
Advanced Scientific English	3	Dr. Francois Muller/ Dept of Oceanography
Ocean and Environmental Policy	3	Dr. Shih-Ming Kao/ Institute of Marine Affairs

Part III: Elective courses of each Division (subject to change)

Division of Marine Biology and Ecology		
Course	Credit	Instructor/Affiliation
Special Topics on Marine Ecology	3	Dr. Keryea Soong and others/ Dept of Oceanography
Marine Molecular Ecology	3	Dr. Hsiu-Chin Lin/ Dept of Marine Biotech & Resources
Special Topics on Marine Resources and Biotechnology	3	Dr. Hsiu-Chin Lin and others/ Dept of Marine Biotech & Resources
Advanced Phycology and Practice	3	Dr. Ching-Nen Nathan Chen/ Dept of Oceanography
Advanced Biochemistry and Practice	3	Dr. Ching-Nen Nathan Chen/ Dept of Oceanography
Molecular Cell Biology	3	Dr. Ching-Nen Nathan Chen/ Dept of Oceanography
Research Methods in Marine Biology	2	Dr. Ching-Nen Nathan Chen and others/ Dept of Oceanography
Special Topics on Marine Invertebrates	3	Dr. Li-Lian Liu/ Dept of Oceanography
Systemics and Evolution	3	Dr. Te-Yu Liao/ Dept of Oceanography
Advanced Marine Microbiology	3	Dr. Liang-Chun Mark Wang/ Dept of Marine Biotech & Resources
Coral Reef Ecology	3	Dr. Tzu-Hsuan Tu/ Dept of Oceanography
Quantitative Genetics in Marine Biology	3	Dr. Hsin-Yuan Tsai/ Dept of Marine Biotech & Resources

Division of Marine Engineering and Technology		
Course	Credit	Instructor/Affiliation
Advanced Environmental System Analysis	3	Dr. Pierre-Alexandre Chateau/ Dept of Marine Environ & Engineering
Advanced Fluid Mechanics	3	Prof. Igor V. Shugan/ Dept of Marine Environ & Engineering
Ocean Fluid Mechanics	3	Prof. Igor V. Shugan/ Dept of Marine Environ & Engineering
Special Topics on Marine Environment and Technology	3	Dr. Po-Hung Yeh and others/ Dept of Marine Environ & Engineering
Wave Mechanics	3	Dr. Po-Hung Yeh/ Dept of Marine Environ & Engineering
Marine Pollution Control Technology	3	Dr. Lei Yang/ Dept of Marine Environ & Engineering
Offshore Geotechnical Engineering	3	Dr. Chun-Hung Lin/ Dept of Marine Environ & Engineering
Nonlinear Waves	3	Dr. Hung-Chu Hsu/ Dept of Marine Environ & Engineering
Physical Modeling in Hydraulic and Ocean Engineering	3	Dr. Wei-Liang Chuang/ Dept of Marine Environ & Engineering
Active Ocean Acoustics	3	Dr. Linus Y. S. Chiu/ Institute of Undersea Technology
Probability and Statistics in Engineering	3	Dr. Yu-Cheng Chou/ Institute of Undersea Technology

Division of Marine Chemistry and Geology		
Course	Credit	Instructor/Affiliation
Independent Studies in Marine Geology and Biogeochemistry	3	Dr. Kuo-Tung Jiann and others/ Dept of Oceanography
Stable Isotope Geochemistry	3	Dr. Yu-Shih Lin/ Dept of Oceanography
Independent Study in Global Environmental Changes	3	Dr. Hon-Kit Lui/ Dept of Oceanography
Independent Study in Coastal Particle Dynamics	3	Dr. James T. Liu/ Dept of Oceanography
Marine Organic Geochemistry	3	Dr. Chin-Chang Hung/ Dept of Oceanography
Theoretical Biogeochemistry	3	Dr. Wei-Jen Huang Dept pf Oceanography

Division of Marine Biomedicine and Natural Products		
Course	Credit	Instructor/Affiliation
Molecular Targets and Natural Products Development	3	Dr. Jing-Ru Weng/ Dept of Marine Biotech & Resources
Marine Natural Products and Chemical Analysis	3	Dr. Chih-Chuang Liaw and others/ Dept of Marine Biotech & Resources
Chromatography	3	Dr. Chih-Chuang Liaw/ Dept of Marine Biotech & Resources
Advanced Biochemistry	3	TBA
Advanced Natural Product Chemistry	3	Dr. Chih-Chuang Liaw and others/ Dept of Marine Biotech & Resources

Division of Marine Affairs		
Course	Credit	Instructor/Affiliation
Marine Affairs	3	Dr. Nien-Tsu Alfred Hu/ Institute of Marine Affairs
Marine Spatial Planning	3	Dr. Yi Chang/ Institute of Marine Affairs
Marine Policy	3	Dr. Shih-Ming Kao/ Institute of Marine Affairs
Resource Economics	3	Dr. Tzu-Ming Liu/ Institute of Marine Affairs
Coastal Zone Planning and Management	3	Dr. Shiau-Yun Lu/ Dept of Marine Environ & Engineering