ESOGU METALLURGY AND MATERIALS ENGINEERING DEPARTMENT

COURSE INFORMATION FORM

Course Name	Course Code
PHYSICS I	151911186

Semester	Number of Course Hours per Week		Credit	ECTS
	Theory	Practice		
1	3	0	3	3

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

Course Language	Course Level	Course Type
Turkish	Undergraduate	Compulsory

Prerequisite(s) if any	none
Objectives of the Course	To provide students with basic information about Newtonian mechanics and conservation laws. Ability to define, formulate and analytically solve problems in physical systems; To improve general problem solving ability.
Short Course Content	Measurement; vectors; movement in one dimension; movement in two and three dimensions; particle dynamics I; particle dynamics II; work and energy; conservation of energy; dynamics of particle systems; collision; rotational kinematics and dynamics; balance of solid bodies; gravity; oscillations.

	Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1	The student recognizes and solves various problems of physical systems in practice.	1	1	A
2	Recognizes the importance of measurement and units.	1	1	A
3	Applies physical systems in daily life.	1	1	A
4	Recognizes the role of physics in engineering and health sciences.	1	1	A
5	Explains the basic laws and concepts of physics.	1	1	A
6				
7				
8				

*Teaching Methods 1:Expression, 2**:**Discussion, **3:**Experiment, **4:**Simulation, **5:**Question-Answer, **6:**Tutorial, **7:**Observation, **8**:Case Study, **9:**Technical Visit, **10:**Trouble/Problem Solving, **11:**Induvidual Work, **12**:Team/Group Work, **13**:Brain Storm, **14:**Project Design / Management, **15:**Report Preparation and/or Presentation

Measuring Methods A:Exam, **B:Quiz, **C:**Oral Exam, **D:**Homework, **E:**Report, **F:**Article Examination, **G:**Presentation, **I:**Experimental Skill, **J:**Project Observation, **K:**Class Attendance; **L:**Jury Exam

Main Textbook	"1. Halliday, D., Resnick, R., and Walker, J. (2008). Fundamentals of Physics (8th Edition). John Wiley & Sons, Inc.2. Serway, R.A., Beichner, R.J., Physics For Scientists and Engineers with Modern Physics (2007), Harcourt College Publishers."
Supporting References	"1. Young, H.D, Freedman, R.A. (2006). University Physics Volume1 (12th Edition). Pearson/Addison Wesley 2.Ohanian, H.C. (1989). Physics (2nd Edition) New York: W.W. Norton & Company, Inc.3. Giancoli, D.C. (2004). Physics: Principles with Applications (6th Edition). Pearson Education Inc."
Necessary Course Material	

Course Schedule	
1	Measurement and Units
2	Vectors
3	One-Dimensional Motion
4	Two-Dimensional Motion
5	Newton's Laws of Motion and Applications
6	Work and Power
7	Energy
8	Mid-Term Exam
9	Energy
10	Momentum and Collision
11	Momentum and Collision
12	Rotational Movement
13	Rotational Motion Applications
14	Balance
15	Harmonic Motion
16,17	Final Exam

Calculation of Course Workload			
Activities	**Number**	**Time (Hour)**	**Total Workload (Hour)**
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,....)	14	1	14
Homework	5	1	5
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	1	1
Studying for Mid-Term Exam	7	3	21
Final Exam	1	2	2
Studying for Final Exam	14	1	14
	Total workload		**99**
	Total workload / 30		**99/30**
	Course ECTS Credit		**3**

Evaluation	
Activity Type	**%**
Mid-term	50
Quiz	
Homework	
Bir öğe seçin.	
Bir öğe seçin.	
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	To possess sufficient knowledge in mathematics, science, and engineering subjects related to Metallurgical and Materials Engineering; the ability to apply theoretical and practical knowledge in these areas to model and solve engineering problems.	5
2	The ability to identify, define, formulate, and solve complex engineering problems by selecting and applying appropriate analysis and modeling methods.	2
3	The ability to design a complex system, process, device, or product under realistic constraints and conditions to meet specific requirements by applying modern design methods.	2
4	The ability to develop, select, and use modern techniques and tools necessary for engineering applications encountered as a Metallurgical and Materials Engineer; the ability to effectively use information technology.	3
5	The ability to design experiments, conduct experiments, collect data, analyze results, and interpret findings for the investigation of engineering problems.	2
6	The ability to work effectively individually, as well as within disciplinary and interdisciplinary teams.	2
7	The ability to communicate effectively in Turkish, both verbally and in writing; knowledge of at least one foreign language.	2
8	The awareness of the necessity for lifelong learning; the ability to access information, follow developments in science and technology, and continuously renew oneself.	2
9	Awareness of professional and ethical responsibility.	2
10	Knowledge about business practices such as project management, risk management, and change management; awareness of entrepreneurship, innovation, and sustainable development.	2
11	Knowledge about the universal and societal impacts of engineering applications on health, environment, and safety; awareness of the legal consequences of engineering solutions.	3
12	Awareness of quality consciousness and sustainability in material selection, product development, and production processes in engineering applications; awareness of quality control.	3
13	The ability to confidently approach problems encountered in engineering applications.	2

LECTUTER(S)				
Prepared by	Asst. Prof. Dr. Şadiye Meral ÇAKMAK			
Signature(s)				

Date: 06.06.2024