Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
AIT101	Atatürk’s Principles and the History of Turkish Revolution I	(2,0,0)	2	2	Compulsory

The reasons that prepared the collapse of the Ottoman Empire and the Turkish Revolution. Disintegration of the Ottoman Empire, Tripoli War, Balkan Wars, First World War. Armistice of Mudros. The situation of the country in the face of the occupations and the reaction of Mustafa Kemal Pasha, the departure of Mustafa Kemal Pasha to Samsun. The opening of the Turkish Grand National Assembly of the National Struggle. Treaty of sevr. The Lausanne Peace Treaty. Atatürk's Principles: Republicanism, Nationalism. Populism, Statism. Secularism, Revolutionism.

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
AIT102	Atatürk’s Principles and the History of Turkish Revolution II	(2,0,0)	2	2	Compulsory

Abolition of the Sultanate; Proclamation of the Republic; Taking the Election Decision in the First Parliament; Establishment of the People's Party; Ankara Becoming the Capital, Proclamation of the Republic and Reactions; Abolition of the Caliphate (The Emergence of the Problem of the Caliphate and the Events Preparing the Abolition of the Caliphate), Progressive Republican Party and Sheikh Said Rebellion; Law of Takrir-i Sukun; Closing the Progressive Republican Party; İzmir Assassination Attempt), Free Republican Party and Menemen Incident; An Overview of Atatürk-Inönü Separation, Revolutions and Their Goals; Revolutions in Law; 1924 Organization-ı Esasiye Law; Adoption of the Turkish Civil Code; Adoption of Other Basic Laws; Revolutions in Women's Rights, Education and Culture; The Law of Unification of Education; Adoption of the New Turkish Alphabet; New Understanding of History and Language; From Darülfünun to Istanbul University; Fine Arts, Developments in Economics; Late Ottoman Economy; Turkish Economy Congress and Its Results; Economic Activities in the First Years of the Republic; Transition to the Practice of Statism, Revolutions Made in Social Life (Modernization in Clothing: The Law on Wearing Hats; Closure of Lodges, Zawiyas and Tombs, Adoption of International Time, Calendar, Numbers, Measurements and Week Holidays; Adoption of the Law on Surnames; Developments), Turkey's Foreign Policy in Atatürk Era; Years 1919-1923; Years 1923-1930, Going to the Second World War and Turkish Foreign Policy 1931-1939, Principles of Atatürk; General Overview of Atatürk's Principles; Republicanism, Nationalism, Populism, Statism, Secularism, Revolutionism, İsmet İnönü Period (1938-1950); Domestic Policy During the Second World War; Establishment of the Democratic Party, Democratic Party Period (1950-1960); May 27 Military Intervention and National Unity Committee

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
AIT103	History I for International Students	(2,0,0)	2	2	Compulsory

Origins and rise of Ottoman Empire, Ottoman Administrative System, Ottoman Society, Law and Education, Revolts and Reform Attempts in Ottoman Empire, Reforms Through 19th Century, Military and Administrative Reforms, Reign of Abdülhamid II, Young Ottomans and Ottomanism, First Constitutional Era, Second Constitutional Era, Political Struggle for Power, The Ideologıcal Debates: 1913-1918, Ottoman Empire and Fırst World War I

