

## BASIC PHYSICS I

1	Course Title:	BASIC PHYSICS I
2	Course Code:	FZK1071
3	Type of Course:	Compulsory
4	Level of Course:	First Cycle
5	Year of Study:	1
6	Semester:	1
7	ECTS Credits Allocated:	6.00
8	Theoretical (hour/week):	3.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	2
11	Prerequisites:	There is no course prerequisite
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Doç.Dr. KEMAL SERTAN AKAY
15	Course Lecturers:	Yrd. Doç. Dr. Nilgün DEMİR
16	Contact information of the Course Coordinator:	Doç. Dr. Sertan Kemal AKAY E-mail: kakay@uludag.edu.tr İş Tel: 0 224 29 41 719 Adres: Uludağ Üniversitesi Fen Edebiyat Fakültesi Fizik Bölümü, 16059 Görükle Kampüsü BURSA
17	Website:	
18	Objective of the Course:	The aim of this course is to teach concepts related to mechanical, to explain physic laws and relation of between the physical concepts. To teach how is applied the physic laws to solve the problems. In addition, laboratory practices and to reinforce physics knowledge gained
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	
	1	The student can solve engineering problems by using the basic concepts of physics
	2	The student can produce the solution to complex problems
	3	The student can follow the scientific developments
	4	The student can reinforce own information by doing the experiments in laboratory
	5	The student can be analyzed the results and can be interpret
	6	The student can be used the vector notation
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21	Course Content:	
	<b>Course Content:</b>	
Week	Theoretical	Practice

1	Length, Mass and time standards, Dimensional analysis, Conversion of units	Working conditions in the laboratory, the creation of groups, and general information about laboratory		
2	Vectors, Coordinate systems, Vector and scalar quantities, some of the properties of Vectors, Vector components and unit vectors	Drawing graph and determine the ways to be followed conclusions based on the received results		
3	Motion, Position, Velocity, Instantaneous velocity, Acceleration, Motion diagrams, Motion with constant acceleration in one dimension, free falling bodies, The kinematic equations derived from the mathematical equation, Two-dimensional motion of position, Velocity and acceleration vectors, Motion in two dimensions with constant acceleration, Angular shot , Uniform circular motion, Tangential and radial acceleration, Relative velocity and relative acceleration	Taking measurements using Vernier caliper, micrometer and Sferometer		
4	The laws of motion, Concept of Force, Newton's first law and inertial systems, Newton's second law, The force of gravity and weight, Newton's third law, Newton's laws in some applications, The friction force	Measurement of friction coefficient with the help of an inclined plane		
5	Other applications of circular motion and Newton's laws, Newton's second law, The implementation of uniform circular motion, Non-uniform circular motion of accelerated systems	Determine calorimeters heat capacity and heat of a solid body		
6	Energy and energy transfer, Work done by a constant force, Work done by the changing force, Kinetic energy and work, Kinetic energy	Reversible Measuring acceleration of gravity with the help of the pendulum		
Activites		Number	Duration (hour)	Total Work Load (hour)
Theoretical	forces of conservation of mechanical energy, Mechanical energy change for non-	14	3.00	42.00
Practicals/Labs		14	2.00	28.00
Self study and preparation	conservative forces and potential energy, The energy diagram	14	3.00	42.00
Homeworks		14	5.00	70.00
Projects		0	0.00	0.00
9	Impulse and momentum, Linear momentum	Examination of movement of an object moving at constant		
Field Studies		0	0.00	0.00
Midterm Exams	momentum, Collisions in one dimension, Collisions in two dimensions. The movement	1	2.00	2.00
Others		0	0.00	0.00
	movement of Rocket			
Final Exams		1	2.00	2.00
10	Rigid body rotation about a fixed axis	Ballistic pendulum		
Total Work Load				186.00
Total work load/ 30 hr	Perpendicular Axes Theorem, Torque, Determination of the Relationship between			6.20
ECTS Credit of the Course				6.00
11	Static, equilibrium conditions, the center of gravity, Stress, Strain, Modulus	Determination of resistance to flow of a liquid using Stokes' law		
12	Gravitation, Newton's law of gravity, weight, and Kepler's laws of planetary motion	Moment of inertia		
13	Simple harmonic motion, simple harmonic motion, period, amplitude, displacement, velocity and acceleration, simple harmonic motion of Energy, Simple pendulum, physical pendulum	Energy and momentum conservation		
14	General Repeat	Control of the test reports		

22	Textbooks, References and/or Other Materials:	<p>1. Raymond A. Serway, John W., (1995). “Fen ve Mühendislik için Fizik”, Palme Yayıncılık</p> <p>2. Hugh D. Young, Roger A. Freedman, (2007) “Üniversite Fiziği”, Pearson Education Yayıncılık</p> <p>3. Fishbane, Gasiorowicz, Thornton”Temel Fizik, Cilt I”</p>
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TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	40.00
Quiz	0	0.00
Home work-project	0	0.00
Final Exam	1	60.00
Total	2	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00
Contribution of Final Exam to Success Grade		60.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		

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