


BSM5183	YÜKSEK LİSANS UZMANLIK ALAN DERSİ III	Z	4	0	0	0	5	BSM5194	YÜKSEK LİSANS TEZ DANIŞMANLIĞI IV	Z	0	1	0	0	25		
BSM5193	YÜKSEK LİSANS TEZ DANIŞMANLIĞI III	Z	0	1	0	0	25										
Toplam Kredi							0	30	Toplam Kredi							0	30
TOPLAM KREDİ: 23 - TOPLAM AKTS:																	

Not: Öğrenci, seçmeli derslerden her yarıyıl toplam kredilik ders seçecektir.
Öğrenci isterse, danışmanın onayı ile her yarıyıl için **1 (bir)** seçmeli dersini alan dışından da alabilir.

EK: 2/7

 ULUDAĞ UNIVERSITY INSTITUTE OF NATURAL SCIENCES 2017-2018 ACADEMIC YEAR COURSE PLAN																
DEPARTMENT OF		Biosystems Engineering														
DEPARTMENT / PROGRAM		Biosystems Engineering / 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
	BSM5191	MA THESIS I	Z	0	1	0	0	1	BSM5192	MA THESIS II	Z	0	1	0	0	1
	BSM5009	SOIL - PLANT - WATER RELATIONSHIPS IN IRRIGATION	Z	3	0	0	3	6	BSM5172	SEMINAR	Z	0	2	0	0	4
	BSM5037	ADVANCED APPLICATIONS IN DESIGN OF AGRICULTURAL BUILDING STRUCTURES	Z	3	0	0	3	6	BSM5008	GEOGRAPHIC INFORMATION SYSTEMS AND NATURAL RESOURCE MANAGEMENT	Z	3	0	0	3	6
	BSM5017	ENERGY USE IN AGRICULTURE	Z	3	0	0	3	6	BSM5036	PLANNING AND DESIGNING OF LARGE DAIRY FARMS	Z	3	0	0	3	6
	BSM5019	PROJECTS OF WATER SUPPLIER STATIONS FOR AGRICULTURAL PURPOSES	Z	3	0	0	3	6	BSM5028	HORTICULTURAL AND GREENHOUSE MECHANIZATION	Z	3	0	0	3	6
									BSM5032	PRINCIPLE OF PRE-COOLING MACHINERY	Z	2	2	0	3	6
									BSM5000	RESEARCH TECHNIQUES and PUBLICATION ETHICS in BIOSYSTEM ENGINEERING	C	2	0	0	2	2
	BSM5181	ADVANCED TOPICS IN MA THESIS I	S	4	0	0	0	5	BSM5182	ADVANCED TOPICS IN MA THESIS II	S	4	0	0	0	5

