
ANKARA YILDIRIM BEYAZIT
ÜNİVERSİTESİ
AYBÜ
Geçmişten Geleceğe

Engineering and Natural Science Faculty

INDUSTRIAL ENGINEERING DEPARTMENT

PRESENTATION

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ANKARA

What is Industrial Engineering?

- Industrial Engineering;

➔ Technic and technological advances in ability of ;

- ✓ Learning
- ✓ Utilizing,
- ✓ Improving,

➔Simple and complex systems within specific cost and time constraints;

- ✓ Design,
- ✓ Production
- ✓ Control

makes and constantly improves the quality of life.

What is Industrial Engineering?

- Industrial Engineering deals with;

  - Human
  - Machine
  - Information
  - Hardware
  - Energy

as well as the design, construction, operation and improvement of integrated systems, which are concerned with their quality, productivity and ethical problems.

What Does the Industrial Engineer Do?

- In Industrial Engineering;
  - Production and Inventory Planning,
  - Service Planning,
  - Operations Management,
  - Project Management
  - Production System and Facility Planning,
  - System Engineering,
  - Ergonomics and Work Methods,
  - Economy & Finance
  - Logistics and Supply Chain Management,
  - Statistics and Data Analysis,
  - Simulation and Network Theory,
  - Quality and
  - Maintainance… There are many underground workshops.
- Large-scale and comprehensive problems encountered in all these areas can be solved within certain constraints and targets.

Academic Members

- Our academic staff is constantly growing within the framework of our fields of study.

- With our successful and experienced teachers in the field, open to current developments and self-refreshing attitude of our faculty members will act as your biggest supporter.

- Our research assistants will try to help you during the course, but they will give you their experiences in practical courses.

Our Difference in Industrial Engineering

- In addition to basic Industrial Engineering approaches, our department tries to make a difference in four areas:
  - **Ergonomics and Business Environment Design**
  - **Systems Engineering**
  - **Production**
  - **Economics and Financial Engineering**

ERGONOMY

- Ergonomics; taking into account the physiological and psychological characteristics of human beings, is a branch of science that examines the harmony of human with machine and environment.

- With ergonomics studies;
  - Balancing workload and working power in the best way,
  - It protects the health of the employee,
  - Interaction of human - machine - environment systems, which ensures production efficiency,
  - Application of the fields of anatomy, physiology and experimental psychology,
  - Briefly; It covers all of the works to optimize the working and living conditions of the designs intended for human use.

ERGONOMY

- Thanks to ergonomic improvements, the working environment is free of the dangers and accidents; it is transformed into an environment that enhances human motivation.

- In addition, due to the ergonomic disruptions of the work is prevented and the efficiency is increased and the cycle time decreases.

- Ergonomic arrangements do not only cover the production environment; office ergonomics, hospital ergonomics, city ergonomics also provide great benefits

ERGONOMY

- The studies that can be done within this scope can be examined under 8 main topics:

  - **Physical Evaluation of the Workplace**
  - **Anthropometric Review**
  - **Manual Lifting Work (MLF)**
  - **Ergonomic Workplace Organization**
  - **Personal Protectors / Machine Protectors**
  - **Risk Analysis and Hazard Sources**
  - **Posture Analysis**
  - **Physical Loads for Mental Loads and Blue Collar in Office Work**

SYSTEM ENGINEERING

- The system is a structure that brings together different elements and produces results that they cannot produce when they are separate. These elements; parts, people, software, hardware, facilities, techniques and technologies, documents, policies etc. elements.

- System engineering enables the design, production, maintenance and termination of complex systems or the sub-systems that constitute these systems, especially taking into account economic fluctuations and time, cost, quality, productivity and ethical constraints.

SYSTEM ENGINEERING

- Systems Engineering programs address, analyze or design the whole using all the basic concepts, tools and methods required for the analysis of functionally complex systems.

- With the system engineering approach, the whole system is handled as a whole, rather than focusing on the individual parts of the system, and problems or problems are identified and resolved faster by an interdisciplinary approach.

- The system engineering approach defines the functional and conceptual structure as a whole and elaborates the whole function as much as the end user. It also monitors and manages processes from design to finishing (scrapping or destroying).

PRODUCTION

- Manufacturing management, the material, machinery, manpower resources in the hands of the company in a certain amount of time to produce products in a timely manner and at the lowest cost to bring together.

- The types of manufacturing are examined in two sections, conventional and non-traditional. Non-traditional manufacturing methods developed after the Second World War, modern technology has become indispensable methods. In this way, flexible production capabilities increased and production costs decreased.

PRODUCTION

- Manufacturing works on a system based on basic and mechanical infrastructure.

- Machining, which is one of the main production types, is the production method which involves the design and construction of the machined machine element, which has been designed and constructed in advance, by forming the cutting machine with the determined cutting tools according to the manufacturing process. Thanks to machining, parts of different geometries and dimensions can be obtained.

ECONOMY & FINANCIAL ENGINEERING

- The risks we face have also changed due to the globalization and the rapidly developing technologies and the increasing international trade and relations. Exchange rate movements in money markets have become one of the most important risks faced by institutions.

- Risk Management has emerged as a very important discipline. Each organization has to calculate the risks it faces in the most effective way according to its business approach and objectives.

ECONOMY & FINANCIAL ENGINEERING

- Financial Engineering simulates the operation of the financial instruments required for realization of risk management in the money market by the creation, correct pricing and mathematical modeling of financial instruments.

- Stochastic processes, simulation and optimization techniques frequently used in operations research can be used in Financial Engineering applications.

- In addition, interest-free risk management efforts have gained considerable importance in order to reduce the systemic risks of interest and interest.

PUIC (Public-University-Insititute Cooperation)

- Our Department,
  - Improvement of any system,
  - Establishing a systematic and efficient structure,
  - Making arrangements in accordance with the essence of the institutions,
  - Calculation of potential gains and
  - To manage all kinds of risks
  - Has the necessary capabilities.
- Our department
  - It is open to mutual trust and sustainable cooperation between each institution and department academicians. The scientific potential in our department can be transferred to the institutions and transformed into economic value.
- Our department
  - Turn-key projects are available.

Thank you !!!

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IE Department