

Level: bachelor				
Course title: Acoustics				
Status: elective				
ECTS: 6				
Requirements:				
Learning objectives Introduction to the basic laws of acoustics in order to extend some parts of courses of mechanics and the wave and oscillations physics.				
Learning outcomes After taking and completing the course, students should have developed: General abilities: following the literature; search and using the Internet. Specific abilities: knowledge about the basic physical laws of sounds in fluids and solids.				
Syllabus <i>Theoretical instruction</i> Physical properties. Longitudinal waves in fluids. Propagation and velocity of longitudinal waves. Acoustic pressure. Energy of acoustic waves. Helmholtz resonant theory. 3-D spherical waves. Intensity of sound. Subjective properties of sounds. Weber-Fechner law. Reflection and absorption. Interference. Diffraction. Pulsation. Doppler's effect. Sources of sounds. Resonance in acoustics. Ultrasound and applications. Sources and detection of ultrasound. Piezoelectricity. Magnetostriction. Solving selected numerical problems. <i>Practical instruction</i> Selected experimental exercises: Monocord, Measurement of wavelength of soundwaves, Kundt's tube experiment.				
Weekly teaching load				Other:
Lectures: 3	Exercises: 1	Other forms of teaching: 1	Student research:	