

Module Name	Introduction to Physical Oceanography	
Module Number	MNF-ozgr-151 (import module Physik des Erdsystems pherIPO)	
Person in Charge	Prof. Dr. Joke Lübbecke Phone: +49-(0)431-600-4150, E-mail: jluebbecke@geomar.de	
Semester / Duration	2. semester / one semester	Status Compulsory
Regular Cycle	annual in summer semester	
Study Programme	Master of Science in Biological Oceanography	
Classes	Class Title (Teaching Form) Lecturers	Contact Time / Group Size
	<u>Introduction to Physical Oceanography</u> (Lecture) Prof. Dr. Joke Lübbecke	3 hrs per week / 80 students
Credit Points / Workload	5 ECTS / 150 hours	
Prerequisites	Basic knowledge in physics.	
Completion Module	None.	
Following Module	None.	
Educational Objectives	The students have developed a basic knowledge of the the structure and dynamics of the ocean. They are able to understand the most important physical mechanisms in the ocean and to apply this knowledge in the study of subject-specific topics of the continuing modules of meteorology and physical oceanography.	
Content Of Teaching	Topography of the sea bed, composition and physical properties of sea water and sea ice, sound, heat budget, mean sea salt stratification, characteristic water masses, wind induced ocean currents, geostrophic currents, thermohaline circulation, regional oceanography, tides, ocean currents	
Examination	Written exam (100%).	
Literature	<p>Talley, L.D., G.L. Pickard, W.J. Emery, J.H. Swift, 2011: Descriptive Physical Oceanography - An Introduction. Pergamon Press, 6 th edition, 555 pp.</p> <p>Bearman, G. (Ed.), 1989: Waves, tides and shallow-water processes. Pergamon Press, Oxford (Open Univ.), reprinted with corrections 1991,1995, 1997, 187 pp.</p> <p>Bearman, G. (Ed.), 1989: Ocean circulation. Pergamon Press, Oxford (Open Univ.), reprinted with corrections 1998, 238 pp.</p> <p>Bearman, G. (Ed.), 1998: The ocean basins: their structure and evolution. Pergamon Press, Oxford (Open Univ.), 2nd edition, 185 pp.</p> <p>Tomczak, M. and J.S. Godfrey, 1994: Regional Oceanography: An Introduction. Pergamon Press, 422 pp.</p>	
Additional Information	None.	