



T.C.

ESKİŞEHİR OSMANGAZI ÜNİVERSİTESİ

FACULTY OF SCIENCES

PHYSICS DEPARTMENT



COURSE INFORMATION FORM

Course Name	Course Code
PHYSICS I LAB	

Semester	Number of Course Hours per Week		Credit	ECTS
	Theory	Practice		
1	0	2	1	2

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
1	1	0	0	0

Course Language	Course Level	Course Type
English	Undergraduate	Compulsory

Prerequisite(s) if any	
Objectives of the Course	Teaching through conducting experiments on the topics related to the content of Physics I; hence, enhancing the students' perception and understanding on the important concepts and fundamental laws of the Newtonian Mechanics.
Short Course Content	Numerical analysis and error calculation, measurement, specification of the components of forces, Newton's laws of motion, projectile motion, conservation of energy, conservation of momentum, moment of inertia, springs, and viscosity experiments.

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 To enhance observational and analytical skills.	1, 2, 11	13	C
2 Make measurements with common instruments.	4, 5	3	I
3 To be able to analyze quantitative information and errors.	5, 6	15	E
4 To be able to represent experimental data by using graphics.	2, 5	15	E
5 To be able to compare experimental results with mathematical and physical models, hence make an interpretation.	5	8	E
6 Prepare a lab report.	1, 2, 4, 5, 6	15	E
7 Develop teamwork skills.	6	12	C, E, I, K
8 To get hands on experience about the topics of basic measurements, statics, kinematics, Newton's Laws, spring constants, viscosity.	1, 2, 4, 5	3	A, I
9 Encourage the curiosity for physics and improve the ability to apprehend the solid correlations between physics and engineering applications.	1	11	I
10 To obtain knowledge and experience on building basic experimental set ups upon need.	2, 3, 4	3, 6, 10	I

Main Textbook	Physics I Experiments. Eskişehir: Eskişehir Osmangazi Üniversitesi Yayınları Sertaç Eroğlu, Murat Kellegöz, Gökhan Kılıç, Halil Yasin Adıyaman.
Supporting References	Fundamentals of Physics, Halliday Resnick, John Wiley and Sons Inc. 1988. Giancoli, D.C. (2004). Physics: Principles with Applications (6th Edition). Pearson Education Inc.
Necessary Course Material	

Course Schedule	
1	Introduction to laboratory, and formation of lab groups.
2	Numerical analysis and error calculation.
3	Measurement experiment .
4	Motion with constant acceleration experiment.
5	Conservation of linear momentum experiment.
6	Projectile motion experiment.
7	Projectile motion experiment.
8	Mid-Term Exam
9	Free fall experiment.
10	Simple pendulum and conservation of energy experiment.
11	Motion on a frictional inclined plane experiment.
12	Springs experiment.
13	Moment of inertia experiment.
14	Viscosity experiment.
15	Make up experiment, general review and preparation for final exam.
16,17	Final Exam

Calculation of Course Workload			
Activities	Number	Time (Hour)	Total Workload (Hour)
Course Time (number of course hours per week)	2	1	2
Classroom Studying Time (review, reinforcing, prestudy,...)	2	1	2
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)	10	4	40
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam			
Studying for Mid-Term Exam			
Final Exam	1	2	2
Studying for Final Exam	1	14	14
	Total workload		60
	Total workload / 30		2
	Course ECTS Credit		2

Evaluation	
Activity Type	%
Mid-term	
Quiz	
Homework	
Report	50
Final Exam	50
Total	100

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	Adequate knowledge of mathematics, science and engineering; ability to practice theoretical and practical knowledge of these areas into modeling and solving problems.	5
2	Ability to identify complex problems in mechanics in engineering and, for this purpose having skills to formulate, select and apply appropriate methods.	5
3	To apply modern methods to design a complex system, equipment or product that works under realistic conditions and constraints and satisfy specific requirements in engineering.	2
4	Having skills to develop, select and apply modern techniques and tools needed for engineering applications, skills to use information technology effectively.	2
5	Skills to design and conduct tests, collect data, analyze results, and interpret data for the experimental investigation of certain engineering problems.	4
6	Ability to function effectively as an individual and as a member of teams within the discipline and in multidiscipline areas.	3
7	To communicate and represent effectively in both Turkish and English.	2
8	Awareness of the necessity of lifelong learning, access to information, monitoring developments in science and technology and the ability to stay updated.	1
9	Understanding of professional and ethical responsibility.	1
10	Information on project management, change management and risk management practices, awareness on entrepreneurship, innovation and sustainable development.	1
11	Information about universal and societal effects of engineering applications on health, safety and environment; awareness of the legal consequences of engineering solutions.	2
12	To aware about the current problems in domestic and international level.	1

LECTUTER(S)				
Prepared by				
Signature(s)				

Date:06.06.2024