



## Bachelor's Degree in Industrial Engineering

Faculty Of Engineering

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### Course Structure Diagram

First Semester		Theo.	Prac	Credits	ECTS
<u>PHYS 103</u>	GENERAL PHYSICS I	3	2	4	7
<u>MATH 123</u>	LINEAR ALGEBRA	3	0	3	5
<u>MATH 113</u>	CALCULUS I	4	2	5	7
<u>ENGR 104</u>	ENGINEERING GRAPHICS	2	2	3	5
ENG 211	ACADEMIC ENGLISH I	3	0	3	5
<u>APHR 101</u>	ATATURK'S PRINCIPLES AND HISTORY OF TURKISH REVOLUTION I	2	0	2	2
		<b>17</b>	<b>6</b>	<b>20</b>	<b>31</b>

Second Semester		Theo.	Prac	Credits	ECTS
<u>PHYS 104</u>	GENERAL PHYSICS II	3	2	4	7
<u>MATH 114</u>	CALCULUS II	4	0	4	7
IE 102	INTRODUCTION TO INDUSTRIAL ENGINEERING	2	0	2	3
<u>ENGR 100</u>	INTRODUCTION TO ENGINEERING DESIGN	2	0	2	3
<u>CHEM 108</u>	GENERAL CHEMISTRY	3	2	4	7
<u>APHR 102</u>	ATATURK'S PRINCIPLES AND HISTORY OF TURKISH REVOLUTION II	2	0	2	2
		<b>16</b>	<b>4</b>	<b>18</b>	<b>29</b>

Third Semester		Theo.	Prac	Credits	ECTS
<u>TURK 101</u>	TURKISH LANGUAGE I	2	0	2	2
<u>MATH 281</u>	PROBABILITY & STATISTICS	3	0	3	5
<u>MATH 271</u>	DIFFERENTIAL EQUATIONS	3	0	3	5
<u>IE 217</u>	OPERATIONS RESEARCH I	3	1	3	7
<u>ECON 101</u>	INTRODUCTION TO MICROECONOMICS	3	0	3	5
<u>CENG 103</u>	FUNDAMENTALS OF COMPUTER PROGRAMMING I	3	2	4	6
		<b>17</b>	<b>3</b>	<b>18</b>	<b>30</b>

Fourth Semester		Theo.	Prac	Credits	ECTS
<u>TURK 102</u>	TURKISH LANGUAGE II	2	0	2	2
<u>IE 236</u>	WORK METHODS AND MEASUREMENT	3	0	3	5
<u>IE 230</u>	APPLIED STATISTICS FOR INDUSTRIAL ENGINEERS	3	0	3	5
<u>IE 228</u>	MATERIALS AND PROCESSES IN MANUFACTURING	3	0	3	5
<u>IE 218</u>	OPERATIONS RESEARCH II	3	1	3	7
IE 204	ENGINEERING ANALYSIS AND PROGRAMMING	2	2	3	6
		<b>16</b>	<b>3</b>	<b>17</b>	<b>30</b>

Fifth Semester		Theo.	Prac	Credits	ECTS
<u>IE 361</u>	FACILITIES LOCATION AND DESIGN	3	0	3	5
<u>IE 347</u>	PROJECT MANAGEMENT	3	0	3	5
<u>IE 341</u>	DATABASE MANAGEMENT IN INDUSTRIAL ENGINEERING	2	2	3	6
<u>IE 325</u>	COST ANALYSIS AND CONTROL	3	0	3	5
<u>IE 321</u>	PRODUCTION PLANNING AND CONTROL I	3	0	3	6
<u>IE 301</u>	PRACTICAL TRAINING I	0	0	0	2
		<b>14</b>	<b>2</b>	<b>15</b>	<b>29</b>

Sixth Semester		Theo.	Prac	Credits	ECTS
<u>IE 346</u>	SYSTEM ANALYSIS AND SIMULATION	2	2	3	6
<u>IE 344</u>	QUALITY CONTROL	3	0	3	5
<u>IE 328</u>	HUMAN FACTORS ENGINEERING	3	0	3	5
<u>IE 322</u>	PRODUCTION PLANNING AND CONTROL II	3	0	3	5
<u>IE 318</u>	MULTI CRITERIA DECISION MAKING	3	0	3	5
<u>ECON 388</u>	ENGINEERING ECONOMICS	3	0	3	5
		<b>17</b>	<b>2</b>	<b>18</b>	<b>31</b>

Seventh Semester		Theo.	Prac	Credits	ECTS
<u>IE 487</u>	RESEARCH METHODS	2	0	2	3
<u>IE 401</u>	PRACTICAL TRAINING II	0	0	0	2
XXX xxx	NON-TECHNICAL ELECTIVE I	3	0	3	5
IE 4xx	TECHNICAL ELECTIVE I	3	0	3	5
IE 4xx	TECHNICAL ELECTIVE II	3	0	3	5
XXX xxx	TECHNICAL ELECTIVE III	3	0	3	5
XXX xxx	TECHNICAL ELECTIVE IV	3	0	3	5

		17	0	17	30
Eight Semester		Theo.	Prac	Credits	ECTS
<u>IE 490</u>	DESIGN PROJECT	0	6	3	10
XXX xxx	NON-TECHNICAL ELECTIVE II	3	0	3	5
IE 4xx	TECHNICAL ELECTIVE IV	3	0	3	5
IE 4xx	TECHNICAL ELECTIVE VI	3	0	3	5
XXX xxx	TECHNICAL ELECTIVE VII	3	0	3	5
		<b>12</b>	<b>6</b>	<b>15</b>	<b>30</b>

#### Elective Courses

Technical elective courses must be selected among all the 3-credit courses from the Technical Electives list given below; and at least 4 of these courses must be a departmental course (i.e. with a code IE XXX).

