INFORMATION ON THE INDUSTRIAL ENGINEERING BACHELOR 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. In order to qualify for the program the student must pass or obtain expemtion from the English Preparatory Program (requires 61 from TOEFL IP). The first three terms of the program provides background in mathematics and basic science. Departmental courses start in the third semester. An academic year at TOBB ETÜ consists of three semesters (Fall, Spring and Summer). After the fifth semester the students take their first Cooperative Education. Cooperative Education (Coop) is a semester-long internship program with payment and insurance. After returning from their first 500 storts, students course there in internship pattern until graduation. The program lasts for 11 semesters, three of which are for Coop semesters. In the last two course semesters students have to take 4-5 departmental , 1-2 technical and one non-technical elective in order to gain deeper knowledge in the areas they desire. The program culminates in a Senior Design Project course, where the students apply their knowledge on an extensive project.
	To educate students to gain proper abilities and the knowledge base of Industrial Engineering discipline in order to design,
Program Purpose	analyze, control, and improve the systems that produce goods and services.
Degree Earned	Bachelor of Science in Industrial Engineering
Level of Degree Earned	First-Cycle (Bachelors Degree – EOF 6) program.
Requirements and Rules of the Degree Earned	Graduation requirements are defined according to Article 45 of the Undergraduate Education and Examination Regulation (link: http://mevzuat.basbakanlik.gov.tr/Metin.Aspx?MevzuatKod=8.5.15287&MevzuatIliski=0&sourceXmlSearch=). For graduation the student should a) successfully complete 287 ECTS credits including the three Cooperative Education semesters within the maximum allowable time period b) obtain a GPA of 2.00/4.00.
Registration Admission Requirements	Student quota of our undergrad programs are determined by the board of regents after a suggestion by the Senate and subject to the approval of the Higher Education Council (YÖK). Acceptance of candidate students is according to the ÖSYM exam scores. Acceptance of foreign students are carried out according to the rules determined by the Senate. Acceptance of horizontal and vertical transfer students and special/guest/exchange students are regulated by the departmental and faculty administrative boards according to Undergraduate Education and Examination Regulation (link: http://mevzuat.basbakanlik.gov.tr/Metin.Aspx?MevzuatKod=8.5.15287&MevzuadIliski=0&sourceXmlSearch=)
Recognition of Prior Learning	A student arriving through the ÖSYM examination or by undergraduate transfer can substitute courses taken in a quitted previous higher 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 its letter grade. In case of vertical transfer the course is substituted with M (Exempt) grade. Grade is converted to a letter at graduation.
Examinations, Assessment and Grading	Evaluation and assessment methods used for each course are defined according to Article 22 of the Undergraduate Education and Examination Regulation (link: http://mevzuat.basbakanlik.gov.tr/Metin.Aspx?MevzuatKod=8.5.15287&MevzuatIliski=0&sourceXmlSearch=). Except the project and laboratory courses, which do not necessarily require an examination, all courses require at least a midterm and a final exam. Final exams are applied in a specific period of time indicated in the Academic Calendar. Final exam period and classrooms are determined by the Rectorate.
Teaching Style	The style of education is Full-Time and Day-Time. Most of the courses are given in classrooms. Only the TÜR 101, 102 Turkish and AİT 201,202 Principles of Atatürk and History of Revolution courses are given by distance educaton methods.
Graduation Requirements	Graduation requirements are defined according to Article 45 of the Undergraduate Education and Examination Regulation (link: http://mevzuat.basbakanlik.gov.tr/Metin.Aspx?MevzuatKod=8.5.15287&MevzuatIliski=0&sourceXmlSearch=). For graduation the student should a) successfully complete the 287 ECTS credits including the three Cooperative Education semesters within the maximum allowable time period b) obtain a GPA of 2.00/4.00.
Occupational Profiles of Graduated-Employment Opportunities	The sectors targeted by the program are financial services, retail services, logistic and transportation, health-care services, intellectual services (consulting, R&D, ICT, education), and public services (governmental and non-governmental organizations). Graduates of the program are employed in these sectors.
Transition to a Upper Degree	Students graduating from the program can apply for graduate degree programs.

				PRC	GRA	MQ	UALI	FICA	TION:	S		_	_
-	am : Industrial Eng ed NQF-HETR Core	Field: Engineering (Academ	ic) - Bachelor Degree	1	2	3	4	5	6	7	8	9	10
	INFORMATION	Theoretical - Factual	Has the infrastructure in mathematics, science and engineering related to their branches.	✓									~
			Uses mathematics, science and their theoretical and practical knowledge in their fields for engineering solutions.	~									
			Identifies, defines, formulates and solves engineering problems, selects and applies appropriate analytical and modal techniques for this purpose.					~					~
	SKILLS	Cognitive - Applied	Analyzes a system, system component or process and design it under realistic constraints to meet the required requirements; he/she implements modern design methods in this direction.			~							
			Selects and uses the modern techniques and tools necessary for engineering applications. Designs experiments, conduct experiments, analyze and										~
			interpret data collection results.		~								
		Ability to work	Works effectively on individual and multidisciplinary teams.				~						
		independently and to take responsibility	Gains access to information and research resources for this purpose, using databases and other sources of information.									~	
			Gains access to information and research resources for this purpose, using databases and other sources of information.									~	
		Is aware of the necessity of lifelong learning; monitors developments in science and technology, and constantly innovates itself.									~		
ATIONS			Uses mathematics, science and their theoretical and applied knowledge in their fields for engineering solutions.	~									~
CORE AREA QUALIFICATIONS		Learning Competence	Identifies, defines, formulates and solves engineering problems, selects and applies appropriate analytical and modal techniques for this purpose.					~					
CORE ARE			Analyzes a system, system component or process and design it under realistic constraints to meet the required requirements; he/she implements modern design methods in this direction.			~							
			Selects and uses the modern techniques and tools necessary for engineering applications.					~					~
	COMPETENCIES		Works effectively on individual and multidisciplinary teams.				~						
			Uses computer and communication technology at least in the European Computer Use License Advanced level required by his / her field.										~
			Communicates verbally and in writing, using at least one foreign language at least at European Language Portfolio B1 General Level.							~			
		Communication and Communicates using technical drawing. Social Competence Gains access to information and research resources for this purpose, using databases and other sources of information.	Communicates using technical drawing.							✓			
			Gains access to information and research resources for this purpose, using databases and other sources of information.									~	
			Is aware of the universal and social effects of engineering solutions and practices; ,s aware of the issues of entrepreneurship and innovation, and has knowledge of contemporary problems.								~		
			Has a professional and ethical responsibility. Has awareness on project management, workplace practices, employee health, environmental and occupational safety; have						√		✓		
		Field Specific Competence	an awareness of the legal consequences of their engineering applications. Demonstrates awareness of the universal and social implications								×		
		Field Specific Competence	of engineering solutions and practices; is aware of the issues of entrepreneurship and innovation and has knowledge of the problems of the times.								~		

