Course name	**Introduction to Geophysics**							
Code	PMP160	Year of study	3 D					
Course teacher	Prof. dr. sc. Darko Koračin	Credits (ECTS)	4					
Associate teachers		Type of instruction (number of hours)	P	S	AV	LV	KV	
			30	15				
Course status	Elective	Percentage of application of e-learning	30					

COURSE DESCRIPTION

Course objectives	Provide knowledge on • History of the Universe and the solar system • The earth structure, tectonic processes, and earthquakes • Ocean properties and ocean dynamics • Atmospheric structure and dynamics
Course enrolment requirements and entry competences required for the course	Prerequisites • Basic physics • Basic chemistry • Basic mathematics
Learning outcomes expected at the level of the course (4 to 10 learning outcomes)	Understanding formation and evolution of the earth and the atmosphere Knowledge on earthquake causes and practical solutions of calculating earthquake's epicenter Calculations of ocean dynamics including tides Understanding algorithms describing atmospheric processes

Course content broken down in detail by weekly class schedule (syllabus)		
	1. Space and solar system	1
	2. The sun	1
	3. Formation of the earth	1
	4. The moon and tides	1
	5. Radiation laws	1
	6. Structure of the earth	2
	7. Plate tectonics	1
	8. Seismic waves and earthquakes	2
	9. Seismology instruments	1
	10. Main concepts of oceanography	2
	11. Properties of the oceans and sea floor	1
	12. Structure of density, temperature, salinity, and motions in the ocean	2
	13. Air-sea interaction	1
	14. Winds and wind stress over the ocean	1
	15. Oceanic heat budget	2
	16. Ocean exploration	1
	17. Dominant forces for ocean dynamics and their modelling	1
	18. Basic concepts of the atmospheric science	2
	19. Atmospheric composition	1
	20. Structure of atmospheric density, temperature, and pressure	2
	21. Ideal gas law	1
	22. Hydrostatic equilibrium in the atmosphere	1
	23. Adiabatic processes in the atmosphere1	1

Instruction format:	x lectures x seminars x exercise □ on line x combined e-learning □ field work	x independent homework □ multimedia □ laboratory x mentoring □ other
Student responsibilities		

Screening student work (name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course)						
	Attendance	1	Research	1	Practical work	
	Experimental work		Report		Homework	
	Essay		Seminars	1	Other	
	Colloquium		Oral exam	1	Other	
	Written exam		Project		Other	

Grading and evaluating student work in class and at the final exam	• Written exam • Oral presentation • Oral exam

	Title	Number of copies in library	From other media
Required literature (available in the library and via other media)	• Howell, B. F., Jr., 1978: Introduction to Geophysics. Robert E. Krieger Publishing. 400 pp. • Stewart, R. H., 2008: Introduction to Physical Oceanography. Texas A & M University. 345 pp. • Wallace J. M., and P. V. Hobbs, 2006: Atmospheric Science: An introductory Survey. 2nd ed., Academic Press. 483 pp.		

Optional literature	• Ahrens C. D. 2001. Essentials of Meteorology, An Invitation to the Atmosphere, Brooks/Cole Publishing. • Bolt, B.A., Inside the Earth, 1982. W.H. Freeman & Company, San Francisco, 191 pp. • Garland G.D., 1977. The Earth's Shape and Gravity, Pergamon Press, Oxford • Kasumović, M., 1971. Opća i primijenjena geofizika I. dio - Opća geofizika, Sveučilište u Zagrebu, Prirodoslovno-matematički fakultet, Zagreb, 1-148. • Merrill, R.T., McElhinny, M.W. and McFadden, P.L. 1998. The magnetic field of the Earth, Academic Press International Geophysics Series, 63 • Pickard, G.L., and W.J. Emery, 1990: Descriptive Physical Oceanography, An Introduction, 5th Edition, Pergamon Press, New York, 320 pp.
Quality assurance methods that	• 1. Analysis of the acquired learning outcomes at the end of the class, compared with the work of students.

ensure the acquisition of exit competences	• 2. Monitoring the development of students in the subjects who followed the links with the success of the case • 3. Other surveys of students •
Other (as the proposer wishes to add)	