

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:	-
12	Language:	English
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Doç. Dr. Cem Salih ÜN
15	Course Lecturers:	Doç. Dr. Cem Salih ÜN
16	Contact information of the Course Coordinator:	cemsalihun@uludag.edu.tr, 0224 2955075, UÜ Fen Edebiyat Fakültesi, Fizik Bölümü 16059 Görükle Kampüsü Bursa
17	Website:	
18	Objective of the Course:	The aim of 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.
19	Contribution of the Course to Professional Development:	The student develops skills to understand and formulate the problem, fundamental factors in solution and to build alternative approaches to solutions through analytical thinking.
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:	
	Course Content:	
Week	Theoretical	Practice

1	Length, Mass and time standards, Dimensional analysis, Conversion of units	Forming groups and error analysis		
2	Vectors, Coordinate systems, Vector and scalar quantities, some of the properties of Vectors, Vector components and unit vectors	Orientation		
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	Measurement Tools		
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	Decomposing forces into orthogonal components and vector Addition		
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	Equilibrium of rotating objects		
6	Energy and energy transfer, Work done by a constant force, Work done by the changing force, Kinetic energy and work, Kinetic energy	Measurement of Viscosity Coefficient		
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	4.00	56.00
Homeworks		14	4.00	56.00
Projects		0	0.00	0.00
9	Impulse and momentum, Linear momentum	Density Measurement by Bottle Method		0.00
Field Studies		0	0.00	0.00
Midterm exams	momentum, Comisions in one dimension, Collisions in two dimensions, The movement	1	2.00	2.00
Others		0	0.00	0.00
Final Exams	movement of Rocket Rigid body rotation about a fixed axis,	1	2.00	2.00
Total Work Load				186.00
Total work load/ 30 hr				6.20
ECTS Credit of the Course				6.00
10	Rigid body rotation about a fixed axis, Moment of inertia, Parallel Axes Theorem, Perpendicular Axes Theorem, Torque, Determination of the Relationship between Torque and Angular Acceleration	Heat Capacity of a Calorimeter and Specific Heato f an Object		
11	Static, equilibrium conditions, the center of gravity, Stress, Strain, Modulus	Reverseble Pendulum		
12	Gravitation, Newton's law of gravity, weight, and Kepler's laws of planetary motion	Conversion of Potential energy into the Kinetic energy		
13	Simple harmonic motion, simple harmonic motion, period, amplitude, displacement, velocity and acceleration, simple harmonic motion of Energy, Simple pendulum, physical pendulum	Evaluation of Reports		
14	General Review	Make Up Session for Experiments		

22	Textbooks, References and/or Other Materials:	1. Raymond A. Serway, John W., (1995). "Fen ve Mühendislik için Fizik", Palme Yayıncılık. 2. Hugh D. Young, Roger A. Freedman, (2007) "Üniversite Fiziği", Pearson Education Yayıncılık. 3. Fishbane, Gasiorowicz, Thornton "Temel Fizik, Cilt I"
23	Assesment	
TERM LEARNING ACTIVITIES		NUMBER
Midterm Exam		40.00
Quiz		0.00
Home work-project		0.00
Final Exam		60.00
Total		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		Measurement and evaluation are performed according to the Rules & Regulations of Bursa Uludağ University on Undergraduate Education.
24	ECTS / WORK LOAD TABLE	

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	5	5	0	0	4	0	3	0	0	0	0	0	0	0	0	0
ÖK2	4	5	0	0	4	0	3	0	0	0	0	0	0	0	0	0
ÖK3	4	4	0	0	3	0	3	0	0	0	0	0	0	0	0	0
ÖK4	4	4	0	0	5	0	5	0	0	0	0	0	0	0	0	0
ÖK5	5	4	0	0	5	0	5	0	0	0	0	0	0	0	0	0
ÖK6	4	4	0	0	3	0	3	0	0	0	0	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contribution Level:	1 very low		2 low		3 Medium		4 High		5 Very High							