

Course title Fizyka I / Physics I		ECTS code 7.2.0537	
Name of unit administrating study Faculty of Chemistry			
Studies			
Field of study	Type	Form	
Environmental Protection	Bachelor	Full-time studies	
Teaching staff Dr hab. Aleksander Kubicki, prof. nadzw. (Aleksander Kubicki, PhD, Associate Professor)			
Forms of classes, the realization and number of hours		ECTS credits 7	
A. Forms of classes, in accordance with the UG Rector’s regulations Lecture, auditorium classes		classes - 45 h tutorial classes – 30 h student’s own work – 100 h	
B. The realization of activities in-class learning		Total: 175 h - 2 ECTS	
C. Number of hours 30 h lecture, 15 h auditorium classes			
The academic cycle First year, winter semester			
Type of course obligatory		Language of instruction Polish	
Teaching methods Lecture with multimedia presentation Student’s own work (i.e. written exam preparation) <ul style="list-style-type: none">• Discussion• Case studies		Form and method of assessment and basic criteria for evaluation or examination requirements	
		A. Final evaluation, in accordance with the UG study regulations course completion (with a grade)	
		B. Assessment methods written exam: test with additional open questions	
		C. The basic criteria for evaluation or exam requirements Activity during classes and mastering the content covered by the lecture subject program provided.	
Required courses and introductory requirements Required basic knowledge of physics and mathematics in the field of secondary school			
Aims of education Understanding the basics of physics on a wider level than in high school using maths higher than at school. The known laws of physics are then to be the foundation for further subjects in the field of study. The student is to acquire the ability to analyze and explain observed phenomena and processes in chemistry from the physics point of view.			
Course contents Tools of physics and its relationship with other sciences. Interactions in nature. Basics of kinematics: description of the motion of a point mass, types of motion, reference systems, relativity of motion. Basics of dynamics: definition of force, principles of Newton's dynamics. The law of universal gravitation. Work, energy, power. Principles of behavior in mechanics. Basics of rigid-body mechanics. Oscillatory and wave motion: harmonic oscillator, mechanical waves and wave phenomena. 1. Basic information from mechanics (kinematics and dynamics) 2. Electromagnetic waves and their application 3. Molecular structure of bodies			

4. Hydrodynamics and hydrostatics

5. Thermodynamics

6. Acoustics and optics

7. Basis of modern physics

Bibliography of literature

A. Literature required to pass the course

D. Halliday, R. Resnick, J. Walker, „Postawy fizyki” (t. 1-5), Wydawn. Naukowe PWN, Warszawa, 2003 (dodruki 2005-2017).

J. Orear, „Fizyka” (t. 1 i 2), Wyd. Naukowo-Techniczne, Warszawa, 2004 (i późniejsze dodruki).

B. Jaworski, A. Dietłaf, (t.3 L. Miłkowska) – „Kurs fizyki” (t. 1-3), PWN 1984.

B. Extracurricular readings