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:	None	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Dr. Ögr. Üyesi ZERRİN KIRCA	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	Dr. Öğr. Ü. Zerrin KIRCA,zkirca@uludag.edu.tr, 0224 2941704, BUÜ 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:	Gains the ability to solve mechanic problems.	
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.
		7	
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		10	
21	Course Content:		

Course Content:

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 theorem, The conservation of energy	Reversible Measuring acceleration of gravity with the help of the pendulum
	Mechanical energy change for non-conservative forces, The correlation between ... energy diagram	
8	Midterm exam + repeating cources	Midterm exam + repeating courses
9	Impulse and momentum, Linear momentum and collisions, Conservation of linear ... of center of mass system of particles, The	Examination of movement of an object moving at constant velocity in one dimension
10	Rigid body rotation about a fixed axis, Moment of inertia, Parallel Axes Theorem, ... Determination of the Relationship between Torque and Angular Acceleration	Ballistic pendulum
	gravity, Stress, Strain, Modulus	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

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	14	2.00	28.00
Self study and preperation	14	8.00	112.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	2.00	2.00
Others	0	0.00	0.00
Final Exams	1	2.00	2.00
Total Work Load			186.00
Total work load/ 30 hr			6.20
ECTS Credit of the Course			6.00

22	Textbooks, References and/or Other Materials:	1. “Physics for Scientists and Engineers”, Raymond A. Serway, John W., vol.2,(1995) Palme, 2. “University Physics”, Hugh D. Young, Roger A. Freedman, vol.2,(2007) Pearson Education, 3. “Fundamentals of Physics”, David Halliday, Robert Resnick, vol.2,(2008), Wiley
23	Assesment	

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		The system of relative evaluation is applied.

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	4	3	3	4	3	0	0	0	0	0	0	0	0	0	0	0
ÖK2	4	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0
ÖK3	3	4	4	3	4	0	0	3	0	3	0	0	0	0	0	0
ÖK4	3	3	4	3	3	0	0	0	0	0	0	0	0	0	0	0
ÖK5	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK6	3	0	3	0	0	0	0	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**