

1. Semester Courses

0500101	Physics I	4-2-5-6	Compulsory	1. Semester
This course covers Newton's law of universal gravitation, work and energy, conservation of energy, motion of momentum and systems, static balance of rigid bodies, rotation and angular motion, motion in two dimensions, vectors, motion in two dimensions, motion laws of Newton and their applications momentum.				

0500102	Chemistry	3-2-4-6	Compulsory	1. Semester
This course covers chemical equilibrium, chemical bonds and electrochemistry, chemical laws and stoichiometry, chemical thermodynamics, cement chemistry.				

0500103	Mathematics I	4-0-4-6	Compulsory	1. Semester
This course covers analytical investigation of a line, functions, limit concept, derivative and application, linear transformations, matrices and applications.				

0500104	Basic Information Technologies	2-1-2.5-3	Compulsory	1. Semester
This course covers computers, data migration codes. analog-digital converters, hardware, software, word processing program, calculation table program, presentation preparation program and introduction to computer programming.				

0509101	Technical Drawing -I	2-1-2.5-3	Compulsory	1. Semester
This course covers the use of rapido pencil in drawings, the use of standard pencil in drawings, the use of standard pencil in drawings, the use of standard papers and applications, writing types and applications, line types and exercises, metrics and rules, geometric drawings, different curve drawings, standard views, drawing of model parts, three views of dimensionless parts, perspective drawings and types, methods and rules of drawing isometric and dimetric perspectives with bracing, different perspective drawing of perspective parts, three parts of given parts perspective drawing, cross-				

0509102	Introduction to Industrial Engineering	2-0-2-2	Compulsory	1. Semester
This course covers the concept of industrial engineering, to pass on its history, to demonstrate the system that must be followed in industrial engineering studies, to adopt the basic principles, to introduce frequently undertaken tasks in businesses, and to examine the future of industrial engineering.				
0500105	Ataturk's Principles and History of Turkish Revolution I	2-0-2-1	Compulsory	1. Semester
This course covers revolutions concept, the Turkish revolution to the cause factors and causes of the collapse of the Ottoman Empire, recovery efforts of the Ottoman Empire, the idea flows, the first world war, Mustafa Kemal Anatolian transition and congresses, Turkey opening of the Grand National Assembly, the liberation war, foreign policy , mudanya fireplace, and lozan conference.				
0500106	Turkish Language I	2-0-2-1	Compulsory	1. Semester
This course covers language, culture; relationship between language and culture, differences between civilization and culture, historical development of Turkish language, place among world languages, voice characteristics, sentence information; mouth, accent, dialect; spelling and punctuation practices, written and oral composition types and studies on these types.				
0500107	Foreign Language I (English)	2-0-2-1	Compulsory	1. Semester
This course covers basic subjects necessary for understanding the common expressions and simple sentences in daily life that express concrete needs, expressing themselves with them, introducing themselves and others, asking questions about personal information of other people and responding to such questions.				
0509110	Fine Arts	2-0-2-1	Social Elective	1. Semester
This course covers art in general meaning, art in specific meaning, natural object - art object, source of art, object analysis in art and art objects, aesthetics as a science field.				

0509111	Photography	2-0-2-1	Social Elective	1. Semester
This course covers the core subjects related to photography				

0509112	Physical Education	2-0-2-1	Social Elective	1. Semester
This course covers physical education and sports concepts, to promote the publication, human and physical education-sports relationships between physical, physiological and psycho-social working fields of physical education relations with science, the world of physical education and development and leading people in Turkey, bodies in different countries the state of education, the relationship between performance and physical education.				

0509113	Natural Disasters and Disaster Management	2-0-2-1	Social Elective	1. Semester
This course covers hazards (threats), vulnerability and disaster, the creation of a secure life, culture, disaster management system in Turkey, disaster and emergency risk assessment and to attempt to reduce, fundamentals of business continuity, disaster response and post-disaster period, humanitarian principles and values, disaster risk international cooperation in management.				

0509114	First and Emergency Aid	2-0-2-1	Social Elective	1. Semester
This course covers general first aid information: Blood, injuries, burns, freezing and hot strikes, fractures, dislocations and sprains, unconsciousness, poisonings, animal bites, eye, ear, and burden of foreign bodies.				

0509115	Entrepreneurship and Business Establishment	2-0-2-1	Social Elective	1. Semester
This course covers the conceptual framework of entrepreneurship, its approaches, functions, process, culture of entrepreneurship, local and international context of entrepreneurship and entrepreneurial ethics.				

0509116	Chess	2-0-2-1	Social Elective	1. Semester
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This course covers basic rules of chess, basic movements in chess, chess tactics.

