Syllabus		
Faculty:	**Faculty of Geosciences**	
Name of study program:	Materials and Metalurgy	
Department:	**Materials and Metalurgy**	
Level:	**Bachelor**	
The code of subject:	2	
Subject:	**Physics I**	
Subject Status:	Compulsory	
Semester:	Winter	
Total hours:	3+2	
ECTS:	7	
Schedule / Hall		
Academic year:		
Professor:	Prof.Asoc.Dr. Nazmi Hasi	
Assistants:	PHD.Candidate Arber Zeqiraj	
Contacts:	Mësimdhënës/e	Asistent/e
Email:	Nazmi.hasi@umib.net	Arber.zeqiraj@umib.net
Phone:	044170727	044565229

BRIEF CONTENT OF SUBJECT	Basic knowledge of physics.	
AIMS	• To teach the student to physical sizes and their measurements • Enabling students to formulate laws, postulates and path of physical phenomena. • Training activities independent researcher in the field of natural phenomena.	
EXPECTED LEARNING OUTCOMES	• To understand the basic phenomena and physical laws. • Provides convenience to the subjects that use physical laws. • To solve physical problems	
PROGRAM	**Weeks**	Topic and Readings
	Week - I	Physics, physical measurement. SI system. Kinematics: Elements of movement, the separation of movements, Linear uniform movement, variable uniform movement.
	Week - II	Strength and movement: The first law, second, and third of the mechanics, the linear mass, surface and volume; the amount of movement, the law of conservation of the quantity of movement, impulse of force, work and energy

	Week- III	Field of gravity, Newton's law of gravity, potential energy of gravity, Kepler's laws, the movement of artificial satellites. Gravity and physics
	Week - IV	Balance and flexibility, balance, center of gravity, some examples of static equilibrium, elasticity, Hooke's Law, extension and compression
	Week - V	Kinematics and Dynamics of rotational and circular movement
	Week - VI	Mechanics of Fluids: Hidrostatics- aerostatics and fluid properties, density and pressure, atmospheric pressure, pressure measurement, Pascal's Law, Archimed's law
	Week- VII	Aerodynamics and Hydrodynamics: Thermodynamic Quantities of fluid movement. Earth's atmospheric pressure equation of continuity. The impulse equation., Bernoul's equation, molecular phenomena in liquids, humidity and molecular forces, surface tension, capillarity
	Week - VIII	Thermal physics: Temperature, measurement of temperature, thermometers and their types, absorption of heat build-up, Heat and work, mechanism of transfer of heat build-up, Latent Heat, experimental determination of heat build-latency, experimental determination of latent heat water evaporation.
	Week - IX	Thermodynamics: thermodynamic system, law of thermodynamics, Some applications of the principle of thermodynamics, entropy and thermodynamics law II, III Law of Thermodynamics, Diffusion and entropy, entropy and heat
	Week - X	The basic processes of thermodynamics
	Week - XI	Oscilations: periodic oscillations, the simple harmonic oscillations, harmonic vibration cinematic sizes, mathematical pendulum, physical pendulum
	Week - XII	Union of harmonic tremors that take place in one direction, the Union of mutually normal vibration, amortization oscilation, forced vibrations, mechanical resonance
	Week- XIII	Mechanical waves: wave sources, transversal and longitudinal waves, wave speed, wavelength, energy and intensity of waves, Hajgens principle,
	Week - XIV	Mechanical waves, reflection and refraction of waves, the waves superponation principle, wave stable, interference of waves, diffraction of waves
	Week - XV	Acoustics: Sound, reflection and refraction of sound, sound interference, Doplers effect, intensity and psychological characteristics of sound, Sound receiver, Supersonic speed, and ultrasound. Infrasound
LITERATURE	Basics Literature: 1. Fizika , Dr.Shukri Klinaku, Prishtinë, 2014 2. Dr. Skender H. Skenderi & Dr. Rashit Maliqi, Fizika për studentët e fakulteteve teknike, Prishtinë, 2005. 3. Dr. Skender H. Skenderi & Dr. Rashit Maliqi, Përmbledhje detyrash nga Fifika, Prishtinë. 4. Dr. Skender H. Skenderi & Dr. Rashit Maliqi, Ushtrime interaktive dhe laboratorike nga Fizika, Prishtinë Literatura plotësuese: 1. Joel L. Lebowitz, Boltzmann's entropy and time's arrow, Physics Today **46** (2013) 2. Halliday & Resnick, Fundamentals of Physics 11th edition 2018, https://www.wiley.com/en-us/Fundamentals+of+Physics%3A+Extended%2C+11th+Edition-p-9781119306856 3. Greiner W. Classical Mechanics.. Point Particles and Relativity (Springer, 2003)	

TEACHING METHODOLOGY	Direct teaching (through explanation, practical exercises and numerical examples). Teaching through demonstration and Experiment. The learning through projects, research works on the ground. Self research

Contribution to student workload (which should correspond to student learning outcomes 1 ECTS credit = 25 hours)

Activity	Hours	Day/Week	Total
Lectures	3	15	45
Exercise sessions - theoretical	2	15	30
Field exercises			
Practical work			
Consultation with the professor / assistant	1	15	15
Colloquiums / seminars	2	2	4
Independent tasks (work)	1	4	4
Student self study time (in library or at home)	4	15	60
Final exam preparation	7	1	7
Time spent in assessment (tests, quizzes, final exams)	2	3	6
Projects, presentations, etc.	2	2	4
Total			**175**

EVALUATION

Evaluation methods [according to the Statute and Regulation of UMIB Studies]	
Tests	20%
Practical test during exercises	
Seminary work (in word)	20%
Interpretation and presentation of seminary work	20%
Tasks and essays during the semester	
Final exam	40%

ACADEMIC POLICIES	• To give students an understanding of the fundamental principles of physics and their application to everyday life and technology • To develop an appreciation of physics as a human endeavour, thereby enriching the students' experience of life • To provide a reasonably broad perspective of physics, thus developing an understanding of the physical environment and of how human beings interact with it •To provide a general education in physics for all students, whether or not they proceed to further studies in physics • To develop the ability to observe, to think logically, and to communicate effectively • To develop an understanding of the scientific method • To develop an appreciation of physics as a creative activity, using informed intuition and imagination to create an understanding of the beauty, simplicity and symmetry in nature.