



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

DEPARTMENT OF
DEPARTMENT / PROGRAM

MECHANICAL 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
	MAK5191	MSC THESIS CONSULTING I	C	0	1	0	0	1	MAK5191	MSC THESIS CONSULTING II	C	0	1	0	0	1
	MAK5001	ADVANCED ENGINEERING MATHEMATICS	C	3	0	0	3	6	MAK5172	SEMINAR (CLASS)	C	0	2	0	0	6
	MAK5181	SPECIAL TOPICS IN MSC THESIS I	E	4	0	0	0	5	MAK5182	SPECIAL TOPICS IN MSC THESIS II	E	4	0	0	0	5
	MAK5201	CONSTRUCTION RELIABILITY	E	3	0	0	3	6	MAK5002	NUMERICAL METHODS IN ENGINEERING	E	3	0	0	3	6
	MAK5203	SHAPING IN CONSTRUCTION	E	3	0	0	3	6	MAK5202	STATISTICAL PROCESS CONTROL	E	3	0	0	3	6
	MAK5205	ADVANCED MANUFACTURING METHODS	E	3	0	0	3	6	MAK5204	PROGRAMMING OF MACHINE SYSTEMS	E	3	0	0	3	6
	MAK5207	METHODICAL DESIGN PRINCIPLES AND APPLICATION	E	3	0	0	3	6	MAK5206	COMPUTER AIDED MANUFACTURING	E	3	0	0	3	6
	MAK5209	PHYSICAL METALLURGY	E	3	0	0	3	6	MAK5208	MODERN WELDING METHODS AND EQUIPMENTS	E	3	0	0	3	6
	MAK5211	THE LIGHT ALLOYS	E	3	0	0	3	6	MAK5210	ERGONOMICS IN MACHINE DESIGN	E	3	0	0	3	6
	MAK5213	TRIBOLOGY	E	3	0	0	3	6	MAK5212	ADVANCED CERAMIC MATERIALS	E	3	0	0	3	6
	MAK5215	SPECIFIC STEELS	E	3	0	0	3	6	MAK5214	MECHANICAL METALLURGY	E	3	0	0	3	6
	MAK5217	COMPUTER GRAPHICS	E	3	0	0	3	6	MAK5216	PHASE TRANSFORMATIONS	E	3	0	0	3	6
	MAK5219	COMPUTER AIDED DESIGN	E	3	0	0	3	6	MAK5218	INDUSTRIAL NOISE CONTROL	E	3	0	0	3	6
	MAK5221	ALTERNATIVE ENGINES AND PROPULSION TECHNOLOGIES	E	3	0	0	3	6	MAK5220	COMPUTER AIDED SETUP PLANNING AND FIXTURE DESIGN	E	3	0	0	3	6
	MAK5223	HEAT CONDUCTION	E	3	0	0	3	6	MAK5222	ADVANCED TOPICS IN INTERNAL COMBUSTION ENGINES	E	3	0	0	3	6
	MAK5225	FINITE ELEMENT ANALYSIS IN THERMOFLUIDS	E	3	0	0	3	6	MAK5224	MIXTURE FORMATION IN INTERNAL COMBUSTION ENGINES	E	3	0	0	3	6
	MAK5227	BOUNDARY LAYER FLOWS	E	3	0	0	3	6	MAK5226	RADIATIVE HEAT TRANSFER	E	3	0	0	3	6
	MAK5229	VISCOUS FLOWS	E	3	0	0	3	6	MAK5228	GAS DYNAMICS	E	3	0	0	3	6
	MAK5231	SOLAR ENERGY APPLICATIONS	E	3	0	0	3	6	MAK5230	SPECIAL TOPICS IN HEAT TRANSFER AND FLUID MECHANICS	E	3	0	0	3	6
	MAK5233	CONVECTION HEAT TRANSFER	E	3	0	0	3	6	MAK5232	TURBULENT FLOWS	E	3	0	0	3	6
	MAK5235	DESIGN OF THERMAL SYSTEMS	E	3	0	0	3	6	MAK5234	NUMERICAL METHODS IN HEAT TRANSFER AND FLUID DYNAMICS	E	3	0	0	3	6
	MAK5237	HEAT PUMP THEORY AND APPLICATIONS	E	3	0	0	3	6	MAK5236	CONDENSERS AND EVAPORATORS	E	3	0	0	3	6
	MAK5239	HEATING, VENTILATING AND AIR CONDITIONING	E	3	0	0	3	6	MAK5238	HEAT AND MASS TRANSFER	E	3	0	0	3	6
	MAK5241	MICROSCALE FLOW AND HEAT TRANSFER	E	3	0	0	3	6	MAK5240	ADVANCED REFRIGERATION	E	3	0	0	3	6
	MAK5243	FLUID POWER SYSTEMS AND CONTROL	E	3	0	0	3	6	MAK5242	DRYING TECHNOLOGY	E	3	0	0	3	6
	MAK5245	MODELLING, ANALYSIS AND PROGRAM OF ENG. SYSTEMS	E	3	0	0	3	6	MAK5244	ABSORPTION REFRIGERATION SYSTEMS	E	3	0	0	3	6