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
AIT104	History II for International Students	(2,0,0)	2	2	Compulsory
The Aarmistice of Moundros and Its Aftermath, The National Resistance Movement and Mustafa Kemal Pasha, The Great National Assembly and the Treaty of Sevres, Great Offensive, Treaty of Lausanne and Sheikh Sait Rebellion, Declaration Of The Turkish Republic, The Major Periods in the Political History of Turkey I, The Major Periods in the Political History of Turkey II, Women and Nationbuilding in the early Turkish Republic I, Women and Nationbuilding in the early Turkish Republic II					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
CMP101	Programming Application for Engineers	(2,2,0)	3	5	Compulsory
Algorithm development. Elements of C. Structure of a C program, data types, constants, input and output of integer numbers, real numbers. Variables, expressions and assignments. Input and output functions. Control Structures. Selection- If statement, multiple selection- switch statement. Iterationwhile, do-while, for operators. User-defined functions, arrays and subscripted variables, single and multi dimensional arrays. Array and functions. Pointers, pointers and strings. Structures, creating structures. Structure as function argument. Subprograms. Files. File operations.Application programs will be developed in a laboratory environment using the C language.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
EAS431	Economics For Engineers	(3,0,0)	3	6	Compulsory
Principles and economic analysis of engineering decision making. Cost concept. Economic environment. Price and demand relations. Competition. Make-versus-purchase studies. Principles and applications of money-time relations. Depreciation. Many and banking. Price changes and inflation. Business and company finance.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
EEE207	Introduction to Electronics	(3,0,0)	3	5	Compulsory
Basic theory of semiconductors (PN-junctions and diodes). Amplifiers in general. Ideal and real amplifiers. Basic circuits with operational amplifiers. Frequency response and stability in feedback amplifiers. Basic circuits with transistor amplifiers. Simulation program for electronic circuits. Computer systems for data acquisition and measurement. Laboratory work.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
ENG101	English I	(3,0,0)	3	4	Compulsory
Talking about biographies, asking and answering about general knowledge, talking about past events, talking about technology in the future, asking for permission/making a request, formal phone					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
conversations, informal phone conversations, making an appointment, talking about products, checking understanding/ asking for clarification. Note: This course is offered by the departments in which the medium of instruction is English.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
ENG102	English II	(3,0,0)	3	4	Compulsory
Health matters, restaurant problems-complaints and responses, talking about computer problems, reporting the news and the weather, product problems- complaints at the store, talking about the future possibilities, health problems and herbs, job qualifications and working conditions. Note: This course is offered by the departments in which the medium of instruction is English.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
ENG201	Academics Reading and Writing Skills	(3,0,0)	3	4	Compulsory
This course follows an intermediate to upper intermediate level of curriculum designed to enable skills of accessing and arranging the necessary information and to improve students' writing and reading comprehension skills that they will need in their academic and professional lives. Paragraph organization, identifying and producing different types of paragraphs, stages of essay writing and organization are some of the topics that will be covered.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
CHE105	General Chemistry	(3,0,2)	4	6	Compulsory
Metric system, introduction to stoichiometry, the structural and physical properties of matter, i.e., electronic structure of atoms, chemical binding, and molecular orbitals and states of matter, i.e., gases, liquids and solids. Basis of concentration. Balancing the reactions.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MTH101	Calculus I	(4,0,0)	4	6	Compulsory
Functions, limits and continuity. Derivatives. Rules of differentiation. Higher order derivatives. Chain rule. Related rates. Rolle's and the mean value theorem. Critical Points. Asymptotes. Curve sketching. Integrals. Fundamental Theorem. Techniques of integration. Definite integrals. Application to geometry and science. Indeterminate forms. L'Hospital's Rule.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MTH102	Calculus II	(4,0,0)	4	6	Compulsory

