



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

DEPARTMENT OF	Industrial Engineering
DEPARTMENT / PROGRAM	Industrial Engineering/ M.S. Program in Industrial Engineering

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			
	END5101	Mathematical Programming	Z	3	0	0	3	7.5	END5110	Production Systems	S1	3	0	0	3	7.5			
	END5113	Computer and Manufacturing	S2	3	0	0	3	7.5	END5112	Job Sequencing and Scheduling	S1	3	0	0	3	7.5			
	END5115	Simulation Analysis	S1	3	0	0	3	7.5	END5114	Analysis of Inventory Systems	S2	3	0	0	3	7.5			
	END5121	Design and Analysis of Algorithms	S1	3	0	0	3	7.5	END5116	Facility Location and Layout	S2	3	0	0	3	7.5			
	END5123	Heuristic Algorithms	S2	3	0	0	3	7.5	END5132	Engineering Economy	S2	3	0	0	3	7.5			
	END5131	Total Quality Management	S2	3	0	0	3	7.5	END5134	Technology Management	S2	3	0	0	3	7.5			
	END5151	Statistical Data Analysis	S1	3	0	0	3	7.5	END5136	Strategic Decision Support Systems	S2	3	0	0	3	7.5			
	END5153	Experimental Design	S2	3	0	0	3	7.5	END5156	Reliability Engineering	S2	3	0	0	3	7.5			
	END5155	Stochastic Processes	S2	3	0	0	3	7.5	END5140	Noise Impact Engineering	S2	3	0	0	3	7.5			
	END5117	Manufacturing Processes Control	S2	3	0	0	3	7.5	END5138	Multicriteria Decision Making	S2	3	0	0	3	7.5			
	END5119	Sustainable Engineering	S2	3	0	0	3	7.5	END5142	Data Mining	S2	3	0	0	3	7.5			
									END5122	Embedded Optimization Techniques	S2	3	0	0	3	7.5			
									END5124	Constraint Programming	S2	3	0	0	3	7.5			
Total Credits								12	30	Total Credits								12	30
STAGE THESIS	III. TERM / FALL								IV. TERM / SPRING										
	END5181	Advanced Topics in MA Thesis I	Z	4	0	0	0	5	END5182	Advanced Topics in MA Thesis II	Z	4	0	0	0	5			
		Seminar	Z	0	0	0	0	5	END5192	MA Thesis II	Z	0	0	0	0	25			
	END5191	MA Thesis I	Z	0	0	0	0	18											
	END5000	RESEARCH TECHNIQUES and PUBLICATION ETHICS in INDUSTRIAL ENGINEERING	Z	2	0	0	2	2											
Total Credits								2	30	Total Credits								0	30
TOTAL CREDITS: 26 - TOTAL ECTS: 120																			

Not: Students are expected to register to a total of 12 credits (30 ECTS) selective and core courses every academic term.

Required course (Z) END5101 is offered in 1st and 2nd terms.

Min. 2 courses will be selected from S1 group in total.

Min. 1 course will be selected from S2 group in each of 1st and 2nd terms.

A total of 8 courses will be taken from Z, S1, S2 groups.



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INSTITUTE OF NATURAL SCIENCES
2017-2018 ACADEMIC YEAR COURSE PLAN

ENGINEERING AND TECHNOLOGY MANAGEMENT
MASTER OF SCIENCE DEGREE PROGRAM (WITHOUT THESIS)

Kodu/Grubu	Dersin Adı	T	U	L	Credit	ECTS	Prereq.
END5590	Engineering Technology Management and Entrepreneurship Project	3	0	0	3	7.5	
S-1	Decision Analysis Electives				6 (2 courses)	15	
S-2	Investment Planning Electives				3 (1 course)	7.5	
S-3	Quality Management Electives				3 (1 course)	7.5	
S-4	Organizational Management Electives				6 (2 courses)	15	
S-5	Bussiness Management Elecvtives				6 (2 courses)	15	
S-6	Technology Management Electives				9 (3 courses)	22.5	
Total Credits					36	90	

Note: : The students are expected to register a total of 12 credits (30 ECTS) courses every academic term in order to complete the program in three terms.

