Level: bachelor

Course title: Physics 1 (M4-22)

Status: obligatory

ECTS: 5

Requirements: none

Learning objectives

Students should acquire new and expand the already acquired knowledge of physics, introduction to basic physical laws and phenomena at a higher professional level in order to understand the content of the technical courses. Developing the ability to understand integrated laboratory exercises, and acquire the necessary knowledge to successfully solve computational problems in physics.

Learning outcomes

Students are expected to develop:

- General skills: understanding the general aspects of physics as a science and natural phenomena in the world around us.
- Course-specific skills: the successful implementation of all forms of acquired knowledge in various fields of physics in technology and techniques.

Syllabus

Theoretical instruction

Mechanics: kinematics, dynamics, work, energy, gravitation, statics, elasticity, dynamics of rigid bodies, oscillations and waves, sound, fluid statics and dynamics. Thermodynamics: heat, heat transfer, the molecular-kinetic theory. Electromagnetism: electrostatics, electric currents in metals and fluids, electromagnetism. Optics: basic properties of light, geometrical optics, physical (wave) optics. Atomic physics: quantum properties of electromagnetic radiation, atomic physics, the wave nature of matter. Physics of atomic nuclei: characteristics of the atomic nucleus, radioactive decay, nuclear reactions.

Practical instruction

Computational exercises follow the theoretical lectures.

Weekly teaching load				Other: 0
Lectures: 2	Exercises: 2	Other forms of teaching: 0	Student research: 0	