INFORMATION ON THE INDUSTRIAL ENGINEERING MASTER DEGREE PROGRAM

General Information	TOBB ETÜ Industrial Engineering Program, founded in 2005 gave its first graduates in 2009. There are currently 9 faculty members in the department. The faculty does research mostly in the areas of optimization, stochastic models, statistics, logistics, supply chain, scheduling, energy systems. Master's Degree in Industrial Engineering program has been founded in the year 2008. The quotas for funded and not-funded master students are determined by the Institute of Natural Sciences of TOBB ETU.
Program Purpose	The objective of the M.Sc. in Industrial Engineering at TOBB ETU is to train industrial engineers who will either continue conducting research towards a Ph.D. degree, lead R&D projects in industry or start their own technology companies to turn innovative ideas into products, make contributions to the state-of-the-art, and disseminate scholarly work in scientific conferences and journals
Degree Earned	Master of Science
Level of Degree Earned	Graduate level
Requirements and Rules of the Degree Earned	Thesis programme - At least 7 courses with a total of 21 credits + 1 seminar course (no credit) + Master's thesis (no credit) + FBE600 - Scientific Research Techniques and Ethics course ::: Nonthesis programme - At least 10 courses with a total of 30 credits + 1 seminar course (no credit) + Master's project course (no credit) + FBE600 - Scientific Research Techniques and Ethics course
Registration Admission Requirements	1. A minimum grade of 55 from the Akademik Personel ve Lisansüstü Eğitimi Giriş Sınavı (ALES). GRE (Graduate Record Examinations) and GMAT (Graduate Management Admission Test) grades are also acceptable. 2. A minimum grade of 50 from UDS. TOEFL, IELTS and KPDS grades are also acceptable 3. Students are evaluated by faculy members through interviews. 4. Candidates should get at least 55 points. Total grade is calculated as follows: ALES 50%, GPA 25%, interview 25%.
Recognition of Prior Learning	A student can substitute courses taken in a quitted previous graduate education program. The substitution of the courses taken in a previous program, its equivalency and suitability with the courses in the program are evaluated at the Departmental and Engineering Faculty Boards. In case of approval of subtitution, the course is substituted with M (exempt) grade.
Examinations, Assessment and Grading	Courses with credits have their own evaluation criteria. Seminar course is graded bu G (pass) - K (fail) grade. The thesis is evaluated by a committee of three facullty members thhrough the written thesis and its oral presentation.
Teaching Style	Day time - in class
Graduation Requirements	To complete the requirements of the degree and A CGPA of at least 3.00/4.00.
Occupational Profiles of Graduated-Employment Opportunities	A great majority of our graduates can find a job within 6 months of graduation. Also 30% of our graduates start their career in one of their Coop companies. Our graduates mostly occupy Electronics, Defense, Space/Aviation, Telecommunications and Information Technologies sectors. Companies like ASELSAN , ROKETSAN, TÜBİTAK, TAİ, ARÇELİK, TÜRK TELEKOM and HAVELSAN are the ones that employ most of our graduates. Our graduates usually work as R&D/Design, System, Production or Test engineers. A 10% of our graduates have either founded their hi-tech start-up companies or work in their family ventures.
Transition to a Upper	Candidates elgible for application to PhD study can apply to the PhD programme.

NQF-HETR PROGRAM QUALIFICATION MATRIX				PROGRAM QUALIFICATIONS										
Program : Industrial Engineering														
Related NQF-HETR Core Field: Engineering (Academic) - Master Degree				1	2	3	4	5	6	7	8	9	10	11
CORE AREA QUALIFICATIONS	INFORMATION	Theoretical - Factual	Achieves knowledge expansion and depth by doing scientific research in engineering field, assesses knowledge, interprets and applies.		✓			✓	✓					
			Has extensive knowledge about current techniques and methods applied in engineering and their limitations.									✓	✓	
			Completes and applies the knowledge using scientific methods using limited or incomplete data; integrates knowledge of different disciplines.		✓			✓	✓	✓				
			Is aware of new and evolving practices of the profession and examines and learns them when necessary.		✓			✓	✓				✓	
	SKILLS	Cognitive - Applied	Completes and applies the knowledge using scientific methods using limited or incomplete data; integrates knowledge of different disciplines.		✓			✓	✓	✓				
			Builds engineering problems, develops methods to solve them, and applies innovative methods in solutions.		✓			✓	✓			✓	✓	
			Develops new and / or unique ideas and methods; develops innovative solutions in system, component or process design.	✓						✓		✓		
			Designs and implements analytical, modeling and experimental based research; analyzes and interprets complex situations encountered in this process.	✓	✓					✓				
	COMPETENCIES	Ability to work independently and to take responsibility	Leads in multidisciplinary teams, develops solution approaches in complex situations and take responsibility.			✓				✓				
			Achieves knowledge expansion and depth by doing scientific research in engineering field, assesses knowledge, interprets and applies.	✓							✓		✓	
			Completes and applies the knowledge using scientific methods using limited or incomplete data; integrates knowledge of different disciplines.		✓			✓	✓	✓				
			Builds engineering problems, develops methods to solve them, and applies innovative methods in solutions.		✓			✓	✓	✓				
			Develops new and / or unique ideas and methods; develops innovative solutions in system, component or process design.							✓			✓	
			Designs and implements analytical, modeling and experimental based research; analyzes and interprets complex situations encountered in this process.	✓	✓					✓				
		Learning Competence	Is aware of the new and developing practices of the profession; it examines and learns them when necessary.		✓			✓	✓				✓	
			Completes and applies knowledge using scientific methods using limited or incomplete data; integrates knowledge of different disciplines.		✓			✓	✓	✓				
			Builds engineering problems, develops methods to solve them, and applies innovative methods in solutions.		✓					✓		✓	✓	
			Develops new and / or unique ideas and methods; develops innovative solutions in system, component or process design.									✓	✓	
			Communicates verbally and in writing using a foreign language at least at the European Language Portfolio B2 General Level.											✓