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
Sequences and Infinite Series; The integral test, comparison test, geometric series, ratio test, alternating series. Power series, Taylor series. Parametric equations and Polar coordinates. Functions of several variables, limits, continuity, partial derivatives, chain rule, extreme of functions of several variables. Multiple integrals: Double integrals, Area, volume, double integral in polar coordinates, surface area, triple integrals, spherical and cylindrical coordinates.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MTH112	Linear Algebra	(3,0,0)	3	5	Compulsory
System of linear equations: elementary row operations, echelon forms, Gaussian elimination method. Matrices: elementary matrices, invertible matrices. Determinants: adjoint and inverse matrices, Crammer's rule. Vector spaces: linear independents, basis, dimension. Linear mapping. Inner product spaces: Gram-Schmit ortogonalization. Eigenvalues and eigenvectors, Cayley-Hamilton theorem, diagonalization					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MTH201	Differential Equations	(4,0,0)	4	6	Compulsory
Ordinary and partial differential equations. Explicit solutions, Implicit Solution. First-order differential equations, separable, homogenous differential equations, exact differential equations. Ordinary linear differential equations. Bernoulli differential equations. Cauchy-differential equations. High-order ordinary differential equations. Introduction to Laplace transforms. Introduction to series method for solving differential equations					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MTH301	Numerical Analysis for Engineers	(3,0,0)	3	5	Compulsory
Approximations and errors. Accuracy and precision. Finite divided difference and numerical differentiation. Roots of equations, bracketing methods and open methods, systems of nonlinear equations. Systems of linear algebraic equations. Curve fitting, interpolation. Numerical integration. Ordinary differential equations.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MTH312	Probability and Statistical Methods	(3,0,0)	3	5	Compulsory
Definition of probability. Sample space and events. Permutations and combinations. Conditional probability and Bayers theorem. Random variables. Discrete and continuous distrubutions. Moment generating function. Expectation, variance, covariance and correlation. Condition densities and regression and transformation of variables. Descriptive statistics.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MCE100	Mechanical Engineering Orientation	(0,0,0)	0	3	Compulsory

ntroduction to mechanical engineering. Demonstrations of Mechanical Engineering Department Laboratories. Technical trips to various industrial sites.

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MEC101	Technical Drawing I	(2,0,2)	3	5	Compulsory

Introduction to technical drawing. Drawing instruments and their use, lettering, lines, geometry of straight lines, scale drawing. Dimensions. Development of surfaces, shape description, selection of views, projecting the views. Pictorial drawing, diametric trimetric projection. Isometric projection, oblique projection. Perspective drawing cross section.

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MEC102	Technical Drawing II	(2,0,2)	3	4	Compulsory

Working with CAD, screw threads and threaded fasteners, locking and retaining devices, keys and keyways, limits and fits, unilateral and bilateral limits, geometrical tolerancing and applications, gears, springs and spring calculations, weld types and symbols, dimensioning, bearings.

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MCE200	Internship I	(0,0,0)	0	3	Compulsory

This is to be completed in the Department's workshops by all ME students. Students will spend at least 80 hours in the workshops, and perform various hand and machine tool operations under staff supervision. At the end of the training students will be required to complete a report regarding their training.

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MEC202	Manufacturing Technology	(3,0,0)	3	5	Compulsory

Basic manufacturing processes, plastic forming of ferrous and nonferrous metals, hot working processes, cold working processes, pipe manufacturing, sheet metal working, basic machine tools and cutting tools chip removal processes, metal casting technology, welding technology, types of welding processes.

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MEC203	Statics	(3,0,0)	3	5	Compulsory

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
Composition and resolution of forces, equilibrium of particles and rigid bodies, centroids and center of gravity. Analysis of trusses, frames and machines. Moments and products of inertia, method of virtual work. Friction					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MEC204	Dynamics	(3,0,0)	3	5	Compulsory
A study of motion particles and rigid bodies. Application of Newton's second law to planar motions of rigid bodies, energy and momentum principles. Free, forced and damped vibrations of particle. Central force motions. Inertia tensor. Euler's equation of motion.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MEC205	Material Science	(3,0,0)	3	5	Compulsory
Materials and properties. Atomic structure and interatomic bonding, crystal structure, crystal imperfections, solid solutions. Mechanical properties of materials, elastic and plastic deformation. Behaviour of materials under tension, compression and shear. Hardness and hardness measurement. Dislocation and strengthening mechanism. Phase equilibria, phase diagrams, the iron –carbon system, solid reactions, microstructures. Structure and properties of ceramics. Polymer structure					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MEC207	Thermodynamics I	(3,0,0)	3	5	Compulsory
Basic concepts and definitions of classical thermodynamics. Thermodynamic processes, work and heat interactions. First law for systems and for flow processes. Second law and entropy, irreversibility and availability.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MEC208	Thermodynamics II	(3,0,0)	3	5	Compulsory
Thermodynamic cycles. Thermodynamics of mixtures and solutions, chemical reactions. Thermodynamic and mechanics of compressible fluid flow. Thermodynamic of energy conversion systems, refrigeration and air conditioning.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MEC210	Strength of Materials I	(4,0,0)	4	6	Compulsory

