VYTAUTAS MAGNUS UNIVERSITY
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TITLE OF THE COURSE:	PHYSICS I (Mechanics and Molecular Physics)
Course code:	FIZN1007
Course group:	C
Faculty:	Faculty of Natural Sciences
Study program:	Biochemistry, Biotechnology
Level:	Bachelor
Semester:	Spring
ECTS credits:	6
Language of instruction	English / Lithuanian
Course lecturer/s:	Arvydas Kanapickas
***Short course description*:**	The course is designed to study basics of mechanics and thermal properties of substances. The study of properties of gases, liquids and solids is based on the microscopic characteristics of particles from which materials are formed. The course includes topics as motion laws of solids, conservation laws, macroscopic and microscopic state of the system, the laws of thermodynamics, the return and non-return processes, Carnot process and efficiency, entropy, surface tension, introduction to the physics of solid state.
Course content:	Physical measurement: quantities, units and errors. Kinematics, the cause motion, forces. The laws of conservation Oscillation, properties of sound. Models of bodies. Statistical and thermodynamic methods Properties of gases. Laws of thermodynamics. Heat capacity, the phase changes Heat, work and internal energy of the bodies. Cyclic processes, heat engines in nature and technology Physical kinetics and transfer processes Properties or real gases Thermal properties of liquids Thermal properties of solids, phase diagram

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Grading and evaluating student work in class and/or at the final exam:	Mid–term exam – 20 %, laboratory – 20 %, problems – 10, final exam – 50 %.
Required reading and additional study material	1. John D. Cutnell & Kenneth W. Johnson. Physics 8th ed. 2014. 2. Halliday D., Resnick R., Walker J. Fundamentals of Physics, 7 Sub edition, 1136 p. 2004. 3. H.D. Young, R. Freedman. University physics, 12th ed. 2008 4. Kanapickas A. Course material “Physics 1” (Molecular physics and thermodynamics). 2017.
Additional information (if applicable)	