Course Information

Course Code	T	P	L	C	ECTS	Type C/E	Language TR/ENG etc.	Year/Semester
FİZ2008	4	2	0	5	7	C	TR	2/SPRING

Course Name (Turkish)	**Dalgalar ve Optik**
Course Name (English)	**Waves and Optics**

Unit/Program	Physics Department/Undergraduate Program
Course Prerequisite	No
Course Objectives	To provide analytical solutions for applications in simple harmonic oscillations and simple mechanical systems, and Based on the results obtained, the technological application areas of wave and optics To teach students in an easy-to-understand way with physical examples encountered
Course Outline	Simple Harmonic Motion, Wave Motion, Diffraction and Interference, Geometric Optics, Reflection and Refraction, Polarization
Textbook/ Material / Resources	1. Vibrations and Waves, A.P. French, M.I.T. 2. Principles of Optics, Born and Wolf
Internship Status	No

Course Precedents

University Name	Program Name	Course Name	T-P-L-C; ECTS	Type
Eskisehir Osmangazi University	**Physics**	**Waves and Optics**	**4-0-0-4; 6**	**C**
Ankara University	**Physics**	**Waves and Optics**	**4-2-0-5; 8**	**C**

The instructor who proposed the course (Title, Name and Surname)	*Signature*

Instructors who can teach the course (Title, Name and Surname)	*Signature*

Academic justification for the opening of the course? (The effect of course outcomes on program outcomes, etc.)

Brief explanation of the course (theoretical lecture, applications, laboratory, studio, off-campus activity, using software, etc.)
Explanation will be made by writing on the board.

External Stakeholder Opinions About the Course (It is expected that the opinions to be obtained from the business world that will employ your graduates or from real or legal persons outside the University who have expertise on the subject of the course will be specified. Proof documents must be attached to this form.)

Stakeholder Name	**Opinion** (It should be given as a summary, it should not exceed two lines.)

Weekly Course Content Distribution		
Week	**Theory**	**Application/Laboratory**
1	Simple Harmonic Motion	
2	Damped and Forced Simple Harmonic Motion	
3	Resonance	
4	Coupled Simple Harmonic Motion	
5	Continuous Environments	
6	Wave Motion	
7	Electromagnetic Waves	
8	Diffraction and Interference	
9	Midterm Exam	
10	Geometric optics, Huygens' principle	
11	Fermat Prensibi	
12	Reflection and Refraction on Flat Surfaces	
13	Reflection and Refraction on Spherical Surfaces	
14	Thin Lenses, Matrix Method of Polarization	
15	Final Exam	
16		

Assessment			
	Activity	**Custom**	**Contribution to Success Grade (%)**
Evaluation Criteria	Midterm Exams	1	40
	Quizzes		
	Assignments		
	Projects		
	Term Paper		
	Laboratory		
	Other		
	Final Exam	1	60
		Sum:	100
Remarks			

Content Design and Subject Weight (%)	Mathematics and Basic Sciences	100
	Engineering Sciences	
	Social Sciences	
	Health Sciences	
	Educational Sciences	
	Culture and Art Sciences	
	Design Information	

Workload (ECTS) Calculation

Events	Number	Duration (Hours)	Total workload (Hours)
Fieldwork			
Midterm Exam Application	1	2	2
Self-Study (including pre-class and exam preparation)	14	3	42
Make-up Exam	1	2	2
Experiment and Observation			
Class Participation (Theory)	14	6	84
Homework			
Final Exam Practice	1	2	2
Laboratory			
Article Review			
Writing an Article			
Reading			
Case Study			
Performance			
Problem Solution	14	2	28
Project Preparation			
Project Submission			
Quiz			
Report Preparation			
Submitting Reports			
Role/Drama Work			
Seminar			
Oral Exam			
Team/Group Work			
Argument			
Application/Practice	5	3	15
Other			
TOTAL WORKLOAD:			**175**
ECTS CREDİTS OF THE COURSE: *(The number obtained as a result of Total Workload/25 is calculated by rounding to the whole number.)*			**7**

	Program Outcomes (PO) / Learning Outcomes (LO) *(Course Outcomes)*	1	2	3	4	5	6	7	8	9	10	11
1	To be able to examine vibrations in mechanical systems	5	5	5	3	3	3	4	4	4	3	3
2	To be able to define waves and their properties	5	5	5	3	3	3	4	4	4	3	3
3	Analyze properties such as diffraction, interference and polarization for optical systems	5	5	5	3	3	3	4	4	4	3	3

Organizer: Assist. U.S. Seda HEKIM
Preparation Date: 20.05.2024