

Identification	Subject	PHSC 111 - Physics 1 - 6 ECTS credits	
	Department	Physics and Electronics	
	Program	Undergraduate	
	Term	Fall 2021	
	Instructor	Assoc. Prof. Dr. Vusala Eminova	
	E-mail:	vusaleeminova84@gmail.com	
	Phone:		
	Classroom/hours		
	Office hours		
Prerequisites			
Language	English		
Compulsory/Elective	Compulsory		
Description	This course covers the principles of mechanics, heat, fluids, oscillations, waves and sound. Emphasis is on conceptual development and numerical problem solving. A detailed schedule of topics can be found later in this syllabus.		
Required textbooks and course materials	<i>Fundamentals of Physics, Serway, Halliday and Resnick, 9th edition</i>		
Course outline	This course of physics I provide a conceptually-based exposure to the fundamental principles and processes of the physical world. Lectures include basic concepts of motion, forces, energy, heat, Newton's laws, fluids thermodynamics, thermal physics, work and energy, power. Upon completion, students should be able to describe examples and applications of the principles studied.		
Course objectives	This course will help students to receive idea of the main physical phenomena and the major physical laws. The course of the general physics will give the chance to students to study motion laws, movement of a solid body, surface phenomena, will be able to analyze the types of motion, Newton's laws. At the end of course the students will be able to understand fundamentals of classical physics, to solve physical problems of mechanics and molecular physics.		
Learning outcomes	<ul style="list-style-type: none"> • What students should know by the end of the course: • Velocity, acceleration, types of motions, fields, Gravitation field, harmonic oscillations, pendulum, temperature, pressure, work and quantity of heat, fluids, the Carnot cycle, entropy, viscosity, Stokes formula, turbulence, Hook's law, simple harmonic oscillator, Doppler effect. 		
Teaching methods	Lecture		+
	Experiential exercise		+
	Assisted work		
	Assisted lab work		
	Others		
Evaluation	Methods	Date/deadlines	Percentage (%)
	Midterm Exam		30
	Class Participation and Attendance	At each lesson	10
	Quizzes	During the semester, total 4 quizzes, for each 5 point	20
	Final Exam		40
	Total		100
Policy	<ul style="list-style-type: none"> • NO CELL PHONES are allowed during lecture and lab sessions. PLEASE turn them off before lecture! (Not silent or vibrating mode) • No late assignments will be accepted without prior arrangement with the instructor for acceptable excuses. Medical and family emergency will be considered on case-by-case basis. • No late homework will be accepted. Homework is to be completed on an individual basis. Students may discuss homework with classmates, but students are responsible for your own work. If students have consulted 		

	<p>classmates, please note the individuals name on the top of students' assignment.</p> <ul style="list-style-type: none"> • Quizzes may be given unannounced throughout the term and will count as one homework. There will be no make-up quizzes. • No make-up exams. If students miss an exam, a zero score will be assigned to the missed exam. • If students should miss class due to personal emergency or medical reasons, please notify the instructor by email immediately. A doctor's note will be required for make-up work. • Students are responsible for completing the reading assigned from the textbook related to the covered topics and for checking email regularly for important information and announcements related to the course. • University policy on academic honesty concerning exams and individual work will be strictly enforced. • BE ON TIME!
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Tentative Schedule

Week	Date/Day (Tentative)	Topics	Textbook/Assignments
1	29.09.2021 04.10.2021	Measurement and Vectors. Short description: Units of measure. Concepts of vectors and action with them. Scalar and vectorial quantities.	1. Serway P, Modern physics, 2003 2. Serway P, Classical mechanics, 3. Handnotes given by teacher
2	06.10.2021 08.10.2021	What is physics? Motion in One Dimension. Short description: Information on a physical concept - matter. Application of standards in physics. Units of measure. Concepts of vectors and action with them.	1. Serway P, Modern physics, 2003 2. Serway P, Classical mechanics, 3. Handnotes given by teacher
3	11.10.2021 13.10.2021	Concept of force. Newton's Laws. Short description: Concept of force. Types of force and representation of force. Use of force. Concept of the center of gravity. Methods of finding of the center of gravity. Types of stability.	1. Serway P, Modern physics, 2003 2. Serway P, Classical mechanics, 3. Handnotes given by teacher
4	18.10.2021 20.10.2021	Newton's Law of Universal Gravitation. Kepler's Law. Short description: Measuring the Gravitational Constant. Gravitational force. Kepler's Law and the motion of planets. The Gravitational field.	1. Serway P, Modern physics, 2003 2. Serway P, Classical mechanics, 3. Handnotes given by teacher
5	25.10.2021 27.10.2021	Work and Power. Work Done by a Constant Force. Short description: Work Done by a Varying Force. Kinetic Energy and the Work-Kinetic Energy Theorem. The Nonisolated System—Conservation of Energy. Power.	1. Serway P, Modern physics, 2003 2. Serway P, Classical mechanics, 3. Handnotes given by teacher
6	01.11.2021 03.11.2021	Midterm Exam Problem solving	
7	08.11.2021 10.11.2021	Potential Energy. Potential Energy of a System Short description: The Isolated System Conservation of Mechanical Energy. Conservative and Nonconservative Forces. Changes in Mechanical. Energy for Nonconservative Forces. Relationship Between . Conservative Forces and Potential Energy.	1. Serway P, Modern physics, 2003 2. Serway P, Classical mechanics, 3. Handnotes given by teacher
8	15.11.2021 17.11.2021	Simple harmonic motion Short description: Simple harmonic motion. The simple pendulum. Waves. Types of waves. Period, frequency and wave speed. Wave equations. Wave intensity.	1. Serway P, Modern physics, 2003 2. Serway P, Classical mechanics, 3. Handnotes given by teacher

9	22.11.2021 24.11.2021	Kinetic theory of ideal gases. Short description: Kinetic theory of ideal gases. Barometric medium. Law of Boltzmann. The Celsius, Fahrenheit, and Kelvin Temperature Scales.	1. Serway P, Modern physics, 2003 2. Serway P, Classical mechanics, 3. Handnotes given by teacher
10	29.11.2021 01.12.2021	Midterm Exam Problem solving	
11	06.12.2021 08.12.2021	Pressure. Buoyant Forces and Archimedes's Principle Short description: Information about pressure in liquids and gases. Concept of buoyancy. Concept and application of the law of Archimedes.	1. Serway P, Modern physics, 2003 2. Serway P, Classical mechanics, 3. Handnotes given by teacher
12	13.12.2021 05.12.2021	Fluid Dynamics. Bernoulli's Equation . Short description: Fluid Dynamics. Bernoulli's Equation .Other Applications of Fluid Dynamics.	1. Serway P, Modern physics, 2003 2. Serway P, Classical mechanics, 3. Handnotes given by teacher
13	20.12.2021 22.12.2021	Wave motion. Short description: Propagation of a disturbance. Sinusoidal Waves. The speed of waves. Reflection and transmission. The linear wave equation.	1. Serway P, Modern physics, 2003 2. Serway P, Classical mechanics, 3. Handnotes given by teacher
14	27.12.2021 29.12.2021	Midterm Exam Problem solving	
15		Final Exam	

