
ANKARA YILDIRIM BEYAZIT
ÜNİVERSİTESİ
AYBÜ
Geçmişten Geleceğe

AYBU,

- ✓was founded in July 2010.
- ✓has eight campuses, 15 faculties, 5 institutes, 28 centers and more.
- ✓For more information please visit: https://aybu.edu.tr/

FACULTY OF ENGINEERING AND NATURAL SCIENCES

PROFESSOR	33
ASSOCIATE PROFESSOR	**11**
ASSISTANT PROFESSOR	**34**
TOTAL NUMBER OF FACULTY MEMBERS	**78**
LECTURER	**8**
RESEARCH ASSISTANT	**56**
TOTAL NUMBER OF ACADEMIC STAFF	**142**

CAMPUS VIEW

INDUSTRIAL ENGINEERING DEPARTMENT

Ankara Yıldırım Beyazıt University

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ACADEMIC STAFF

3 Professors
2 Associate Professors
3 Assistant Professors
6 Research Assistants (1 PhD'ed)

LABORATORIES

- **Optimization Laboratory**
- **Simulation Laboratory**
- **Big Data Laboratory**

Our Computer Labs

Conferences

Journal of Turkish Operations Management

- Journal of Turkish Operations Management (JTOM) is published by Ankara Yıldırım Beyazıt University Industrial Engineering Department twice a year (June-December) in English, Turkish, Persian and Arabic.
- It is an international peer-reviewed journal that conducts research on Industrial Engineering.

Journal of Turkish Operations Management

- The first issue of the journal was published in 2017.
- The international editors of our journal were selected from 20 countries.
- Our journal is currently indexed in ***TR DİZİN, EBSCO, ERIH PLUS, ESJI, MIAR, ROAD, GOOGLE SCHOLAR, ACADEMIC RESOURCE INDEX, INDEX COPERNICUS, ROOT INDEXING, ASOS INDEX and SOBIAD.***
- Scopus application has been made and it is planned to apply to the SCI index next year.

7 PROGRAMS

# OF PRG'S	MAJORS	DEGREES
3	INDUSTRIAL ENGINEERING	Undergraduate, MSc, PhD
3	OCCUPATIONAL HEALTH AND SAFETY	Non Thesis MSc, MSc, PhD
1	ENGINEERING AND TECHNOLOGY MANAGEMENT	Non Thesis MSc

Industrial Engineering

- Managing Processes. Training and research are carried out in the development and implementation of methods and techniques for the effective use of people, machinery, and materials in order to increase the productivity of the institutions that produce products or services.
- Industrial Engineers can work in the public sector and private sector factories. Industrial engineering is an increasingly important engineering discipline.

MISSION

- The mission of our Industrial Engineering Program is to train competitive Industrial Engineers by equipping them with practical knowledge as well as theoretical foundations for today's challenging business world.
- Make a difference!

VISION

- The vision of our Industrial Engineering Department is to prepare our students for various industrial branches with the broad/competitive subject scope of Industrial Engineering.
- As a department, we strive to train creative thinking and self-confident future leading engineers as well as training competitive Industrial Engineers.

Main Courses Taught in the Program

- The duration of training in the departments of industrial engineering is 4 years. In the first two years of the undergraduate program, basic engineering courses such as mathematics, physics, chemistry and basic engineering courses such as static, dynamic, strength, materials, computer programming, and economics courses are given.

Main Courses Taught in the Program

- In the last two years of the program, a project course on basic Industrial Engineering (Elective) courses such as operation research, statistics, business survey, ergonomics, engineering economics, facility planning, production methods and planning, inventory and quality control and other courses and system design for various departments are given. Work&Study in Industry (15 ECTS) is also available.

PUBLIC-UNIVERSITY COOPERATION

- Public, University and Industry Cooperation and Development Team (KUSİ) try to be selected **among the top ten universities to benefit from the TÜBİTAK Support Program for Technology Transfer Offices**.
- Over the years, university-industry collaboration has increased, technology transfer and commercialization and effective management of intellectual priority has become a priority.

PUBLIC-UNIVERSITY COOPERATION

Mission

- Integrating university's research results into the industry
- Acting as a bridge between the private sector and the university in developing new projects and establishing long-term relationships
- Providing support mechanisms for faculty members so that they can benefit most effectively from national and international R&D funds

PUBLIC-UNIVERSITY COOPERATION

- Supporting, motivating and providing the necessary environment for students, faculty members and researchers for entrepreneurship
- Effectively managing intellectual property rights for our stakeholders)
- Max benefit of being in Ankara, the capital.

