



**ULUDAĞ UNIVERSITY**  
GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES  
2015-2016 ACADEMIC YEAR COURSE PLAN

<b>DEPARTMENT OF</b>	PHYSICS
<b>DEPARTMENT / PROGRAM</b>	PHYSICS/ Master's Degree Program

COURSE STAGE	I. TERM / FALL								II. TERM / SPRING							
	Code	Course Title	Type	T	U	L	Credit	ECTS	Code	Course Title	Type	T	U	L	Credit	ECTS
	PHYS 5191	MATHESIS I	Z	0	1	0	0	1	PHYS 5192	MATHESIS II	Z	0	1	0	0	1
	PHYS 5403	ADVANCED QUANTUM MECHANICS I	Z	3	0	0	3	6	PHYS 5172	SEMINAR(CLASS)	Z	0	2	0	0	5
	PHYS5181	ADVANCED TOPICS IN MATHESIS I	S	4	0	0	0	5	PHYS5182	ADVANCED TOPICS IN MATHESIS II	S	3	0	0	0	5
	PHYS5101	EXPERIMENTAL TECHNIQUES AND MEASUREMENTS IN MR	S	2	2	0	3	6	PHYS 5102	MULTIPLE LAYER STRUCTURE OF RESONANCE LINE IN LIQUIDS	S	3	0	0	3	7
	PHYS5103	SPECTROSCOPIC METHODS	S	3	0	0	3	6	PHYS5104	MAGNETIC RESONANCE IMAGING	S	3	0	0	3	6
	PHYS5107	ADVANCED ATOMIC PHYSICS I	S	3	0	0	3	6	PHYS5202	INTERNET PROGRAMMING I	S	2	2	0	3	6
	PHYS 5201	DIELECTRIC PROPERTIES OF MATERIALS I	S	3	0	0	3	6	PHYS5302	STRUCTURE OF MAGNETIC MATERIALS	S	3	0	0	3	7
	PHYS 5203	INTERNET PROGRAMMING II	S	2	2	0	3	6	PHYS5304	ADVANCED SOLID STATE II	S	3	0	0	3	6
	PHYS 5301	MAGNETIC PROPERTIES OF MATERIALS	S	3	0	0	3	6	PHYS5306	ADVANCED MAGNETISM I	S	3	0	0	3	6
	PHYS 5303	ADVANCED SOLID STATE PHYSICS I	S	3	0	0	3	6	PHYS5308	SURFACE OXIDE FILMS AND THEIR TECHNOLOGIES	S	3	0	0	3	7
	PHYS 5307	ADVANCED MAGNETISM II	S	3	0	0	3	6	PHYS5310	SUPERCONDUCTORS I	S	3	0	0	3	6
	PHYS 5309	ELECTROCHEMICAL METHODS	S	3	0	0	3	6	PHYS5312	PHYSICS OF SEMICONDUCTOR DEVICES I	S	3	0	0	3	7
	PHYS 5311	SUPERCONDUCTIVITY II	S	3	0	0	3	6	PHYS5314	PHYSICS OF SEMICONDUCTORS I	S	3	0	0	3	6
	PHYS 5313	PHYSICS OF SEMICONDUCTOR DEVICES II	S	3	0	0	3	6	PHYS5316	MAGNETIC THIN FILMS	S	3	0	0	3	6
	PHYS 5315	PHYSICS OF SEMICONDUCTORS II	S	3	0	0	3	6	PHYS5318	MAGNETIC DOMAINS	S	3	0	0	3	7
	PHYS 5317	QUANTUM THEORY OF SOLIDS	S	3	0	0	3	6	PHYS5320	SURFACE PHYSICS AND ANALYSIS TECHNIQUES	S	3	0	0	3	7
	PHYS 5319	MAGNETIC LOSSES	S	3	0	0	3	6	PHYS5324	NANOTECHNOLOGY	S	3	0	0	3	7
	PHYS 5321	MEASUREMENT TECHNIQUES IN PHYSICS	S	3	0	0	3	6	PHYS5326	X-RAY DIFFRACTIONS	S	3	0	0	3	6
	PHYS 5401	MATHEMATICAL METHODS IN PHYSICS I	S	3	0	0	3	6	PHYS5402	ELECTROMAGNETIC THEORY	S	3	0	0	3	7
	PHYS 5405	ADVANCED THEORETICAL MECHANICS	S	3	0	0	3	6	PHYS5404	NUMERICAL ANALYSIS METHODS IN PHYSICS	S	2	2	0	3	6
	PHYS 5501	ADVANCED NUCLEAR SPECTROSCOPY I	S	3	0	0	3	6	PHYS5502	ADVANCED NUCLEAR SPECTROSCOPY II	S	3	0	0	3	6
	PHYS 5503	ADVANCED NUCLEAR PHYSICS I	S	3	0	0	3	6	PHYS5504	NUCLEAR RADIATION DETECTION	S	3	0	0	3	7
	PHYS 5505	NUCLEAR MODELS	S	3	0	0	3	6	PHYS5506	ADVANCED NEUTRON PHYSICS I	S	3	0	0	3	6
	PHYS 5507	ADVANCED NEUTRON PHYSICS II	S	3	0	0	3	6	PHYS5508	NUCLEAR REACTIONS	S	3	0	0	3	6
	PHYS 5509	ADVANCED RADIATION PHYSICS I	S	3	0	0	3	6	PHYS5512	SAMPLING TECHNIQUES IN NUCLEAR PHYSICS II	S	3	0	0	3	7
	PHYS 5511	SAMPLING TECHNIQUES IN NUCLEAR PHYSICS I	S	3	0	0	3	6	PHYS5514	APPLICATION OF ADVANCED MICROSCOPY	S	3	0	0	3	6
	PHYS 5513	ADVANCED MICROSCOPY	S	3	0	0	3	6	PHYS5602	GRAND UNIFIED THEORIES	S	3	0	0	3	7