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BSM5001	SOIL AND WATER CONSERVATION ENGINEERING	S	3	0	0	3	6	BSM5002	RESEARCH TECHNIQUES IN DRAINAGE ENGINEERING	S	3	0	0	3	6
BSM5003	PHYSICAL PLANNING IN RURAL AREAS AND LAND CONSOLIDATION RELATIONS	S	3	0	0	3	6	BSM5004	COMPUTER AIDED DESIGN IN BIOSYSTEMS ENGINEERING	S	2	2	0	3	6
BSM5005	SPATIAL TECHNOLOGIES IN BIOSYSTEMS ENGINEERING	S	3	0	0	3	6	BSM5006	PRESSURIZED IRRIGATION SYSTEMS AND METHODS	S	3	0	0	3	6
BSM5007	IRRIGATION OF AGRICULTURAL CROPS	S	3	0	0	3	6	BSM5010	ORGANIZATION AND MANAGEMENT OF IRRIGATION NETWORK	S	3	0	0	3	6
BSM5011	DATABASE MANAGEMENT IN THE LAND CONSOLIDATION	S	3	0	0	3	6	BSM5012	MEASUREMENT TECHNIQUES IN AGRICULTURAL MACHINERY	S	2	2	0	3	6
BSM5013	SYSTEM ENGINEERING IN WATER RESOURCES	S	3	0	0	3	6	BSM5014	APPLICATION OF INTERNAL COMBUSTION ENGINE IN AGRICULTURE	S	3	0	0	3	6
BSM5015	ADVANCED THERMODYNAMIC IN BIOSYSTEMS ENGINEERING	S	3	0	0	3	6	BSM5016	DESIGN OF SOIL TILLAGE MACHINERY	S	2	2	0	3	6
BSM5021	ADVANCED AGRICULTURAL MACHINERY MANAGEMENT	S	3	0	0	3	6	BSM5018	DESIGN OF SEEDING AND PLANTING MACHINERY	S	2	2	0	3	6
BSM5023	RESEARCH AND DEVELOPMENT IN AGRICULTURAL TECHNOLOGY	S	2	2	0	3	6	BSM5020	PRECISION AGRICULTURE IN CROP PRODUCTION	S	3	0	0	3	6
BSM5025	DAIRY MILKING SYSTEMS AND MILK PROCESSING MACHINES	S	3	0	0	3	6	BSM5022	COMPUTER APPLICATIONS IN AGRICULTURAL TECHNOLOGY	S	2	2	0	3	6
BSM5027	SYSTEM ANALYSIS AND PLANNING IN AGRICULTURAL MACHINERY	S	3	0	0	3	6	BSM5024	ERGONOMICS AND SAFETY IN AGRICULTURAL TECHNOLOGY	S	3	0	0	3	6
BSM5029	DETERMINATION SYSTEMS OF BIOLOGICAL MATERIAL TECHNICAL PROPERTIES	S	2	2	0	3	6	BSM5026	WORKING SYSTEMS IN AGRICULTURAL MACHINERY PLANTS	S	3	0	0	3	6
BSM5031	DRYING METHODS OF AGRICULTURAL PRODUCTS	S	3	0	0	3	6	BSM5030	ANALYSIS TECHNIQUE OF MECHANISM IN AGRICULTURAL MACHINERY	S	3	0	0	3	6
BSM5033	INDOOR AIR QUALITY IN BARNS	S	3	0	0	3	6	BSM5034	BULK SOLIDS STORAGE AND HANDLING	S	3	0	0	3	6
BSM5035	STATICALLY INDETERMINATE STRUCTURES	S	3	0	0	3	6	BSM5038	PARTICULATE MATTER POLLUTION IN AGRICULTURAL BUILDINGS	S	3	0	0	3	6
BSM5039	WASTEWATER IRRIGATION	S	3	0	0	3	6	BSM5040	STANDARDIZATION AND QUALITY IN AGRICULTURAL TECHNOLOGY	S	3	0	0	3	6
BSM5041	COMPUTER SIMULATION MODELS IN PLANT GROWTH AND MANAGEMENT	S	3	0	0	3	6	BSM5042	IRRIGATION SCHEDULING TECHNIQUES	S	3	0	0	3	6

	BSM5043	ODOR POLLUTION AND CONTROL IN ANIMAL BARNs	S	3	0	0	3	6	BSM5044	DATA ANALYSIS IN BIOSYSTEMS ENGINEERING	S	3	0	0	3	6		
	BSM5045	HYDRAULIC CIRCUIT DESIGN AND CONTROL	S	3	0	0	3	6	BSM5046	ADVANCED GREENHOUSE DESIGN	S	3	0	0	3	6		
	BSM5047	DESIGN AND MODELING OF ANIMAL BARNs	S	3	0	0	3	6	BSM5048	AGRICULTURAL APPLICATIONS OF SOLAR ENERGY	S	2	2	0	3	6		
	BSM5049	DIGITAL IMAGE PROCESSING IN AGRICULTURAL TECHNOLOGIES	S	3	0	0	3	6										
	BSM5051	RESEARCH TECHNIQUES IN IRRIGATION ENGINEERING	S	3	0	0	3	6										
	Total Credits							12	30	Total Credits							11	30
STAGE THESIS	III. TERM / FALL								IV. TERM / SPRING									
									BSM5184	ADVANCED TOPICS IN MA THESIS IV	Z	4	0	0	0	5		
	BSM5183	ADVANCED TOPICS IN MA THESIS III	Z	4	0	0	0	5	BSM5194	MA THESIS IV	Z	0	1	0	0	25		
	BSM5193	MA THESIS III	Z	0	1	0	0	25										
	Total Credits							0	30	Total Credits							0	30
TOTAL CREDITS: 23 - TOTAL ECTS: 30																		