2. Semester Courses

0500201	Physics II	4-2-5-6	Compulsory	2. Semester
This course covers potential difference, current and resistance, electric circuit, ohm law, current, potential difference and resistance measures, hydrostatic, temperature and expansion, work and heat, coulomb law, electric loads, conductors and insulators, electric field, bridge, joule law.				
0500202	Mathematics II	4-0-4-6	Compulsory	2. Semester
This course covers definite and indefinite integrals, applications about integrals (volume and volume of rotational bodies), generalized integrals, series and series, conics.				
0509201	Linear Algebra	3-0-3-4	Compulsory	2. Semester
Course Content This course covers Linear Equation Systems are explained; Matrix Operations, Determinants and Applications.				
0509202	Engineering Computer Applications	2-1-2.5-4	Compulsory	2. Semester
This course covers method creation and module addition, writing the pricing in a method, maximum note is an example that makes an account, monitoring of data exchange with different arguments, factorial calculation, frequency calculation and bar chart preparation in different data series, create random data, sort them and search for data, assignment of different lecture notes and their frequency.				

0509203	Introduction into Economy	3-0-3-3	Compulsory	2. Semester
This course covers teaching of basic economic concepts, formation of market equilibrium and types of competition.				

0509204	Computer Aided Drawing	2-1-2.5-3	Compulsory	2. Semester
This course covers basic CAD Concepts and introduction to CAD program two dimensional drawing commands isometric drawings, three dimensional drawing techniques.				

0500205	Ataturk's Principles and History of Turkish Revolution II	2-0-2-1	Compulsory	2. Semester
This course covers the proclamation of the republic and the political, social, cultural revolutions, economic strides, Lausanne peace issue could not reach the solution of the treaty and to finalize them, movements against the new order, multi-party life experiments and results, Atatürk era of Turkish foreign policy, inönü era and the second world war years, Turkey multi-party passion of life, democratic party period and after Ataturkism and Atatürk's principles.				

0500206	Turkish Language II	2-0-2-1	Compulsory	2. Semester
This course covers language, culture; language-culture relation, differences between civilization and culture, historical development of Turkish language, place among world languages, voice features, sentence information; mouth, accent, dialect; spelling and punctuation, types of written and oral compositions and studies on these types.				

0500207	Foreign Language II (English)	2-0-2-1	Compulsory	2. Semester
This course covers knowledge that students should be able to communicate clearly and informed topics when they need it, understand themselves, their education, their immediate surroundings, and their immediate surroundings, in order to be able to understand current sentences and frequently used expressions (themselves, their families, the subjects based on the foreign language course and the continuation.				

0509210	Communication Skills	2-0-2-1	Social Elective	2. Semester
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This course covers important topics such as travel communication, social communication, negotiation skills and business correspondence.

0509211	Body Language	2-0-2-1	Social Elective	2. Semester
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This course covers the use of the body as a whole and the use of the ancestors, the gestures and mimics of some important emotions, the behaviors that obstruct and facilitate people, the status symbols.

0509212	Effective Communication in Engineering	2-0-2-1	Social Elective	2. Semester
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This course covers effective communication rules, CV preparation, letter of thanks, scientific papers and report preparation rules.

0509213	Presentation and Presentation Techniques	2-0-2-1	Social Elective	2. Semester
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This course covers presentation, presentation principles, visual design principles.

0509214	Public Relations	2-0-2-1	Social Elective	2. Semester
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This course covers in addition to the definition, birth, and criticism of the public relations profession, other concepts close to this concept will be examined, differences will be revealed, and basic information will be given in order to practice the public relations profession. The foundation, birth and historical development of the science of public relations The structure of public relations departments, the characteristics that should be found in the professional staff, the printed and visual tools used in public relations.

0509215	Speaking and Appeal Skills	2-0-2-1	Social Elective	2. Semester
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This course covers what is a beautiful and effective speech? Development and Evaluation of Speaking Skills, Points to be Considered in Turkish Speech. Speech Types, Speech, Debate (Open Session, Symposium, Panel, Forum, Debate, Colloquium, Conference), Effective Listening, Note Taking Methods and Techniques, Sese-based language mistake.