PHYS 5601	ELEMENTARY SCATTERING THEORY	S	3	0	0	3	6	PHYS5604	CHARGED PARTICLES PHYSICS	S	3	0	0	3	6		
PHYS 5603	ELEMENTARY PARTICLES PHYSICS I	S	3	0	0	3	6	PHYS5606	HIGH ENERGY DETECTORS I	S	3	0	0	3	7		
PHYS 5605	SYMMETRIES AND CLASSIFICATION OF PARTICLES	S	3	0	0	3	6	PHYS5608	HIGH ENERGY SIMULATION TECHNIQUES I	S	3	0	0	3	6		
PHYS 5607	INTRODUCTION TO ACCELERATOR PHYSICS	S	3	0	0	3	6	PHYS5612	ADVANCED OPTICS II	S	3	0	0	3	6		
PHYS5609	ADVANCED OPTICS I	S	3	0	0	3	6	PHYS5614	Physics of Thin Film	S	3	0	0	3	7		
PHYS5611	SOLAR ENERGY	S	3	0	0	3	6										
PHYS5613	COATING TECHNIQUES	S	3	0	0	3	6										
<b>Total Credits</b>							<b>12</b>	<b>30</b>	<b>Total Credits</b>							<b>9</b>	<b>30</b>
<b>STAGE THESIS</b>	<b>III. TERM / FALL</b>							<b>IV. TERM / SPRING</b>									
	PHYS 5173	SEMINAR (THESIS)	Z	0	2	0	0	5	PHYS 5182	ADVANCED TOPICS IN MASTER THESIS IV	Z	4	0	0	0	5	
	PHYS 5181	ADVANCED TOPICS IN MASTER THESIS III	Z	4	0	0	0	5	PHYS 5194	MA THESIS IV	Z	0	1	0	0	25	
	PHYS 5193	MA THESIS III	Z	0	1	0	0	20									
<b>Total Credits</b>							<b>0</b>	<b>30</b>	<b>Total Credits</b>							<b>0</b>	<b>30</b>
<b>TOTAL CREDITS: 21 - TOTAL ECTS: 120</b>																	

**Not:** The student is expected to take a total of 8 credited 3 selective courses every academic term.  
The student has the option of choosing one selective course from another department with the endorsement of the supervisor.



