



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Physics III							
Course Code		FBÖ255		Course Level		First Cycle (Bachelor's Degree)			
ECTS Credit	3	Workload	75 (Hours)	Theory	2	Practice	2	Laboratory	0
Objectives of the Course		To teach Heat and Temperature, Thermal Properties of Matter, Thermodynamic Laws, Reversible and Irreversible Events, Yield and Entropy; Structure of Light, Speed and Sources; Reflection and Mirrors; Fracture and Lenses; Interference, Thin Films, Diffraction, Resolution, Polarization; Optical Instruments, Magnifier, Glasses, Microscope, etc .; Wave Motion, Kinematics, Dynamics, Energy, Reflection, Refraction and Interference, Sound Waves, Standing Waves, Resonance, Sound Intensity, Doppler Event; AC Circuits; Atom Models, Energy Levels, Atomic and Molecular Spectrums; Relativity in Time, Dimension, Speed, Energy and Momentum; Black Body Light, Photoelectric and Compton Event; Wave-Particle Dichotomy, De Broglie Waves, Heisenberg Uncertainty Principle, Schrödinger Waves and to make Open and Closed-Ended Experiments for These Topics.							
Course Content		Heat and Temperature, Thermal Properties of Matter, Thermodynamic Laws, Reversible and Irreversible Events, Yield and Entropy; Structure of Light, Speed and Sources; Reflection and Mirrors; Fracture and Lenses; Interference, Thin Films, Diffraction, Resolution, Polarization; Optical Instruments, Magnifier, Glasses, Microscope, etc .; Wave Motion, Kinematics, Dynamics, Energy, Reflection, Refraction and Interference, Sound Waves, Standing Waves, Resonance, Sound Intensity, Doppler Event; AC Circuits; Atom Models, Energy Levels, Atomic and Molecular Spectrums; Relativity in Time, Dimension, Speed, Energy and Momentum; Black Body Light, Photoelectric and Compton Event; Wave-Particle Dichotomy, De Broglie Waves, Heisenberg Uncertainty Principle, Schrödinger Waves and Open and Closed-Ended Experiments for These Topics.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Experiment, Discussion, 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	1. Raymond A. Serway, Fen ve Mühendislik için Fizik 1 ve 2. Saunders College Publishing. Çeviren: Kemal Çolakoğlu, Palme Yayıncılık, Ankara, 2009.
2	2. D. Halliday and Robert Resnick, Physcs 1 and 2. Library of Congress Cataloging Publishing, Canada, Fifth edition.
3	3. Douglas C. Giancoli, Physics for Scientists and Engineers with Modern Physics. Published by Prentice Hall Upper Saddle River, NJ, 07458, USA.

Week	Weekly Detailed Course Contents	
1	Theoretical	1 Heat and Temperature, Thermal Properties of Matter, Thermodynamic Laws, Reversible and Irreversible Events, Yield and Entropy
2	Theoretical	2 Structure of Light, Speed and Sources
3	Theoretical	3 Reflection and Mirrors
4	Theoretical	4 Fracture and Lenses
5	Theoretical	5 Interference, Thin Films, Diffraction, Resolution, Polarization, Optical Instruments, Magnifier, Glasses, Microscope, etc .
6	Theoretical	Wave Motion, Kinematics, Dynamics, Energy, Reflection, Refraction and Interference, Sound Waves, Standing Waves, Resonance, Sound Intensity, Doppler Event
7	Theoretical	7 Wave Motion, Kinematics, Dynamics, Energy, Reflection, Refraction and Interference, Sound Waves, Standing Waves, Resonance, Sound Intensity, Doppler Event
8	Intermediate Exam	MIDTERM
9	Theoretical	AC Circuits
10	Theoretical	10 Atom Models, Energy Levels, Atomic and Molecular Spectrums
11	Theoretical	11 Relativity in Time, Dimension, Speed, Energy and Momentum;
12	Theoretical	12 Relativity in Time, Dimension, Speed, Energy and Momentum;
13	Theoretical	13 Black Body Light, Photoelectric and Compton Event;



14	Theoretical	14 Black Body Light, Photoelectric and Compton Event;
15	Theoretical	15 Wave-Particle Dichotomy, De Broglie Waves, Heisenberg Uncertainty Principle, Schrödinger Waves and Open and Closed-Ended Experiments for These Topics.
16	Final Exam	final

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Lecture - Practice	14	1	1	28
Midterm Examination	1	9	0	9
Final Examination	1	10	0	10
Total Workload (Hours)				75
[Total Workload (Hours) / 25*] = ECTS				3

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	1. Students gain knowledge about thermodynamics and optics.
2	2. Students can connect basic knowledge about thermodynamics and optics with everyday life
3	3. Students can use basic knowledge to solve daily life problems.
4	4. Students can know how to use basic information about thermodynamics and optics.
5	5. Students can use the basic information they have by doing experiments.

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 Atatürk, be modern democratic, secular, protecting and developing 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
P1	5	5	5	5	5
P2	4	4	4	4	4
P3	5	5	4	5	5
P4	4	4	5	4	4
P5	5	5	4	5	5
P6	4	5	5	4	4
P7	5	5	4	5	5
P8	5	4	5	4	4
P9	5	5	4	5	5
P10	5	4	5	4	4