3. Semester Courses

0509301	Advanced Analysis	4-0-4-6	Compulsory	3. Semester
This course covers the concept of vector in R^3 , concept of vector valued function and its ability to perform algebraic operations related to these functions, limit, continuity, partial derivative, derivation of differential concepts in function of multivariable functions, sequence and series of functions, Taylor series expansions in bivariate functions, directional derivative and gradient concept, two and triple integrals, polar, spherical and cylindrical coordinates, curvilinear and surface integrals, basic theorems and their application areas and emphasizing their relations with daily life.				
0509302	Engineering Mechanics	2-1-2.5-5	Compulsory	3. Semester
This course covers the general principles and force vectors, balance of particles and solids, structure analysis, center of gravity and center of gravity, stress and strain, axial loading, torsion, pure bending, beam-column analysis and design for bending, tension and strain transformation, beam-column bending, columns energy methods.				
0500301	Statistics I	3-0-3-4	Compulsory	3. Semester
The Significance of Statistical Engineering: Principles of Probability Theory. Random variable and random event. The concept of probability. Distributions of random variables, parameters of distributions. Statistical moments. Mean, variance, frequency analysis. Estimation of parameters. Important probability distributions and functions. Sampling distributions. Control of statistical hypothesis. Simple linear regression analysis. Correlation coefficient. Multivariate linear and nonlinear regression analysis.				
0509303	Fundamentals of Electrical Engineering	2-1-2.5-3	Compulsory	3. Semester
Basic concepts of electrical engineering, basic circuit theorems and circuit analysis methods, power and energy concepts, power and energy measurement methods, basic concepts of digital electronics.				

0509304	Material Science	2-1-2.5-3	Compulsory	3. Semester
Classification of engineering materials, atomic structure, atomic arrangement, crystal structure, structural defects and atomic movements. Mechanical properties. Pulling and behavior under pressure. Concepts of force, stress, strain and elongation. Types of fracture, ductile and brittle fracture. Visco-elasticity, rheological models and fatigue. Creep of materials, stress relaxation, brittleness, ductility, hardness, toughness. Physical properties of materials.				

0509305	Occupational Health and Safety I	2-0-2-3	Compulsory	3. Semester
In the course of occupational health, topics related to the content of the course will be given and the issues regarding the industry should have an opinion on occupational health.				

0509306	Machine Tools	2-0-2-3	Compulsory	3. Semester
The main principles of machining rules are systematic classification of machine tools, machine tool components, cutting tool work, effects of machining, forces, calculation of these forces and their realization by means of these operations.				

0509310	Engineering Ethics	2-0-2-3	Social Elective	3. Semester
The course introduces ethical concepts, ethics, professionalism and ethics, analysis of ethical problems, ethical problems, risk, security and accident, rights and responsibilities in engineering, research and experiment.				

0509311	Personel Development and Effective Living	2-0-2-3	Social Elective	3. Semester
In the course of personal development and effective lecture, the topics related to the contents of the course should be given by giving information about personal development and having an opinion about living effectively.				

0509312	Environmental Pollution and Control	2-0-2-3	Social Elective	3. Semester
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In the course of environmental pollution and control, appropriate topics will be given to the contents of the course, and issues related to having an opinion on environmental pollution and control will be explained.

4. Semester Courses

0509401	Manufacturing Jobs and Engineering	3-0-3-5	Compulsory	4. Semester
Production methods, suitable casting method according to part shape and materials, suitable welding method according to part shape and material, suitable plastic shaping method according to part shapes and materials, production processes that must be applied from raw material to final shape				
0509402	Statistics II	3-0-3-4	Compulsory	4. Semester
Concept of probability and uncertainty, analysis of students' compiled data, real life uncertainty problems, statistically valid estimates.				
0509403	Differential Equations	2-2-3-5	Compulsory	4. Semester
Multivariable functions, limit, continuity, compound and closed functions, partial derivative, total differential and applications. Functional determinant (Jacobian), variable transformation. Maximum-minimum in two variable functions. Multiple integrals, Vector fields, gradient, divergence, rotation concepts.				
0509404	Computer Programming	2-2-3-4	Compulsory	4. Semester
In this course, basic computer terminology, computer hardware, computer software, network and internet concepts, word processing, calculation scheduling, presentation and database application software usage, basic features of computer programming languages, ANSI C and structural programming.				

0509405	Cost Analysis	3-3-0-3	Compulsory	4. Semester
Financial tables and macroeconomics. Time value of money. Interest rates. Current value analysis. Annual equality analysis. Rate of return analysis. Amortization. Money flow analysis. Benefit-cost analysis.				

0509406	Computer Controlled Machine Programming	2-1-2.5-3	Compulsory	4. Semester
The course, organized as a part of industrial engineer in the industry, is designed for computer-controlled machine tools to show how engineers and CNC operators can program computer aided machine tools.				

0509407	Occupational Health and Safety II	2-0-2-3	Compulsory	4. Semester
Learning job security application areas, recognizing different sectors in job security, learning the risks in different sectors in job security applications, learning the importance that can be taken against the risks in different sectors				

0509410	Turkish Economy	2-0-2-3	Social Elective	4. Semester
Definition and scope of Turkey's economy, 1923-1960 period of Turkish Economy: Economic development and structure of production, savings, domestic terms of trade and taxation, improvements in employment, growth in foreign trade, 1960-1994 period, the Turkish economy: economic development, production, productivity, intersectoral links, financing, employment, foreign trade, the next developments in 1995, main economic problems and solutions.				

