



AYDIN ADNAN MENDERES UNIVERSITY
GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES
MATHEMATICS AND SCIENCE EDUCATION
SCIENCE EDUCATION
SCIENCE EDUCATION MASTER
COURSE INFORMATION FORM

Course Title	General Physics II								
Course Code	İFB518		Course Level		Second Cycle (Master's Degree)				
ECTS Credit	8	Workload	200 (Hours)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	Understanding electric and magnetism topics								
Course Content	Electromagnetic universe, Electrical specifics of matter, Magnetical characteristics of matter								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Experiment, Discussion, Case Study, Individual Study, Problem Solving								
Name of Lecturer(s)									

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading	
1	Physics, SERWAY
2	Principles of Physics
3	Basic Physics
4	Essential Physics

Week	Weekly Detailed Course Contents	
1	Theoretical	Electromagnetic universe
	Preparation Work	problem solving from Fizik, SERWAY
2	Theoretical	Electromagnetic universe
	Preparation Work	problem solving from Fizik, SERWAY
3	Theoretical	Electrical specifics of matter
	Preparation Work	problem solving from Fizik, SERWAY
4	Theoretical	Electrical specifics of matter
	Preparation Work	problem solving from Fizik, SERWAY
5	Theoretical	Magnetical characteristics of matter
	Preparation Work	problem solving from Fizik, SERWAY
6	Theoretical	Magnetical characteristics of matter
	Preparation Work	problem solving from Fizik, SERWAY
7	Theoretical	Electromagnetic energy and dispersion
	Preparation Work	problem solving from Fizik, SERWAY
8	Preparation Work	problem solving from Fizik, SERWAY
	Intermediate Exam	MIDTERM
9	Theoretical	Electromagnetic energy and dispersion
	Preparation Work	problem solving from Fizik, SERWAY
10	Theoretical	Semiconductor materials and characteristics
	Preparation Work	problem solving from Fizik, SERWAY
11	Theoretical	Semiconductor materials and characteristics
	Preparation Work	problem solving from Fizik, SERWAY
12	Theoretical	Interaction of electromagnetic energy-matter
	Preparation Work	problem solving from Fizik, SERWAY
13	Theoretical	Interaction of electromagnetic energy-matter
	Preparation Work	problem solving from Fizik, SERWAY
14	Theoretical	Electrical-semiconductor sensors and their application field



14	Preparation Work	problem solving from Fizik, SERWAY
15	Theoretical	Electrical-semiconductor sensors and their application field
	Preparation Work	problem solving from Fizik, SERWAY
16	Preparation Work	problem solving from Fizik, SERWAY
	Final Exam	TERM

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	4	3	98
Reading	10	4	3	70
Midterm Examination	1	10	3	13
Final Examination	1	15	4	19
Total Workload (Hours)				200
[Total Workload (Hours) / 25*] = ECTS				8

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To be able to solve electric and magnetism problems.
2	To be able to solve problems in electrostatics using Coulomb and Gauss laws and imagine basic electrical charge distributions.
3	To be able to define and solve problems about electrical circuit and circuit elements.
4	To be able to define magnetic field occurring in a simple current distribution using Biot-Savart and Amperé's Laws.
5	To be able to define EMF caused by moving ring in a magnetic field.
6	To be able to describe the characteristics of different types of magnetic materials and solve magnetic cycle problems.
7	To be able to understand the impact of development of electric and magnetism field on science and technology and learn daily life applications of it.

Programme Outcomes (Science Education Master)

1	To be able to have an expert theoretical knowledge within the field of science education.
2	To be able to transfer expert knowledge gained in science education into various instructional environment.
3	To be able to integrate science education knowledge with the other disciplines and product functional knowledge
4	To be able to use information and communication technologies efficiently in conceptual learning
5	To be able to find scientific solutions to the problems in the field of science education
6	To be able to evaluate the knowledge critically in the field
7	To be able to participate in team projects in the science education field
8	To be able to adopt lifelong learning strategies to his/her studies
9	To be able to use at least one foreign language efficiently in oral and verbal communication
10	To be able to share national and international data in the field of science education
11	To be able to comprehend and evaluate science-technology-society and environment interactions
12	To be able to comprehends science under the ethical values and take account of ethical considerations
13	To be able to use scientific information in the other domains that is gained in the masters field and have the transfer skills
14	To be able to follow the current development in the science education field
15	To be able to develop strategical plans and evaluate them in the context of quality processes

Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5	L6	L7
P1	5	3	5	5	5	5	5
P6	2	4	3	3	3	3	4
P8	4	3	3	3	3	3	5
P11							5

