

## Course

The course (74h) is an introduction to classical physics. The course is aimed at allowing the student to undertake university study courses in which the teaching of Physics is present. It is also aimed at acquiring a basis for taking the admission tests to the University.

Teaching material: lectures and exercises with evaluation.

## Content

Physical quantities and dimensions; systems of measure; scalar and vector quantities; displacement, speed, acceleration; uniform rectilinear motion, uniformly accelerated motion; motion of a bullet; mass, weight, density; first, second and third principles of dynamics, momentum and its conservation; gravitational force; force field; work and energy; principle of energy conservation; kinetic energy; conservative forces and potential energy; gravitational potential energy; dissipative forces; conservation of mechanical energy; equilibrium of a mechanical system; mechanical power and efficiency; elastic force and energy; thermal phenomena, temperature and heat, expansion of bodies and thermal equilibrium; thermodynamic transformations; state transformations; perfect gases and relative laws; real gases; first and second law of thermodynamics; energy in thermal machines; heat transmission; metabolism and thermoregulation of the human body; temperature and humidity; wave phenomena; sound waves; harmonic oscillator; forced and damped oscillations; resonance; flow rate and pressure; continuity equation; motion of a fluid in a duct; Bernoulli's theorem; hydrostatic pressure; thrust of Archimedes.

## PHYSICS

