



## Course Content Report

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
OD 107	CAREER PLANNING	1	0	0	1.00	2.00	Compulsory

### Course Content

The Methods and Tools Used In Professional Job Applications and the Ability to Use Them Most Effectively; Applied Assignments; Relations with Career Centers; Activities That Provide Experience Opportunities to Help Students Develop Their Skills.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
TM 109	PHYSICS I	3	1	0	3.50	5.00	Compulsory

### Course Content

Electric Charge and Electric Field, Gauss's Laws, Electric Potential, Capacitance and Dielectrics, Current and resistance, Electromotive Force, Direct Current Circuit Midterm Exam, Magnetic Field, Magnetic Forces, Sources of Magnetic Field, Electromagnetic Induction, Inductance, Alternating Current, Electromagnetic Waves

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
OD 113	TURKISH I	2	0	0	2.00	2.00	Compulsory

### Course Content

Definition and Features of Language; Language-Thought, Language-Nation and Language-Culture Relationship; Classification of World Languages, Language Families; The Place of Turkish Language Among World Languages and Its Historical Development; Sound Characteristics of Turkish; Turkish Language Association, Atatürk's Turkish View; Phonology, Sound Events; Writing rules; Punctuation.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
TM 107	GENERAL CHEMISTRY	3	1	0	3.50	5.00	Compulsory

### Course Content

Matter, atoms and atomic theory; Chemical compounds, chemical reactions; gases; Thermochemistry; Electron structure of atom; Periodic Table and Periodic Properties of Elements; Chemical bonds; Liquids and intermolecular forces; Solutions and their physical properties; Chemical balance; acids and bases; Thermodynamics

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
TM 105	MATHEMATICS I	4	0	0	4.00	5.00	Compulsory

### Course Content

This lesson includes the following subjects; limit and continuity, derivative and applications of derivative, integral and integral applications.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
OD 117	ADVANCED ENGLISH I	3	0	0	3.00	4.00	Compulsory

### Course Content

This course; Includes topics aimed to ensure academic level English reading skills.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 101	INTRODUCTION TO INDUSTRIAL ENGINEERING	2	0	0	2.00	3.00	Compulsory

### Course Content

History of industrial engineering, information management, efficiency, statistics, work study, production planning, operations research, production systems, supply chain management, quality engineering, total quality and process management, simulation, intelligent manufacturing systems.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 103	COMPUTER AIDED ENGINEERING DRAWING	2	2	0	3.00	4.00	Compulsory

### Course Content

Introduction to technical drawing: Basic concepts, Geometric drawings, Line types, Layers, Projection, View extraction, Section views: applications of full, half and gradual section view, Creating Perspective, Dimensioning principles.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 102	GENERAL ECONOMICS	3	0	0	3.00	5.00	Compulsory

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 104	COMPUTER PROGRAMMING I	3	1	0	3.50	5.00	Compulsory

**Course Content**

The Context of Software Development, Values and Variables, Expressions and Arithmetic, Conditional Statements, Iterations, Functions, Objects, Lists, Tuples, Dictionaries, Sets.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
OD 118	ADVANCED ENGLISH II	3	0	0	3.00	4.00	Compulsory

**Course Content**

This course covers advanced English grammar rules, effective writing techniques, oral communication skills, listening and reading skills, and advanced vocabulary work.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
OD 114	TURKISH II	2	0	0	2.00	2.00	Compulsory

**Course Content**

Expression disorders, types of written expression, thoughts, artistic writing, types of correspondence, types of verbal expression.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
TM 106	MATHEMATICS II	4	0	0	4.00	5.00	Compulsory

**Course Content**

This course includes sequences, series and applications, vectors, limit, continuity and derivative, direction derivatives and multiple integrals in multivariable functions etc.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
TM 108	PHYSICS II	3	1	0	3.50	5.00	Compulsory

**Course Content**

Electric Fields; Gauss's Law; Electric Potential; Capacitance and Dielectrics; Current and Resistance; Direct Current Circuits; Magnetic Field; Sources of the Magnetic Field; Faraday's Law; Inductance; Alternating Current Circuits.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
TM 110	LINEAR ALGEBRA	3	0	0	3.00	4.00	Compulsory

**Course Content**

Matrices: Definition of matrix, types of matrices, equality of matrices, sum and difference of matrices, product of a matrix with a scalar, properties of sum of matrices and multiplication of scalars, multiplication of matrices and their properties, transpose of matrix and its properties -Some Special Matrices and matrix applications - Elementary row and column operations in matrices, reduced row (echolon) form of a matrix, rank of matrix, inverse of a square matrix -Determinants: Determinant of a square matrix, Laplace expansion, determinant properties -Sarrus rule, Supplementary matrix, inverse of a matrix with the help of additional matrix calculation, -Linear Equation Systems: Solution of systems of linear equations with the help of equivalent matrices, Systems of linear homogeneous equations, -Cramer's method, Solution with the help of coefficients matrix, -Vectors: Vector definition, sum of vectors, difference, analytical expression of vectors, scalar product of vectors, properties of the scalar product. Vector product and its properties, Mixed product and its properties, Double vector product and its properties, -Vector Spaces: Definition of vector spaces and related theorems. Sub vector space. The concept of stretching and basic theorems. Linear dependence and linear independence of vectors and related theorems, -Base and dimension concept and fundamental theorems. Definition of coordinates and transition matrices and related theorems. -Eigenvalues ??and Eigenvectors:Calculation of eigenvalues ??and eigenvectors of a square matrix, -Calculation of inverse and power of a square matrix with the help of Cayley-Hamilton Theorem

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
TM 203	DIFFERENTIAL EQUATIONS	3	0	0	3.00	5.00	Compulsory

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 201	COMPUTER PROGRAMMING II	3	1	0	3.50	5.00	Compulsory

**Course Content**

Python Classes, Data Visualization (Matplotlib and Plotly), Data Read/Write (sqlite, csv, txt), Sympy, Numpy, Math, Random, Sqlite, QGIS.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 203	PROBABILITY THEORY	3	0	0	3.00	5.00	Compulsory