	MAK5247	PARTIAL DIFFERENTIAL EQUATIONS AND ENG. APPLICATIONS	E	3	0	0	3	6	MAK5246	COMPUTER CONTROLLED SYSTEMS	E	3	0	0	3	6		
	MAK5249	DYNAMICS OF MULTIBODY SYSTEMS	E	3	0	0	3	6	MAK5248	MECHATRONICS	E	3	0	0	3	6		
	MAK5251	NUMERICAL ANALYSIS OF MACHINE ELEMENTS	E	3	0	0	3	6	MAK5250	KINEMATICS AND SYNTHESIS OF MECHANISMS	E	3	0	0	3	6		
	MAK5253	COMPUTATIONAL FLUID DYNAMICS ON BUILDINGS	E	3	0	0	3	6	MAK5252	COMPOSITE MATERIALS	E	3	0	0	3	6		
	MAK5255	FLUID MECHANICS AND EXPERIMENTAL METHODS IN HEAT TRANSFER	E	3	0	0	3	6	MAK5254	FINITE ELEMENT METHOD	E	3	0	0	3	6		
									MAK5256	CLASSICAL THEORETICAL MECHANICS AND ITS APPLICATIONS	E	3	0	0	3	6		
									MAK5258	MATHEMATICAL THEORY OF ELASTICITY	E	3	0	0	3	6		
									MAK5260	SUSTAINABLE DESIGN	E	3	0	0	3	6		
									MAK5262	NUMERICAL METHODS IN WIND ENERGY	E	3	0	0	3	6		
									MAK5264	FLOW AND HEAT TRANSFER FOR SEPERATED FLOWS	E	3	0	0	3	6		
	Total Credits							12	30	Total Credits							9	30
	III. TERM / FALL								IV. TERM / SPRING									
STAGE THESIS	MAK5173	SEMINAR (THESIS)	C	0	2	0	0	5	MAK5184	SPECIAL TOPICS IN MSC THESIS IV	C	4	0	0	0	5		
	MAK5183	SPECIAL TOPICS IN MSC THESIS III	C	4	0	0	0	5	MAK5194	MSC THESIS CONSULTING IV	C	0	1	0	0	25		
	MAK5193	MSC THESIS CONSULTING III	C	0	1	0	0	20										
	Total Credits							0	30	Total Credits							0	30
TOTAL CREDITS: 21 - TOTAL ECTS: 120																		

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.



