

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Physics</b>		Code <b>1011104321010410382</b>
Field of study <b>Logistics - Part-time studies - First-cycle</b>	Profile of study (general academic, practical) <b>(brak)</b>	Year /Semester <b>1 / 2</b>
Elective path/specialty <b>-</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>obligatory</b>
Cycle of study: <b>First-cycle studies</b>	Form of study (full-time, part-time) <b>part-time</b>	
No. of hours Lecture: <b>10</b> Classes: <b>-</b> Laboratory: <b>10</b> Project/seminars: <b>-</b>		No. of credits <b>4</b>
Status of the course in the study program (Basic, major, other) <b>(brak)</b>		(university-wide, from another field) <b>(brak)</b>
Education areas and fields of science and art		ECTS distribution (number and %)
<b>Responsible for subject / lecturer:</b>  dr inż. Andrzej Biadasz email: andrzej.biadasz@put.poznan.pl tel. 616653182 Wydział Fizyki Technicznej ul. Nieszawska 13, 60-965 Poznań		
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	Basic news from high school
2	<b>Skills</b>	Basic knowledge of experimental physics in the field of secondary school.
3	<b>Social competencies</b>	Ability to work in a team
<b>Assumptions and objectives of the course:</b> The aim of the course is to familiarize students with the basic physical phenomena and their theoretical description at the academic level. To develop in students the habit of thinking in physical terms.		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b> 1. He knows the basic methods and materials used in simple engineering solutions in the field of physics - [K1A_W02]		
<b>Skills:</b> 1. Is able to independently develop a set problem within physics - [K1A_U05] 2. Can use analytical, simulation and experimental methods to formulate and solve engineering problems in the field of physics - [K1A_U09]		
<b>Social competencies:</b> 1. He can complete and improve acquired knowledge and skills - [K1A_K01]		

<b>Assessment methods of study outcomes</b>
Forming rating: a) in the field of exercises: on the basis of an assessment of the current progress of the implementation of tasks assessed by written work - colloquia b) in the field of lectures: based on the answers to questions about material assimilated in previous lectures, Summary rating: a) in the scope of exercises based on the results of the average partial grades of the formulating assessment b) in the field of lectures: exam in the form of a test. You can take the exam after completing the exercises.

<b>Course description</b>		
<p>The program of the subject includes the following topics: Principles of conservation of energy, momentum, mass and momentum of momentum. Kinematics and dynamics of a material point and rigid body. Mechanical vibrations. A special theory of relativity. Electrostatic field. Loads and conductors in the electric and magnetic field. Maxwell's equations. Electromagnetic waves. Geometric and wave optics. Radiation of the black body, photoelectric effect, de Broglie waves, atomic model according to Bohr. Schrödinger's equation with solutions for an oscillator and for a hydrogen atom.</p> <p>Teaching methods:            Lecture - informative and conversational lecture            Classes / laboratories - laboratory method</p>		
<p><b>Basic bibliography:</b>            1. D. Halliday, R. Resnick, J. Walker, Podstawy fizyki t 1-5, PWN Warszawa 2004.</p>		
<p><b>Additional bibliography:</b>            1. J. Orear, Fizyka, WNT 1990.            2. J. Masalski, Fizyka dla inżynierów t.1-2, WNT Warszawa 1980.</p>		
<b>Result of average student's workload</b>		
Activity	Time (working hours)	
1. Lecture	10	
2. Laboratory	10	
3. Consultation	10	
4. Pass the laboratory	2	
5. Pass the lecture	2	
6. Preparation to the laboratory	25	
7. Preparation to pass the laboratory	10	
8. Preparation to pass the lecture	6	
<b>Student's workload</b>		
Source of workload	hours	ECTS
Total workload	75	4
Contact hours	34	2
Practical activities	10	1