

**School of Engineering and Natural Sciences / Computer Engineering (English)**

**2023 - 2024 Academic Year**

**PHYSICS II**

**Syllabus**

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
PHYSICS II	COE1210752	Spring Semester	3+0	3	5
<b>Prerequisites Courses</b>	MATEMATİK I				
<b>Recommended Elective Courses</b>					
<b>Language of Instruction</b>	English				
<b>Course Level</b>	First Cycle (Bachelor's Degree)				
<b>Course Type</b>	Required				
<b>Course Coordinator</b>	Assoc.Prof. Muhammed Fatih TOY				
<b>Name of Lecturer(s)</b>	Lect.Dr. Mustafa ERYÜREK, Lect. Sultan YILDIZ				
<b>Assistant(s)</b>					
<b>Aim</b>	The aim of the course is to provide students with theoretical knowledge on basic electricity and magnetism and to understand the universe and engineering applications in the most effective way with this theoretical structure.				
<b>Course Content</b>	This course contains; Electric charge and electric field,Gauss' law,Electric potential,Capacitance and dielectrics I,Capacitance and dielectrics II,Current, resistance, and electromotive force,Direct current circuits,Magnetic field and magnetic forces,Sources of magnetic field,Electromagnetic induction,Inductance I,Inductance II,Alternating current,Electromagnetic waves.				
<b>Course Learning Outcomes</b>			<b>Teaching Methods</b>	<b>Assessment Methods</b>	
1. Students know the basic laws of electricity and magnetism and uses them in problem solving.			10, 12, 14, 6, 9	A, G	
2. Students have knowledge about electrostatic, capacitance and dielectric, direct current circuits and elements, electromotive force.			10, 12, 14, 6, 9	A, G	
3. Students gain knowledge about basic magnetism, electromagnetic induction, inductance, alternating current and electromagnetic waves.			10, 12, 14, 6, 9	A, G	
4. Students gain the ability to apply mathematical knowledge in problem solving.			10, 12, 14, 6, 9	A, G	
5. Students can model problems, interpret, evaluate and analyze data using basic theoretical knowledge on electricity and magnetism.			10, 12, 14, 9	A, G	
<b>Teaching Methods</b>	10: Discussion Method, 12: Problem Solving Method, 14: Self Study Method, 6: Experiential Learning, 9: Lecture Method				
<b>Assessment Methods</b>	A: Traditional Written Exam, G: Quiz				
<b>Lecture Schedule</b>					
<b>Sequence</b>	<b>Topics</b>	<b>Preliminary Preparation</b>			
1	Electric charge and electric field				
2	Gauss' law				
3	Electric potential				
4	Capacitance and dielectrics I				
5	Capacitance and dielectrics II				
6	Current, resistance, and electromotive force				
7	Direct current circuits				
8	Magnetic field and magnetic forces				
9	Sources of magnetic field				
10	Electromagnetic induction				
11	Inductance I				
12	Inductance II				
13	Alternating current				
14	Electromagnetic waves				
<b>Evaluation Methods</b>		<b>Weight(%)</b>			
Midterm Exam		30			
General Exam		70			

**Resources**

Serway R.A, Jewett, Jr J.W. Physics for Scientists and Engineers with Modern Physics. Brooks Cole, 9th Edition  
 Young H.D, Freedman R.A. Sears and Zemansky's University Physics with Modern Physics. Pearson, 13th Edition  
 College Physics, OpenStax College (From: <https://openstaxcollege.org/textbooks/college-physics>)