Program Qualifications

1	An ability to apply knowledge of mathematics, science, and engineering
2	An ability to design and conduct experiments, as well as to analyze and interpret data
3	An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
4	An ability to function on multidisciplinary teams
5	An ability to identify, formulate, and solve engineering problems
6	An understanding of professional and ethical responsibility
7	An ability to communicate effectively
8	The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
9	A recognition of the need for, and an ability to engage in life-long learning
10	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

All Course	All Courses in the Program Program Qualifications										
Code	Course Name	1	2	3	4	5	6	7	8	9	10
MAT 101	Mathematics I	5			2	5	3		3	3	3
MAT 102	Mathematics II	5			3	3	3		3		3
MAT 203	Intro. to Linear Algebra and Diff. Eq.	5				4					3
FİZ 101	Physics I	5			3	3					3
FİZ 101L	Physics I Laboratory	5	3		4	3			3		3
FİZ 102	Physics II	5			2	3					3
FİZ 102L	Physics II Laboratory	5	5		4	3		3	3		3
KİM 101	General Chemistry	5			3	3					3
KİM 101L	General Chemistry Laboratory	5	5		4	3	3	3			3
AİT 201	History of Turkish Revolution I						3				
AİT 202	History of Turkish Revolution II						3				
TÜR 101	Turkish I				3		3	5		5	
TÜR 102	Turkish II				3			5		3	
İNG 001	English I							5		5	
İNG 002	English II							5		3	
İNG 003	English Writing Skills						3	5		5	
İNG 004	English Presentation Skills							5		3	
IYD 1	Second Foreign Language 1							5		3	
IYD 2	Second Foreign Language 2							5		3	
IYD 3	Second Foreign Language 3							5		3	
IYD 4	Second Foreign Language 4							5		3	
OEG 101	Introduction to Cooperative Education				3		3	3	3	5	3
USD 421	University Elective I	3		3	5	3	5	5	5	5	5
USD 422	University Elective II				3		3	5	3	5	
BİL 141	Computer Programming I (Java)	3		5	3	3					5
BİL 106	Database Management	3		5		3					5
MAK 101	Computer Aided Technical Drawing I		3	3				3			3
MAK 209	Materials Sci. & Manuf. Processes	5	3			3			3		3
MAK 209L	Materials Sci. & Manuf. Processes Lab	5	5			3		3	3		3
MFSD 421	Faculty Elective	5	3	5	5	5	3	3	5	3	5
İKT 103	Introduction to Economics	3		3	3		3		3	3	
İŞL 212	Management Science	5		3	5	3	3	3	5	3	3
UGİ 315	Entrepreneurship and Leadership			3	5		5	5		3	
İŞL 353	Accounting and Cost Accounting	5	3	3	3	3	3	1	5	3	3
END 320	Engineering Economics	5	3	3		4			3		4
END 101	Introductory Seminars to Ind. Eng.	2	2	2	3	4			3	3	4
END 202	Work Analysis and Design	3	5	5	5	4	3	4	3	4	4
END 213	Probability and Statistics I	5	2			5	2			3	2
END 214	Probability and Statistics II	5	5			4	2			3	4
END 294	Operations Research I	5		4		5					5
END 306	Systems Simulation	4	5	5	4	5	3	4	2	2	5
END 307	Production Systems Planning	5	3	4	<u> </u>	5	<u> </u>	<u> </u>			5
END 308	Facilities Planning and Design	5		5		5	3	4	4		5
END 321	Stochastic Models	5			<u> </u>	4	<u> </u>	<u> </u>			4
END 395	Operations Research II	5	3	5	2	5	<u> </u>	4	3		4
END 396	Service Systems Design and Planning	5	2	5	4	5	3	<u> </u>	5	5	5
END 409	Production Information Systems	4	2	5	4	3	3	2	3	3	5

END 471	Quality Planning and Control	5	4	2		4			1		4
END 497	Senior Design Project	5	5	5	5	5	5	5	3	5	5
END 426	Logistics	5	3	3	3	5	3	4	3	4	4
END 424	Quantitative Decision Making Methods	4	3	5	2	4			3		5
END 429	Energy Systems Planning	3	4	4		5			4		5
END 433	System Reliability and Maintenance Planning	5	2	3		4					4