Course Content							
Descriptive Statistics, Sets and Introduction to Probability, Sample Space Concept, Probability Concept, Conditional Probability, Bayes Theorem, Random Variables, Discrete and Continuous Probability Distributions, Combined Distributions, Expected Value Concept, Variance and Expected Value of Variance, Chebyshev Theorem, Some Discrete Probability Distributions , Some Continuous Probability Distributions, Functions of Random Variables, Moment Derivation Functions							
Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 205	MATERIALS SCIENCE	3	0	0	3.00	3.00	Compulsory
Course Content							
Atomic structure and properties of solid materials, microstructure, phase diagrams and transformations, mechanical, electrical and thermal properties of materials, production and characterization techniques.							
Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 207	MANUFACTURING METHODS	3	0	0	3.00	4.00	Compulsory
Course Content							
Introduction to production methods/ Fundamentals of manufacturing with casting technique and casting methods/ Fundamentals of chipless forming and chipless manufacturing methods/ Fundamentals of joining techniques and joining methods/ Fundamentals of machining and machining methods/ Calculation of machining times.							
Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 209	OCCUPATIONAL HEALTH AND SAFETY I	2	0	0	2.00	3.00	Compulsory
Course Content							
Basic concepts and historical development concepts about occupational health and safety, duties, authorities and responsibilities of occupational physician and occupational safety specialist in the workplace, risk, danger, primary, secondary, tertiary protection concepts, physical, chemical, biological and psychosocial risks; occupational health and safety legislation and practices in the workplace.							
Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 211	ENGINEERING MECHANICS	3	0	0	3.00	3.00	Compulsory
Course Content							
Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 213	TECHNICAL ENGLISH	2	0	0	2.00	2.00	Compulsory
Course Content							
Issues and Areas that an Engineer may Encounter when She Starts to Practice Her Profession.							
Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 202	DATABASE MANAGEMENT	3	0	0	3.00	5.00	Compulsory
Course Content							
Basic Concepts, Database Management Systems Architecture and Functions, Data Models, Database Design, Conceptual Database Design with Entity-Relationship Model, Database Design with Relational Data Model, SQL Query Language, Normalization, Hierarchical and Network Database Models, Client , Server Architecture, Database Security and Reliability, Database and Information Management Internet Applications.							
Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 204	PRODUCTION SYSTEMS	3	0	0	3.00	5.00	Compulsory
Course Content							
Introduction to Production Systems, History of Production and Production Systems, Classification of Production Systems, Labor Intensive Production, Discrete Production Systems, Continuous Production Systems, Comparison of Discrete and Continuous Production Systems, Production Approaches by Country, New Trends in Production Systems, Design of Production Systems.							
Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 206	STATISTICS	3	0	0	3.00	5.00	Compulsory
Course Content							
Sampling and Sampling Distributions, Two Population Difference Hypothesis Tests, Two Population Difference Confidence Interval, Chi-square Analysis, One-Way Analysis of Variance, Two-Way Analysis of Variance, Multiple Linear Regression Analysis, Nonparametric Tests, Statistical Software Applications							
Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 208	COST ACCOUNTING	3	0	0	3.00	4.00	Compulsory

**Course Content**

Basic Concepts of Accounting, Classification of Costs: Fixed Costs, Variable Costs, Joint Costs, Cost Systems, Financial Statements, Types of Costs: Labor Costs; Material Costs, Direct and Indirect Separation, Types of Costs: General Production Costs, Flexible Budgets; Order Costing System, Phase Costing System, Standard Costing, Formula Costing; Unified Costing, Cost Recording System, Cost Calculations.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 210	OPERATIONS RESEARCH I	3	0	0	3.00	6.00	Compulsory

**Course Content**

Introduction to Operations Research, Introduction to Model Building, Basic Linear Algebra, Introduction to Linear Programming, The Simplex Algorithm, Sensitivity Analysis An Applied Approach, Sensitivity Analysis and Duality.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 212	BUSINESS ENGLISH	2	0	0	2.00	2.00	Compulsory

**Course Content**

Prepare written and visual forms, CV, write technical reports, examine feasibility reports, prepare resumes, cover letters, business letters, short notes, proposal drafts in English. Ability to express thoughts in areas where people interact, such as meetings, collaboration, and teamwork in English. To be able to understand and follow current developments in the professional field in English. To be able to express oneself in English in professional meetings, symposiums, congresses, etc.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 214	OCCUPATIONAL HEALTH AND SAFETY II	2	0	0	2.00	3.00	Compulsory

**Course Content**

General principles of Occupational Health and Safety (ISIG), the general framework of OHSAS 18001 and ISO 14001 standards, the role of Mechanical Engineering in the OHS management system, OHS legislation in our country, Definition of Industrial Hazard and Risk, Occupational Accidents, Occupational Diseases, Physical, Chemical and Biological Risks factors, Emergency plans, Authorities and responsibilities of emergency teams, Personal Protective equipment.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
STJ 01	INTERNSHIP	0	0	0	0.00	5.00	Compulsory

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 301	OPERATIONS RESEARCH II	3	0	0	3.00	6.00	Compulsory

**Course Content**

Basic Definitions of Operations Research, Transportation, Assignment and Transshipment Problems, Network Problems: Shortest Path, Maximum Flow, Minimum Cost Network Flow, Minimum Spanning Tree, Integer Programming, Dynamic Programming, Goal Programming, Game Theory.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 303	PRODUCTION PLANNING AND CONTROL I	3	0	0	3.00	5.00	Compulsory

**Course Content**

Introduction to Production Planning, Demand Forecasting Methods, Inventory Management and Inventory Control Systems, Mass Production Planning, Master Production Scheduling, Material Requirements Planning

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 305	MANAGEMENT AND ORGANIZATION	3	0	0	3.00	3.00	Compulsory

**Course Content**

People and organizations, individual differences and diversity, organization development, culture and change, perception and communication, work motivation and job satisfaction, work groups and teams, organization structure and design, the role and nature of management, organizational strategy, ethics and responsibilities, organizational control and power, leadership in organizations, controlling quality in organizations, organization theory and design, communication in organizations.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 307	WORK STUDY	3	0	0	3.00	4.00	Compulsory

**Course Content**

Efficiency and basic concepts in enterprises, Method study, Work measurement techniques, time study, work sampling, Working conditions and working environment, Job evaluation and wage systems, Occupational health and safety, Application projects.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 309	ENGINEERING ECONOMICS	3	0	0	3.00	4.00	Compulsory

**Course Content**

Fundamentals of investment and investment projects/Investment opportunities and types of fixed capital investments/ Cash flows and interest calculations/ Present value analysis/ Annual cash flow analysis/ Payback ratio analysis/ Analysis of investment differences and continuous investment increases/ Profit-Cost ratio analysis / Depreciation methods and applications / Income, corporate and value added taxes, inflation and deflation / Tax payment and engineering economics analysis in cases related to inflation / Examining the effects of re-evaluation and re-evaluation on engineering economy / Incentive measures and feasibility report of investments.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 311	ERGONOMICS	3	0	0	3.00	3.00	Compulsory

**Course Content**

Introduction to Ergonomics / Musculoskeletal System / Anthropometry / Calculation of Energy Consumption and Resting Times / Physical Ergonomics Risks and Workstation Design / Shift Systems / Ergonomics in the Human-Machine System / Occupational Health and Safety / Ergonomics Application Examples and HMD Program Application.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 302	STATISTICAL QUALITY CONTROL	3	0	0	3.00	4.00	Compulsory

**Course Content**

Concept of Quality and Quality Control, Statistical Techniques Used in Quality Control, Total Quality Management, Quality Control in Production, Control Diagrams for Quantitative Features, Control Diagrams for Qualitative Features, Acceptance Sampling, Process Capability Analysis

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 304	STOCHASTIC MODELING	3	0	0	3.00	4.00	Compulsory

**Course Content**

Probability Analysis: Conditional Probability, Basic Definition of Stochastic Processes. Discrete Time Markov Chains: Markov Chains, Transient Behaviors, Limiting Behaviors and Classification of States, First Pass and Repetition Times, Ergodic Theorems, Continuous Time Markov Chains: Transient Behavior, Restrictive Behaviors and Classification of States in Continuous Time, Ergodicity, Fundamental Queuing Models.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 306	PRODUCTION PLANNING AND CONTROL II	3	0	0	3.00	5.00	Compulsory

