



Code and Name: FİZ5140 PHYSICAL ELECTRONICS

Unit: Graduate School of Natural and Applied Sciences

Detail: **Period:** 2023-2024 **Status:** Optional **Class:** 1 **Credits:** 2-2-0-3 **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: The course will be conducted face-to-face for 4 hours per week.

Place: YY: Faculty of Science, Department of Physics UE:

Purpose: Providing a Fundamental Background in Semiconductor Detectors for Graduate Students.

Material: Physical Electronics Textbook (Robert Lee Ramey) and lecture notes .

Student Responsibility :

Weekly Lesson Plan	Week	Topic		Method	
	1	Weekly Course Topics Overview, Course Objective, Fundamental Concepts			YY
	2	Electronic properties of semiconductors ,			YY
	3	Photoelectric effect			YY
	4	Bohr atomic model and electronic states			YY
	5	Electrons Transitions between shells and their physical meanings			YY
	6	Effective mass, Phase velocity and group velocity			YY
	7	Schodinger wave equation			YY
	8	Midterm Exam			YY
	9	Electronic structures of atoms in solids and energy band systems			YY
	10	Conductivity, state density and mobilete calculation in semiconductors			YY
	11	State density and mobility calculation in doped semiconductors			YY
	12	Electronic states in the temperature-dependent semiconductor			YY
	13	Electronic conditions in the PN junction			YY
	14	General Review and Learning Outcome Assessment			YY
Assessment and Evaluation	Method			Number	Weight
	Break Exam	Exam	Face to Face	1	%5 0
		Quiz	It will not be done.	-	
		Homework	Activities will be given before and after the midterm exam.	2	
		Project	It will not be issued.	-	-
	General Exam	Face to Face		1	%5 0
Course Outcomes:	1	Gaining the Ability to Evaluate Electronic States in Solids from a Physicist's Perspective			
	2	Learning Course Content and Gaining Knowledge on Related Formulas, Equations, and Proofs.			
	3	Understanding the Applicability of Acquired Knowledge in Scientific Research.			
	4	Understanding the Applicability and Usability of Electronics.			
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Course-Specific Explanations:

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