T.C. ESKİŞEHİR OSMANGAZİ UNIVERSITY
ARCHITECTURE AND ENGINEERING FACULTY
MECHANICAL ENGINEERING DEPARTMENT
COURSE INFORMATION FORM

SEMESTER	Spring

COURSE CODE	151812201	**COURSE NAME**	Physics II (A)

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	**Practice**	**Laboratory**	**Credit**	**ECTS**	**TYPE**	**LANGUAGE**
1	3	0	0	3	3	COMPULSORY (x) ELECTIVE ( )	English

COURSE CATAGORY			
Basic Science	**Basic Engineering**	**Mechanical Engineering** [if it contains considerable design, mark with (√)]	**Social Science**
X		( )	

ASSESSMENT CRITERIA			
MID-TERM	**Evaluation Type**	**Quantity**	**%**
	Mid-Term	1	50
	Quiz		
	Homework		
	Project		
	Report		
	Others (………)		
FINAL EXAM		1	50

PREREQUIEITE(S)	
COURSE DESCRIPTION	Electric charges, Coulomb's Law, electric field, Gauss' Law; electric potential; capacitance and dielectric materials, resistance and electric current, magnetic field, magnetic field sources, Faraday's induction law.
COURSE OBJECTIVES	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.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION	Students will realize and solve several physical problems in some areas of application. By the use of such solutions, students will also perceive the role of physics in applied sciences such as engineering and medical sciences.
COURSE OUTCOMES	By the end of this module students will be able to: 1. Know fundamental concepts and principles related to the electricity and magnetism. 2. Identify, formulate, and solve problems analytically that appear in physical systems. 3. Analyze and resolve natural phenomenon. 4. Associate the gained knowledge to analyze and interpret data. 5. Apply and link the gained knowledge of natural sciences to interdisciplinary fields. 6. Correlate and apply gained knowledge directly with technology and industry.
TEXTBOOK	Young H.D., Freedman R.A., (2008). University Physics, Pearson.
OTHER REFERENCES	1. Serway R.A., Jewett J.W., (2007). Physics for Scientists and Engineers, Brooks/Cole. 2. Fishbane P.M., Gasiorowicz S., Thornton S.T., (2004). Physics: For Scientists and Engineers with Modern Physics, Prentice/Hall. 3. Giancoli D.C., (2000). Physics for Scientists & Engineers, Prentice/Hall 4. Halliday D., Resnick R., (1999). Fundamentals of Physics, John Wiley. 5. Ohanian H.C., Markert J.T., (2007). Physics for Engineers and Scientists, W. W. Norton & Company.
TOOLS AND EQUIPMENTS REQUIRED	

WEEK	TOPICS
	COURSE SYLLABUS
1	Electric Charges, Coulomb' Law
2	Electric field
3	Electric potential
4	Capacitances
5	Dielectric Materials
6	Electric current
7	Electrical work and power
8	Mid-Term Examination
9	Mid-Term Examination
10	Kirchoff' Law
11	Circuits with many eyes
12	Magnetic field
13	Magnetic field sources
14	Faraday's induction law
15,16	Final Exam

NO	PROGRAM OUTCOMES	1	2	3
1	Sufficient knowledge of engineering subjects related with mathematics, science and mechanical engineering; an ability to apply theoretical and practical knowledge on solving and modeling of mechanical engineering problems.	[ ]	[ ]	[x]
2	Ability to determine, define, formulate and solve complex mechanical engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	[ ]	[ ]	[x]
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.	[ ]	[x]	[ ]
4	Ability to develop, select and use modern methods and tools required for mechanical engineering applications; ability to effective use of information technologies.	[x]	[ ]	[ ]
5	In order to investigate mechanical engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	[ ]	[x]	[ ]
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	[ ]	[ ]	[x]
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.	[ ]	[x]	[ ]
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.	[ ]	[ ]	[x]
9	Understanding of professional and ethical issues and taking responsibility	[x]	[ ]	[ ]
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.	[x]	[ ]	[ ]
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.	[x]	[ ]	[ ]

1:None. **2**:Partially contribution. **3**: Completely contribution.

Prepared by: **Date:**

Signature(s):