	COMPETENCIES	Communication and Social Competence	Transcribes the processes and outcomes of his or her work in a systematic and explicit way, either in writing or verbally, in the national or international contexts in the area or outside the field.								✓			✓
			Describes the social and environmental dimensions of engineering applications.			✓	✓							
			Achieves knowledge expansion and depth by doing scientific research in engineering field, assesses knowledge, interprets and applies.									✓	✓	
			Completes and applies the knowledge using scientific methods using limited or incomplete data; integrates knowledge of different disciplines.		✓			✓	✓	✓				
			Builds engineering problems, develop methods to solve them, and applies innovative methods in solutions.		✓					✓		✓	✓	
			Has extensive knowledge about current techniques and methods applied in engineering and their limitations.										✓	
			Designs and implements analytical, modeling and experimental based research; analyzes and interprets complex situations encountered in this process.	✓										
		Field Specific Competence	Cbserves social, scientific and ethical values in the process of collecting, interpreting and announcing data and in all professional activities.	✓		✓	✓							
			Complete and applies the knowledge using scientific methods using limited or incomplete data; integrates knowledge of different disciplines.	✓	✓			✓	✓	✓				
			Leads in multidisciplinary teams, develops solution approaches in complex situations and take responsibility.								✓			
			Transcribes the processes and outcomes of his or her work in a systematic and explicit way, either in writing or verbally, in the national or international contexts in the area or outside the field.				✓				✓			✓

Not: 1 (Az) 2 (Orta) 3 (Çok)

Program Qualifications

1	Ability to design and conduct theoretical or experimental research and to analyze and solve complex problems faced during the research.
2	Ability to formulate and solve problems in the area of Industrial engineering and to develop and apply innovative methods for solving these problems
3	Adherence to societal, scientific, and ethical values in all professional activities including collection of data, interpretation of results, and dissemination of outputs.
4	Awareness of social, environmental, health, safety, legal implications of and constraints for engineering applications.
5	Ability to access knowledge in Industrial engineering and to evaluate, interpret and apply this knowledge
6	Ability to complete and apply knowledge through scientific methods, using limited or incomplete information; to integrate and apply knowledge from different disciplines.
7	Ability to develop new methods, to design complex systems or processes and to employ innovative/alternative solutions in these designs.
8	Ability to work independently, to take responsibility, and to function effectively as a member or a leader in intra- and multi-disciplinary teams, and to develop solutions in complicated situations.
9	Comprehensive knowledge in contemporary methods and techniques in engineering and their constrains
10	Knowledge in new and emerging applications in Industrial Engineering
11	Ability to communicate effectively in both national and international arenas verbally and in writing.

All Courses in the Program		Program Qualifications										
Code	Course Name	1	2	3	4	5	6	7	8	9	10	11
END501	Advanced Linear Programming	5		4	2	5		2			5	
END 502	Integer Programming	5	5			4	5	5	4	5	5	
END504	Network Models and Optimization	5		4	2	5		2			5	
END507	Heuristic Search Methods	5		4	2	5		2			5	
END 521	Advanced Simulation	5	3	5	3	3		4	5		3	
END 520	Advanced Production Planning and Inventory	5		3		5		2			4	
END 524	Sequencing and Scheduling	5		4	2	5		2			5	
END 527	Facility Location and Layout Models	5	2	4		5		2			5	
END 570	Stochastic Processes	5				3	3	4	3	3	2	
END 572	Markov and Renewal Processes	5				3	3	4	3	3	2	
END 599	Master Thesis	5	5	5	4	5	5	5	4	4	4	5