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
Introduction. Internal force diagrams. Analysis of stress and strain. Hooke's law. Yield criteria and plasticity. Axial force. Pure shear. Torsion of circular bars and thin walled tubes. Moment of inertia of cross-sections. Simple bending.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MCE300	Internship II	(0,0,0)	0	3	Compulsory
This is a period comprising a minimum of 30 days training to be completed in an industrial organization by all students who are effectively in their junior or senior year. Students should obtain approval of the Department before commencing training. Following this training, students will be required to write a formal report and give a short presentation before a committee regarding their training.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MEC301	Heat Transfer	(4,0,0)	4	5	Compulsory
Introduction, Conservation Laws, Introduction to conduction, One-dimensional steady state conduction, thermal generation, and extended surface, Two-dimensional and transient conduction, Introduction to convection, External Flow, Internal Flow, Free Convection, Boiling and Condensation, Heat Exchangers, Thermal Radiation, Absorption, reflection, and transmission, Radiation exchange, Mass Transfer.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MEC303	Machine Component Design I	(4,0,0)	4	5	Compulsory
Introduction to mechanical engineering design. Load analysis, materials, deflection and stability. Stress analysis, stress concentrations. Strength of machine elements, theories of failure under static and dynamic loadings. Threaded fasteners, bearings riveted welded joints, springs. Lubrication and sliding bearings, rolling element bearings. Kinematics of spur gears. Design of spur gears.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MEC304	Machine Component Design II	(4,0,0)	4	5	Compulsory
Analysis and design of machine elements. Helical, bevel and worm gears. Shafts and associated parts, keys, pins, splines, couplings, clutches, brakers and fly wheels, belts, chains, torque converters. Design project involving a mechanical component or device including all detail drawings, assembly drawings and cost analysis.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MCE308	Control Systems	(4,0,0)	4	6	Compulsory
Introduction to automatic control. Mathematical modelling of dynamic systems. Response analysis using Laplace transform method. Transfer functions and block systems. Feedback control systems. Typical actuators and transducers. Control law					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MCE314	Dynamics of Machine Systems	(4,0,0)	4	5	Compulsory
Numerical methods in heat conduction. Condensation and boiling. Heat transfer by radiation. Heat exchangers. Mass transfer.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MCE333	Mechanical Vibration	(3,0,0)	3	5	Compulsory
The course will cover fundamental concepts on the vibration of mechanical systems including, but not limited to, review of systems with one degree for freedom, Lagrange's equations of motion for multiple degree of freedom systems, introduction to matrix methods, transfer functions for harmonic response, impulse response, and step response, convolution integrals for response to arbitrary inputs, principle frequencies and modes, applications to critical speeds, measuring instruments, isolation, torsional systems, introduction to nonlinear problems					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MEC355	Fluid Mechanics	(3,2,0)	4	5	Compulsory
Physical properties of fluids, fluid statics, pressure forces on plane and curved surfaces. Stability of floating and submerged objects. Fluid flow concepts and basic equations. Continuity, energy and momentum principles. Viscous effects in fluid flow, open and closed conduit flows. Potential flow theory.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MCE401	Graduation Project I	(2,0,0)	2	5	Compulsory
The design process and morphology. Problem solving and decision making. Modelling and simulation. Use of computers in engineering design and CAD. Project engineering, planning and management. Design optimization. Economic decision making and cost evaluation. Aspects of quality. Failure analysis and reliability. Human and ecological factors in design. Case studies. A term project is assigned.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
MCE402	Graduation Project II	(2,0,0)	2	5	Compulsory

The design process and morphology. Problem solving and decision making. Modelling and simulation. Use of computers in engineering design and CAD. Project engineering, planning and management. Design optimization. Economic decision making and cost evaluation. Aspects of quality. Failure analysis and reliability. Human and ecological factors in design. Case studies. A term project is assigned.

