

National Sun Yat-sen University

Department of Oceanography

Curriculum Structure

Compulsory Subject & Elective Subject	Division	Division of Marine Biology	Division of Marine Chemistry and Geology		Division of Physical Oceanography
	Ph. D. /M.S.		Marine Chemistry	Marine Geology	
Compulsory Subject (Core Curriculum)	Ph. D. Program	◎Required Elective Subject ●Seminar in Marine Biology(I)(II)(III)(IV) ●Introduction to Oceanography ●Independent Studies in Marine Biology (I)(II)(III)(IV) ◎Core Curriculum : (3 of 4) ●Marine Ecology ●Systematics and Evolution ●Physiology of Marine Organisms ●Molecular Cell Biology	◎Required Elective Subject ●Colloquium(I)(II)(III)(IV) ●Scientific English(I)(II)(III)(IV)		◎Required Elective Subject ●Seminar in Physical Oceanography(I)(II)(III)(IV) ●Advanced Physical Oceanography(I)(II)
	Master Program	●Introduction to Oceanography (海洋相關科系畢業者可免修) ●Oceanographic Cruise (海洋相關科系畢業者可免修)			
		◎Required Elective Subject ●Seminar in Marine Biology(I)(II)(III)(IV) ●Independent Studies in Marine Biology (I)(II)(III)(IV) ◎Core Curriculum : (2 of 4) ●Marine Ecology ●Systematics and Evolution ●Physiology of Marine Organisms ●Molecular Cell Biology	◎Required Elective Subject ●Technical Writing(I) ●Advanced Marine Chemistry ●Advanced Marine Geology ●Colloquium(I)(II)(III)(IV)		◎Required Elective Subject ●Seminar in Physical Oceanography(I)(II)(III)(IV) ●Advanced Physical Oceanography(I)(II)
Elective Subject	Ph. D. Program	●Special Topics on Oceanography ●Practicum in Oral Presentation for International Conferences (Taught in English)			
		●Special Topics in Fish Taxonomy ●Special Reading on Environment and Fish Resources(I)(II) ●Special Topics in Fish Nutrition ●Special Topics in Molluscs ●Special Topics on Marine Ecology ●Special Topics in Larval Nutrition			

Compulsory Subject & Elective Subject	Division	Division of Marine Biology		Division of Marine Chemistry and Geology		Division of Physical Oceanography
	Ph. D. /M.S.			Marine Chemistry	Marine Geology	
	Master Program	<ul style="list-style-type: none"> ●Ichthyology ●Evolution ●Bioacoustics ●Reading in Evolutionary Biology ●Technical Writing)(II) ●Fish Taxonomy ●Evolutionary Ecology ●Fish Nutrition ●Molluscs ●Marine Microbiology ●Readings in Environmental Physiology ●Marine Animal Behavior ●Marine Environmental Toxicology ●Biochemical Adaptation in Animals 	<ul style="list-style-type: none"> ●Research Methods in Biology ●Advanced Underwater Survey Technique ●Readings In Marine Molluscs ●Statistical Methods and Data Analysis ●Readings in Ecology(I)(II) ●Larval Ecology of Marine Invertebrates ●Environmental Biology of Fishes ●Ecology of Marine Benthos ●Aquatic Ecotoxicology ●Fish Ecology ●Atoll Ecology Research* ●Field Experimental Approaches* ●Aquaculture ●Biotechnology and Physiology ●Research Methods of Molecular Stress Physiology of Marine Animals ●Advanced Phycology and Practice ●Advanced Biochemistry and Practice 	<ul style="list-style-type: none"> ●Water Chemistry ●Marine Pollution ●Modern Oceanography ●Marine Analytical Chemistry ●Trace Analysis of Seawater ●Tracers Oceanography ●Introduction to Ocean Modeling ●Ocean Observation and Investigation ●Global Change and the Oceans ●Descriptive Chemical Oceanography ●Sedimentary Biogeochemistry ●Advanced Marine Geochemistry ●Marine Organic Geochemistry ●Estuarine and Marine Biogeochemistry ●Biogeochemistry of Trace Metals in The Ocean ●Analytical Organic Geochemistry and Its Application ●Microbial Processes and Element Cycles in the Ocean ●Theoretical Biogeochemistry 	<ul style="list-style-type: none"> ●Climate Dynamics ●Advanced Paleoceanography ●Introduction to Paleoclimatology ●Coastal Geology ●Analyses of Marine Sediments ●Coastal and Estuarine Processes ●Coastal and Estuarine Processes Laboratory ●Stable Isotope Geochemistry ●Advanced Radioisotope Geochemistry ●Independent Studies In Marine Geology And Biogeochemistry (I)(II)(III)(IV) ●Data Processing in Marine Chemistry and Geology 	<ul style="list-style-type: none"> ●Remote Sensing in Oceanography ●Dynamical Oceanography ●Marine Numerical Analysis ●Ocean Currents and Circulation ●Physical Oceanography in Coastal Waters ●Geophysical Fluid Dynamics ●Ocean Turbulence and Mixing ●Field Observations and Data Analysis ●Large Scale Oceanic Waves and Tides ●Wave and Tide ●Independent Studies in Physical Oceanography (I)(II)(III) (IV) ●Signal Processing and Analysis ●Data Analysis in Physical Oceanography ●Environmental Data Analysis and Matlab Programming ●Data Analysis and Web Application Using Python
		Taught in English: ●Advanced Scientific English ●Technical Writing in English ●Frontier of Marine Sciences				
		*This is a potentially dangerous course. Students attending the course should pay attention to the safety of the course, and please evaluate and obtain the school's student safety group insurance or other commercial insurance.				