

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

**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**

<b>Course</b>	<b>Credit</b>	<b>Instructor</b>
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**

<b>Course</b>	<b>Credits</b>	<b>Instructor/Affiliation</b>
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)

<b>Division of Marine Biology and Ecology</b>		
<b>Course</b>	<b>Credit</b>	<b>Instructor/Affiliation</b>
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

<b>Division of Marine Engineering and Technology</b>		
<b>Course</b>	<b>Credit</b>	<b>Instructor/Affiliation</b>
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

<b>Division of Marine Chemistry and Geology</b>		
<b>Course</b>	<b>Credit</b>	<b>Instructor/Affiliation</b>
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

<b>Division of Marine Biomedicine and Natural Products</b>		
<b>Course</b>	<b>Credit</b>	<b>Instructor/Affiliation</b>
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

<b>Division of Marine Affairs</b>		
<b>Course</b>	<b>Credit</b>	<b>Instructor/Affiliation</b>
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