**Course Content**

Capacity Planning and Control, Resource Capacity Planning, Order Consolidation and Bulk Sourcing, Enterprise Resource Planning, Planning and Control of Manufacturing Activities, Constraint Management, Work Scheduling, Manufacturing and Assembly Line Balancing, Project Planning and Scheduling

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 308	SYSTEM SIMULATION	3	0	0	3.00	4.00	Compulsory

**Course Content**

Introduction to Simulation, Probability and Statistics, Queuing Systems, Input Data Analysis, Setting Up a Simulation Model, Output Analysis, Arena General Introduction and Commands, Sample Models in Arena

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 310	LOGISTICS AND SUPPLY CHAIN MANAGEMENT	3	0	0	3.00	3.00	Compulsory

**Course Content**

Supply Chain Management, Basic Concepts and Principles, Supply Chain Processes and Strategies, Logistics Management and Its Importance, Logistics Facilities Location, Transportation and Assignment models, Supply Chain and Logistics Network Design, Transportation Management and Transportation Modes, Warehouse Management, Logistics Information Systems

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
STJ 03	INTERNSHIP	0	0	0	0.00	5.00	Compulsory

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
OD 111	ATATURK PRINCIPLES AND HISTORY OF TURKISH REVOLUTION I	2	0	0	2.00	2.00	Compulsory

**Course Content**

Atatürk's Principles and Revolution History-I expresses the historical conditions of Turkish Revolutions and includes purpose and meaning of the revolution.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 401	FACILITY DESIGN AND PLANNING	3	0	0	3.00	5.00	Compulsory

**Course Content**

Basic Facility Planning Concepts and System Concept and Types in terms of Facility Planning, Facility Location Selection, Facility Design. Process Design, Some Calculations Used in Arrangement, Arrangement Approaches in Facilities, Warehouse Systems Arrangement, Computer Aided Facility Arrangement, Graph Theory and Arrangement Approaches, Discrete Facility Arrangement and Covering Problems, Material Management System and Analysis, Automated Directional Vehicle Systems.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 403	MANAGEMENT INFORMATION SYSTEMS	3	0	0	3.00	4.00	Compulsory

**Course Content**

MIS Overview, Information, Data and Communication, Motion Processing Systems, Management Information Systems, Decision Support Systems, Expert Systems, Structure in Organizations, Information and Culture, Database Management, Database Management Systems, Supply Chain Management Systems, Customer Relationship Management Systems

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 405	INDUSTRIAL ENGINEERING PRACTICE I	0	2	0	1.00	6.00	Compulsory

**Course Content**

The application of the students' theoretical knowledge gains to real life problems.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 402	INDUSTRIAL ENGINEERING PRACTICE II	0	2	0	1.00	6.00	Compulsory

**Course Content**

The application of the students' theoretical knowledge gains to real life problems.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 404	PROJECT MANAGEMENT	3	0	0	3.00	5.00	Compulsory

**Course Content**

Elements and Phases of Project Management, Functions of Project Management (Planning, Staffing, Scheduling, Monitoring and Control) and Techniques (CPM, PERT), Software Tools for Project Management, Project Cost Control and Time, Resource Management, Types of Leadership, Conflict and Risk Management

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 406	DECISION ANALYSIS	3	0	0	3.00	4.00	Compulsory

**Course Content**

Introduction to Decision Analysis, Decision Making Models Under Uncertainty, Decision Making Models Under Risk, Effect Diagrams and Decision Trees, Multi-Criteria Decision Making Problems, Game Theory.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
OD 112	ATATURK PRINCIPLES AND HISTORY OF TURKISH REVOLUTION II	2	0	0	2.00	2.00	Compulsory

**Course Content**

The course of Atatürk's Principles and History of Turkish Revolution-II includes political, economical, cultural, social developments during the historical process from the foundation of Turkish Republic up to now. It deals with the changes that Turkey has experienced by being predicated on the important turning points of our recent history. The principles of Atatürkist thought and Atatürkism as a modern thought are included to the course content properly according to the aim of the course.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE TS I	TEKNİK SEÇMELİ I	3	0	0	3.00	5.00	

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 321	TIME SERIES ANALYSIS	3	0	0	3.00	5.00	Seçmeli

**Course Content**

Method of Separation of Time Series into Components, Linear Trend Function. Smoothing Methods; Simple Moving Averages, Exponential Smoothing Methods, Single Exponential Smoothing, Autoregressive Models and Moving Average Methods. Seasonal Autoregressive Moving Average Methods. Price Indices and Their Importance in Time Series Analysis, Indices, Basic Circuit and Transformation in Price Indices.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 323	REGRESSION ANALYSIS	3	0	0	3.00	5.00	Seçmeli

**Course Content**

Linear Regression and Assumptions; Distributional Properties of Forecasters; Hypothesis Tests and Confidence Intervals for Parameters; Residue Analysis; Matrix Approach in Regression.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 325	RISK MANAGEMENT	3	0	0	3.00	5.00	Seçmeli

**Course Content**

Risk definition, risk perception, risk management, risk assessment, qualitative and quantitative risk assessment techniques (FMEA, FTA, ETA, PHA, HAZOP, L and X type risk matrices, Butterfly model)

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 327	FINANCIAL ANALYSIS	3	0	0	3.00	5.00	Seçmeli

**Course Content**

Analyzing the liquidity, financial structure, operational efficiency and profitability of the company by applying various analysis techniques on the financial statements; Making decisions regarding the future of the company based on the findings about the company as a result of the analysis.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 329	STATISTICAL DATA ANALYSIS	3	0	0	3.00	5.00	Seçmeli

**Course Content**

Basic statistical concepts, descriptive statistics, conditional probability, random variables, predictive-discrete-continuous probability models, combined and sample distributions, hypothesis testing, confidence intervals, complexity matrix, logical regression, linear and multiple regression and testing techniques

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 331	EFFICIENCY ANALYSIS	3	0	0	3.00	5.00	Seçmeli

**Course Content**

Basic Efficiency Concepts, Ratio Analysis, Regression Analysis, Efficiency Measurement with the Help of Mathematical Models, Green Efficiency, Green Efficiency Application Steps, Green Efficiency Techniques, Sustainable Efficiency Applications, Green Efficiency Applications in Turkey

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE TS II	TECHNICAL ELECTIVE II	3	0	0	3.00	5.00	

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 322	DYNAMIC PROGRAMMING	3	0	0	3.00	5.00	Seçmeli

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 324	INTEGER PROGRAMMING	3	0	0	3.00	5.00	Seçmeli

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 326	NETWORK OPTIMIZATION	3	0	0	3.00	5.00	Seçmeli

**Course Content**

Introduction and Basic Concepts, Minimum Spanning Tree Problem, Shortest Route Problem , Maximum Flow Problem, Minimum Cost Flow Problem, Transportation Problem - Transportation Table, Transportation Problem - Initial Solution, Transportation Problem - MODI Method, Transshipment Problem, Assignment Problem, Königsberg Bridges Problem - Euler Network, Solution of Network Models using package programs

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 328	DISCRETE OPTIMIZATION	3	0	0	3.00	5.00	Seçmeli

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 330	HEURISTIC METHODS	3	0	0	3.00	5.00	Seçmeli

**Course Content**

Available and newly introduced heuristic methods to solve/optimize combinatorial problems. Objective, abilities and practical applications of heuristic methods in optimization theory.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 332	GAME THEORY	3	0	0	3.00	5.00	Seçmeli

