NAME OF THE COURSE	Ocean Physics 2				
Code	PMP268	Year of study	1		
Course teacher	Žarko Kovač, PhD, Assistant Professor	Credits (ECTS)	5		
Associate teachers		Type of instruction (number of hours)	L	S	E	F
			30		15	
Status of the course	Compulsory	Percentage of application of e-learning				

COURSE DESCRIPTION

Course objectives	- gaining knowledge on basic dynamical and physical processes in the ocean - acquiring knowledge of physical models describing ocean currents and wave motion - to introduce students to basic numerical methods for solving differential equations describing the physical dynamics of the ocean - gaining knowledge about more complex forms of motion in the ocean - to introduce students with to the concept of vorticity
Course enrolment requirements and entry competences required for the course	- Ocean Physics I - Introduction to Fluid Mechanics - programming
Learning outcomes expected at the level of the course (4 to 10 learning outcomes)	- basic knowledge about turbulence in the ocean - knowledge of basic forms of currents in the ocean and their physical causes - understanding different forms of wave motion in the ocean - introductory knowledge of numerical methods of discretization of equations of equations of motion - basic knowledge of ocean tides
Course content broken down in detail by weekly class schedule (syllabus)	1. Reynolds averaging (2 hours of lectures) 2. Turbulent cascade (2 hours of lectures) 3. Surface Ekman layer (4 hours of lectures) 4. Bottom Ekman layer (2 hours of lectures) 5. Wind currents in the oceans (6 hours of lectures) 6. Vorticity (2 hours of lectures) 7. Free waves (4 hours of lectures) 8. Shallow water equations and dynamics (4 hours of lectures) 9. Tides (2 hours of lectures) 10. Storm surge (2 hours of lectures)
Format of instruction	☒ lectures ☐ seminars and workshops ☒ exercises ☐ *on line* in entirety ☐ partial e-learning ☒ field work ☒ independent assignments ☐ multimedia ☐ laboratory ☐ work with mentor ☒ homework
Student responsibilities	Attend at least 70% of lectures and 70% of exercises.

Screening student work *(name the proportion of ECTS credits for each activity so that the total number of ECTS credits is*						
	Class attendance	1	Research		Practical training	
	Experimental work		Report		Homework	1
	Essay		Seminar essay		(Other)	
	Tests		Oral exam	2	(Other)	

equal to the ECTS value of the course)	Written exam	1	Project		(Other)	

Grading and evaluating student work in class and at the final exam	During the first 7 weeks of classes, students receive 5 homework assignments from the first 5 teaching units. These assignments are handed over at the end of the 8th week of classes. During the next 7 weeks of classes, students receive 5 new homework assignments from the last 4 teaching units. These assignments are handed over at the end of the 15th week of class. Students who submit assignments on time and achieve more than 50% of the possible points are exempted from taking the written part of the exam. Students who do not pass assignments or achieve less than 50% of the possible points must take a written exam. The final grade is formed on the basis of homework / exam (1/2 grade) and the answer to the oral exam (1/2 grade).		
Required literature (available in the library and via other media)	**Title**	**Number of copies in the library**	**Availability via other media**
	Benoit Cushman-Roisin & Jean-Marie Beckers **Introduction to Geophysical Fluid Dynamics: Physical and Numerical Aspects** Academic Press, 2007	0	yes
Optional literature (at the time of submission of study programme proposal)	Jochen Kampf **Ocean Modelling for Beginners** Springer, 2009. Jochen Kampf **Advanced Ocean Modelling** Springer, 2009. Reza Malek-Madani **Physical Oceanography: A Mathematical Introduction with MATLAB** CRC Press, Taylor & Francis, 2012. Rick Salmon **Introduction to Ocean Waves** Scripps Institution of Oceanography, 2018.		
Quality assurance methods that ensure the acquisition of exit competences	Exam results statistics and student evaluation through an anonymous survey at the end of the course. The survey is conducted according to the regulations of the University of Split.		
Other (as the proposer wishes to add)			