<table>
<tr><td colspan="2">NAME OF THE COURSE</td><td colspan="5">Introduction to Physics</td></tr>
<tr><td>Code</td><td>PMP096</td><td>Year of study</td><td colspan="4">1st year of undergraduate study</td></tr>
<tr><td>Course teacher</td><td>Assist. Prof. Martina Požar, PhD</td><td>Credits (ECTS)</td><td colspan="4">4</td></tr>
<tr><td rowspan="2">Associate teachers</td><td rowspan="2"></td><td rowspan="2">Type of instruction (number of hours)</td><td>L</td><td>S</td><td>E</td><td>F</td></tr>
<tr><td>45</td><td></td><td>15</td><td></td></tr>
<tr><td>Status of the course</td><td>Compulsory</td><td>Percentage of application of e-learning</td><td colspan="4">50%</td></tr>
<tr><td colspan="6">COURSE DESCRIPTION</td></tr>
<tr><td>Course objectives</td><td colspan="5">Acquire knowledge and understanding of the basics in mechanics, physics of condensed matter, optics and quantum physics. Acquire computational knowledge in solving physical problems and develop competence in construction of mathematical models for real mechanical problems.</td></tr>
<tr><td>Course enrolment requirements and entry competences required for the course</td><td colspan="5">Enrollment in the 1st year of undergraduate study</td></tr>
<tr><td>Learning outcomes expected at the level of the course (4 to 10 learning outcomes)</td><td colspan="5">Upon passing the course on Introduction to physics, the student will be able to:
1. demonstrate knowledge of the kinematics of motion in one, two and three dimensions;
2. identify and explain Newton's laws of motion and apply them in numerical problems;
3. explain the concepts of work , kinetic and potential energy, momentum and impulse and apply the laws of conservation of energy and momentum in realistic examples;
4. demonstrate knowledge of kinematics and dynamics of rigid bodies rotations and solve simple problems involving the rotation of a rigid body;
5. identify and explain Newton's law of gravitation and Kepler’s laws and apply them in the description of the Solar system
6. identify and explain the properties of solids, liquids and gases and solve problems in hydromechanics;
7. explain the motion of a simple harmonic oscillator and describe the propagation of waves, the interference, the resonance and the Doppler effect;
8. demonstrate the knowledge of optics in solving problems;
9. identify and explain Plack's radiation law and the photoelectric effect.</td></tr>
<tr><td>Course content broken down in detail by weekly class schedule (syllabus)</td><td colspan="5">Lectures per weeks (15 weeks in total):
1. Units and physical quantities (2L+1E)
2. Motion along a straight line (2L+1E)
3. Motion in two or three dimensions (4L+1E)
4. Newton's laws of motion (4L+1E)
5. Applying Newton's laws (3L+1E)
6. Work and kinetic energy (3L+1E)
7. Potential energy and energy conservation (3L+1E)
8. Momentum, impulse, and collisions (3L+1E)
9. Rotation of Rigid Bodies (6L+1E)
10. Newton's law of gravitation and Kepler's laws (2L+1E)
11. Solids, liquids and gases (3L+1E)
12. Oscillations (2L+1E)
13. Waves (2L+1E)
14. Optics (3L+1E)</td></tr>
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	15. Introduction to Quantum Physics (3L+1E)					
Format of instruction	x lectures ☐ seminars and workshops x exercises ☐ *on line* in entirety ☐ partial e-learning ☐ field work		x independent assignments ☐ multimedia ☐ laboratory ☐ work with mentor ☐ (other)			
Student responsibilities	Students have to attend at least 70% of the lectures and 80% of the exercises. Students have to solve at least 50% from each of the two written partial exams or to solve 50% from the final written exam. Students have to pass an oral exam.					
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)*	Class attendance	2	Research		Practical training	
	Experimental work		Report		(Other)	
	Essay		Seminar essay		(Other)	
	Tests		Oral exam	1	(Other)	
	Written exam	1	Project		(Other)	
Grading and evaluating student work in class and at the final exam	Contribution to the final grade: 1. written exam (or two partial exams) – 50% 2. oral exam - 50%					

Required literature (available in the library and via other media)	**Title**	**Number of copies in the library**	**Availability via other media**
	D. Halliday, R. Resnick, J. Walker, Fundamentals of Physics. 9th Edition, John Wiley, New York 2011.	21	internet

Optional literature (at the time of submission of study programme proposal)	• P. G. Hewitt, Conceptual Physics, 12th Edition, Pearson 2010. • H. D. Young, R. A. Freedman, Sears and Zemansky's University Physics, 12th Edition, Pearson, 2008.
Quality assurance methods that ensure the acquisition of exit competences	Statistics of the exam results and student evaluation via an anonymous survey conducted by the University of Split.
Other (as the proposer wishes to add)	