

pherIPOnf-01a Introduction to Physical Oceanography for Minors

Module Name	Modul Code
Introduction to Physical Oceanography for Minors	pherIPOnf-01a
Module Coordinator	
Prof. Dr. Peter Brandt	
Organizer	
GEOMAR Helmholtz Centre for Ocean Research Kiel	
Fakulty	
Faculty of Mathematics and Natural Sciences	
Examination Office	
Examination Office Geosciences	

Status (C / CE / O)	C
ECTS Credits	5
Evaluation	graded
Duration	one Semester
Frequency	every summer semester
Workload per ECTS Credit	30 hours
Total Workload	150 hours
Contact Time	26 hours
Independent Study	124 hours

Teaching Language	English
Entry Requirements as Stated in the Examination Regulations	none
Recommended Requirements*	

Module Course(s)			
Course Type	Course Name	Compulsory/Compulsory elective/Optional	Credit hours
Lecture	Introduction to Physical Oceanography	Compulsory	2
Further Information on the Course(s)*			
Prerequisites for Admission to the Examination(s)*			

Examination(s)				
Examination Name	Type of Examination	Evaluation	Compulsory/Compulsory elective/Optional	Weighting
Introduction to Physical Oceanography	Written Examination	Graded	Compulsory	100%
Further Information on the Examination(s)*				

Short Summary*

Course Content

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

Learning Outcomes

The students have developed a basic knowledge of 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.

Reading List

Talley, L.D., G.L. Pickard, W.J. Emery, J.H. Swift, 2011: Descriptive Physical Oceanography - An Introduction. Pergamon Press, 6th edition, 555 pp.
 Bearman, G. (Ed.), 1989: Waves, tides and shallow-water processes. Pergamon Press, Oxford (Open Univ.), reprinted with corrections 1991,1995, 1997, 187 pp.
 Bearman, G. (Ed.), 1989: Ocean circulation. Pergamon Press, Oxford (Open Univ.), reprinted with corrections 1998, 238 pp.
 Bearman, G. (Ed.), 1998: The ocean basins: their structure and evolution. Pergamon Press, Oxford (Open Univ.), 2nd edition, 185 pp.
 Tomczak, M. and J.S. Godfrey, 1994: Regional Oceanography: An Introduction. Pergamon Press, 422 pp.

Additional Information*

Application of module

Application	Compulsory / Optional	Semester
Bachelor, 1-Fach, Geowissenschaften	Optional	-
Bachelor, 1-Fach, Geographie	Compulsory elective	-
Master, 1-Fach, Umweltgeographie und -management	Optional	-
Master, 1-Fach, Biological Oceanography	Compulsory	2
Master, 1-Fach, Marine Geosciences	Compulsory Optional	