0509411	Current Economic and Social Events	2-0-2-3	Social Elective	4. Semester
Every week in Turkey and the world experienced an economic and / or social debate to be held about the incident, the causes of events, related to the development of analysis and results will be made. In this way, information on the appropriate content of the course content will be given and the subjects related to the students should have an opinion on current economic and social events.				

0509412	Innovation Management	2-0-2-3	Social Elective	4. Semester
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Subject, innovation process, management of intellectual capital in enterprises, management of organizational knowledge, management of research and development, new product development and service innovation, open innovation and technology transfer will be transferred to the students.

0509413	Professional Foreign Language (English)	2-0-2-3	Social Elective	4. Semester
Basic grammatical rules will be revoked for the translation of profession and for the understanding of basic professional books written in foreign languages. Work will be carried out on the understanding and translation of the basic terms in the field of industrial engineering, simple texts.				

0509414	Professional Language (German)	2-0-2-3	Social Elective	4. Semester
It contains the basic subjects necessary for the students to be able to understand and express themselves in common daily expressions and simple phrases expressing their concrete needs, to introduce themselves and others, to ask questions about other people's personal information and to answer such questions.				

0509415	Professional Language (Chinese)	2-0-2-3	Social Elective	4. Semester
This course covers topics such as greeting, self introduction, family, introducing friends, use of adjectives and question words, numbers, verb conjugation in order to improve communication, reading, writing and understanding skills in the basic level.				

0509416	Professional Language (Russian)	2-0-2-3	Social Elective	4. Semester
This course covers topics such as greeting, self introduction, family, introducing friends, use of adjectives and question words, numbers, verb conjugation in order to improve communication, reading, writing and understanding skills in the basic level.				

0509417	Professional Language (Arabic)	2-0-2-3	Social Elective	4. Semester
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This course covers topics such as greeting, self introduction, family, introducing friends, use of adjectives and question words, numbers, verb conjugation in order to improve communication, reading, writing and understanding skills in the basic level.

5. Semester Courses

0509501	Operations Research I	4-0-4-6	Compulsory	5. Semester
This course covers modelling and modelling philosophy, linear programming and simplex algorithm, big M and two stage simplex methods, duality and its economic interpretation with sensitivity analysis, transportation models and their solution methods, integer programming, and the use of a computer software (ampl / gams / lindo, etc.) for them.				

0509502	Quality Control	3-1-3.5-4	Compulsory	5. Semester
This course covers definition of quality, total quality understanding, quality costs, acceptance sampling, characteristic curves in acceptance sampling, standard sampling plans, statistical process control, variability and reasons, control diagrams, organization of quality function.				

0509503	Management and Organization	3-0-3-4	Compulsory	5. Semester
This course covers definition of organization; organizational design dimensions, organizational design dimensions, organizational team work, team types and team building process, team models used in organizations, organizational design dimensions, authority structure and centralization, formalization, complexity, control and management field, specialization, professionalization, separation, organizational design approaches, total quality management and team work, team types in TQM, aim and definition of quality circles, basic planning stages in the establishment of quality circles,				

0509504	Production Planning and Control I	3-0-3-4	Compulsory	5. Semester
This course covers current concepts and approaches in the field of supply chain management, business management and organization of planning activities, demand forecasting and capacity analysis methods which are the basis of planning, inventory control policies, integrated production planning, capacity planning methods, material requirements planning, manufacturing resources planning and enterprise resource planning.				

0509505	Work Study	2-1-2.5-5	Compulsory	5. Semester
This course covers basic concepts related to work study, method study, time study, work sampling, group timing technique, synthetic timing techniques and MTM applications.				

0509506	Internship I	0-0-0-3	Compulsory	5. Semester
This course covers company to be internship will be investigated, the company will be applied for the internship work, the documents and documents required for the internship will be prepared and delivered to the related departments, the internship work will be done in a company approved by the industrial engineering, the internship will be written according to the report format and internship experiences will be presented in front of the jury evaluation of the jury will be taken.				

0509510	Business and Business Law	2-0-2-3	Technical Elective	5. Semester
This course covers commerce and companies general information about the law, concepts related to trade, brand, branding, company types and issues related to individual and collective labor law.				

