AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Physics I (mechanics)						
Course Code	FİZ101		Couse Level	First Cycle (Bachelor's Degree)			
ECTS Credit	7	Workload	175 *(Hours)*	Theory	4	Practice	2	Laboratory	0

Objectives of the Course	to introduce Newton's motion laws and to apply them to various problems, to denote the relationship with work and energy and to establish the relationship with motion and force among nature laws
Course Content	Motion in one dimension, laws of motion, Momentum and collisions, thermodynamics, fluid mechanics, Circular motion and other applications of Newton's Laws, Work, kinetic and potential energy, Rotation of rigid bodies, Rolling motion and angular momentum, Elasticity and vibration motion, Gravitation force and Kepler's laws, Waves and basic properties,
Work Placement	N/A
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion
Name of Lecturer(s)	

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	30
Final Examination	1	60
Assignment	2	10

Recommended or Required Reading

1	Üniversite Fiziği Cilt I , H.D.Young, R.A.Freedman
2	Fen ve Mühendisler için Fizik 1 (Mekanik) , R.A. Serway, R.J. Beichner
3	Fiziğin Temelleri , David Halliday, Robert Resnick, and Pearl Walker
4	Physics , Hans C. Ohanian
5	Lectures on Physics I, R. Feynmann

Week	Weekly Detailed Course Contents	
1	Theoretical	Physical quantities, vectors and scalars
2	Theoretical	Motion in one dimension
3	Theoretical	Motion in two dimension
4	Theoretical	Laws of motion and dynamics
5	Theoretical	Circular motion and other applications of Newton's Laws
6	Theoretical	Work, kinetic and potential energy
7	Theoretical	Linear momentum and collisions
8	Intermediate Exam	MIDTERM
9	Theoretical	Rotation of rigid bodies, Rolling motion and angular momentum
10	Theoretical	Elasticity and vibration motion
11	Theoretical	Gravitation force and Kepler's laws
12	Theoretical	Introduction to fluid physics
13	Theoretical	Waves and basic properties
14	Theoretical	Kinetic theory and heat and temperature
15	Theoretical	Thermodynamics Principles and basic examples

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	4	4	112
Quiz	2	2	0.5	5
Midterm Examination	1	21	2	23

Final Examination	1	33	2	35
		Total Workload (Hours)		175
		[Total Workload (Hours) / 25*] = **ECTS**		7

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To learn the fundamentals of the motion
2	To learn the fundamentals of the dynamics and to apply them
3	To learn the fundamentals of work and energy
4	To learn the fundamentals of angular momentum
5	To learn the fundamentals of Angular kinematics
6	To learn the fundamentals of the vibrational motion

Programme Outcomes *(Physics)*

1	To understand the importance of physics by understanding the general concepts of physics, matter and energy
2	To be able to define the movements of matter and to distinguish the characteristics of movements under different force (potential)
3	Be able to say the meaning of Lagrange and Hamiltonian formulations of the movement and apply them to simple problems,
4	To be able to express the fundamental concepts such as time, space, force, momentum and energy in the movements of matter close to the speed of light and be able to solve and interpret the simple problems related to
5	To be able to establish the relationship between electric and magnetic forces and to be able to illustrate their applications to technology and solve problems related to the movement of particles in electric and magnetic fields
6	Be able to say the basic laws of electromagnetics and apply them to problems, illustrate their applications to simple technology
7	To be able to tell the reasons of the differences between the classical cases and the quantum scale and explain the reasons
8	Explain the concepts of discontinuity, uncertainty, matter-antimatter, indecisiveness of quantum physics with examples and explain simple problems related to the subject.
9	To be able to solve the problems of micro-particles under different simple potentials and be able to say their meanings
10	To be able to establish the relationship between the movements and properties of multi-particle systems and the laws of probability and solve simple problems
11	To be able to illustrate the laws, meanings and applications of thermodynamics and use them
12	Be able to use their knowledge about quantum physics and mechanics in explaining some properties of atoms and nuclei
13	To be able to show the meanings of some theoretical concepts by experimenting, and develop a strong relationship between thought and the real world, develop analytical thinking
14	To be able to apply the meanings of the basic laws of physics, their comprehension of universality and the relations between them and the unity of the laws of nature.
15	Use computer to solve physics problems
16	To be able to understand the problems by using their analytical knowledge skills and to propose solutions by dealing with the laws of physics
17	Be able to use the knowledge of physics to understand new technologies
18	To be able to tell the relations between symmetry and conservation laws in laws of physics

Contribution of Learning Outcomes to Programme Outcomes *1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High*

	L1	L2	L3	L4	L5	L6
P1	4	4	4	4	4	
P2	5	4	5	4	5	5
P3			3			
P4				3		
P5			3			4