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



ULUDAĞ UNIVERSITY
INSTITUTE OF NATURAL SCIENCES
2017-2018 ACADEMIC YEAR COURSE PLAN

DEPARTMENT OF Biosystems Engineering
DEPARTMENT / PROGRAM Biosystems Engineering / 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
	BSM6191	PHD THESIS I	Z	0	1	0	0	1		BSM6192	PHD THESIS II	Z	0	1	0	0
BSM6009	ADVANCED GEOGRAPHIC INFORMATION SYSTEMS IN HYDROLOGIC ANALYSIS	Z	3	0	0	3	6		BSM6172	SEMINAR	Z	0	2	0	0	4
BSM6025	NON - POINT SOURCE POLLUTION AND CONTROL IN AGRICULTURAL BUILDINGS	Z	3	0	0	3	6		FEN6000	RESEARCH TECHNIQUES and PUBLICATION ETHICS	C	2	0	0	2	2
BSM6019	AGRICULTURAL APPLICATIONS OF WIND ENERGY	Z	2	2	0	3	6									
BSM6021	AGRICULTURAL MACHINERY IN THE MANUFACTURING OF CNC PROGRAMMING PRINCIPLES	Z	3	0	0	3	6									
BSM6181	ADVANCED TOPICS IN PHD THESIS I	S	4	0	0	0	6		BSM6182	ADVANCED TOPICS IN PHD THESIS II	S	4	0	0	0	6
BSM6001	HYDROLOGIC MODELING OF SMALL WATERSHEDS	S	3	0	0	3	6		BSM6002	HYDRAULICS IN POROUS MEDIA	S	3	0	0	3	6


BSM6003	INFILTRATION THEORY	S	3	0	0	3	6	BSM6004	ADVANCED HYDROLOGY	S	3	0	0	3	6		
BSM6005	GROUNDWATER DEVELOPMENT	S	2	2	0	3	6	BSM6006	SIMULATION MODELS IN DRAINAGE ENGINEERING	S	3	0	0	3	6		
BSM6007	SURFACE IRRIGATION HYDRAULICS	S	3	0	0	3	6	BSM6008	ADVANCED COMPUTER PROGRAMMING	S	3	0	0	3	6		
BSM6011	TRACTORS - EQUIPMENT MECHANICS	S	3	0	0	3	6	BSM6010	MONITORING AND EVALUATION OF IRRIGATION PROJECTS	S	3	0	0	3	6		
BSM6013	SPECIFICATION AND APPLICATIONS OF COOLING MACHINERY AND HEAD PUMPS	S	3	0	0	3	6	BSM6012	DESIGN OF PLANT PROTECTION MACHINERY	S	2	2	0	3	6		
BSM6015	DESIGN OF CULTIVATION MACHINERY	S	2	2	0	3	6	BSM6014	DESIGN OF IRRIGATION MACHINERY	S	2	2	0	3	6		
BSM6017	MODELING TECHNIQS IN AGRICULTURAL MACHINERY	S	2	2	0	3	6	BSM6020	DESIGN AND PRACTICAL GUIDELINES OF HARVEST AND THRESHING MACHINERY	S	3	0	0	3	6		
BSM6023	DESIGN OF TRANSPORTATION MACHINERY	S	3	0	0	3	6	BSM6022	EXPERIMENT TECHNIQUE IN AGRICULTURAL MACHINERY	S	2	2	0	3	6		
BSM6027	DESIGN OF STEEL STRUCTURES IN FARM BUILDINGS	S	3	0	0	3	6	BSM6024	SELECTING AND CLASSIFICATION PRINCIPLES OF AGRICULTURAL PRODUCTS	S	2	2	0	3	6		
BSM6029	REALLOCATION MODELS ON THE LAND CONSOLIDATION PROJECTS	S	3	0	0	3	6	BSM6026	ADVANCED AGRICULTURAL WASTE MANAGEMENT	S	3	0	0	3	6		
BSM6031	AGRICULTURAL SOURCES POLLUTION ANALYSIS	S	3	0	0	3	6	BSM6028	LIFE CYCLE ASSESSMENT IN BIOLOGICAL SYSTEMS	S	3	0	0	3	6		
BSM6033	DESIGN OF WOODEN STRUCTURES IN FARM BUILDINGS	S	3	0	0	3	6	BSM6030	GEOGRAPHIC INFORMATION SYSTEMS APPLICATIONS IN RURAL PLANNING	S	3	0	0	3	6		
								BSM6032	ADVANCED TECHNIQUES IN EVAPOTRANSPIRATION MODELING	S	3	0	0	3	6		
								BSM6034	ADVANCED ENVIROMENTAL CONTROL FOR AGRICULTURAL STRUCTURES AND DESIGN	S	3	0	0	3	6		
								BSM6036	BIOPROCESS APPLICATIONS IN ANIMAL FEEDING OPERATIONS	S	3	0	0	3	6		
Toplam Kredi							14	30	Toplam Kredi							11	30
STAGE THESIS	III. TERM / FALL								IV. TERM / SPRING								
	BSM6183	ADVANCED TOPICS IN PHD THESIS III	Z	4	0	0	0	5									
	BSM6193	PHD THESIS III	Z	0	1	0	0	15	BSM6184	ADVANCED TOPICS IN PHD THESIS IV	Z	4	0	0	0	5	
	YET6177	PHD PROFICIENCY EXAMINATION	Z	0	0	0	0	10	BSM6194	PHD THESIS IV	Z	0	1	0	0	25	
	Toplam Kredi							0	30	Toplam Kredi							0
V. TERM / FALL								VI. TERM / SPRING									