Recomended electives from each group can be freely selected at each term..

Student may register to END5590 Engineering Technology Management and Entrepreneurship Project in the third term.



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INSTITUTE OF NATURAL SCIENCES
2017-2018 ACADEMIC YEAR COURSE PLAN

DEPARTMENT OF		Industrial Engineering															
DEPARTMENT / PROGRAM		Industrial Engineering/ M.S. Program in Engineering and Technology Management (Without Thesis)															
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	
	END5501	Probability and Statistics in Engineering	S-1	3	0	0	3	7.5	END5502	Applied Operations Research	S-1	3	0	0	3	7.5	
	END5511	Engineering Economy	S-2	3	0	0	3	7.5	END5504	Engineering Optimization	S-1	3	0	0	3	7.5	
	END5531	Leadership and Management For Engineers	S-4	3	0	0	3	7.5	END5513	Engineering Project Management	S-2	3	0	0	3	7.5	
	END5541	Accounting and Finance For Engineers	S-5	3	0	0	3	7.5	END5524	Lean Production and Service Management	S-3	3	0	0	3	7.5	
	END5551	Strategic Technology Management	S-6	3	0	0	3	7.5	END5532	Human Factors Engineering	S-4	3	0	0	3	7.5	
	END5555	Information Systems Management	S-6	3	0	0	3	7.5	END5534	Organizational Behavior and Communication	S-4	3	0	0	3	7.5	
									END5544	Entrepreneurship	S-5	3	0	0	3	7.5	
									END5542	Financial Research and Development	S-5	3	0	0	3	7.5	
									END5552	Product Design and Development	S-6	3	0	0	3	7.5	
									END5562	Environmental Health and Safety Management	S-6	3	0	0	3	7.5	
									END5554	Supply Chain Management	S-6	3	0	0	3	7.5	
								END5560	Legal Issues in Engineering Management	S-6	3	0	0	3	7.5		
								END5564	Energy Management	S-6	3	0	0	3	7.5		
Total Credits							12	30	Total Credits							12	30
STAGE THESIS	III. TERM / FALL								IV. TERM / SPRING								
	END5590	Eng. Technology Management and Entrepreneurship Project	Z	3	0	0	3	7.5									
	END5503	Decision Analysis Under Risk and Uncertainty	S-1	3	0	0	3	7.5									
	END5505	Data Analytics	S-1	3	0	0	3	7.5									
	END5522	Statistical Quality Control	S-3	3	0	0	3	7.5									
	END5533	Human Resources Management	S-4	3	0	0	3	7.5									
	END5543	Marketing Technology Products	S-5	3	0	0	3	7.5									
	END5553	Production Planning and Management	S-6	3	0	0	3	7.5									
END5557	Research and Development Management	S-6	3	0	0	3	7.5										
Total Credits							12	30	Total Credits								
TOTAL CREDITS: 36 - TOTAL ECTS: 90																	

Not: The students are expected to register a total of 12 credits (30 ECTS) courses every academic term in order to complete the program in three terms.

Recommended electives from each group can be freely selected at each term..

Student may register to END5590 Engineering Technology Management and Entrepreneurship Project earliest in the third term