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<b>DEPARTMENT OF</b>	PHYSICS
<b>DEPARTMENT / PROGRAM</b>	PHYSICS / Doctoral Program


COURSE STAGE	I. TERM / FALL								II. TERM / SPRING											
	Code	Course Title	Type	T	U	L	Credit	ECTS	Code	Course Title	Type	T	U	L	Credit	ECTS				
	PHYS6191	PHDTHESIS I	Z	0	1	0	0	1	PHYS6192	PHDTHESISII	Z	0	1	0	0	1				
	PHSY6001	RESEARCHMETHODS	Z	2	0	0	2	4	PHYS6172	SEMİNAR(CLASS)	Z	0	2	0	0	4				
	PHSY6101	NUCLEARMAGNETİCRESONANCE I(ATOM VE MOLEKÜL FİZ.A.B.D. İÇİN)	Z	3	0	0	3	5	PHSY6102	NUCLEARMAGNETİCRESONANCE II (ATOM VE MOLKÜL FİZİĞİ A.B.D.İÇİN)	Z	3	0	0	3	5				
	PHSY6201	ULTRASOUND(GENEL FİZ.A.B.D.İÇİN)	Z	3	0	0	3	5	PHSY6608	QUANTUMFIELDTHEORY I (YÜK.EN.FİZ.A.B.D İÇİN)	Z	3	0	0	3	5				
	PHSY6303	PROPERTIES OF SOLID MATERIALS I(KATIHALFİZ.A.B.D.İÇİN)	Z	3	0	0	3	5												
	PHSY6501	ADVANCED NUCLEARPHYSİCS II(NÜKLEER FİZ.A.B.D. İÇİN)	Z	3	0	0	3	5												
	PHYS6181	ADVANCED TOPİCSINPHDTHESIS I	S	4	0	0	0	5	PHYS6182	ADVANCED TOPİCSINPHDTHESIS II	S	4	0	0	0	5				
	PHSY6103	ELECTRON SPIN RESONANCE I	S	3	0	0	3	5	PHSY6104	ELECTRON SPIN RESONANCE II	S	3	0	0	3	5				
	PHSY6203	DIELECTRİCPROPERTIES OF MATERIALS II	S	3	0	0	3	5	PHSY6202	ELECTRONMİCROSCOPESAND APPLİCATIONS	S	2	2	0	3	5				
	PHSY6301	NUMERİCAL ANALYSIS METHODS İN MAGNETİSM	S	3	0	0	3	5	PHSY6302	ARTİFİCİALNEURAL NETWORK	S	3	0	0	3	5				
	PHSY6305	X-RAYSAND APPLİCATIONS	S	2	2	0	3	5	PHSY6304	PROPERTIES OF SOLİD MATERIALS II	S	3	0	0	3	5				
	PHSY6307	MİCROMAGNETİSM I	S	3	0	0	3	5	PHSY6308	MİCROMAGNETİSM II	S	3	0	0	3	5				
	PHSY6309	ADVANCED MAGNETİCMATERIAL I	S	3	0	0	3	5	PHSY6310	ADVANCED MAGNETİCMATERIALS II	S	3	0	0	3	5				
	PHSY6311	HETEROJUNCTIONSAND METAL-SEMİKONDUKTORJUNCTIONS	S	3	0	0	3	5	PHSY6312	NANOPHYSİCSANDNANOSCIENCE	S	3	0	0	3	5				
	PHSY6315	MAGNETİCCORESANDPROPERTIES I	S	3	0	0	3	5	PHSY6314	OPTİCAL PROPERTIES OF SEMİKONDUCTORS	S	3	0	0	3	5				
	PHSY6317	DIODELASERS I	S	3	0	0	3	5	PHSY6316	MAGNETİCCORESANDPROPERTIES II	S	3	0	0	3	5				
	PHSY6319	PHOTONİCSANDLASERS	S	3	0	0	3	5	PHSY6318	DIODELASERS II	S	3	0	0	3	5				
	PHSY6401	MATHEMATİCAL METHODS İN PHYSİCS II	S	3	0	0	3	5	PHSY6402	ADVANCED QUANTUM MECHANİCS II	S	3	0	0	3	5				
	PHSY6503	ADVANCED RADIATIONPHYSİCS II	S	3	0	0	3	5	PHSY6502	NUCLEAR SHELL MODEL	S	3	0	0	3	5				
	PHSY6505	NUMERİCAL APPLİCATIONS FORNUCLEAREVENTS II	S	3	0	0	3	5	PHSY6504	NUMERİCAL APPLİCATIONS FORNUCLEAREVENTS I	S	2	2	0	3	5				
	PHSY6601	ELECTROWEAKINTERACTIONS	S	3	0	0	3	5	PHSY6602	ELEMENTARYPARTİCLESPHYSİCS II	S	3	0	0	3	5				
	PHSY6603	LİEALGEBRA İN PARTİCLEPHYSİCS	S	3	0	0	3	5	PHSY6604	GAUGETHEORİES	S	3	0	0	3	5				
	PHSY6605	QUANTUM ELECTRODYNAMİCS	S	3	0	0	3	5	PHSY6606	QUANTUM CHROMODYNAMİCS	S	3	0	0	3	5				
	PHSY6607	HADRONPHYSİCSANDQUARK MODEL	S	3	0	0	3	5	PHSY6610	HİGH ENERGYDETECTORS II	S	3	0	0	3	5				
	PHSY6609	QUANTUM FIELDTHEORY II	S	3	0	0	3	5	PHSY6612	HİGH ENERGYSIMULATIONTECHNİQUES II	S	3	0	0	3	5				
	PHSY6613	ADVANCED SOLİDİFİCATION TECHNİQ UES	S	3	0	0	3	5	PHSY6614	ORGANİC ELECTRONİC	S	3	0	0	3	5				
	<b>Toplam Kredi</b>								<b>14</b>	<b>30</b>	<b>Toplam Kredi</b>								<b>12</b>	<b>30</b>
<b>E T</b>	<b>III. TERM / FALL</b>								<b>IV. TERM / SPRING</b>											