Non-Technical Elective Courses can be selected among all the 3-credit courses that are not in the Must Courses List or the Technical Elective Courses list, or with an obviously similar content.

**Total Credits Required in Degree Program: 138 / Total ECTS Credits: 240**

**INFORMATION: All of the following elective courses aren't opened each semester. Please take information about potential open courses from the head of department.**

#### Elective Courses

TECHNICAL ELECTIVES (3+0) 3		Theo.	Prac	Credits	ECTS
ENGR 442	OCCUPATIONAL HEALTH AND SAFETY	3	0	3	5
<u>ENGR 444</u>	ENGINEERING ETHICS	3	0	3	5
ENGR 446	INNOVATION AND ENTREPRENEURSHIP	3	0	3	5
IE 303	SEMINARS IN INDUSTRIAL ENGINEERING I	0	0	0	5
IE 403	SEMINARS IN INDUSTRIAL ENGINEERING II	0	0	0	5
<u>IE 407</u>	QUALITY ENGINEERING	3	0	3	5
<u>IE 411</u>	TOTAL PRODUCTIVE MAINTENANCE	3	0	3	5
<u>IE 415</u>	SMALL AND MEDIUM-SIZED ENTERPRISES (SMES) MANAGEMENT	3	0	3	5
<u>IE 419</u>	ARTIFICIAL INTELLIGENCE	3	0	3	5
<u>IE 420</u>	USABILITY ENGINEERING	3	0	3	5
<u>IE 421</u>	ENGINEERING FINANCIAL ANALYSIS	3	0	3	5
<u>IE 422</u>	DATA MINING	3	0	3	5
<u>IE 423</u>	LEAN PRODUCTION MANAGEMENT	3	0	3	5
<u>IE 430</u>	TOTAL QUALITY MANAGEMENT	3	0	3	5
<u>IE 441</u>	OPERATIONS SCHEDULING	3	0	3	5
<u>IE 445</u>	COMPUTER INTEGRATED MANUFACTURING SYSTEMS	3	0	3	5
<u>IE 455</u>	APPLIED OPTIMIZATION	3	0	3	5
<u>IE 466</u>	INFORMATION SYSTEMS AND DESIGN	3	0	3	5
<u>IE 470</u>	SUPPLY CHAIN AND LOGISTICS MANAGEMENT	3	0	3	5
<u>IE 473</u>	ENTERPRISE RESOURCE PLANNING	3	0	3	5
<u>IE 476</u>	MODELING AND ANALYSIS OF MANUFACTURING SYSTEMS	3	0	3	5
<u>IE 481</u>	SPECIAL TOPICS IN INDUST. ENG. I	3	0	3	5
<u>IE 482</u>	SPECIAL TOPICS IN INDUST. ENG. II	3	0	3	5
<u>CENG 451</u>	INTRODUCTION TO MANAGEMENT INFORMATION SYSTEMS	3	0	3	5
<u>CENG 452</u>	INTRODUCTION TO DATA MINING	3	0	3	5
<u>CENG 453</u>	INTRODUCTION TO E-BUSINESS/E-COMMERCE	3	0	3	5
<u>CENG 493</u>	INTRODUCTION TO EVOLUTIONARY COMPUTING	3	0	3	5
<u>ENVE 325</u>	OCCUPATIONAL HEALTH AND SAFETY	3	0	3	5
<u>ENVE 350</u>	SUSTIANBLE ENERGY MANAGEMENT	3	0	3	5
<u>ENVE 420</u>	ENGINEERING ETHICS	3	0	3	5
<u>LAW 350</u>	BUSINESS LAW	3	0	3	5
<u>ECON 231</u>	INTERMEDIATE MICROECONOMICS	3	0	3	9
<u>ECON 232</u>	INTERMEDIATE MACROECONOMICS	3	0	3	9
<u>ECON 321</u>	PUBLIC FINANCE I	3	0	3	4
<u>ECON 322</u>	PUBLIC FINANCE II	3	0	3	5
ECON 348	ENERGY ECONOMICS	3	0	3	5
<u>EKON 102</u>	INTRODUCTION TO MACROECONOMICS	3	0	3	5
<u>MAN 209</u>	PRINCIPLES OF MARKETING	3	0	3	5
<u>MAN 303</u>	MANAGERIAL FINANCE I	3	0	3	6
<u>MAN 304</u>	MANAGERIAL FINANCE II	3	0	3	7
<u>MAN 310</u>	INTERNATIONAL BUSINESS	3	0	3	5
<u>MAN 314</u>	HUMAN RESOURCES MANAGEMENT	3	0	3	5
<u>MAN 361</u>	ORGANISATIONAL BEHAVIOR	3	0	3	6
<u>MAN 367</u>	BUSINESS ETHICS	3	0	3	6
<u>MAN 401</u>	STRATEGIC MANAGEMENT	3	0	3	5
<u>MAN 425</u>	KNOWLEDGE MANAGEMENT	3	0	3	6
<u>MAN 432</u>	BUSINESS POLICY	3	0	3	6
<u>MAN 434</u>	ENTREPRENEURSHIP AND SMALL BUSINESS MANAGEMENT	2	2	3	5
<u>MAN 446</u>	MARKETING RESEARCH	3	0	3	6
<u>MAN 475</u>	SYSTEMS APPROACHES TO MANAGEMENT	3	0	3	6
<u>MATH 286</u>	MATLAB AND MAPLE	3	0	3	5
<u>MATH 375</u>	NUMERICAL ANALYSIS I	3	0	3	5
<u>MATH 488</u>	GAME THEORY	3	0	3	5

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