

COURSE INFORMATION					
Course Title	Code	Semester	L+P Hour	Credits	ECTS
ELECTROMAGNETISM I	PHYS 511	1	4+ 0+0	4	10

<b>Prerequisites</b>	-
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<b>Language of Instruction</b>	English
<b>Course Level</b>	Postgraduate
<b>Course Type</b>	Compulsory
<b>Course Coordinator</b>	
<b>Instructors</b>	Prof.Dr.Ertan Akşahin
<b>Assistants</b>	
<b>Goals</b>	To give the ability of making researches in the field of electromagnetizm
<b>Content</b>	Electromagnetic waves and physical optics

Learning Outcomes	Teaching Methods	Assessment Methods
1)To know about Maxwell's Equations	1,2,3	A,C
2)To have enough knowlage to discuss the Properties of Electromagnetic waves	1,2,3	A,C
3)To learn matematical forms of wave guides	1,2,3	A,C
4) To have an idea about Relativistic electrodynamics	1,2,3	A,C

<b>Teaching Methods:</b>	1: Lecture, 2: Question-Answer, 3: Discussion, 9: Simulation, 12: Case Study
<b>Assessment Methods:</b>	A: Testing, C: Homework

<b>COURSE CONTENT</b>		
<b>Week</b>	<b>Topics</b>	<b>Study Materials</b>
1	Electrostatic and electromagnetic fields	
2	Boundry value problems	
3	Time varient fields	
4	Maxwell's Equations	
5	Multipole Expantions	
6	Midterm Exam	
7	Interaction of light with matter	
8	Interference	
9	Difractions	
10	Waveguides and cavities	
11	Lorentz Transformations	
12	Midterm Exam	
13	Relativity and electromagnetism	
14	General Revision	

<b>RECOMMENDED SOURCES</b>	
<b>Textbook</b>	Tai L. Chow Electromagnetic Thory
<b>Additional Resources</b>	

<b>MATERIAL SHARING</b>	
<b>Documents</b>	
<b>Assignments</b>	
<b>Exams</b>	

<b>ASSESSMENT</b>		
<b>IN-TERM STUDIES</b>	<b>NUMBER</b>	<b>PERCENTAGE</b>
Mid-terms	1	30
Assignment	2	30
Assignment	1	40
<b>Total</b>		<b>100</b>
<b>CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE</b>		40
<b>CONTRIBUTION OF IN-TERM STUDIES TO OVERALL GRADE</b>		60
<b>Total</b>		<b>100</b>

<b>COURSE CATEGORY</b>	Expertise/Field Courses
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<b>COURSE'S CONTRIBUTION TO PROGRAM</b>						
No	Program Learning Outcomes	Contribution				
		1	2	3	4	5
1	Gets a sound base for the main fields of physics such as Classical Mechanics, Quantum Mechanics and Electromagnetism,					X
2	Gets the ability of interpreting, analysing, forming a synthesis and relationships between the main fields of physics and/or other sciences,					X
3	Obtains the education required for the measurements in scientific and technological areas and the contribution of physics in the industrial applications and on the macroscopic scale such as the society,				X	
4	Follows the up-to-date scientific developments, makes the analysis/synthesis for the new ideas and evaluates them,				X	
5	Uses the academic sources, the computer technology and the related devices,		X			
6	Joins the working and research groups, also the scientific meetings, communicates well at the national and international level,		X			
7	Gets the ability of creative and critical thinking, problem solving, researching, producing a new and original work, improving himself/herself in his/her own fields of interest,					X
8	Gains the concepts of ethics and responsibility. Undertakes the responsibility for the solutions to the problems related with his/her field as required for having an intellectual identity.		X			

<b>ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION</b>			
Activities	Quantity	Duration (Hour)	Total Workload (Hour)
Course Duration (Excluding the exam week: 14x Total course hours)	14	4	56
Hours for off-the-classroom study (Pre-study, practice)	14	6	84
Mid-terms	2	10	20
Assignment	10	6	60
Final examination	1	10	10
<b>Total Work Load</b>			242
<b>Total Work Load / 25 (h)</b>			9,68
<b>ECTS Credit of the Course</b>			10