PHYS6183	ADVANCED TOPICSINPHDTHESIS III	Z	4	0	0	0	5	PHYS6173	SEMİNAR(THESIS)	Z	0	2	0	0	5				
PHYS6193	PHDTHESIS III	Z	0	1	0	0	20	PHYS6184	ADVANCED TOPICSINPHDTHESIS IV	Z	4	0	0	0	5				
PHYS6177	PHDPROFİCİENCYEXAMINATION	Z	0	0	0	0	5	PHYS6194	PHDTHESIS IV	Z	0	1	0	0	25				
<b>Toplam Kredi</b>								<b>0</b>	<b>30</b>	<b>Toplam Kredi</b>								<b>0</b>	<b>30</b>
<b>V. TERM / FALL</b>								<b>VI. TERM / SPRING</b>											
ENS6121	DEVELOPMENT AND LEARNING	Z	3	0	0	0	5	ENS6122	PLANNING AND EVALUATION IN EDUCATION	Z	3	2	0	0	5				
PHYS6185	ADVANCED TOPICSINPHDTHESIS V	Z	4	0	0	0	5	PHYS6186	ADVANCED TOPICSINPHDTHESIS VI	Z	4	0	0	0	5				
PHYS6195	PHDTHESIS V	Z	0	1	0	0	20	PHYS6196	PHDTHESIS VI	Z	0	1	0	0	20				
<b>Toplam Kredi</b>								<b>0</b>	<b>30</b>	<b>Toplam Kredi</b>								<b>0</b>	<b>30</b>
<b>VII. TERM / FALL</b>								<b>VIII. TERM / SPRING</b>											
PHYS6187	ADVANCED TOPICSINPHDTHESIS VII	Z	4	0	0	0	5	PHYS6188	ADVANCED TOPICSINPHDTHESIS VIII	Z	4	0	0	0	5				
PHYS6197	PHDTHESIS VII	Z	0	1	0	0	25	PHYS6198	PHDTHESIS VIII	Z	0	1	0	0	25				
<b>Toplam Kredi</b>								<b>0</b>	<b>30</b>	<b>Toplam Kredi</b>								<b>0</b>	<b>30</b>
<b>TOTAL CREDITS: 26 - TOTAL ECTS: 240</b>																			

**Not:** The student is expected to take a total of credited (.....) selective courses every academic term.

The student has the option of choosing one selective course from another department with the endorsement of the supervisor. \*Success in Ph.D. qualifying exam is a prerequisite.

EK: 5/7

 <b>ULUDAĞ ÜNİVERSİTESİ</b> <b>FEN BİLİMLERİ ENSTİTÜSÜ</b> 2015-2016 EĞİTİM ÖĞRETİM YILINDA EKLENEN DERSLER																
<b>ANABİLİM DALI</b>		FİZİK														
<b>BİLİM DALI / PROGRAMI</b>		FİZİK / Yüksek Lisans Programı														
Kodu	Dersin Adı	Yarıyıl	Türü	T	U	L	Kredi	AKTS	Uygulama Esasları*	Gereke						
<b>Toplam Kredi</b>							<b>6</b>	<b>15</b>								

\* Her değişiklikte giriş yılı farklı olan öğrenciler için uygulama esaslarının açıkça belirtilmesi.