Fizik Bölümü / PHYSICS /

Course Code	Course Name	Teorical	Practice	Laboratory	Credits	ECTS
FİZ1001	Physics I (Mechanics)	4.00	2.00	0.00	5.00	6.00

Course Detail

Course Language	:	Turkish
Qualification Degree	:	Bachelor
Course Type	:	Compulsory
Preconditions	:	Not
Objectives of the Course	:	Our goal is to develop a solid understanding of the fundamental mechanical concepts such as motion, force, energy, conserved quantities and the relationships between these, and an ability to apply the theoretical framework to describe and predict the motions of bodies.
Course Contents	:	Physics and measurement, vectors, kinematic, laws of motion, work and energy, system of particles, linear momentum and collisions, rotational kinematics and dynamics, and universal gravitation.
Recommended or Required Reading	:	Serway, R. A., Jewett, J. W., “Physics for Scientists and Engineers”, Thomsons Brooks/Cole 2004, 6th edition. Halliday, D., Resnick, R., Walker, J., “Fundamental of physics”, John Wiley & Sons, Inc., 2011, 9th edition.
Planned Learning Activities and Teaching Methods	:	The teaching method is a modern mode in which students are active with questions-answers and discussion. The course is presented with use of the blackboard and demonstration of slides.
Recommended Optional Programme Components	:	Playing games, observing physics phenomena, reading books and exercising on a large number of sample problems to increase problem solving abilities.
Course Instructors	:	Prof. Dr. Ahmet Erdem
Instructor's Assistants	:	Dr. Oğuz ÖZTÜRK
Presentation Of Course	:	Face to Face

Course Outcomes

Upon the completion of this course a student :

1 At the end of this course, the students should understand the following concept and principles of mechanics and be able to solve simple problems that involve these.

2 Fundamental dimensions and SI units. Dimensional analysis.

3 Basic vector algebra.

4 Kinematics for linear and angular motion.

5 The concepts of force and torque, and their relationship to linear and angular motion.

6 The concepts of work and energy and their relationship to other mechanical concepts.

7 Conservation of energy, conservation of linear momentum and conservation of angular momentum.

8 Analysis of the motion of a system of particles.

9 Newtonian gravitational force and Kepler's laws.

Preconditions

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Weekly Contents

	Teorical	Practice	Laboratory	Preparation Info	Teaching Methods
1.Week	*Physics and Measurement.	*Physics and Measurement.			
2.Week	*Motion in One Dimension.	*Motion in One Dimension.			
3.Week	*Vectors.	*Vectors.			
4.Week	*Motion in Two Dimensions.	*Motion in Two Dimensions.			
5.Week	*The Laws of Motion.	*The Laws of Motion.			
6.Week	*Circular Motion and Other Applications of Newton's Laws.	*Circular Motion and Other Applications of Newton's Laws.			
7.Week	*Energy and Energy Transfer.	*Energy and Energy Transfer.			
8.Week	*Potential Energy.	*Potential Energy.			
9.Week	*Linear Momentum and Collisions.	*Linear Momentum and Collisions.			
10.Week	*Rotation of a Rigid Object about a Fixed Axis.	*Rotation of a Rigid Object about a Fixed Axis.			
11.Week	*Angular Momentum.	*Angular Momentum.			
12.Week	*Conservation of Angular Momentum.	*Conservation of Angular Momentum.			
13.Week	*Universal Gravitation	*Universal Gravitation.			
14.Week	*Kepler's Laws.	*Kepler's Laws.			

Assesment Methods %

1 Vize : 30.000

2 Ödev : 10.000

3 Final : 60.000

ECTS Workload

Activities	Count	Time(Hour)	Sum of Workload
Vize	1	2.00	2.00
Final	1	2.00	2.00
Make-up	1	2.00	2.00
Class Hours (14 weeks)	84	1.00	84.00
Problem Çözme	84	1.00	84.00
		Total :	174.00
		Sum of Workload / 30 (Hour) :	6
		ECTS :	6.00

Program And OutcomeRelation

	P.O. 1	P.O. 2	P.O. 3	P.O. 4	P.O. 5	P.O. 6	P.O. 7	P.O. 8	P.O. 9	P.O. 10	P.O. 11	P.O. 12	P.O. 13	P.O. 14	P.O. 15	P.O. 16	P.O. 17	P.O. 18	P.O. 19	P.O. 20	P.O. 21	P.O. 22	P.O. 23	P.O. 24
L.O. 1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
L.O. 2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
L.O. 3	1	1	1	2	2	2	2	2	2	2	2	2	2	1	2	1	2	1	2	2	1	1	2	2
L.O. 4	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2
L.O. 5	3	3	3	2	3	3	3	3	3	3	2	2	2	2	3	3	2	2	3	2	2	2	3	3
L.O. 6	3	3	3	2	3	3	3	3	3	3	3	3	2	2	3	3	2	3	3	3	2	3	3	3
L.O. 7	3	3	4	3	3	4	3	3	3	3	3	3	3	3	3	4	3	3	4	3	3	3	4	4
L.O. 8	5	5	4	4	4	4	4	4	4	4	3	3	4	4	3	4	3	4	4	4	3	4	4	4
L.O. 9	5	5	5	5	5	5	4	4	4	4	4	4	5	5	3	5	4	4	4	4	4	4	5	5

Ders/Program Çıktıları İlişkisi

P.O. 1	P.O. 2	P.O. 3	P.O. 4	P.O. 5	P.O. 6	P.O. 7	P.O. 8	P.O. 9	P.O. 10	P.O. 11	P.O. 12	P.O. 13	P.O. 14	P.O. 15	P.O. 16	P.O. 17	P.O. 18	P.O. 19	P.O. 20	P.O. 21	P.O. 22	P.O. 23	P.O. 24	P.O. 2
5	5	5	5	5	5	5	4	4	4	4	5	5	4	3	5	4	4	4	4	4	3	5	4	4