



# ESOGÜ Electrical-Electronics Engineering Department

**COURSE CODE:** 151222198 - 151242198

**COURSE TITLE:** Physics II

Semester	Weekly Hours		COURSE			
	Theoretical	Practical	Credits	ECTS	Type	Language
2	3	0	3	3	Compulsory ( x) Elective ( )	Turkish ( ) English (x)
Write the credit (for non-credit courses weekly hours) below (If necessary distribute the credits.).						
<b>Math and Basic Science</b>		<b>Electrical Engineering</b> [mark (√) if there is high design content]		<b>General Education</b>	<b>Humanities</b>	
3		()				
<b>Assessment</b>		<b>THEORETICAL-PRACTICAL COURSES</b>			<b>LABORATORY COURSES</b>	
<b>Midterm</b>	<b>Type</b>	<b>Number</b>	<b>%</b>	<b>Activity Type</b>	<b>Number</b>	<b>%</b>
	Midterm	1	40	Quiz		
	Quiz			Lab performance		
	Homework			Report		
	Project			Oral exam		
	Other (Present.)			Other (.....)		
<b>Final</b>		1	60			
<b>Makeup exam (Oral/Written)</b>		Oral				
<b>Prerequisites</b>		Physics I				
<b>Brief content of the course</b>		Electric charge; electric fields; Gauss' law; electric potential; capacitance and dielectrics; current and resistance; electromotive force and circuits; magnetic field; Biot-Savart law, Ampere's law; Faraday's law; inductance; electromagnetic oscillations; alternating current; Maxwell's equations.				
<b>Objectives of the course</b>		To introduce fundamental concepts and principles related to the electricity and magnetism and provide an understanding of these principles with applications from the real world.				
<b>Contribution of the course towards professional education</b>		Identify, formulate, and solve problems analytically that appear in physical systems; in general develop problem solving skills.				
<b>Outcomes of the course</b>		18. Know fundamental concepts and principles related to the electricity and magnetism. 19. Identify, formulate, and solve problems analytically that appear in physical systems. 20. Analyze and resolve natural phenomenon. 21. Associate the gained knowledge, analyze and interpret data. 22. Apply and link the gained knowledge of natural sciences to interdisciplinary fields. 23. Correlate and apply gained knowledge directly with technology and industry. 24. Use techniques and skills necessary for engineering practice.				
<b>Textbook of the course</b>		<b>3. Halliday, D., Resnick, R., and Walker, J. (2008).</b> Fundamentals of Physics (8th Edition). John Wiley & Sons, Inc. 1. Serway, R.A., Beichner, R.J., <b>Physics For Scientists and Engineers with Modern Physics (2007)</b> , Harcourt College Publishers				
<b>Other reference books</b>		1. <b>Giancoli, D.C. (2004).</b> Physics: Principles with Applications (6th Edition). Pearson Education Inc. 2. <b>Young, H.D, Freedman, R.A. (2006).</b> University Physics Volume 1 (12th Edition). Pearson/Addison Wesley.				
<b>Required material for the course</b>						

WEEKLY PLAN OF THE COURSE	
Week	Topics
1	Elektric Charge and Coulmb's Law
2	The Electric Field
3	Gauss Law
4	Gauss Law
5	Electric Potential
6	Capacitance
7	Dielectrics
8	Midterm
9	Midterm
10	Current and Resistance
11	DC Circuits
12	The Magnetic Field
13	Biot -Savart Law and Ampere's Law
14	Faraday's Law of Induction
15,16	Final

### Contribution of the course to the program outcomes

NO	OUTCOMES OF THE PROGRAMME	4	3	2	1
1	Adequate knowledge of mathematics, science and Electrical and Electronic Engineering; ability to practice theoretical and practical knowledge of these areas into modeling and solving problems of Electrical and Electronic Engineering	X			
2	Ability to identify complex engineering problems in Electrical and Electronic Engineering and related fields, for this purpose having skills to formulate, select and apply appropriate methods.	X			
3	Having skills to apply modern design methods to design a complex system, equipment or product that should work under realistic conditions and constraints and satisfy specific requirements concerning the Electrical and Electronic Engineering.				X
4	Having skills to develop, select and apply modern techniques and tools needed for Electrical and Electronic Engineering applications, skills to use information technology effectively.				X
5	Skills to design and conduct tests, collect data, analyze results, and interpret data for the experimental investigation of Electrical and Electronic Engineering problems				X
6	Ability to function effectively as an individual and as a member of teams within the discipline and in multidiscipline areas.				X
7	Communicating effectively in oral and written form both in Turkish and English.				X
8	Awareness of the necessity of lifelong learning, access to information, monitoring developments in science and technology and the ability to self-renewing			X	
9	Understanding of professional and ethical responsibility				X
10	Information on project management, change management and risk management practices, awareness on entrepreneurship, innovation and sustainable development.				X
11	Information about universal and societal effects of engineering applications on health, safety and environment; awareness of the legal consequences of engineering solutions.			X	

Scale for assessing the contribution of the course to the program outcomes:

**4: High                      3: Medium                      2: Low                      1:None**

Name of Instructor(s): M. Celalettin Baykul

Signature(s):

Date: