



**Code and Name:**

## FİZ5700 APPLICATION AREAS OF SUPERCONDUCTIVITY

**Unit:**

Graduate School of Natural and Applied Sciences, Graduate School

**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**

**Monday**

**Tuesday**

**Wednesday**

**Thursday**

**Friday**

**Saturday**

**Weekly**

**Program:**

**Rendering:**

**Place:**

YY: Department of Physics Seminar Room

**UE:**

**Purpose:**

To gain general knowledge about the application areas of superconductivity.

**Material:**

1) H. Weinstock, Applications of Superconductivity, Springer, 2013.

**Student**

**Responsibility**

:

**Weekly Lesson Plan**

Week	Topic	Method
1	Conductor, Insulator, Semiconductor and Superconductor Overview	YY
2	Types of superconductors and terminology used in superconductivity	YY
3	Low temperature and High Temperature superconductivity	YY
4	Superconducting quantum interference device (SQUID) and its applications	YY
5	Superconductor generators	YY
6	Superconducting magnets	YY
7	Superconducting magnetic energy storage (SMES)	YY
8	MIDTERM EXAM	YY
9	Magnetic Levitation (MAGLEV) systems	YY
10	Use of superconductors in wind turbines	YY
11	Use of Superconductors in Magnetic Resonance Imaging	YY
12	Use of superconductors in particle colliders	YY
13	In the transport of energy, the use of superconductor cables	YY
14	Cryogenic refrigeration systems for superconductors	YY

**Assessment and Evaluation**

Method		Number	Weight
Break Exam	Exam	1	%50
	Quiz	-	-
	Homework	-	-
	Project	-	-
General Exam		1	%50

**Course Outcomes:**

1	Comprehension of the basics of superconductivity.
2	To learn the uses of superconductors in our environment.
3	
4	
5	

**Course-Specific Explanations:**

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