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE TS III	TEKNİK SEÇMELİ III	3	0	0	3.00	5.00	

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 336	SERVICE SYSTEMS	3	0	0	3.00	5.00	Seçmeli



## Course Content

Service concepts, service systems, characteristics of service systems, measurement of service quality, quality and performance models in service systems, production in service systems

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 338	QUALITY ENGINEERING	3	0	0	3.00	5.00	Seçmeli

## Course Content

Among the current quality techniques, Quality Function Expansion (QFA), Failure Mode and Effects Analysis (FMEA), 6-Sigma Approach, Experimental Design and Applications, Advanced Statistical Process Control (SPC) Methods, Process Adequacy Indexes, Taguchi Loss Function, Quality System and Processes. Development, Use of Exponential Weighted Moving Average and other time series methods, Advanced Techniques and Applications in Acceptance Sampling, Statistical Techniques in Quality Engineering, Modern Quality Management and Quality Engineering within the Framework of Fuzzy Logic

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 340	STRATEGIC PLANNING	3	0	0	3.00	5.00	Seçmeli

## Course Content

Concept of strategy, purpose, target, vision, mission, policy, tactics; Strategic Management Concept; Strategic decisions in businesses; General Environmental Analysis; Nearby Environment Analysis; Factors Affecting Competition; Importance and Scope of Business Valuation; Strategic Alternatives that can be followed; Definition and Importance of Portfolio Analysis; Definition and Scope of Globalization; Organization culture; Sample Cases

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 342	INDUSTRY 4.0	3	0	0	3.00	5.00	Seçmeli

## Course Content

Introduction to Industry 4.0, Road map for Industry 4.0, Smart systems and technologies, The role of data, information and knowledge in Industry 4.0, Collaboration in organizations of the future, Applications and case studies

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 344	ENTERPRISE RESOURCE PLANNING	3	0	0	3.00	5.00	Seçmeli

## Course Content

Concept of strategy, purpose, target, vision, mission, policy, tactics; Strategic Management Concept; Strategic decisions in businesses; General Environmental Analysis; Nearby Environment Analysis; Factors Affecting Competition; Importance and Scope of Business Valuation; Strategic Alternatives that can be followed; Definition and Importance of Portfolio Analysis; Definition and Scope of Globalization; Organization culture; Sample Cases

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
İE GS I	GENEL SEÇMELİ I	2	0	0	2.00	3.00	

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 001	RESEARCH METHODS	2	0	0	2.00	3.00	Seçmeli

## Course Content

This course includes information about scientific research, research process, identification of research problem, literature review, data collection methods, creating hypothesis, universe, sample, analysis methods and research report.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 003	TECHNICAL COMMUNICATION	2	0	0	2.00	3.00	Seğmeli

## Course Content

The content of this course; definition of communication concept, communication types and classification, functions of communication, and effective communication ways.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 005	STRESS AND TIME MANAGEMENT	2	0	0	2.00	3.00	Seçmeli

## Course Content

This lesson; historical development of occupational health and safety, occupational accident and occupational diseases and costs, the concept of occupational safety, the importance of occupational safety studies in terms of workforce efficiency, basic factors in occupational safety, sources of hazards, the concept of occupational health, psychosocial risk factors, ILO conventions, events that disrupt security Includes fire, earthquake and flood issues.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 009	PUBLIC ADMINISTRATION	2	0	0	2.00	3.00	Seçmeli

## Course Content

The nature of public administration, Central government organizations, Local administrations; Subjects such as special provincial administration and the concept of bureaucracy constitute the content of this course.



Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 011	VOLUNTEERING STUDIES	2	0	0	2.00	3.00	Seçmeli

#### Course Content

The content of the course; corporate social responsibility concept and development, social responsibility areas, social responsibility plan, business ethics and social responsibility relationship, the impact of social responsibility practices on corporate success.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 013	ACADEMIC TURKISH	2	0	0	2.00	3.00	Seçmeli

#### Course Content

Definition of language, its characteristics, relations between language-nation / language-thought and language-culture. Language in the world; the place and importance of Turkish among them and its historical development. Atatürk's language revolution, concept and works. Sounds in Turkish. Phonology of Turkish. Spelling rules and application. Punctuation rules and application. Vocabulary. Productiveness of Turkish.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 015	CREATIVE DRAMA AND IMPROVISION	2	0	0	2.00	3.00	Seçmeli

#### Course Content

This course includes the sociological and psychological dimensions of drama, history of drama and its applications in education, drama in education, role play and improvisation, and the relationship of drama with creativity and communication concepts, drama practices and how to use drama activities in teaching different courses.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 021	BUSINESS LAW	2	0	0	2.00	3.00	Seçmeli

#### Course Content

This lesson; the emergence of labor law, sources of labor law, types of employment contract, termination of employment contract, working hours, Permissions and wages, etc. covers topics.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 025	HUMAN RIGHTS	2	0	0	2.00	3.00	Seçmeli

#### Course Content

Historical Development of Human Rights, European Convention on Human Rights and International Fundamental Documents on the Protection of Human Rights, European Court of Human Rights and its Case Laws, Fundamental Rights and Freedoms, Generational Rights.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 027	ENTREPRENEURSHIP	2	0	0	2.00	3.00	Seçmeli

#### Course Content

Basic terms in entrepreneurship; Preparing a business plan; Basics of marketing research; Preparing a marketing plan; Production plan; Organization plan; Financial plans; Financial statement

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 031	HISTORY OF SCIENCE	2	0	0	2.00	3.00	Seçmeli

#### Course Content

Science. Science from the perspective of civilizations: Nile and Anatolian civilizations; Asian, Chinese, Indian, Roman, Greek and Islamic civilizations. European, American, Asian, Far East, Middle-Eastern civilizations. Turkish World History of Science and Technology; History of glass, textile and ceramic technology; history of iron-copper and casting technology.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 033	SOCIAL PSYCHOLOGY	2	0	0	2.00	3.00	Seçmeli

#### Course Content

Psychology science, fields of psychology, the place of social psychology in psychology, social psychology field and methods, human nature, socialization, social perception, attitudes and change, social impact, individual behavior in the group, interpersonal attraction and love.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 035	COMMUNICATION	2	0	0	2.00	3.00	Seçmeli

#### Course Content

Introduction to Communication; Language, Culture and Communication; Types of Communication (Written, Verbal, Nonverbal); Communication Models; Mass Media (Television, Radio, Press, Social Media); Communication and Public Relations; Political Communication; Media Literacy; You Have The Word; Communication and Ethics.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 037	FINANCIAL LITERACY	2	0	0	2.00	3.00	Seçmeli

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 039	SIGN LANGUAGE	2	0	0	2.00	3.00	Seçmeli

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 041	DISASTER AND CRISIS MANAGEMENT	2	0	0	2.00	3.00	Seçmeli

**Course Content**

The principles of disaster and crisis management, concepts, definitions and standards, elements of the emergency plans and emergency management, emergency situations, the communication, the importance of evacuation, examination of mitigation-preparation-intervention improvement phase, the next desk applications; The objective of crisis management, identification of the crisis, characteristics, stages, aspects of crisis management, history and time, disaster management and crisis management as well as providing information on legislative issues

