



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Physics II							
Course Code		FBÖ150		Course Level		First Cycle (Bachelor's Degree)			
ECTS Credit	3	Workload	75 (Hours)	Theory	2	Practice	2	Laboratory	0
Objectives of the Course		The aim of this course is; students will be able to understand the basic concepts and principles of electricity, magnetism and thermodynamics from the basic subjects of physics and to establish relations between these concepts and principles through daily and daily applications of electricity and magnetism with the help of open and closed end experiments for these subjects.							
Course Content		Charge and conservation, electrification, insulators and conductors, Coulomb's law, electric fields of continuous and continuous loads; Gauss law; static charge potential potential (potential, potential difference, intermittent and continuous loads, dielectrics, coupling and energy in capacitors); direct current (current, power sources, emf, resistances, energy and power, direct current circuits, structure of measuring instruments, electricity use and safety); magnetic force and field (magnetic field interaction with current passing conductors and moving loads, Law of Biot-Savart, Hall effect, magnetic properties of matter, electromagnetic induction (Faraday law, Lenz law, self induction, magnetic field energies, AC generators, electric motors, transformers, thermodynamic laws, reversible and irreversible phenomena, yield and entropy) and open and closed end experiments for these subjects.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Discussion, Project Based Study, Individual Study					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading

1	Genel Fizik, Ergin, Ö., Dinozor Yayınevi
2	Üniversite Fiziği Cilt II, Young & Freedman, Pearson Education Yayıncılık
3	Fen ve Mühendislik İçin Fizik: Elektrik ve Manyetizma-Işık ve Optik, Serway & Beichner, Palme Yayıncılık

Week	Weekly Detailed Course Contents	
1	Theoretical	Load and protection, electrification, insulators and conductors
2	Theoretical	Coulomb's law, electric fields of continuous and continuous loads
3	Theoretical	Gauss law; static charge potential potential (potential, potential difference, intermittent and continuous loads, dielectrics, coupling and energy in capacitors)
4	Theoretical	direct current; current, power sources
5	Theoretical	emf, resistances, energy and power,
6	Theoretical	direct current circuits, structure of measuring instruments, electricity use and safety
7	Theoretical	magnetic force and field (magnetic field interaction with current passing conductors and moving loads)
8	Intermediate Exam	Midterm
9	Theoretical	Law of Biot-Savart, Hall effect
10	Theoretical	magnetic properties of matter,
11	Theoretical	electromagnetic induction (Faraday law,
12	Theoretical	Lenz law, self induction, magnetic field energies
13	Theoretical	AC generators, electric motors, transformers
14	Theoretical	thermodynamic laws
15	Theoretical	reversible and irreversible phenomena, yield and entropy) and open and closed end experiments for these subjects
16	Final Exam	Final



Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	1	2	42
Midterm Examination	1	13	2	15
Final Examination	1	16	2	18
Total Workload (Hours)				75
[Total Workload (Hours) / 25*] = ECTS				3

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	Load and protection, electrification, insulators and conductors.
2	Coulomb law, electric fields of continuous and continuous loads; Gauss law
3	Static charge potential potential (potential, potential difference, intermittent and continuous loads, dielectrics, bonding and energy in capacitors).
4	Direct current (current, power sources, emf, resistances, energy and power, direct current circuits, structure of measuring instruments, electricity usage and safety).
5	Magnetic force and field (magnetic field interaction with current passing conductors and moving charges, Biot-Savart law, Hall phenomenon, magnetic properties of matter.
6	Electromagnetic induction (Faraday's law, Lenz law, selfinduction, magnetic field energy, AC generators, electric motors, transformers, heat and temperature, thermal properties of the material (core heat, thermal conductivity, thermal expansion).
7	Thermodynamic laws, reversible and irreversible phenomena, efficiency and entropy) and open and closed end experiments for these subjects.

Programme Outcomes (Science Teacher Education)

1	To be able to gain subject knowledge of profession in theory and practice in the learning process.
2	To be able to gain the competence of using the appropriate approach, strategy, method and technique for the instructional plans to be prepared in the learning process.
3	To be able to gain the skills of the teaching profession in the learning process.
4	To be able to implement teaching profession knowledge, skills, attitudes and habits related to the subject-matter in a real teaching and learning environment in the learning process.
5	To be able to comprehend contemporary approaches of education and the philosophy they are based on.
6	To be able to gain the basic skills such as comprehending, expressing, commenting, evaluating, being aware and enterprising, communicating, acknowledging the individual related to the subject-matter.
7	To be able to become individuals faithful to the Principles and Revolutions of Ataturk, be modern democratic, secular, protecting and deveoping one's country, being alive to the nation, respecting human rights, preserving the nature, not being discriminatory, giving importance to the traditions and customs, protecting the values
8	To be able to improve oneself in terms of sport, art and culture.
9	To be able to become individuals believing in lifelong learning.
10	To be able to gain the vision of being individuals who keep up with developments in social, economic, technological and scientific areas, who investigate the main reasons of World problems and try to contribute to the solutions of these problems.

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	5	5	5	5	5	5
P2	5	5	5	4	4	4	5
P3	4	5	5	5	5	4	5
P4	5	4	5	4	4	4	4
P5	4	5	4	5	4	5	4
P6	5	4	5	4	5	4	4
P7	4	5	4	5	5	5	4
P8	5	4	5	4	5	4	5
P9	4	4	4	4	5	4	4
P10	4	4	4	4	4	5	5