0509511	Public Administration	2-0-2-3	Technical Elective	5. Semester
This course covers management related to public administration, public administration, development of public administration discipline, public administration, examination and the development of education in Turkey, public administration, politics, bureaucracy, development of the Turkish bureaucracy, structure and functioning of the Turkish public administration, central and local governments, other public agencies , public administration reform, bureaucratic organization understanding and practices; public benefit and public service approaches, civil service, public service and				

0509512	International Relations	2-0-2-3	Technical Elective	5. Semester
This course covers the state, nation, anarchy, terror etc ... basic concepts, features and historical developments in international relations; basic actors, roles, strategies, partnerships in international relations; international system historical process, models, history of international relations; From Westphalia to the present, the discipline of international relations, theoretical discussions in the discipline, problems, approaches such as idealism and realism.				

0509513	Decision Models	2-0-2-3	Technical Elective	5. Semester
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This course covers decision making, decision making, impact diagrams, decision making, information value, analytic hierarchy process, topsis, vikor, etc. criterion decision making modeling techniques, benefit theory.

0509514	Numerical Analysis	2-0-2-3	Technical Elective	5. Semester
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This course covers solutions of linear and non-linear systems, regression, interpolation, numerical integration, numerical derivative techniques.

0509520	Social Policy in the European Union	2-0-2-3	Technical Elective	5. Semester
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This course covers European social structure, current developments; Social cutbacks, social policies and economic performance of European states' understanding of social welfare; the effects of labor market institutions on social politics, trends and developments starting in the social field with the Lisbon process; subsidies and social security costs, labor market regulatory.

0509521	Economic Globalization	2-0-2-3	Technical Elective	5. Semester
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This course covers the role of technological development in the globalization process, the power of the nation state in the face of globalization, differentiations in state policies, transnational corporations as the main actors of the globalization process, the geography of global production networks, states and nations bargaining relationship between transnational corporations, textiles and apparel, automobiles, semiconductors, financial services and logistics and global changes in the retail sector that issues of structural transformation of Turkey's economy in the global economy.

0509522	Supply Chain Management	2-0-2-3	Technical Elective	5. Semester
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This course covers basic components of supply chain and basic concepts of supply chain management, mathematical modeling of problems such as supply chain management, plant location selection, production planning, shortest path, network design, vehicle locomotion, and analysis of these models with computer programs.

6. Semester Courses

0509601	Operations Research II	4-0-4-6	Compulsory	6. Semester
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This course covers modeling and solution of integer problems (shortest path, minimum cost, maximum flow, etc.), random processes and their properties, markov chains, poisson processes and queuing theory.

0509602	Production Planning and Control II	3-0-3-5	Compulsory	6. Semester
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This course covers basic methods that can be used for production, operations, scheduling of machines according to desired purposes, scheduling methods of projects, crunch path analysis, project planning and project time / cost abstraction techniques, assembly line design and balancing methods, risk and reliability analysis and maintenance policies.

0509603	System Simulation	2-1-2.5-5	Compulsory	6. Semester
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This course covers basic simulation concept and model creation, model analysis and interpretation of results, random number generation for simulation models.

0509604	Engineering Economics	3-0-3-4	Compulsory	6. Semester
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This course covers deals with investment analysis for engineering projects, monetary / economic analysis and comparison of alternative projects.

0509605	Human Engineering	2-1-2.5-4	Compulsory	6. Semester
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This course covers ergonomics, work and equipment, ergonomics and work study, shift work, monotony, workplace stress, aging issues in the workplace, basic concepts in the workplace, human machine interface in business systems, indicators, control systems, ergonomic workplace layout, workplace anthropometry.

0509610	Introduction to Heat Energy Systems	3-0-3-3	Technical Elective	6. Semester
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This course covers application of heat transfer processes in engineering, conservation laws, basic mechanisms of heat transfer, introduction to heat transfer, general equation of heat transfer, continuous regime heat transfer, heat transfer in composite environment, transient regime heat transfer, total mass approach, plane plate, cylinder and sphere (Nu, Re, Pr, Gr, St), transport equilibrium equations, forced convection in surface flows, forced convection in channel flows, natural convection, radiation heat transfer, energy economics.

0509611	Machine Elements Information	3-0-3-3	Technical Elective	6. Semester
This course covers Stress Analysis, Static Stresses, Dynamic Stresses, Welding Ties, Bolt Ties, Shaft-Belt Ties, Springs, Axles, Miller, Shaft and Roller Bearings, Coupling and Coupling Concepts, Belt-Pulley Mechanisms, Gear Mechanisms, Gear Mechanisms.				

0509612	Geographic Information Systems	3-0-3-3	Technical Elective	6. Semester
This course covers analysis function, organization of geographic data for analysis, data layers, segmentation of enclosed areas, classification of ABS, data analysis and maintenance, format transformations, bordering, processing functions, line coordinate refinement and implementation.				