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 043	CITY AND SOCIETY	2	0	0	2.00	3.00	Seçmeli

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 045	ENVIRONMENTAL PROTECTION	2	0	0	2.00	3.00	Seçmeli

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 047	BEHAVIORAL SCIENCES	2	0	0	2.00	3.00	Seçmeli

**Course Content**

Behavior, Behavioral Sciences, Development of Behavioral Sciences and Their Relationship with Other Social Sciences, Behavioral Plane and Social Institutions, Needs and Related Theories as the Main Source of Behaviors, Personality and Personality Traits, The Concept of Learning, Perception and Perception, Social Impact and Adaptation, Attitude Concept and Attitudes, Communication and Impressive Communication, Group Structure and Dynamics, Teaming, Group Team Decomposition, Effect of Culture and Behavior.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 019	FIRST AID	2	0	0	2.00	3.00	Seçmeli

**Course Content**

Principles of First Aid; Basic Health Information; Basic Life Support; Bleeding and Shock; Injuries; Burns, Frostbite, and Heatstroke; Impairment of Consciousness; Fractures, Dislocations, and Sprains; Poisonings; Choking; Foreign Objects in the Eye, Ear, and Nose; Animal Bites and Insect Stings; Techniques for Transporting the Sick and/or Injured; First Aid for Respiratory Obstructions.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 049	HISTORY OF CLOTHING	2	0	0	2.00	3.00	Seçmeli

**Course Content**

Clothing in Prehistoric Societies; A.D. Clothing Culture in Various Regions of the World (Anatolia, Asia, Europe, Australia, Africa, America...) from the 5th Century to the 20th Century; the Latest Situation of Clothing Culture in the 21st Century.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 051	FINANCIAL INVESTMENT ANALYSIS	2	0	0	2.00	3.00	Seçmeli

**Course Content**

Financial markets, investment instruments, interest calculations, return and risk calculations, valuation, and portfolio transactions.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 053	SPECIAL EDUCATION	2	0	0	2.00	3.00	Seçmeli

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 055	INTERNATIONAL POLITICS	2	0	0	2.00	3.00	Seçmeli

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 057	HISTORY OF TURKISH DEMOCRACY	2	0	0	2.00	3.00	Seçmeli

**Course Content**

Democracy, Political Party and Parliament; Parliamentary System, Presidential System, Parliamentary Government System; Emergence of Parliament: England; Emergence of Parliament: France; Turkish Modernization and Democratization: From Nizam-ı Cedid to the First Constitutional Monarchy; I. Constitutional Monarchy and II. Abdulhamid Eras; II. Constitutional Era; War of Independence and Parliamentary Government System; Early Republican Era; From Transition to Multi-Party Life to the Constitution of 61; Political Developments from the Adoption of the Constitution of 61 to the 12 March Regime; Political Developments from 1971 to the 12 September Regime; Political Developments from 12 September Regime to the 28 February; Political Developments Since the 28 February.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 059	CREATIVITY MANAGEMENT AT THE WORKPLACE	2	0	0	2.00	3.00	Seçmeli

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 061	HISTORY OF MATHEMATICS	2	0	0	2.00	3.00	Seçmeli

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 063	ANALYZING THE ECONOMICAL INDICATORS	2	0	0	2.00	3.00	Seçmeli

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 065	ENGLISH-TURKISH TRANSLATION	2	0	0	2.00	3.00	Seçmeli

**Course Content**

This course follows a process consisting of material sharing that facilitates students' basic vocabulary knowledge and foreign language reading and writing skills, as well as provides guidance for translating the target language to the native language. It also includes regular assignments to practice and apply what they have learned.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 067	NEUROMARKETING	2	0	0	2.00	3.00	Seçmeli

**Course Content**

The basic topics in this course are; determining the methods of neuroscience methods on marketing strategies, using neuroscience data in the process of consumer protection, neuromarketing strategies and ethical side of neuromarketing.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 069	COMMUNICATION WITH DISABLED INDIVIDUALS	2	0	0	2.00	3.00	Seçmeli

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 071	ADDICTION AND FIGHT AGAINST ADDICTION	2	0	0	2.00	3.00	Seçmeli

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 073	INFORMATION LITERACY	2	0	0	2.00	3.00	Seçmeli

**Course Content**

The importance of information literacy Information literacy: Concepts, definitions Legal and ethical issues in the scientific research process The scientific research process (wonder, research, select, binding, transfer and evaluation) Information access tools (library catalogs, databases, search engines) Information Search Strategies Principles of quotation, footnote and bibliography

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS-MTH-03	DIGITAL TRANSFORMATION ECOSYSTEM	2	0	0	2.00	3.00	Seçmeli

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE TS IV	TECHNICAL ELECTIVE IV	3	0	0	3.00	5.00	

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 421	ARTIFICIAL INTELLIGENCE APPLICATIONS	3	0	0	3.00	5.00	Seçmeli

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 423	DATA MINING	3	0	0	3.00	5.00	Seçmeli

#### Course Content

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 425	DECISION SUPPORT SYSTEMS	3	0	0	3.00	5.00	Seçmeli

#### Course Content

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 427	MACHINE LEARNING	3	0	0	3.00	5.00	Seçmeli

#### Course Content

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 429	CLOUD COMPUTING	3	0	0	3.00	5.00	Seçmeli

#### Course Content

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 431	FUZZY LOGIC	3	0	0	3.00	5.00	Seçmeli

#### Course Content

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE TS V	TEKNİK SEÇMELİ V	3	0	0	3.00	5.00	

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 435	SUPPLY CHAIN INFORMATION SYSTEMS	3	0	0	3.00	5.00	Seçmeli

#### Course Content

Definitions of knowledge, information system and information flow; Process and value chain integration with information and communication technologies; Planning: Demand planning, supply planning, production planning, distribution planning; Information Systems in logistics processes: E-Business evolution stages; Information systems in procurement logistics; Information systems in product logistics; Information systems in warehouse logistics; Information systems in distribution logistics; Information systems in supply chain management; SAP Enterprise Resource Planning (SAP ERP); SAP Shipping Management (SAP TM); SAP Warehouse Management (SAP WM).

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 437	SUPPLY CHAIN MODELING	3	0	0	3.00	5.00	Seçmeli

#### Course Content

Understanding the supply chain, Supply chain performance: Understanding strategic fit and scope; Supply chain drivers and metrics, Design of distribution networks; Network design in supply chain; Demand forecasting in the supply chain; Integrated planning in the supply chain; Economic metrics management in supply chain: cyclical inventory; Transport in the supply chain.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 439	STORAGE AND DISTRIBUTION SYSTEMS	3	0	0	3.00	5.00	Seçmeli

#### Course Content

Definitions and scope of material handling. Material handling equipment. Methods and equipment selection models used in the material handling system. Storage systems and tools used in storage and system requirements. Warehousing operations, order picking and cross-docking operations.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 441	GREEN REVERSELOGISTICS	3	0	0	3.00	5.00	Seçmeli

#### Course Content

Examination of numerical models for key issues related to supply chain management and design, mathematical programming models, stochastic modeling, fuzzy modeling and decision-making models for supply chain network design, inventory management, reverse logistics, supply chain contracts and uncertainty in the supply chain.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 443	SPECIAL TOPICS IN SUPPLY CHAIN MANAGEMENT	3	0	0	3.00	5.00	Seçmeli

