Identification	**Subject**	PHSC 111 - Physics 1 - 6 ECTS credits	
	Department	Physics and Electronics	
	Program	Undergraduate	
	Term	Spring 2023	
	Instructor	**Assoc. Prof. Dr. Vusala Eminova**	
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	Phone:	050 724 14 17	
	Classroom/hours	10:00-15:00	
	Office hours		
Prerequisites	no		
Language	English		
Compulsory/Elective	Compulsory		
Description	This course covers the principles of mechanics, heat, fluids, oscillations, waves andsound. 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	**Fundamentals of Physics Extended 8th Edition by Halliday, Resnick,** https://drive.google.com/folderview?id=0B2q6eS6QaN-pZXRDQ3VCZ0xQYmM&usp=sharing- **Go to this page to download textbook**		
Course website	**Class assignments**: www.edmodo.com		
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 studentsto 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	• What students should know by the end of the course: • Students should describe the types of motion, such as motion in one-dimension, projectile motion, circular motion and also differentiate each of them. • Students should apply Newton's Laws, can analyzing contact and field forces, also should know about simple harmonic motion, pendulum, temperature, pressure, Archimedes principle, Buoyant force, work and energy, the types of energy, fluids dynamics. • Students should solve each problem relating to these topics and answer the questions easily and correctly, path the quizzes and midterm or final exam successfully.		
Teaching methods	**Lecture**		+
	Seminar		+
	Assisted work		x
	Assisted lab work		x
	Others		
Evaluation	**Methods**	**Date/deadlines**	**Percentage (%)**
	Midterm Exam		30
	Class Participation and Attendance	At each lesson	5
	Quizzes	During the semester, total 2 quizzes, for each 10 point	20
	Activity	At each lesson	10
	Final Exam		35
	Total		100
Policy	▪ **Preparation for class** The structure of this course makes your individual study and preparation outside the class extremely important. The lecture material will focus on the major points introduced in the text. Reading the assigned chapters and having some familiarity with them before class will greatly assist your understanding of the lecture. After the lecture, you should study your notes and work relevant problems and cases from the end of the chapter and sample exam questions.		

	▪ **Withdrawal (pass/fail)** This course strictly follows grading policy of the School of Science and Engineering. Thus, a student is normally expected to achieve a mark of at least60% to pass. In case of failure, he/she will be required to repeat the course thefollowing term or year. ▪ **Cheating/plagiarism** Cheating or other plagiarism during the Quizzes, Mid-term and Final Examinations will lead to paper cancellation. In this case, the student will automatically get zero (0), without any considerations. ▪ **Professional behavior guidelines** The students shall behave in the way to create favorable academic and professional environment during the class hours. Unauthorized discussions and unethical behavior are strictly prohibited. **Attendance** Students who attend the whole classes will get 5 marks. for three absence student loses 1 mark. ▪ **Activity** Students who will be active during discussion of past lessons and who will be solve homework problems in a seminar will be awarded with one activity mark. ▪ **Quizzes** ▪ There will be 2 quizzes examination during the semester. The quizzes will be announced in the classroom two weeks before. Quiz is based on homework problems. The homework problems will be selected from questions and problems in the end of each chapter. The number of homework problems will be announced after finishing each chapter. ▪ The students who able to pass midterm and first quiz with max points automatically get max 10 point for the second quiz.

Tentative Schedule			
Week	**Date/Day (Tentative)**	**Topics**	**Textbook/Assignments**
1	02.2023 02.2023	Measurement and Vectors. **Short description:**Units of measure. Concepts of vectors and action with them. Scalar and vectorial quantities.	1. Fundamentals of Physics by Halliday, Chapter 3. 2. Handnotes given by teacher
2	02.2023 02.2023	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. Fundamentals of Physics by Halliday, Chapter 2. 2. Handnotes given by teacher
3	03.2023 03.2023	Projectile motion. **Short description:** Description of circular motion.	1. Fundamentals of Physics by Halliday, Chapter 4. 3. Handnotes given by teacher
4	03.2023 03.2023	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. Fundamentals of Physics by Halliday, Chapter 5. 3. Handnotes given by teacher
5	03.2023 03.2023	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. Fundamentals of Physics by Halliday, Chapter 7. 3. Handnotes given by teacher
6	03.2023 03.2023	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. Conservative Forces	1. Fundamentals of Physics by Halliday, Chapter 8. 2. Handnotes given by teacher
7	03.2023 03.2023	Linear momentum. Impulse. **Short description:** Conservation of momentum.Elastic and inelastic collision.	1. Fundamentals of Physics by Halliday, Chapter 9. 3. Handnotes given by teacher
8	04.2023 04.2023	Midterm Exam Problem solving	
9	04.2023 04.2023	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. Fundamentals of Physics by Halliday, Chapter 13. 3. Handnotes given by teacher
10	04.2023 04.2023	Quiz Problem solving	
11	04.2023 04.2023	Newton′s Law of Universal Gravitation. Keepler′s Law. **Short description:** Measuring the Gravitational Constant. Gravitational force. Keepler′s Law and the motion of planets. The Gravitational field.	1. Fundamentals of Physics by Halliday, Chapter 14. 3. Handnotes given by teacher
12	05.2023 05.2023	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. Fundamentals of Physics by Halliday, Chapter 15. 3. Handnotes given by teacher

13	05.2023 05.2023	Fluid Dynamics. Bernoulli's Equation . **Short description:** Fluid Dynamics. Bernoulli's Equation .Other Applications of Fluid Dynamics.	1. Fundamentals of Physics by Halliday, Chapter 15. 3. Handnotes given by teacher
14	05.2023 05.2023	Wave motion. **Short description:** Propogation of a distutbance. Sinusoidal Waves. The speed of waves. Reflection and transmission. The linear wave equation.	1. Fundamentals of Physics by Halliday, Chapter 16. 3. Handnotes given by teacher
15	05.2023 05.2023	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. Fundamentals of Physics by Halliday, Chapter 21. 3. Handnotes given by teacher
		Final Exam