0509613	Production Scheduling	3-0-3-3	Technical Elective	6. Semester
This course covers the basics of scheduling problem, inputs and outputs are single machine scheduling problem, sequencing rules, basic scheduling rules, neighborhood scans, tabu search, using branch-bound technique with scheduling purpose, interdependent jobs, dynamic systems, parallel machines, flow workshop, dynamic workshop topics.				

0509614	Forecasting Methods	3-0-3-3	Technical Elective	6. Semester
This course covers forecasting methods for estimating the values of parameters (demand, sales, endorsement, etc.) that may be required for forecasting by underground students in production / capacity planning for businesses and computer software that will allow them to evaluate and use the accuracy of these estimates.				

0509615	Inventory Control	3-0-3-3	Technical Elective	6. Semester
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This course covers features of inventory control, frequently used policies in inventory control, determination of their most suitable values, models used in inventory control, simulation applications and SAP etc. software which is frequently used in the industry.

0509620	Customer Relations Management	3-0-3-3	Technical Elective	6. Semester
This course is designed to provide students with an understanding of customer relationship management and related concepts, customer behaviors and procurement processes, customer relationship planning, customer relationship management planning and implementation, customer related databases development, management and use, customer portfolio management, customer life cycle management: customer acquisition and development, information technology for customer relationship management, customer relationship management components and stakeholders are examined.				

0509621	Business Information	3-0-3-3	Technical Elective	6. Semester
The basic concepts of the business, the relationship of business science to other branches of science, objectives pursued in business, basic principles of business, analysis of enterprises as a system, functional analysis of enterprises, enterprise establishment studies, establishment site selection, types and methods of growth in enterprises, capacity issues in enterprises are examined.				

0509622	Lean Manufacturing	3-0-3-3	Technical Elective	6. Semester
This course covers the concepts of lean manufacturing; comparison of production strategies and lean production with other production systems; lean thinking, fundamental of lean thinking, principles and development; value, value flow, and maps; smoothing of production and continuous flow; successful systems: kanban system, poka - yoke, job standardization, 5S rule, U type settlement plan and regulation, analysis and reduction of preparation times SMED, TPM, kaizen are examined.				

0509623	Risk and Reliability Analysis	3-0-3-3	Technical Elective	6. Semester
This course covers the basic risk and reliability concepts, risk measurement, evaluation, management techniques / models, decision trees, error tree analysis ... etc. methods of reliability, calculation of reliability, different life probability distributions and system reliability.				

0509624	Logistics Engineering	3-0-3-3	Technical Elective	6. Semester
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This course covers the characteristics of the basic logistics functions such as derste, logistics, logistics management and transportation logistics, warehousing, stock control, packaging, after-sales services, material handling and engineering applications.

7. Semester Courses

0509701	Database Management Systems	3-1-3.5-5	Compulsory	7. Semester
Defining database management system, defining database basic theoretical conditions, using entity-relationship approaches and comparing structured query language with relational model are examined in this course.				

0509702	Facility Planning	2-1-2.5-4	Compulsory	7. Semester
Applicable site selection, field and machine requirements of the facilities, application of the layouts of the departments within the facility by various methods, basic information of material transportation and storage will be applied within the scope of a facility planning project course.				

0509703	Industrial Engineering Seminar	2-1-2.5-4	Compulsory	7. Semester
This course covers the literature search for probing is done by examining the problems of real industrial engineering. Solution algorithms are prepared.				

0509704	Internship II	0-0-0-3	Compulsory	7. Semester
It includes topics such as general information about an enterprise, activities, products or services provided, financial information, determination of process types in a firm, evaluation of human factors, selection of establishment sites and business location strategies and examination of technological infrastructure of firms in terms of information systems .				

0509710	Service Systems	3-0-3-4	Technical Elective	7. Semester
Basic concepts of service systems, design process of service systems, introduction to process management, definition of processes, determination of process inputs and outputs, preparation of process flow charts, measurement of process performance will be examined.				

0509711	Production Systems	3-0-3-4	Technical Elective	7. Semester
This course covers the production systems and classification for students, agile production; lean production, flexible production, etc. Modern production systems, features and trends in artificial intelligence in production, industry 4.0, basic factory dynamics are taught.				

0509720	System Dynamics and Control	3-0-3-4	Technical Elective	7. Semester
This course covers the Introduction to the course, introduction to concepts of open-loop, closed-loop and feedback control systems, application examples, laplace transforms, inverse laplace transforms, introduction to system dynamics and mathematical modeling, persistent state behavior, defects, stability definition of linear systems, application of Routh-Hurwitz stability criterion and feedback control systems, basic control effects of linear systems and PID controller and PID controller settings and MATLAB / Simulink issues are examined.				

