MECHATRONICS ENGINEERING DEPARTMENT

İstanbul Gelişim University

Faculty of Engineering and Architecture

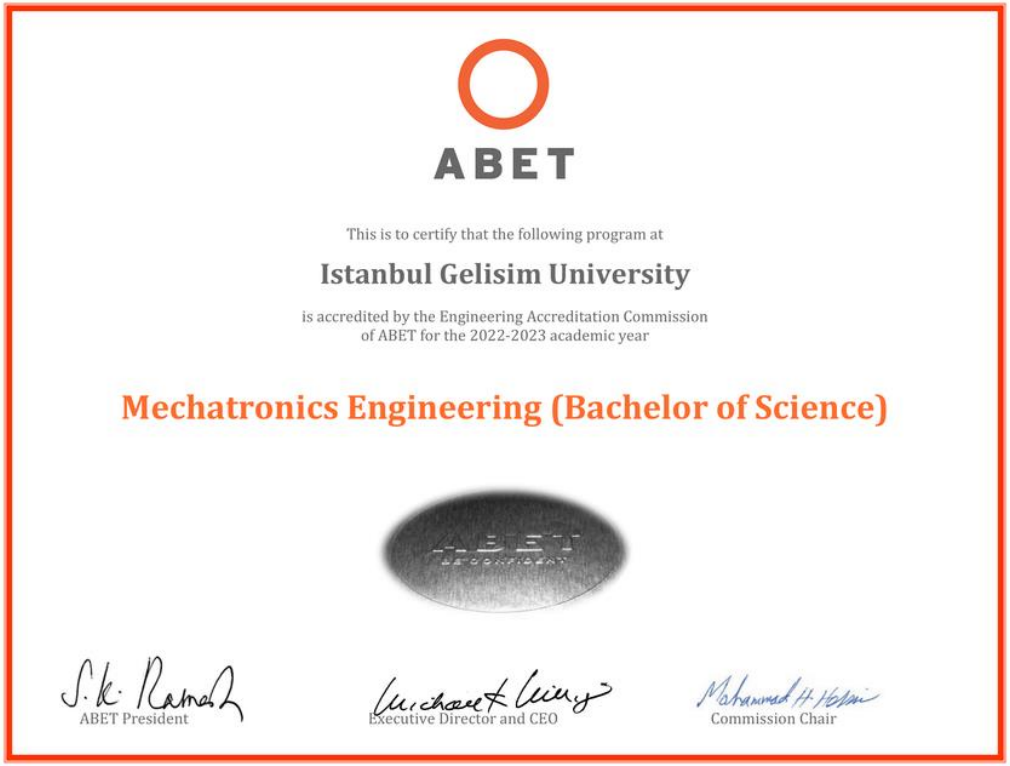
Our goal is to train qualified engineers who are capable of multidisciplinary work in line with a high quality, accredited education program.

Prof. Hamdi Alper ÖZYİĞİT

Head of Mechatronics Engineering Department

Faculty of Engineering and Architecture

Department Accreditation


ABET

This is to certify that the following program at

Istanbul Gelisim University

is accredited by the Engineering Accreditation Commission of ABET for the 2022-2023 academic year

Mechatronics Engineering (Bachelor of Science)

ABET President

Executive Director and CEO

Commission Chair

ABET (Accreditation Board for Engineering and Technology) is the world's top accreditation organization in the field of engineering and technology and is a non-profit, U.S.-based organization that accredits higher education programs.

Although there are many organizations around the world that monitor higher education programs in terms of teaching processes and outcomes within certain norms, ABET is the leading organization in its field in terms of audit approaches and methods, especially in engineering programs.

Istanbul Gelisim University Mechatronics Engineering Department is one of the programs accredited by ABET and offers its students an education at internationally recognized quality standards.

Purpose of the Department

Mechatronics Engineering is a branch of engineering, which has been frequently referred to in the recent years and has become more required with the rising popularity of using smart systems and robots in the industry. Rapid development of mechanics, electronics, computer hardware and software industries and transition to smart systems in the industry enhanced with this development created the field of mechatronics engineering, which is a combination of different fields of engineering. As a combination of mechanical, electrical-electronics and computer engineering, the mechatronics engineering studies on the design and production of functional smart systems and products to be beneficial to humanity and industry.

Department's Objective

In modern times, when technology is developing very rapidly, it is seen that the use of artificial intelligence technologies and intelligent systems is increasing in a wide range of fields. Rapidly developing technologies in the machinery, electronics, computer hardware and software sectors have gradually increased and increased the transition to intelligent systems in industry. Mechatronics Engineering Departments have been opened to meet the need for technical staff in this field and have taken their place in the industry in order to provide the necessary software, hardware and design infrastructure to the graduates of the department. Its importance is increasing every day with the use of intelligent systems and new generation technologies.

