



MARMARA UNIVERSITY - FACULTY OF ENGINEERING

2017-2018 Fall

PHYS1101 Physics I

COURSE DESCRIPTION FORM

Offering Department	Department of Computer Engineering		Undergraduate must course								
Course Code	PHYS1101										
Course Name	Physics I										
Language of Instruction	English										
ECTS	4										
Contact Hours	Theoretical (T): 3		Practice (U): 0			Laboratory(L): 0					
Pre-requisites											
Instructor	Name	Mustafa Alevli									
	E-mail	mustafaalevli@marmara.edu.tr									
Course Materials	Mandatory	Course Book: Sears&Zemansky University Physics (Author: Hugh Young and Roger Freedman)									
	Recommended	Serway-Jewitt 13. Edition									
Course Objectives	The aim of the course: 1. Analyze force systems related to motion dynamics. 2.Solve problems related to displacement, velocity and motion acceleration of an object by considering the force applied to the object. 3. Explain Newton's laws of motion and apply them to the analysis of problems involving smoothly accelerated motion. 4. Apply motion principles and conduct smooth linear, circular and simple harmonic motion controlled experiments in a plane. 5. Calculate the work done in the system of forces applied to an object and associate the energy in the system with this work. 6. Distinguish the main energy types such as potential and kinetic energy and establish a relationship between the energy types of the system. 7.Gain ability to solve problems and controlled experiments including conservation of energy, work and momentum.										
Course Content	1. Movement, units 2. 1-dimensional motion, kinematics 3. 2D motion, vectors 4. Forces, Newton's laws of motion 5. Applying Newton's laws 6. Circular motion, gravity 7. Rotation movement 8. Balance 9. Momentum 10.Energy, work										
Learning Outcomes	LO1	Solve problems concerning force systems related to motion dynamics.									
	LO2	Solve problems related to displacement, velocity and motion acceleration of an object by considering the force applied to the object.									
	LO3	Explain the Newton's laws of motion and apply them to the problems involving smoothly accelerated motion.									
	LO4	Apply the motion principals for smooth linear, circular and simple harmonic moving objects in a plane.									
	LO5	Calculate the work done in the system of forces applied to an object and associate the energy in the system with this system.									
	LO6	Distinguish the main energy types such as potential and kinetic energy and establish a relationship between energy types of the system.									
	LO7	Solve problems and controlled experiments involving conservation of energy, work and momentum.									
Program Outcomes					LO1	LO2	LO3	LO4	LO5	LO6	LO7
PO1	Sufficient knowledge of mathematics, science (a) and computer engineering (b) (1); ability to use theoretical and practical knowledge in these areas in complex engineering problems (2).				1a	1a	1a	1a	1a	1a	1a
Subjects (Knowledge, Skills and Behaviours), Contributions of Subjects to Learning Outcomes, Assessment Methods	No	Week	Subjects								
	K1	1	Introduction								
	K2	1-2	Motion along a straight line								
	K3	2-3	Motion in two or three dimensions, vectors								
	K4	4	Newton's laws of motion								
	K5	5-6	Applying Newton's laws								
	K6	6-7	Work and kinetic energy								
	K7	7-8	Potential energy and energy conservation								
	K8	8-9	Momentum, impulse and collisions								
	K9	10-11	Rotation of rigid bodies								
K10	12-13-14	Dynamics of rotational motion									
Assessment Methods and Weights	No	Type	Weight	Implementation Rule			Make-up Rule				
	MF	Midterm-Final	100%	There will be two midterms and a final exam. Exams will be closed books and all course materials. Calculators are allowed.			When a medical report or letter of appointment in accordance with the university procedure is submitted, a make-up exam is given for a maximum of one midterm exam. The make-up exam for the final exam is given in the make-up exam week.				
	Q	Quiz	-								
	H	Homeworks									
	P	Projects	-								
	R	Reports									
	S	Presentation									
P	Participation / Interaction										

	L	Class/ Laboratory/ Field Work			
	O	Others			
	TOTAL		100%		
Determining Letter Grades	<ul style="list-style-type: none"> The letter grades will be determined based on two midterms and a final exam. In order to pass the course, the final exam score and the total average score of the student must be at least 50. 				
	Assessment	Midterm 1	Midterm 2	Final	TOTAL
	Weight	30	30	40	100
Teaching Method, Student Work Load	Time Applied by the Instructor				
	No	Method	Explanation		Hours
	1	Lectures	Lectures are given in class using the board or via presentations. Example questions are solved to enhance the concepts.		14*3=42
	2	Problem Session/ Practice	Problems related to the course topics are solved on the board.		
	3	Laboratory	Experiments are done in the laboratory or theoretical concepts covered during the lectures are practiced using computer exercises.		
	4	Interactive Courses	Questions are asked to students during lectures and they are encouraged to guess the answers (peer learning is also in this category)		
	5	Field Work	Students attend activities outside the campus.		
	6	Midterm	Midterm exam is given during the midterm week.		2
	7	Final	Final exam is given during the final exam week.		2
	Estimated Time to be Allocated by a Student				
	8	Projects	The students carry out research about the problem given in the project, design and implement their solution and prepare a report.		
	9	Homeworks	The students solve the problems given as homework.		
	10	Pre-class learning of Course Material	The students study and learn the new subjects from course materials.		14*2=28
11	Review of Course Material	Students review the course subjects from course materials to prepare for the exams and homeworks.			
12	Office Hour	Students ask questions to the instructor or the assistant during office hours.		14*2=28	
TOTAL				102	
Academic Honesty	Violations of scholastic honesty include, but are not limited to cheating, plagiarizing, fabricating information or citations, facilitating acts of dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students.				
	In case academic dishonesty is observed, the first authority is the instructor of the course. The instructor may decide to give the student zero for the homework(s)/lab(s)/exam(s), give the letter grade FF, or may take disciplinary action.				