#### Course Content

Supply chain, its elements and current issues in supply chain management, risk management in supply chain, production planning, information technologies, strategies, sustainability, green supply chain, e-procurement, performance management, global trends.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE GS II	GENEL SEÇMELİ II	2	0	0	2.00	3.00	
Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 002	MEDIA AND COMMUNICATION	2	0	0	2.00	3.00	Seçmeli

#### Course Content

Communication concept, process and features; basic elements of the communication process; communication skills; types of communication; forms of communication; model concept; basic communication models; models used in the communication process; communication theories; the adventure of communication studies; critical media studies; feminist media studies; media and public opinion; the concept of democracy; opinion polls; media, politics and propaganda; digital media.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 004	DICTION AND EFFECTIVE SPEAKING	2	0	0	2.00	3.00	Seçmeli

#### Course Content

The content of the course includes communication, communication techniques, language usage, body language, word selection, sentence structure, improving rhythm, emphasis, tone of voice, speech tempo, stage usage, and etiquette rules.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 006	BUSINESS ETHICS	2	0	0	2.00	3.00	Seçmeli

#### Course Content

The lesson contains these topics: Ethical and moral concepts - Ethical systems - Professional Concept and Professional Ethics - Ethical and Unethical Behaviors in Business Life - Professional Corruption and Ethics - Social Responsibilities of Business and Ethics etc.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 008	PROTOCOL AND SOCIAL BEHAVIOR RULES	2	0	0	2.00	3.00	Seçmeli

#### Course Content

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 012	VOLUNTEERING STUDIES	2	0	0	2.00	3.00	Seçmeli

#### Course Content

The content of the course; corporate social responsibility concept and development, social responsibility areas, social responsibility plan, business ethics and social responsibility relationship, the impact of social responsibility practices on corporate success.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 014	ACADEMIC TURKISH II	2	0	0	2.00	3.00	Seçmeli

#### Course Content

Definition of language, its characteristics, relations between language-nation / language-thought and language-culture. Language in the world; the place and importance of Turkish among them and its historical development. Atatürk's language revolution, concept and works. Sounds in Turkish. Phonology of Turkish. Spelling rules and application. Punctuation rules and application. Vocabulary. Productiveness of Turkish.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 016	CREATIVE DRAMA AND IMPROVISATION	2	0	0	2.00	3.00	Seçmeli

#### Course Content

This course includes the sociological and psychological dimensions of drama, history of drama and its applications in education, drama in education, role play and improvisation, and the relationship of drama with creativity and communication concepts, drama practices and how to use drama activities in teaching different courses.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 020	FIRST AID	2	0	0	2.00	3.00	Seçmeli

#### Course Content

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 022	BUSINESS LAW	2	0	0	2.00	3.00	Seçmeli

#### Course Content

This lesson; the emergence of labor law, sources of labor law, types of employment contract, termination of employment contract, working hours, Permissions and wages, etc. covers topics.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 024	POLITICAL MANAGEMENT	2	0	0	2.00	3.00	Seçmeli

Course Content
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Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 026	SUSTAINABILITY	2	0	0	2.00	3.00	Seçmeli

[illegible]

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 030	TECHNOLOGY ADDICTION	2	0	0	2.00	3.00	Seçmeli

[illegible]

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 032	BUSINESS ADMINISTRATION	2	0	0	2.00	3.00	Seçmeli

Course Content

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 034	FACTORY ORGANIZATION	2	0	0	2.00	3.00	Secmeli

## Course Content

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 036	QUALITY MANAGEMENT SYSTEMS	2	0	0	2.00	3.00	Secmeli

Course Content
<p>1. Introduction to the course and the importance of mathematics in science and engineering.</p> <p>2. Review of basic algebra and geometry concepts.</p> <p>3. Calculus I: Limits, Derivatives, and Integrals.</p> <p>4. Calculus II: Advanced Integration Techniques and Applications.</p> <p>5. Vector Calculus: Dot and Cross Products, Gradient, Divergence, and Curl.</p> <p>6. Differential Equations: Ordinary and Partial Differential Equations.</p> <p>7. Linear Algebra: Matrices, Vectors, and Eigenvalues.</p> <p>8. Probability and Statistics: Basic Concepts and Applications.</p> <p>9. Final Review and Assessment.</p>

The content of this course consists of the concept and meaning of quality, history and principles of quality management, the concept of total quality management, measurement and evaluation methods used in quality management, quality certification.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 038	TECHNOLOGY MANAGEMENT AND R&D	2	0	0	2.00	3.00	Secmeli

[illegible]

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 040	MARKETING	2	0	0	2.00	3.00	Seçmeli

Course Content
<p>1. Introduction to the course and the importance of the subject.</p> <p>2. The role of the teacher in the classroom.</p> <p>3. The role of the student in the classroom.</p> <p>4. The role of the parent in the classroom.</p> <p>5. The role of the community in the classroom.</p> <p>6. The role of the government in the classroom.</p> <p>7. The role of the media in the classroom.</p> <p>8. The role of the technology in the classroom.</p> <p>9. The role of the environment in the classroom.</p> <p>10. The role of the culture in the classroom.</p> <p>11. The role of the religion in the classroom.</p> <p>12. The role of the politics in the classroom.</p> <p>13. The role of the economy in the classroom.</p> <p>14. The role of the society in the classroom.</p> <p>15. The role of the family in the classroom.</p> <p>16. The role of the individual in the classroom.</p> <p>17. The role of the group in the classroom.</p> <p>18. The role of the organization in the classroom.</p> <p>19. The role of the institution in the classroom.</p> <p>20. The role of the system in the classroom.</p>

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 044	E-COMMERCE	2	0	0	2.00	3.00	Seçmeli

