UNIWERSYTET GDAŃSKI

Course title Fizyka I / Physics I	**ECTS code** 13.2.0285

Name of unit administrating study
Faculty of Chemistry

Studies

Field of study	Type	Form	
Chemistry	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

A. Forms of classes, in accordance with the UG Rector's regulations
lecture

B. The realization of activities
in-class learning

C. Number of hours
15 h lecture

ECTS credits 2

classes - 15 h
tutorial classes – 15 h
student's own work – 20 h

Total: 50 h - 2 ECTS

The academic cycle
2019/20 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)

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

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.

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

Knowledge

knows basic laws and theories in the field of physics;has the knowledge necessary to understand and describe the physical processes important especially for the understanding of chemistry;
knows the basic calculation methods necessary to solve physics problems

Skills

knows how to effectively solve tasks and physical problems in the discussed parts of the lecture;
can learn independently

Social competence

identifies the level of knowledge and skills, the need for continuous training and personal development, understanding the practical applications of physics