Academic Practice Areas

- System Analysis and Design
- Ergonomics and Work Study
- Human Factors
- Finance
- Decision Science
- Optimization
- Production Systems
- Supply Chain Management
- Facility Planning
- Statistics and Data Analysis
- Quality & Maintenance
- Robotics

We Make A Difference

In addition to the classical Industrial Engineering approaches, our department tries to make a difference in four main areas:

- Manufacturing
- Human Factors Engineering (Ergonomics)
- Systems Engineering
- Economy/Finance Engineering.

Manufacturing

- Manufacturing or production planning helps organizations to meet customer demands with optimum use of machine, equipment and workforce resources.

- This planning is a critical business process for manufacturing institutions. Therefore, manufacturers need a planning process that is designed and successfully implemented to meet both customer expectations and their own corporate goals.

Human Factors Engineering

- Human factors engineering is a multidisciplinary field. It is a research area that deals with the design of tools, machines and systems that takes into account human limitations and characteristics.

- It considers the interactions among humans and other system elements. The main aim is to design in order to optimize human well-being and overall system performance.

Systems Engineering

- Systems engineering aims to realize the design, production and maintenance of complex systems or the subsystems that make up these systems, taking into account time and cost constraints.
- It offers an interdisciplinary holistic approach.
- In this way, instead of focusing on the individual parts of the system, the whole system is handled as a whole, and thus the problem or problems are determined and solved more quickly.

Economy/Finance Engineering

- Financial engineering is an important field that brings an engineer's point of view to the economy field.
- It involves financial theory, engineering and mathematics techniques. Besides of these programming is widely used.
- Quantitative modelling, quantitative programming and risk managing are main areas.

Publication/Project Examples

- Highly Productive Team wrt numbers
- Projects
- Consultancies
- Commertials
- Industrial activities
- Books
- Articles

Publication/Project Examples

Production (Manufacturing) Systems

- Bulanık Kalite Fonksiyon Yayılımı (BKFY) Temelli Tasarım Geliştirme Yaklaşımı, Eraslan E.
- Optimal Siting and Sizing of Battery Energy Storage System for Distribution Loss Reduction Based on Meta-heuristics, Yıldızbaşı A.
- A Distributed Adaptive Coordination Protocol to Enhance Manual Order Picking Operations, Yılmaz İ.

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Publication/Project Examples

Ergonomics and Work Study

- A hybrid algorithm based on fuzzy linear regression analysis by quadratic programming for time estimation: An experimental study in manufacturing industry, Eraslan E.
- A New Approach for Wage Management System Using Fuzzy Brackets in Industry, Eraslan E.
- Usability ranking of intercity bus passenger seats using fuzzy axiomatic design theory, Eraslan E.
- Pace making and worker reassignment for assembly line rebalancing, Budak G.

Publication/Project Examples

System Analysis and Design

- Model Based Engineering, Optimizing The Higher Education Goals of Turkey's 2050 Using (2N+1) Geometric Ratio Model, Gündoğan M.
- Restructuring Governments Using A Geometric Ratio Technique And Its Multiple Effects, Gündoğan M.
- An Analysis Of A Manufacturing Company To Transform Into Industry_4.0 Using Systems Engineering Approach, Gündoğan M.
- Developing And Analyzing The Strategic Plan For Mado Company, Efendioğlu D.

Publication/Project Examples

Finance

- Money Creation Versus Wealth Creation, Gündoğan M.
- Debt Based Monetary System, Gündoğan M.
- BIST 100 Index Estimation Using Bayesian Regression Modelling, Öztürk C., Efendioğlu D., Güleç N.
- An Application of Blockchain Systems in Livestock Supply Chain Management, Efendioğlu D.
- Blockchain and Sustainability, Öztürk C., Yıldızbaşı A. , Arıöz Y.