Course Content
<p>1. <b>Introduction to the Course</b></p> <p>2. <b>Unit 1: The History of the English Language</b></p> <p>3. <b>Unit 2: The English Language in the 21st Century</b></p> <p>4. <b>Unit 3: The English Language and the Internet</b></p> <p>5. <b>Unit 4: The English Language and the Media</b></p> <p>6. <b>Unit 5: The English Language and the Environment</b></p> <p>7. <b>Unit 6: The English Language and the Future</b></p> <p>8. <b>Unit 7: The English Language and the World</b></p> <p>9. <b>Unit 8: The English Language and the Arts</b></p> <p>10. <b>Unit 9: The English Language and the Sciences</b></p> <p>11. <b>Unit 10: The English Language and the Humanities</b></p> <p>12. <b>Unit 11: The English Language and the Social Sciences</b></p> <p>13. <b>Unit 12: The English Language and the Health Sciences</b></p> <p>14. <b>Unit 13: The English Language and the Business World</b></p> <p>15. <b>Unit 14: The English Language and the Legal System</b></p> <p>16. <b>Unit 15: The English Language and the Medical Field</b></p> <p>17. <b>Unit 16: The English Language and the Education Sector</b></p> <p>18. <b>Unit 17: The English Language and the Government</b></p> <p>19. <b>Unit 18: The English Language and the Military</b></p> <p>20. <b>Unit 19: The English Language and the Space Program</b></p> <p>21. <b>Unit 20: The English Language and the Environmental Movement</b></p> <p>22. <b>Unit 21: The English Language and the Human Rights Movement</b></p> <p>23. <b>Unit 22: The English Language and the LGBTQ+ Community</b></p> <p>24. <b>Unit 23: The English Language and the Disability Community</b></p> <p>25. <b>Unit 24: The English Language and the Aging Population</b></p> <p>26. <b>Unit 25: The English Language and the Immigrant Community</b></p> <p>27. <b>Unit 26: The English Language and the Native American Community</b></p> <p>28. <b>Unit 27: The English Language and the African American Community</b></p> <p>29. <b>Unit 28: The English Language and the Hispanic Community</b></p> <p>30. <b>Unit 29: The English Language and the Asian American Community</b></p> <p>31. <b>Unit 30: The English Language and the Pacific Islander Community</b></p> <p>32. <b>Unit 31: The English Language and the Middle Eastern Community</b></p> <p>33. <b>Unit 32: The English Language and the South Asian Community</b></p> <p>34. <b>Unit 33: The English Language and the Caribbean Community</b></p> <p>35. <b>Unit 34: The English Language and the African Community</b></p> <p>36. <b>Unit 35: The English Language and the Latin American Community</b></p> <p>37. <b>Unit 36: The English Language and the European Community</b></p> <p>38. <b>Unit 37: The English Language and the North American Community</b></p> <p>39. <b>Unit 38: The English Language and the Oceania Community</b></p> <p>40. <b>Unit 39: The English Language and the Arctic Community</b></p> <p>41. <b>Unit 40: The English Language and the Antarctic Community</b></p> <p>42. <b>Unit 41: The English Language and the Southern Ocean Community</b></p> <p>43. <b>Unit 42: The English Language and the Northern Ocean Community</b></p> <p>44. <b>Unit 43: The English Language and the Eastern Ocean Community</b></p> <p>45. <b>Unit 44: The English Language and the Western Ocean Community</b></p> <p>46. <b>Unit 45: The English Language and the Central Ocean Community</b></p> <p>47. <b>Unit 46: The English Language and the Southern Ocean Community</b></p> <p>48. <b>Unit 47: The English Language and the Northern Ocean Community</b></p> <p>49. <b>Unit 48: The English Language and the Eastern Ocean Community</b></p> <p>50. <b>Unit 49: The English Language and the Western Ocean Community</b></p> <p>51. <b>Unit 50: The English Language and the Central Ocean Community</b></p> <p>52. <b>Unit 51: The English Language and the Southern Ocean Community</b></p> <p>53. <b>Unit 52: The English Language and the Northern Ocean Community</b></p> <p>54. <b>Unit 53: The English Language and the Eastern Ocean Community</b></p> <p>55. <b>Unit 54: The English Language and the Western Ocean Community</b></p> <p>56. <b>Unit 55: The English Language and the Central Ocean Community</b></p> <p>57. <b>Unit 56: The English Language and the Southern Ocean Community</b></p> <p>58. <b>Unit 57: The English Language and the Northern Ocean Community</b></p> <p>59. <b>Unit 58: The English Language and the Eastern Ocean Community</b></p> <p>60. <b>Unit 59: The English Language and the Western Ocean Community</b></p> <p>61. <b>Unit 60: The English Language and the Central Ocean Community</b></p> <p>62. <b>Unit 61: The English Language and the Southern Ocean Community</b></p> <p>63. <b>Unit 62: The English Language and the Northern Ocean Community</b></p> <p>64. <b>Unit 63: The English Language and the Eastern Ocean Community</b></p> <p>65. <b>Unit 64: The English Language and the Western Ocean Community</b></p> <p>66. <b>Unit 65: The English Language and the Central Ocean Community</b></p> <p>67. <b>Unit 66: The English Language and the Southern Ocean Community</b></p> <p>68. <b>Unit 67: The English Language and the Northern Ocean Community</b></p> <p>69. <b>Unit 68: The English Language and the Eastern Ocean Community</b></p> <p>70. <b>Unit 69: The English Language and the Western Ocean Community</b></p> <p>71. <b>Unit 70: The English Language and the Central Ocean Community</b></p> <p>72. <b>Unit 71: The English Language and the Southern Ocean Community</b></p> <p>73. <b>Unit 72: The English Language and the Northern Ocean Community</b></p> <p>74. <b>Unit 73: The English Language and the Eastern Ocean Community</b></p> <p>75. <b>Unit 74: The English Language and the Western Ocean Community</b></p> <p>76. <b>Unit 75: The English Language and the Central Ocean Community</b></p> <p>77. <b>Unit 76: The English Language and the Southern Ocean Community</b></p> <p>78. <b>Unit 77: The English Language and the Northern Ocean Community</b></p> <p>79. <b>Unit 78: The English Language and the Eastern Ocean Community</b></p> <p>80. <b>Unit 79: The English Language and the Western Ocean Community</b></p> <p>81. <b>Unit 80: The English Language and the Central Ocean Community</b></p> <p>82. <b>Unit 81: The English Language and the Southern Ocean Community</b></p> <p>83. <b>Unit 82: The English Language and the Northern Ocean Community</b></p> <p>84. <b>Unit 83: The English Language and the Eastern Ocean Community</b></p> <p>85. <b>Unit 84: The English Language and the Western Ocean Community</b></p> <p>86. <b>Unit 85: The English Language and the Central Ocean Community</b></p> <p>87. <b>Unit 86: The English Language and the Southern Ocean Community</b></p> <p>88. <b>Unit 87: The English Language and the Northern Ocean Community</b></p> <p>89. <b>Unit 88: The English Language and the Eastern Ocean Community</b></p> <p>90. <b>Unit 89: The English Language and the Western Ocean Community</b></p> <p>91. <b>Unit 90: The English Language and the Central Ocean Community</b></p> <p>92. <b>Unit 91: The English Language and the Southern Ocean Community</b></p> <p>93. <b>Unit 92: The English Language and the Northern Ocean Community</b></p> <p>94. <b>Unit 93: The English Language and the Eastern Ocean Community</b></p> <p>95. <b>Unit 94: The English Language and the Western Ocean Community</b></p> <p>96. <b>Unit 95: The English Language and the Central Ocean Community</b></p> <p>97. <b>Unit 96: The English Language and the Southern Ocean Community</b></p> <p>98. <b>Unit 97: The English Language and the Northern Ocean Community</b></p> <p>99. <b>Unit 98: The English Language and the Eastern Ocean Community</b></p> <p>100. <b>Unit 99: The English Language and the Western Ocean Community</b></p> <p>101. <b>Unit 100: The English Language and the Central Ocean Community</b></p>

Historical Development Process of Electronic Commerce, Basic Concepts of Internet and Electronic Commerce, Management of Marketing over the Internet, Electronic Logistics: Electronic Commerce Applications

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 046	CURRENT ECONOMIC ISSUES	2	0	0	2.00	3.00	Secmeli

Course Content
<p>1. Introduction to the course and the importance of mathematics in science and engineering.</p> <p>2. Review of basic algebra and geometry concepts.</p> <p>3. Calculus I: Limits, Derivatives, and Integrals.</p> <p>4. Calculus II: Advanced Integration Techniques and Applications.</p> <p>5. Vector Calculus: Scalars, Vectors, and Differential Equations.</p> <p>6. Linear Algebra: Matrices, Determinants, and Eigenvalues.</p> <p>7. Probability and Statistics: Basic Concepts and Data Analysis.</p> <p>8. Final Review and Assessment.</p>