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective
PHY101	Physics I	(3,0,2)	4	6	Compulsory

Measurements, vectors, kinematics, force, mass. Newton's laws, applications of Newton's laws. Work and kinetic energy. Conservation of linear momentum. Impulse, collisions, rotation, moments of inertia. Torque, angular momentum, conservation of angular momentum, static equilibrium.

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective
PHY102	Physics II	(3,0,2)	4	6	Compulsory

Kinetic theory of ideal gases. Equipartition of energy. Heat, heat transfer and heat conduction. Laws of thermodynamics, applications to engine cycles. Coulombs law and electrostatic fields. Gauss's law. Electric potential. Magnetic field. Amperes law. Faradays law.

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
TUR101	Turkish I: Written Expression	(2,0,0)	2	2	Compulsory

Reading passages related to the chapter; grammar studies; vocabulary and translation activities; listening activities; debates on current issues related to the department (Repetition of tenses, Internet history, Health and medicine, passive frameworks, Social issues, Environmental issues, Repetition of modals, Law and punishment, repetition of adjective phrases, Language and Literature, Repetition of noun phrases.

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
TUR102	Turkish II: Oral Expression	(2,0,0)	2	2	Compulsory

Spelling, punctuation and composition (punctuation marks, other signs), Spelling, spelling rules (capital letters, spelling of numbers, spelling of abbreviations, spelling of quoted words), Composition (purpose of composition, method of writing composition), plan in composition, introduction, development, result, Expression features, clarity in expression, simplicity in expression, clarity and sincerity in expression, Expression disorders (using synonyms in sentences), Misuse of idioms, Expression styles (explanation, story, concise expression, description, satire, portrait, proof,

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
speech, Verbal expression types (daily and impromptu speech, prepared speech, panel discussion, debate, panel), Written expression types (letter, telegram, greeting, invitation, literary letter), business letters, official letter, petition, report, report, decision, advertisement, conversation, criticism, memoir, travel writing, interview, survey, autobiography, biography, novel, story, fairy tale, fable, theatre, tragedy,drama ,scenario) .					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
YIT103	Turkish I for International Students	(2,0,0)	2	2	Compulsory
The Turkish Alphabet and how Phonetics is in Turkish Alphabet, how nouns are made plural in Turkish, how to form yes-no questions, how to form sentences with “there is/there are, possessives in Turkish, how to use personal pronouns, numbers and asking questions related to numbers, how to use noun states in Turkish, where and how to use present continuous tense and simple present tense.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
YIT104	Turkish II for International Students	(2,0,0)	2	2	Compulsary
The Turkish Alphabet and how Phonetics is in Turkish Alphabet, how nouns are made plural in Turkish, how to form yes-no questions, how to form sentences with “there is/there are, possessives in Turkish, how to use personal pronouns, numbers and asking questions related to numbers, how to use noun states in Turkish, where and how to use present continuous tense and simple present tense.					

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
NTE1	Non-Technical Elective I	(0,0,0)	3	6	Elective

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
NTE2	Non-Technical Elective II	(0,0,0)	3	5	Elective

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
NTE3	Non-Technical Elective III	(3,0,0)	3	5	Elective

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
TE1	Technical Elective I	(3,0,0)	3	5	Elective

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
TE2	Technical Elective II	(3,0,0)	3	5	Elective

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
TE3	Technical Elective III	(3,0,0)	3	5	Elective

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
TE4	Technical Elective IV	(3,0,0)	3	5	Elective

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
TE5	Technical Elective V	(3,0,0)	3	5	Elective

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
TE6	Technical Elective VI	(3,0,0)	3	5	Elective

Course Code	Course Name	(T,A,L)	Credit	ECTS	Compulsory/Elective Course
TE7	Technical Elective VII	(3,0,0)	3	5	Elective