BSM6185	ADVANCED TOPICS IN PHD THESIS V	Z	4	0	0	0	5	BSM6186	ADVANCED TOPICS IN PHD THESIS VI	Z	4	0	0	0	5		
BSM6195	PHD THESIS V	Z	0	1	0	0	25	BSM6196	PHD THESIS VI	Z	0	1	0	0	25		
Toplam Kredi							0	30	Toplam Kredi							0	30
VII. TERM / FALL								VIII. TERM / SPRING									
BSM6187	ADVANCED TOPICS IN PHD THESIS VII	Z	4	0	0	0	5	BSM6188	ADVANCED TOPICS IN PHD THESIS VII	Z	4	0	0	0	5		
BSM6197	PHD THESIS VII	Z	0	1	0	0	25	BSM6198	PHD THESIS VII	Z	0	1	0	0	25		
Toplam Kredi							0	30	Toplam Kredi							0	30
TOTAL CREDITS: 23 - TOTAL ECTS: 240																	

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

The student have 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

 ULUDAĞ ÜNİVERSİTESİ FEN BİLİMLERİ ENSTİTÜSÜ 2016-2017 EĞİTİM ÖĞRETİM YILINDA EKLENEN DERSLER															
ANABİLİM DALI			Biyosistem Mühendisliği												
BİLİM DALI / PROGRAMI			Biyosistem Mühendisliği / Yüksek Lisans- Doktora Programı												
Kodu	Dersin Adı	Yarıyıl	Türü	T	U	L	Kredi	AKTS	Uygulama Esasları*	Gerekeçe					
BSM5046	İleri Sera Tasarımı	Bahar	S	3	0	0	3	6		Tarım toprakları sanayileşme ve kentleşme gibi amaçlarla tarım dışına çıkmakta ve tarım alanları giderek azalmaktadır. Birim alandan elde edilen ürün miktarının fazla olması nedeniyle, sera yetiştiriciliği artan nüfusun gıda gereksinimini karşılamada önemli bir araç haline gelmiştir. Sera işletmeciliğinin başarılı bir biçimde yürütülebilmesinde kültürel işlemlerin yanında seraların bitki gelişimini ve verimliliği artıracak, işgücü kullanımını etkinleştirecek ve arzu edilen iç ortam çevre koşullarından ödün vermeden en ucuz maliyetle inşa edilmesini sağlayacak biçimde tasarlanması da oldukça önemlidir. Özellikle modern seraların tasarımında ileri çevresel kontrol teknolojilerinin, statik hesaplamaya yönelik yazılımların bilinmesi tasarımın daha gerçekçi, az hatayla ve gereksinim duyulan koşullara uygun bir biçimde yapılmasında oldukça önemlidir. Bu dersi başarı ile tamamlayan öğrenciler mezun olduğunda, modern sera tasarımı konusunda yetkin bir hale gelecek ve günümüzde İspanya ve Hollanda gibi ülkelerin egemen olduğu sera inşası piyasasında ileride söz sahibi olabileceklerdir. Tüm bu gerekçeler ışığında bu dersin Biyosistem Mühendisliği Yüksek Lisans programında açılmasının gerekli olduğu					