Publication/Project Examples

Decision Science

- Development of a Spreadsheet DSS for Multi-Response Taguchi Parameter Optimization Problems Using the TOPSIS, VIKOR, and GRA Methods, Eraslan E.
- Barriers to implementation of blockchain into supply chain management using an integrated multi-criteria decision-making method: a numerical example, Yıldızbaşı A.
- Weighting the Positions and Skills of Volleyball Sport by Using AHP: A real life application, Budak G.
- A Hybrid Multiple Criteria Decision Making Approach for Academic Staff Selection, Ecer B.
- Evaluation of Retail Industry Performance Ability Through Integrated Intuitionistic Fuzzy TOPSIS and Data Envelopment Analysis Approach, Rouyendegh B. D. , Yıldızbaşı A. , Yılmaz İ.
- Assessing the Social Sustainable Supply Chain Indicators Using an Integrated Fuzzy Muli-Criteria Decision-Making Methods: A Case Study of Turkey, Yıldızbaşı A., Öztürk C., Efendioğlu D.
- MACBETH Yöntemi ile Sürdürülebilir Enerji Alternatifi Seçimi, Yıldızbaşı A., Öztürk C., Çalık A., Eraslan E.

Publication/Project Examples

Optimization

- Multi-level Optimization of an Automotive Closed-Loop Supply Chain Network with Interactive Fuzzy Programming Approaches, Yıldızbaşı A.
- A Mixed-Integer Programming Model for Green Location and Transportation in a Closed-Loop Supply Chain, Yıldızbaşı A.
- Bilevel optimization to deal with demand response in power grids: models, methods and challenges, Ecer B.
- Goal Programming Model for Bi-Objective Inverse Multiple Criteria Sorting Problem, Ecer B.
- New mathematical models for team formation of sports clubs before the match, Budak G.
- Performance Assessment of Multi-objective Optimization Methods, Öztürk C.

Publication/Project Examples

Supply Chain Management

- A Comparative Holistic Fuzzy Approach for Evaluation of the Chain Performance of Suppliers, Eraslan E.
- Assessing the social sustainable supply chain indicators using an integrated fuzzy multi-criteria decision-making methods: a case study of Turkey, Yıldızbaşı A., Öztürk C., Efendioğlu D.
- Assessment And Creation Of Livestock Supply Chain Management, Efendioğlu D.
- Assessing the social sustainable supply chain indicators using an integrated fuzzy multi-criteria decision-making methods: a case study of Turkey, Yıldızbaşı A., Öztürk C., Efendioğlu D.
- Transportation of Valuable Product A Case Study, Ecer B.
- A Comprehensive Literature Review On Circular Economy In Sustainable Supply Chain Applications, Arıöz Y., Yıldızbaşı A.

Publication/Project Examples

Facility Planning

- Facility Location Selection Problem: An Application, Gündoğan M.
- Using Intuitionistic Fuzzy TOPSIS in Site Selection of Wind Power Plants in Turkey, Rouyendegh (B. Erdebilli), Yıldızbaşı A.
- Warehouse Selection based on Fuzzy ELECTRE, Erdebilli B.
- A new methodology for optimal location and sizing of battery energy storage system in distribution networks for loss reduction, Yıldızbaşı A.
- Centrality based solution approaches for median-type incomplete hub location problems, Öztürk C.

Publication/Project Examples

Statistics and Data Analysis

- Restructuring Governments Using A Geometric Ratio Technique And Its Multiple Effects, Gündoğan M.
- Determining the Position of Countries According to the Quality of Life Index Criteria, Güleç N., Efendioğlu D., Öztürk C.
- Temel Sağlık Göstergeleri ve Sürdürülebilirlik Veri Madenciliği Tekniklerinden Faydalanarak Çocuk Ölümlerinin Analizi, Efendioğlu D.

Latest Publications

- An optimal configuration for hybrid SOFC, gas turbine, and Proton Exchange Membrane Electrolyzer using a developed Aquila Optimizer, S Wang, J Ma, W Li, M Khayatnezhad, BD Rouyendegh International Journal of Hydrogen Energy, 2022
- Integrated Fuzzy AHP-TOPSIS Method to Analyze Green Management Practice in Hospitality Industry in the Sultanate of Oman S Piya, A Shamsuzzoha, M Azizuddin, N Al-Hinai, B Erdebilli Sustainability 14 (3), 1118, 2022
- A Linear Programming Based Multi-Criteria Approach for Performance Ranking: A Case Study UT Şenel, R B.D, A Pınar Journal of Engineering Research 2021
- An optimal size selection of hybrid renewable energy system based on Fractional-Order Neural Network Algorithm: A case study X Guo, L Zhou, Q Guo, BD Rouyendegh Energy Reports 7, 7261-7272, 2021
- BULANIK ÇOK KRİTERLİ KARAR VERME YÖNTEMLERİ – MS Excel ® ve Software Çözümlü Uygulamalar, Babek Erdebilli Mehmet Kabak

THANKS FOR YOUR ATTENTION

INDUSTRIAL ENGINNERING DEPARTMENT