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

DEPARTMENT OF	Industrial Engineering
DEPARTMENT / PROGRAM	Industrial 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				
	END6101	Linear Programming	Z	3	0	0	3	7.5	END6102	Integer Programming	Z	3	0	0	3	7.5				
	END6105	Dynamic Programming	S	3	0	0	3	7.5	END6112	Advanced Simulation Techniques	Z	3	0	0	3	7.5				
	END6113	Supply Chain Management	S	3	0	0	3	7.5	END6104	Nonlinear Programming	S	3	0	0	3	7.5				
	END6115	Management of Integrated Manufacturing Systems	S	3	0	0	3	7.5	END6108	Complexity Analysis	S	3	0	0	3	7.5				
	END6117	Management of Product Design	S	3	0	0	3	7.5	END6114	Design of Integrated Manufacturing Systems	S	3	0	0	3	7.5				
	END6121	Neural Networks	S	3	0	0	3	7.5	END6116	Advanced Topics in Quality Control	S	3	0	0	3	7.5				
	END6131	Financial Engineering	S	3	0	0	3	7.5	END6122	Artificial Intelligence	S	3	0	0	3	7.5				
	END6141	Human-Machine Systems	S	3	0	0	3	7.5	END6142	Physiology and Psychology in Ergonomics	S	3	0	0	3	7.5				
	END6107	Multi-Objective Optimization	S	3	0	0	3	7.5	END6144	Ergonomics in Product Design	S	3	0	0	3	7.5				
	Total Credits								12	30	Total Credits								12	30
STAGE THESIS	III. TERM / FALL								IV. TERM / SPRING											
	FEN6000	RESEARCH TECHNIQUES and PUBLICATION ETHICS	Z	2	0	0	2	2	END6182	Advanced Topics in PHD Thesis I	Z	3	0	0	0	5				
	END6171	Seminar	Z	0	0	0	0	5	END6192	PHD Thesis I	Z	0	0	0	0	25				
	YET6177	PHD Proficiency Examination (*)	Z	0	0	0	0	23												
	Total Credits								2	30	Total Credits								0	30
	V. TERM / FALL								VI. TERM / SPRING											
	END6183	Advanced Topics in PHD Thesis II	Z	4	0	0	0	5	END6184	Advanced Topics in PHD Thesis III	Z	4	0	0	0	5				
	END6193	PHD Thesis II	Z	0	0	0	0	25	END6194	PHD Thesis III	Z	0	0	0	0	25				
	Total Credits								0	30	Total Credits								0	30
	VII. TERM / FALL								VIII. TERM / SPRING											
END6185	Advanced Topics in PHD Thesis IV	Z	4	0	0	0	5	END6186	Advanced Topics in PHD Thesis V	Z	4	0	0	0	5					
END6195	PHD Thesis IV	Z	0	0	0	0	25	END6196	PHD Thesis V	Z	0	0	0	0	25					
Total Credits								0	30	Total Credits								0	30	
TOTAL CREDITS: 26 - TOTAL ECTS: 240																				

Not: The student is expected to take a total of 12 credits (30 ECTS) core/selective courses every academic term for the I. and II. terms.

* Success in Ph.D. qualifying exam is a prerequisite to register courses following the term III.