> “Development (Gelişim)” is the most fundamental principle of our department and we prepare our students for the future by always following the latest technology and implementations.

Program and Curriculum Information

In order to graduate from Istanbul Gelisim University, Faculty of Engineering and Architecture, Department of Mechatronics Engineering, it is necessary to complete a course load of 138 credits and 240 ECTS.

In the first two years, our students take the required basic science courses such as “Mathematics I-II, Physics I-II, Chemistry”, which are common to all departments of the Faculty of Engineering and Architecture, as well as basic branch courses. Starting from the third year, our students start to take elective courses in addition to the compulsory courses required for the department. In this context, interdisciplinary education is provided with elective courses offered to the entire faculty. In addition, our students are also supported with social elective courses aimed at strengthening their outlook on life, versatility and gaining additional skills. During the education process, students encounter theoretical courses, laboratory-workshop studies and project-based assignments on a semester basis.

In the fourth year, our students, having decided on the field they will specialize in, produce a work in the light of all the knowledge they have learned in four years, individually or as a group, with the Mechatronics System Design and Graduation Project course.

Learning Outcomes

The learning outcomes of the department are as follows:

- Able to adopt math and science knowledge to the problems of Mechatronic Engineering.
- Can use the scientific methods to solve problems of Mechatronic Engineering.
- Able to plan experiment, build hardware, collect data using modern devices and analyze data.
- Can define, scientize and solve the actual mechatronics problems.
- Use modern tools such as softwares in engineering design and analysis.
- Prone to work in interdisciplinary teams and be a team leadership.
- Able to find solutions that meet technical and economical expectations when designing a system with components.
- Can approach with a global perspective to Mechatronics Engineering.
- Able to keep up to date of self-awarness in the field.
- Can follow academic and industrial developments related Mechatronics Engineering.
- Able to work in the field, interdisciplinary and multidisciplinary environments.
- Have written and verbal communication skills in Turkish and English.
- Have professional and ethical values and sensitive to these.
- Sensitive to health and safety issues in Mechatronic Engineering.
- Sensitive to social, environmental and economic factors in professional activities.

Practice in Laboratories Workshops

- Machining-Chipless Manufacturing Methods Laboratory
- Mechanical / Industrial Automation Laboratory
- Physics Laboratory
- Computer Laboratories
- Electronics Laboratory
- Communication and Microprocessors Laboratory
- Electrical Machinery and Electrical Facilities Laboratory

Academic Staff

Prof.
Hamdi Alper ÖZYİĞİT
Mechatronics Engineering Department
Head of Department

Assoc. Prof.
Bülent GÜZEL
Mechatronics Engineering Department

Assoc. Prof.
Engin ERBAYRAK
Mechatronics Engineering Department

Asst. Prof.
Haydar İzzettin KEPEKÇİ
Mechatronics Engineering Department

Asst. Prof.
Cansu NOBERİ
Mechatronics Engineering Department

Asst. Prof.
Kenan ŞENTÜRK
Mechatronics Engineering Department

Asst. Prof.
Safar POURABBAS
Mechatronics Engineering Department

Asst. Prof.
Gökçe KARACAYILMAZ
Mechatronics Engineering Department

Asst. Prof.
Sanem YAVUZ
Mechatronics Engineering Department

Res. Asst.
Tunay ACIMAN
Mechatronics Engineering Department

Res. Asst.
Ufuk ATEŞOĞLU
Mechatronics Engineering Department

Res. Asst.
Muhammed Lütfi TIRABZON
Mechatronics Engineering Department

Program Educational Objectives

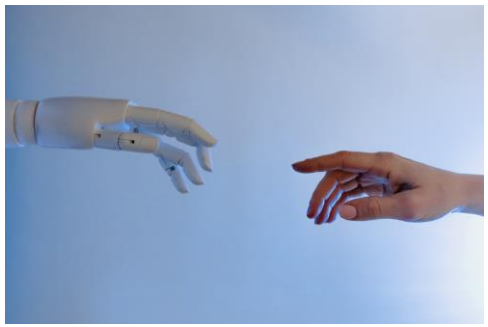
According to the mission of Mechatronics Engineering program, the following program educational objectives are career and professional accomplishments that our expected to be achieved by our graduates within a few years of their graduation:

1. Establish a successful career in mechatronics engineering in leading and prominent organizations

2. Gain advancement in their careers through professional development activities and pursue of higher education

3. Develop a variety of relationships in international working environments which will contribute to the respect and appreciation to the other individuals and the society

4. Practice in mechatronics engineering in a broad range of industries



Career Opportunities

Mechatronics engineers are needed wherever there is production and technology in today's smart systems transition period, which is considered as a revolution in the industry. Mechatronics engineers, who have a wide range of career opportunities, are offered job opportunities in the following areas.

