COURSE DESCRIPTION CARD - SYLLABUS

Course name

Some Issues in Modern Physic

Course

Field of study

TRANSPORTATION

Area of study (specialization)

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

2/4

Profile of study

general academic

Course offered in

Requirements

compulsory

Year/Semester

2/4

Profile of study

general academic

Course offered in

Requirements

compulsory

Number of hours

Lecture	Laboratory classes	Other (e.g. online)
15	-	-
Tutorials	**Projects/seminars**	
-	-	

Number of credit points

1

Lecturers

Responsible for the course/lecturer:
Dr. Jędrzej Łukasiewicz
email: jedrzej.lukasiewicz@put.poznan.pl
tel. 61 2244511
Wydział Inżynierii Lądowej i Transportu
ul. Piotrowo 3, 60-965 Poznań

Responsible for the course/lecturer:

Responsible for the course/lecturer:

Prerequisites

Basics of mathematics, chemistry and physics,
Using literature (textbooks, internet), the ability to perceive lecture content,
Awareness of the need to deepen engineering knowledge and its place in everyday life

Course objective

Providing students with basic knowledge of the physical aspects of the functioning of the world around us in the scope defined by the curriculum content appropriate for the field of study.

Course-related learning outcomes

Knowledge

1. Has knowledge of the physics of the functioning of selected elements of the world around us,
2. Has an ordered knowledge of traditional methods of researching physical phenomena occurring in the surrounding world,
3. Defines the principles of physics,
4. Has a structured knowledge of devices for researching the phenomena described in the lecture.

Skills

1. Can use knowledge of elementary terminology in the field of physics,
2. Can use mathematical models to describe physical phenomena,
3. Has the ability to independently describe physical phenomena occurring in the world around us,
4. Use of the acquired knowledge.

Social competences

1. Openness to discussion of physical issues,
2. Creativity in solving problems in the field of physics,
3. Skepticism in research (experimental) activities.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Written credit based on orally asked questions. In case of doubts related to the assessment, an oral exam is allowed.

Programme content

Origin of the universe, relict radiation, electromagnetic radiation and quanta, matter waves, quantum description of the world, PSI function, examples of the use of quantum description, statistical physics, particle structure, solid state physics, superconductivity.

Teaching methods

Multimedia presentation

Bibliography

Basic

Paul. A. Tipler - "Contemporary Physics",
Jerzy Ginter - "Introduction to the physics of the atom, molecule and solid state"

Additional

Breakdown of average student's workload

	Hours	ECTS
Total workload	60	1
Classes requiring direct contact with the teacher	15	0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) [1]	0	0

[1] delete or add other activities as appropriate