AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Classical Electrodynamics								
Course Code	FZK508		Couse Level	Second Cycle (Master's Degree)					
ECTS Credit	9	Workload	225 *(Hours)*	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	To teach the fundamentals of classical electrodynamics and its applications								
Course Content	The basic laws of electrostatic, image method, boundary-value problems, Green's function and its applications, Multiple expansion, the macroscopic electrostatics, dielectrics.								
Work Placement									
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion, Problem Solving								
Name of Lecturer(s)	Assoc. Prof. Fatih ERSAN, Assoc. Prof. Yelda KADIOĞLU								

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	15
Final Examination	1	60
Quiz	2	5
Attending Lectures	14	10
Assignment	8	10

Recommended or Required Reading	
1	Classical Electrodynamics, John David Jackson
2	Classical Electromagnetic radiation, Jerry B. Marion
3	Introductions to electrodynamics, D.J.Griffits
4	Classical Electrodynamics, W. Greiner

Week	Weekly Detailed Course Contents	
1	Theoretical	Coulomb’s law, Electric field
	Preparation Work	Classical Electrodynamics, John David Jackson, Section 1.2
2	Theoretical	Gauss’s law and scalar potential
	Preparation Work	Classical Electrodynamics, John David Jackson, Section 1.3, 1.4, 1.5
3	Theoretical	Poisson’s and Laplace’s equation
	Preparation Work	Classical Electrodynamics, John David Jackson, Section 1.6, 1.7
4	Theoretical	İmage method
	Preparation Work	Classical Electrodynamics, John David Jackson, Section 2.1-2.8
5	Theoretical	Boundary-value problems in rectangular coordinates
	Preparation Work	Classical Electrodynamics, John David Jackson, Section 2.9, 2.10
6	Theoretical	Boundary value problems in spherical coordinates
	Preparation Work	Classical Electrodynamics, John David Jackson, Bölüm 3.1-3.5
7	Theoretical	Boundary value problems in cylindrical coordinates
	Preparation Work	Classical Electrodynamics, John David Jackson, Section 3.6, 3.7
8	Intermediate Exam	Midterm Exam
9	Theoretical	Green functions

9	Preparation Work	Classical Electrodynamics, John David Jackson, Section 1.8-1.11, Section 3.8
10	Theoretical	Application of Green functions in spherical coordinates
	Preparation Work	Classical Electrodynamics, John David Jackson, Section 3.9
11	Theoretical	Application of Green functions in cylindrical coordinates
	Preparation Work	Classical Electrodynamics, John David Jackson, Section 3.10-3.12
12	Theoretical	Multipol expansion
	Preparation Work	Classical Electrodynamics, John David Jackson, Section 4.1, 4.2
13	Theoretical	Macroscopic electrostatic
	Preparation Work	Classical Electrodynamics, John David Jackson, Section 4.3
14	Theoretical	Boundary value problems in dielectric media
	Preparation Work	Classical Electrodynamics, John David Jackson, Section 4.4, 4.5
15	Theoretical	Boundary value problems in dielectric media
	Preparation Work	Classical Electrodynamics, John David Jackson, Section 4.4, 4.5
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	6	3	126
Assignment	8	5	2	56
Quiz	3	5	2	21
Midterm Examination	1	9	2	11
Final Examination	1	9	2	11
			Total Workload (Hours)	225
			[Total Workload (Hours) / 25*] = **ECTS**	9

**25 hour workload is accepted as 1 ECTS*

Learning Outcomes

1	To learn and apply the basic laws of electrostatic problems
2	To solve problems with image method
3	To solve boundary value problems
4	To understand Green function and to use it in problem solution
5	To solve problems involving the dielectric medium

Programme Outcomes *(Physics Master)*

1	The student should conceive the concepts in physics and may apply them on her/his own
2	The student should be able to conceive the relationship between the different physics laws and integrity of them and apply them in solving different physics problems
3	The student should know the basic principles of classical, quantum and relativistic physics and use them in the solutions of problems
4	The student should be able to do research in a specific area of physics
5	The student should be able to prepare reports on papers on the subject of her/his research and present her/his research subject in scientific conferences
6	The student should be able to explain the relationship between complicated problems and basic physics laws.
7	The student should be able to use computers for solving complicated physics problems
8	The student should be able to interrelate between the theory and the experiment. If she/he is experimentalist he/she has to explain the theory behind her/his work. If she /he is a theorist she/he should has to know the experiments in her/his subject.

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	4	5	5	5
P2	4	4	4	4	4
P3	4	4	4	4	4
P4	3	3	3	3	3
P5	3	3	3	3	3
P6	4	4	3	4	4
P7	3	3	3	3	3
P8	3	3	3	3	3