

# TOROS ÜNİVERSİTESİ

Faculty Of Engineering  
Industrial Engineering (English)

## Course Information

PHYSICS I					
Code	Semester	Theoretical	Practice	National Credit	ECTS Credit
		Hour / Week			
PHY101	Fall	3	2	4	7

<b>Prerequisites and co-requisites</b>	None
<b>Language of instruction</b>	English
<b>Type</b>	Required
<b>Level of Course</b>	Bachelor's
<b>Lecturer</b>	Asst. Prof. Dr. Çağdaş ALLAHVERDİ
<b>Mode of Delivery</b>	Face to Face
<b>Suggested Subject</b>	None
<b>Professional practise ( internship )</b>	None
<b>Objectives of the Course</b>	The course's objective is to introduce students to the fundamental concepts of physics and their practical applications, and to provide students with a foundation to build upon in their future studies. The course introduces to non-major students physical quantities and measurements, mechanical motion, force, work and energy, and oscillations and waves.
<b>Contents of the Course</b>	The topics covered in this course include: • quantitative approach, measurements, quantities, and units; • vectors and manipulations with vectors; • kinematics of mechanical motion and simplest motions; • dynamics of mechanical motion, Newton's laws, forces, momentum, solving motion using forces; • rotational motion, torque and angular momentum, rotational and rolling motion of solid bodies; • conservation of energy, linear, and angular momentum, significance and application of conservation laws in physics; • simple harmonic oscillations, forced oscillations and resonance, simple wave motion, basic properties of waves.

## Learning Outcomes of Course

#	Learning Outcomes
1	Students would have up to date information, software, theoretical and practical knowledge on Physics. Moreover, they will be equipped with knowledge sufficiently to use Physics related resources.
2	Students would acquire theoretical knowledge on subject of Physics theories.
3	They could apply the theoretical knowledge gained in the field of Physics
4	Students would be able to analyze the experimental results.
5	They would acquire the ability to figure out the physical concepts and issues in the field of Physics through scientific methods and interpret them.

## Course Syllabus

#	Subjects	Teaching Methods and Technics
1	Physical quantities	Synchronous
2	Vectors	Synchronous
3	Position, speed, velocity and acceleration	Synchronous
4	Free fall and projectile motion	Synchronous
5	Newton's laws	Synchronous

6	Free-body diagrams	Synchronous
7	Midterm	Exam
8	Static, kinetic, and rolling friction	Synchronous
9	Momentum	Synchronous
10	Work-Energy theorem	Synchronous
11	Torque	Synchronous
12	Rolling motion	Synchronous
13	Oscillatory motion	Synchronous
14	Waves	Synchronous
15	Interference	Synchronous
16	Final Exam	Exam

## Course Syllabus

#	Material / Resources	Information About Resources	Reference / Recommended Resources
1	H.D. Young, R.A. Freedman and A.L. Ford, Sears and Zemansky's University Physics with Modern Physics Technology Update, 13th Edition, ISBN 10: 0-321-89470-7, 2014		
2	Raymond A. Serway, Physics for Scientists and Engineers, 4th edition, Saunders College Pub, 1996		
3	D. Halliday, R. Resnick, J. Walker, Fundamentals of Physics Extended, 9th Edition, Wiley, 2009 ISBN-10: 0-321-64363-1, 2010.		

## Method of Assessment

#	Weight	Work Type	Work Title
1	40%	Mid-Term Exam	Mid-Term Exam
2	40%	Final Exam	Final Exam
3	20%	Laboratory	Laboratory

## Relationship between Learning Outcomes of Course and Program Outcomes

#	Learning Outcomes	Program Outcomes	Method of Assessment
1	Students would have up to date information, software, theoretical and practical knowledge on Physics. Moreover, they will be equipped with knowledge sufficiently to use Physics related resources.	1	1,2
2	Students would acquire theoretical knowledge on subject of Physics theories.	1	1,2
3	They could apply the theoretical knowledge gained in the field of Physics	1,4	1,2,3
4	Students would be able to analyze the experimental results.	1,4	1,2,3
5	They would acquire the ability to figure out the physical concepts and issues in the field of Physics through scientific methods and interpret them.	1,9	1,2,3

PS. The numbers, which are shown in the column Method of Assessment, presents the methods shown in the previous table, titled as Method of Assessment.

## Work Load Details

#	Type of Work	Quantity	Time (Hour)	Work Load
1	Course Duration	14	5	70
2	Course Duration Except Class (Preliminary Study, Enhancement)	14	3	42
3	Presentation and Seminar Preparation	0	0	0

4	Web Research, Library and Archival Work	0	0	0
5	Document/Information Listing	0	0	0
6	Workshop	0	0	0
7	Preparation for Midterm Exam	1	17	17
8	Midterm Exam	1	8	8
9	Quiz	0	0	0
10	Homework	3	3	9
11	Midterm Project	0	0	0
12	Midterm Exercise	0	0	0
13	Final Project	0	0	0
14	Final Exercise	0	0	0
15	Preparation for Final Exam	1	15	15
16	Final Exam	1	3	3
				<b>164</b>