

Course title Fizyka I / Physics I		ECTS code 13.3.0714	
Name of unit administrating study Faculty of Chemistry			
Studies			
Field of study	Type	Form	
Chemical Business	Bachelor / Engineer	Full-time studies	
Teaching staff Prof. dr hab. Marek Grinberg			
Forms of classes, the realization and number of hours		ECTS credits 5	
A. Forms of classes, in accordance with the UG Rector's regulations lecture, auditorium classes		classes - 60 h tutorial classes – 10 h student's own work – 55 h	
B. The realization of activities in-class learning		Total: 125 h - 5 ECTS	
C. Number of hours 60 h (30 h lecture, 30 h auditorium classes)			
The academic cycle First year, winter semester			
Type of course obligatory		Language of instruction Polish	
Teaching methods Lecture Solving tasks Discussion Lecture with multimedia presentation		Form and method of assessment and basic criteria for evaluation or examination requirements	
		A. Final evaluation, in accordance with the UG study regulations lecture – exam auditorium classes – course completion (with a grade)	
		B. Assessment methods Written exam with open questions (tasks) Oral exam Oral test Test Establishing a final grade based on partial grades received during the semester	
		D. The basic criteria for evaluation or exam requirements Passing two tests.	
Required courses and introductory requirements Lack			
Aims of education Mastering the basic laws, theories and mathematical methods in the field of physics			
Course contents 1 The basics of classical mechanics - kinematics and dynamics, Newton's laws, the concept of kinetic and potential energy, the concept of momentum, angular momentum. Conservation laws 2. Elements of hydrodynamics 3. Vibrations and mechanical waves in elastic media - Harmonic motion, wave motion, wave vector, phase velocity and group wave speed, polarization and interference 4. Electricity and magnetism, electromagnetic waves			

- 5. Elements of geometrical and wave optics
- 6. Electrotechnical elements (Ohm's law, Kirchoff's law, current and voltage measurements)

Bibliography of literature

A. Literature required to pass the course

- A. Bałanda, Fizyka dla chemików, skrypt UJ, Kraków 1994.
- D. Halliday, R. Resnick, J. Walker, Podstawy fizyki, PWN, Warszawa, 2005
- J. O'Rear, Fizyka t.1. i 2

B. Extracurricular readings

Knowledge

the student known and understand basic laws and theories in the field of physics;

- has the knowledge necessary to understand and describe the physical processes important for the understanding of chemistry;
- knows the basic calculation methods necessary to solve physics problems

Skills

- the student can solve basic tasks (transform and output patterns)
- the student is able to learn independently

Social competence

- the student identifies the level of his/her knowledge and skills, the need for continuous training and personal development, understand the practical applications of physics