0509721	CNC Programming	3-0-3-4	Technical Elective	7. Semester
This course covers, CNC programming, basic axes in CNC turning, CNC coordinate system, work coordinate system, CNC program structure, CNC program structure, description of the entrance section, technological information, geometric information, auxiliary codes and program end explanation, , line numbers, addresses (G and M codes), application works in AlphaCAM program, programming of NC codes using M and G codes and tool assignment are investigated.				

0509722	Metrology	3-0-3-4	Technical Elective	7. Semester
This course covers the definition of measurement, generalization of measurement systems, pressure measurements, liquid column pressure meters, flow measurements, statistical analysis of measurement errors, measurement standards, testing and measurement methods are examined.				

0509723	Intuitive Optimization	3-0-3-4	Technical Elective	7. Semester
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This course teaches the characteristics, abilities, limitations and scopes of various intuitive optimization techniques.

0509724	Experimental Design	3-0-3-4	Technical Elective	7. Semester
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This course covers the introduction to analysis of variance, single and multi-factor analysis of variance, introduction to experimental planning, experiment concept, experiment types, determination of experiment number, full factorial designs, fractional factorial designs, Yates algorithm, Taguchi methods, analysis of computer support experiments.

0509725	Optimization Techniques	3-0-3-4	Technical Elective	7. Semester
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This course covers, optimization concept, types and properties, techniques that can be used for single-purpose / multi-objective optimizations, techniques that can be used for qualitative and quantitative variables, optimization techniques used in fuzzy situations, optimization techniques for linear and nonlinear constrained / unconstrained situations, computer programs supporting them are taught together.

0509730	Productivity and Value Analysis	3-0-3-3	Technical Elective	7. Semester
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This course covers the efficiency analysis, efficiency analysis, evaluation of business performance, determination and evaluation of productivity trends, productivity improvement techniques, constraint theory, energy saving for efficiency, value analysis, sample value analysis in production are examined.

0509731	Six Sigma	3-0-3-3	Technical Elective	7. Semester
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This course covers the historical development of the six sigma and the concept of generation, human resources in six sigma, basic statistics, probability distributions and sigma level, short and long term relationship in six sigma, stages of six sigma, project examples and applications will be examined.

0509732	Industry and Environment Interaction	3-0-3-3	Technical Elective	7. Semester
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This course covers the introduction and basic definitions, water pollution, solid wastes, air pollution, global warming, air pollution, noise pollution, radioactive pollution, soil pollution, ISO 14000, environmental impact assessment (EIA), wastewater accounts are examined.

0509733	Industrial Engineering Applications	3-0-3-3	Technical Elective	7. Semester
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This course covers the completes what students have learned so far by analyzing industrial engineering applications in 26 sectors determined by the professional qualification institution as fact studies and has detailed equipments about the situations they will encounter when they become an industrial engineer.

0509740	Sustainability and Resource Productivity	2-0-2-3	Technical Elective	7. Semester
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This course covers sustainability policy, sustainable systems, subsystems, approaches, sustainability development, sustainability ecology are examined.

0509741	Industrial Product Design	2-0-2-3	Technical Elective	7. Semester
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This course covers the designed to provide an introduction to product design, brainstorming and innovation, product planning, customer needs determination, product specification extraction, concept design, introduction to AutoCAD 2008, The 2D drawing & annotation workspace, drawing tools, Introduction to 3D modeling, viewport, modification, editing and rendering, working with solid models are studied.

0509742	Data Processing in Industrial Systems	2-0-2-3	Technical Elective	7. Semester
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This course discusses the topics of introduction to information technologies, computer networks, protocols related to computer networks, topologies, internet applications, management information systems, system development life cycle expert systems, artificial neural networks, genetic algorithms, databases.

0509743	R & D and Innovation in the Industry	2-0-2-3	Technical Elective	7. Semester
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This course covers the examined by examples interactively with students, such as R & D, innovation, entrepreneurship concepts, financing possibilities, public legislation and support, education, human resources, dimensions of non-governmental organizations, etc., which could be part of the working life of industrial engineers.

8. Semester Courses

0509801	Industrial Engineering Laboratory	2-2-3-5	Compulsory	8. Semester
The course content is applied in the laboratory environment, such as CNC lathe, PLC, noise analysis, vision, hearing ability.				

0509802	Industrial Engineering Project	2-2-3-5	Compulsory	8. Semester
To be able to define real problems, to have knowledge about the functioning of an organization and its job descriptions, to model and analyze a complex system and to gain professional communication skills.				