Basic Economic Concepts, National Income, Income Distribution and Poverty, Factors of Production, Inflation, Unemployment, Interest Rate, Middle Income Trap, Cryptocurrency, Structural Reforms, Sustainable Development.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 048	PUBLIC RELATIONS	2	0	0	2.00	3.00	Secmeli

Course Content
<p>1. Introduction to the course and the importance of mathematics in science and engineering.</p> <p>2. Review of basic algebra and geometry concepts.</p> <p>3. Calculus I: Limits, Derivatives, and Integrals.</p> <p>4. Calculus II: Advanced Integration Techniques and Applications.</p> <p>5. Multivariable Calculus: Partial Derivatives and Double Integrals.</p> <p>6. Linear Algebra: Vectors, Matrices, and Linear Transformations.</p> <p>7. Probability and Statistics: Basic Concepts and Data Analysis.</p> <p>8. Final Review and Assessment.</p>

Concept of Public Relations; Historical Development; Methods and Techniques Used; Principles and Organization; Strategic Management in Public Relations; Public Relations in the Information Society

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 050	SOCIOLOGY	2	0	0	2.00	3.00	Secmeli

Course Content
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Within the scope of the course, the definition of sociology, its basic concepts, its emergence as a science will be emphasized. Afterwards, some topics of sociological interest (such as modernization, globalization, social stratification, class, gender) will be discussed.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 052	GLOBALIZATION READINGS	2	0	0	2.00	3.00	Seçmeli

#### Course Content

The course covers the modern and its conceptual concepts, the general outlines of the modernization process and evolution from the past to the present, 20th-century modernization theories and their criticism, the post-modern period, the emergence conditions and historicity of globalization, the large-scale changes that occurred in the post-globalization period and their economic, political discusses and discusses the topics that will reveal the social and cultural consequences of these developments, and finally question the effects, results, and meanings of these developments in Turkey.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 054	PHOTOGRAPHY	2	0	0	2.00	3.00	Seçmeli

#### Course Content

The phenomenon of photograph, Concept of Photography, Historical Development of Photography, Types of Cameras, Working Principles of Camera, Interpretation of Photography, Golden Ratio, Exposure Triangle, Application Examples.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 058	INTRODUCTION TO BUSINESS SCIENCE	2	0	0	2.00	3.00	Seçmeli

#### Course Content

Basic concepts of business organizations, organizations' objectives and environment, establishment and classification of organizations, expansion of organizations, the concept of international business and business functions.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 060	HEALTHY AND ACTIVE AGEING	2	0	0	2.00	3.00	Seçmeli

#### Course Content

This course includes the concept of health and other related concepts, physical health, mental health, social health concepts, aging concept and active aging practices.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 062	SALES TECHNIQUES	2	0	0	2.00	3.00	Seçmeli

#### Course Content

In addition to the theoretical information given in the preparation of pre-sales, performing the sales process and following the after-sales services, the student shares his / her knowledge with the class through a field study.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 066	HISTORY OF CLOTHING	2	0	0	2.00	3.00	Seçmeli

#### Course Content

Clothing in Prehistoric Societies; A.D. Clothing Culture in Various Regions of the World (Anatolia, Asia, Europe, Australia, Africa, America...) from the 5th Century to the 20th Century; the Latest Situation of Clothing Culture in the 21st Century.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 068	ADDICTION AND FIGHT AGAINST ADDICTION	2	0	0	2.00	3.00	Seçmeli

#### Course Content

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
GS 070	CHILD RIGHTS AND FAMILY EDUCATION	2	0	0	2.00	3.00	Seçmeli

#### Course Content

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE TS VII	TEKNİK SEÇMELİ VII	3	0	0	3.00	5.00	

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 432	MULTI CRITERIA DECISION MAKING	3	0	0	3.00	5.00	Seçmeli

#### Course Content

Basic concepts of decision making, Modeling and classification of decision making problems, Decision making under uncertainty, Four criteria: maximin, maximax, Hurwicz, Laplace criterion, Decision making under risk, expected value, expected opportunity cost, Normalization Methods, Sensitivity Analysis, Simple Additive Weighting Method, Weighted Product Method, AHP, Analytical Network Process, TOPSIS Method, ELECTRE Method, PROMETHEE Method, VIKOR Method, Current Topics on MCDM and SuperDecision/ExpertChoice Package Programs.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 434	FEASIBILITY STUDY	3	0	0	3.00	5.00	Seçmeli



**Course Content**

Scope of factory establishment studies, market research/warehousing, stocking, determination of production capacity, determination of machine quantities, determination of worker numbers/determination of wages, manufacturing methods, work study, placement plan, quality control organization, profitability calculations, investment capital account.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 436	SIMULATION APPLICATIONS	3	0	0	3.00	5.00	Seğmeli

**Course Content**

Models and Classification of Models, Simulation and Analog Models, Properties of Simulation Models, Time Flow Mechanism in Simulation, Definite and Random Simulation, Derivation of Random Values ??in Random Numbers, Discrete System Simulation and Examples, Discrete System Simulation Languages ??SIMAN, ARENA Programs and Examples, Accuracy of Simulation Models and Validity, Analysis of Simulation Outputs

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 438	ASSEMBLY LINE BALANCING	3	0	0	3.00	5.00	Seğmeli

**Course Content**

Production lines, Assembly line setup, Heuristic and analytical methods for assembly line balancing, Production smoothing

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 440	LEAN MANUFACTURING	3	0	0	3.00	5.00	Seğmeli

**Course Content**

Value Stream Mapping and Process Analysis; Production/Management with Cells and Cell Design; SMED, Production Smoothing and Push/Pull Systems; Lean Logistics; Lean Management System; Lean Cost Accounting; Lean Product Development; Examples of Various Real Lean Manufacturing/Management Practices

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 442	SPECIAL TOPICS IN INDUSTRIAL ENGINEERING	3	0	0	3.00	5.00	Seğmeli

**Course Content**

Selected Industrial Engineering current practice, problem definition about its applications, modeling, literature research, adaptation, application, presentation of study results, etc. conveying information on topics.

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 444	SPECIAL TOPICS IN OPERATIONS RESEARCH	3	0	0	3.00	5.00	Seğmeli

**Course Content**

Introduction, Operations research methodology. Management science. Mathematical problem structures. Quick review of linear programming solution methods and algorithms. Post-optimal analyzes and interpretations. Use of GAMS package program. Simplex table analysis with matrix vector calculations. Revised simplex method and Parametric programming

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE TS VI	TECHNICAL ELECTIVE VI	3	0	0	3.00	5.00	

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 422	R&D MANAGEMENT AND INNOVATION	3	0	0	3.00	5.00	Seğmeli

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 424	CUSTOMER RELATIONS MANAGEMENT	3	0	0	3.00	5.00	Seğmeli

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 426	HUMAN RESOURCES MANAGEMENT	3	0	0	3.00	5.00	Seğmeli

**Course Content**

Course Unit Code	Course Name	T	U	L	Credit	ECTS	Type
IE 428	TOTAL QUALITY MANAGEMENT	3	0	0	3.00	5.00	Seğmeli

**Course Content**