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INSTITUTE OF NATURAL SCIENCES
2017-2018 ACADEMIC YEAR COURSE PLAN**

DEPARTMENT OF Industrial Engineering
DEPARTMENT / PROGRAM Industrial Engineering / Integrated 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
	END5101	Mathematical Programming	Z	3	0	0	3	7.5	END5110	Production Systems	Z	3	0	0	3	7.5
	END5113	Computer and Manufacturing	S	3	0	0	3	7.5	END5112	Job Sequencing and Scheduling	Z	3	0	0	3	7.5
	END5115	Simulation Analysis	S	3	0	0	3	7.5	END5114	Analysis of Inventory Systems	S	3	0	0	3	7.5
	END5121	Design and Analysis of Algorithms	S	3	0	0	3	7.5	END5116	Facility Location and Layout	S	3	0	0	3	7.5
	END5123	Heuristic Algorithms	S	3	0	0	3	7.5	END5132	Engineering Economy	S	3	0	0	3	7.5
	END5131	Total Quality Management	S	3	0	0	3	7.5	END5134	Technology Management	S	3	0	0	3	7.5
	END5151	Statistical Data Analysis	S	3	0	0	3	7.5	END5136	Strategic Decision Support Systems	S	3	0	0	3	7.5
	END5153	Experimental Design	S	3	0	0	3	7.5	END5156	Reliability Engineering	S	3	0	0	3	7.5
	END5155	Stochastic Processes	S	3	0	0	3	7.5	END5140	Noise Impact Engineering	S	3	0	0	3	7.5
	END5117	Manufacturing Processes Control	S	3	0	0	3	7.5	END5138	Multicriteria Decision Making	S	3	0	0	3	7.5
	END5119	Sustainable Engineering	S	3	0	0	3	7.5	END5142	Data Mining	S	3	0	0	3	7.5
									END5122	Embedded Optimization Techniques	S	3	0	0	3	7.5
									END5124	Constraint Programming	S	3	0	0	3	7.5
							12	30						12	30	
	III. TERM / FALL								IV. TERM / SPRING							
	Code	Course Title	Type	T	U	L	Credit	ECTS	Code	Course Title	Type	T	U	L	Credit	ECTS
	END6101	Linear Programming	Z	3	0	0	3	7.5	END6102	Integer Programming	Z	3	0	0	3	7.5
	END6105	Dynamic Programming	S	3	0	0	3	7.5	END6112	Advanced Simulation Techniques	Z	3	0	0	3	7.5
	END6113	Supply Chain Management	S	3	0	0	3	7.5	END6104	Nonlinear Programming	S	3	0	0	3	7.5
	END6115	Management of Integrated Manufacturing Systems	S	3	0	0	3	7.5	END6108	Complexity Analysis	S	3	0	0	3	7.5
	END6117	Management of Product Design	S	3	0	0	3	7.5	END6114	Design of Integrated Manufacturing Systems	S	3	0	0	3	7.5
	END6121	Neural Networks	S	3	0	0	3	7.5	END6116	Advanced Topics in Quality Control	S	3	0	0	3	7.5
	END6131	Financial Engineering	S	3	0	0	3	7.5	END6122	Artificial Intelligence	S	3	0	0	3	7.5
	END6141	Human-Machine Systems	S	3	0	0	3	7.5	END6142	Physiology and Psychology in Ergonomics	S	3	0	0	3	7.5
	END6107	Multi-Objective Optimization	S	3	0	0	3	7.5	END6144	Ergonomics in Product Design	S	3	0	0	3	7.5
							12	30						12	30	

THESIS STAGE	V. TERM / FALL							VI. TERM / SPRING										
	FEN6000	RESEARCH TECHNIQUES and PUBLICATION ETHICS	Z	2	0	0	2	2	END6182	Advanced Topics in PHD Thesis I	Z	3	0	0	0	5		
	END6171	Seminar	Z	0	0	0	0	5	END6192	PHD Thesis I	Z	0	0	0	0	25		
	YET6177	PHD Proficiency Examination (*)	Z	0	0	0	0	23										
	Total Credits							2	30	Total Credits							12	30
	VII. TERM / FALL							VIII. TERM / SPRING										
	END6183	Advanced Topics in PHD Thesis II	Z	4	0	0	0	5	END6184	Advanced Topics in PHD Thesis III	Z	4	0	0	0	5		
	END6193	PHD Thesis II	Z	0	0	0	0	25	END6194	PHD Thesis III	Z	0	0	0	0	25		
	Total Credits							12	30	Total Credits							12	30
	IX. TERM / FALL							X. TERM / SPRING										
END6185	Advanced Topics in PHD Thesis IV	Z	4	0	0	0	5	END6186	Advanced Topics in PHD Thesis V	Z	4	0	0	0	5			
END6195	PHD Thesis IV	Z	0	0	0	0	25	END6196	PHD Thesis V	Z	0	0	0	0	25			
Total Credits							12	30	Total Credits							12	30	
TOTAL CREDITS: 50							- TOTAL ECTS: 300											

Not: The student is expected to take a total of 12 credits (30 ECTS) core/selective courses every academic term for the I.-IV. terms.

* Success in Ph.D. qualifying exam is a prerequisite to register courses following the term V.