0509810	Strategy-Business Development and Technology Management	3-0-3-5	Technical Elective	8. Semester
This course covers the concepts of short, medium and long term strategy, PEST and SWOT analysis, business development concepts and techniques, Blue / Red ocean strategies, new product development strategies, TRIZ, technology management.				

0509811	Patent and Industrial Design	3-0-3-5	Technical Elective	8. Semester
This course covers the invention and prospect, Intellectual property rights, Intellectual property rights history and approach of our country, patent, patentability criteria, preparation of patent file, patent examination process, utility model, industrial design, criteria and process, international patent, international patent treaties systems), elements affecting system choice are examined.				

0509812	Industrial Process Design	3-0-3-5	Technical Elective	8. Semester
This course covers the ISO 9000/2000 quality management system standard, process flow charts, efqm business perfection model, elements of process improvement, measurement of process performance, metrics, organization chart, process definition, process definition, process definition, , cause and effect diagrams, creation of a calendar and a timeline, gannt and pert scheduling methods, quality function propagation, value flow mapping, error tree analysis.				

0509820	Total quality Management	3-0-3-5	Technical Elective	8. Semester
TQM concept and main principles, TQM tools, quality costs, factors affecting TQM, TQM and results (interim evaluation), TQM implementation difficulties, basic tools used in the execution of TQM, EFQM excellence model, EFQM excellence model evaluation process, TQM: TQM future in Turkey, is it a debate: TQM is a management fashion? issues are examined.				

0509821	Logistics Management	3-0-3-5	Technical Elective	8. Semester
In this course, the concepts of logistics, logistics strategy, components of logistics systems, design of logistics system, design of logistics system, design and management of distribution systems, selection of suppliers in logistics systems, coordination in logistics systems, inventory management in logistics systems, the design and management of warehouses, the use of information technology in logistics management, and lean and six sigma approaches in logistics systems.				

0509822	Introduction to Robots	3-0-3-5	Technical Elective	8. Semester
Topics covered in this course include general information about robots, motion control systems, position control, speed control, robot programming, work-time diagrams, fundamentals of robot design, economic analysis of robots, special topics in robots (vision, hearing, etc.).				

0509823	Computer Integrated Production	2-1-2.5-5	Technical Elective	8. Semester
The course covers the design of computer integrated manufacturing systems, the production systems of computers and databases, the product design and development of the concept of synchronous engineering, the design and use of flexible production systems.				

0509830	European Union Legislation	3-0-3-5	Technical Elective	8. Semester
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In the course, the establishment of the European Union, the legal and institutional structure of the European Union, the resources of the European Union, the institutions and their duties and authorities are examined.

0509831	Project management	3-0-3-5	Technical Elective	8. Semester
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In the scope of the course, course introduction, definitions - introduction, selection of projects, project manager, project organization, project planning project org. scheduling, computer tools and project management, ms-project, computer tools and project management, resource allocation issues are examined.

0509832	Human Resources Management	3-0-3-5	Technical Elective	8. Semester
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In the context of the course, introduction to human resources management, human resources planning, job analysis, job descriptions, methods of finding occupations, methods of selecting occupations, training management, performance appraisal-I, performance appraisal-II, wage management, worker health and work security, and social responsibility, motivation and job satisfaction, mobbing issues.

0509833	Production Resource Planning	3-0-3-5	Technical Elective	8. Semester
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In the scope of the course, basic concepts in material management, material requirement planning system design, input of Mrp system, output, product trees, MRP calculations, preparation of MRP plan, matrix method, methods of finding order quantities in MRP system, benefits, deficiencies of MRP system, (MRPII), examples, distribution resources planning, MRPII and JIT (hybrid systems), institutional resource planning (ERP), critical success factors for ERP system, selection of suitable ERP system are examined.

0509840	Finance Engineering	3-0-3-5	Technical Elective	8. Semester
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This course covers an introduction to finance and finance engineering, functions of business finance and financial objectives of company, financial techniques, risk and delivery measurement, portfolio management, financial markets, capital market instruments, capital market institutions, bond valuation, stock valuation, derivative products and contracts , are examined.

0509841	Stochastic Models	3-0-3-5	Technical Elective	8. Semester
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The content of the course is as follows: Markov chains and applications of cut-off time, Markov chains, random walk, random walk, classification of situations, long-term limit analysis of processes, Poisson process, birth-death processes, M / M / 1 tail model and extensions.

0509842	MATLAB	3-0-3-5	Technical Elective	8. Semester
This course covers the algorithms and flow charts, introduction to Matlab programming environment. Introducing constants, variables and mathematical expressions in Matlab. Introducing the Matlab editor (M-file). Introduction to control structures, repetitive structures and sequences used in Matlab, file management and subfunctions in Matlab, drawing graphics in Matlab, and topics to be covered in the course.				