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DEPARTMENT OF

MECHANICAL ENGINEERING

DEPARTMENT / PROGRAM

/ DOCTORAL PROGRAM

	I. TERM / FALL								II. TERM / SPRING										
	Code	Course Title	Type	T	U	L	Credit	ECTS	Code	Course Title	Type	T	U	L	Credit	ECTS			
COURSE STAGE	MAK6191	PHD THESIS CONSULTING I	C	0	1	0	0	1	MAK6192	PHD THESIS CONSULTING II	C	0	1	0	0	1			
	FEN6001	RESEARCH METHODS IN	C	2	0	0	2	4	MAK6172	SEMINAR (CLSASS)	C	0	2	0	0	4			
	MAK6181	SPECIAL TOPICS IN PHD THESIS I	E	4	0	0	0	5	MAK6182	SPECIAL TOPICS IN PHD THESIS II	E	4	0	0	0	5			
	MAK6101	OPTIMIZATION IN ENGINEERING	E	3	0	0	3	5	MAK6202	BEARINGS AND LUBRICATION THEORY	E	3	0	0	3	5			
	MAK6201	MATERIALS CHARACTERIZATION	E	3	0	0	3	5	MAK6204	SURFACE PROCESSES IN INDUSTRY	E	3	0	0	3	5			
	MAK6203	PRINCIPLE OF SOLIDIFICATION	E	3	0	0	3	5	MAK6208	CONTINUUM MECHANICS	E	3	0	0	3	5			
	MAK6207	COMBUSTION TECHNOLOGY	E	3	0	0	3	5	MAK6210	TURBO MACHINERY DESIGN PRINCIPLES	E	3	0	0	3	5			
	MAK6209	PARTICLE DYNAMICS	E	3	0	0	3	5	MAK6212	COMBINED HEAT-POWER SYSTEMS	E	3	0	0	3	5			
	MAK6211	TURBULENCE AND TURBULENCE MODELS	E	3	0	0	3	5	MAK6214	SPECIAL TOPICS IN FLUID DYNAMICS	E	3	0	0	3	5			
	MAK6213	ADVANCED THERMODYNAMICS	E	3	0	0	3	5	MAK6216	SPECIAL TOPICS IN HEAT TRANSFER	E	3	0	0	3	5			
	MAK6215	ENERGY METHODS	E	3	0	0	3	5	MAK6218	ADVANCED TOPICS IN MACHINE DYNAMICS	E	3	0	0	3	5			
	MAK6217	APPLIED TENSOR ANALYSIS	E	3	0	0	3	5	MAK6220	ENERGY AND ENVIRONMENT	E	3	0	0	3	5			
	MAK6219	THERMODYNAMIC OPTIMIZATION	E	3	0	0	3	5	MAK6222	DECISION ANALYSIS OF ENGINEERING DESIGN	E	3	0	0	3	5			
	MAK6221	ANALYTICAL METHODS IN VIBRATION THEORY	E	3	0	0	3	5	MAK6224	PRECISION DEVICE DESIGN	E	3	0	0	3	5			
	MAK6223	ADVANCED TECHNOLOGY ENERGY MECHANISMS	E	3	0	0	3	5											
	MAK6225	MOBILE ROBOTICS	E	3	0	0	3	5											
	MAK6227	ADVANCED BONDING TECHNIQUES	E	3	0	0	3	5											
	Toplam Kredi							14	30	Toplam Kredi							12	30	
STAGE THESIS	III. TERM / FALL								IV. TERM / SPRING										
	MAK6183	SPECIAL TOPICS IN PHD THESIS III	C	4	0	0	0	5	MAK6174	SEMINAR (THESIS)	C	0	2	0	0	5			
	MAK6193	PHD THESISCONSULTING III	C	0	1	0	0	15	MAK6184	SPECIAL TOPICS IN PHD THESIS IV	C	4	0	0	0	5			
	YET6177	PHD PROFICIENCY	C	0	0	0	0	10	MAK6194	PHD THESISCONSULTING IV	C	0	1	0	0	20			
		Toplam Kredi							0	30	Toplam Kredi							0	30
	V. TERM / FALL								VI. TERM / SPRING										
	ENS6121	DEVELOPMENT AND LEARNING	C	3	0	0	0	5	ENS6122	PLANING AND EVALUATION IN EDUCATION	C	3	2	0	0	5			
	MAK6185	SPECIAL TOPICS IN PHD THESIS V	C	4	0	0	0	5	MAK6186	SPECIAL TOPICS IN PHD THESIS VI	C	4	0	0	0	5			
	MAK6195	PHD THESIS CONSULTING V	C	0	1	0	0	20	MAK6196	PHD THESISCONSULTING VI	C	0	1	0	0	20			
		Toplam Kredi							0	30	Toplam Kredi							0	30
VII. TERM / FALL								VIII. TERM / SPRING											
MAK6187	SPECIAL TOPICS IN PHD THESIS VII	C	4	0	0	0	5	MAK6188	SPECIAL TOPICS IN PHD THESIS VIII	C	4	0	0	0	5				

MAK6197	PHD THESISCONSULTING VII	C	0	1	0	0	25	MAK6198	PHD THESIS CONSULTING VIII	C	0	1	0	0	25	
							Toplam Kredi	0	30							
							Toplam Kredi	0	30							
TOTAL CREDITS: 26 - TOTAL ECTS: 240																

Not: The student is expected to take a total ofcredited 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.