



Code and Name: FİZ5810 MATERIAL PHYSICS

Unit: Graduate School of Natural and Applied Sciences

Detail: **Period:** 2023-2024 **Status:** Optional **Class:** 1 **Credits:** 3-0-0-3 **ECTS:** 6 **Language:** Turkish

INSTRUCTOR

Title, Name and Surname:

Phone:

Email:

Social Account: -

Student Day and Time:

COURSE ASSISTANT

Title, Name and Surname:

Phone:

Email:

Social Account:

Student Day and Time:

Lessons Weekly Program:	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

Rendering: Face-to-face lessons per week 3 It will be done on an hourly basis.
Place: YY: - EU: -

Purpose: Physics , Use By area Materials Purposeful selection of the product Understanding its fundamental place in the production and characterization stages To be able to is intended.

Material: 1) H. Fredriksson, U. Akerlind, Physics of Functional Materials, John Wiley & Sons, 2008. 2) E. Akat, Fundamentals of Solid State Physics, Daisy Science, 2010.

Student Responsibility: Attending classes, submitting assignments on time, and participating in exams.

Weekly Lesson Plan	Week	Topic			Method	
	1	Atom and molecule, subatomic particles and Atomic models			YY	
	2	Crystalline and amorphous structures			YY	
	3	Types of crystal lattices and crystal defects			YY	
	4	Conductors and Transmission mechanisms			YY	
	5	Insulators			YY	
	6	Semiconductors Semiconductors elementary and advanced knowledge of optics			YY	
	7	Semiconductors Semiconductors elementary and advanced knowledge of optics			YY	
	8	Magnetic properties (Paramagnetism)			YY	
	9	Magnetic Properties (Diamagnetivity and Ferromagnetism)			YY	
	10	Investigation of heat and temperature and thermal properties			YY	
	11	Dielectric concept and dielectric properties			YY	
	12	Introduction to the basic physical properties of matter			YY	
	13	Physical characterization methods used in materials analysis What an overview			YY	
	14	General evaluation of X-ray diffraction (XRD)			YY	
Assessment and Evaluation	Method				Number	Weight
	Break Exam	Exam	Face		1	% 50
		Quiz	-		-	
		Homework	-			
		Project	-		-	-
	General Exam	Face		1	% 50	
Course Outcomes:	1	Acquires knowledge on the fundamental and general aspects of physics, with a primary focus on solid-state physics, atomic and molecular physics.				
	2	Gains knowledge on how the properties of materials change under different physical conditions.				
	3	It is understood which physical feature is associated with which technological expectation.				
	4	Using knowledge of physics, they can choose, design and research an original study topic.				
	5	Able to conduct independent research.				

Course-Specific Explanations:



T.C.
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Course Syllabus Form

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UE: Distance Education; **YY:** Face-to-Face Education