- Automotive industry
- Custom robot design and production for different sectors
- Industrial automation
- Smart sensors
- Weapons and weapon systems, electromechanical systems

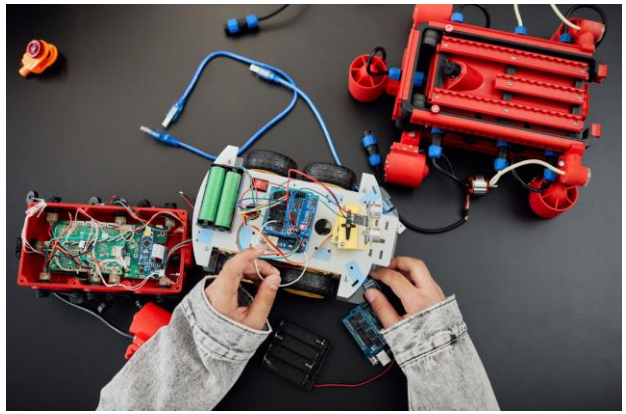
Who Should Choose?

In today's era of transition to intelligent systems, which is considered as a revolution in the industry, it is a department that will be preferred by people who are interested in the fields given below, who follow current technological developments and who want to make a career in these fields.

- Robotics and artificial intelligence technologies, automation systems
- Health technologies
- Defense industry
- Automotive industry

Future of the Department

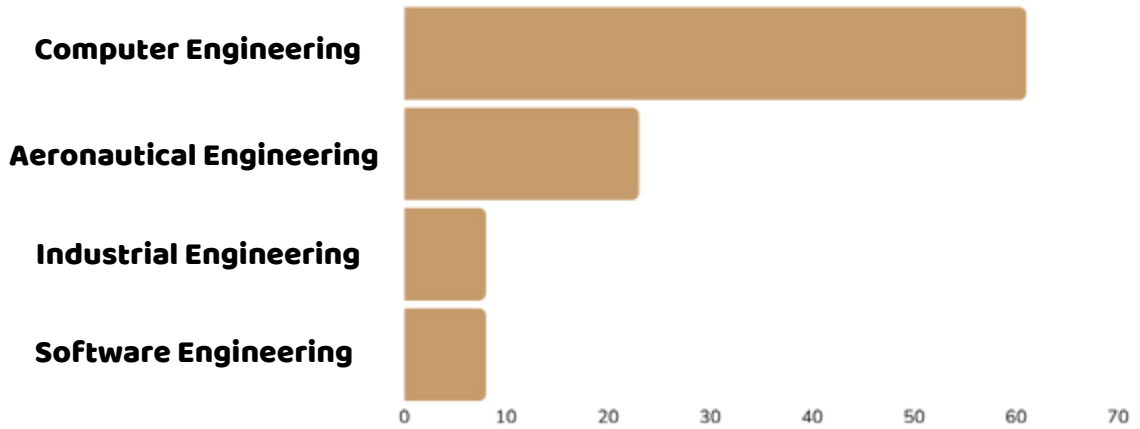
In our time, when technology is developing very rapidly, it is seen that the use of artificial intelligence technologies and intelligent systems is increasing in a wide range of fields. Rapidly developing technologies in the machinery, electronics, computer hardware and software sectors have gradually increased and increased the transition to intelligent systems in industry. Mechatronics Engineering Departments have been opened to meet the need for technical staff in this field and have taken their place in the industry in order to provide the necessary software, hardware and design infrastructure to the graduates of the department. Its importance is increasing every day with the use of intelligent systems and new generation technologies.



Free of Charge Double Major Opportunity

The purpose of the double major program is to enable students who have successfully completed their major programs to study in a second major program free of charge. Students who have a cumulative grade point average of 2.90 out of 4.00 in their major program and who are in the top 20% of their undergraduate/graduate program can start the second major diploma program free of charge.

In which departments do Mechatronics Engineering students do their DMP?



In addition, being entitled to ABET (Accreditation Board for Engineering and Technology) accreditation based in the United States of America, which is highly recognized in the world, proves that our department's education is at a quality level at international standards.

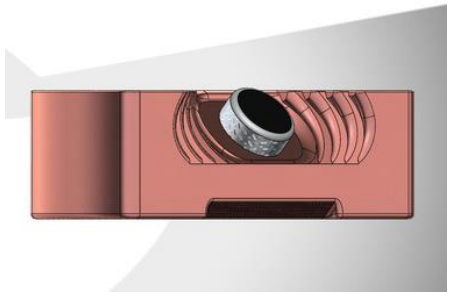
Mechatronics Engineering
Head of Department
Prof. Hamdi Alper ÖZYİĞİT(PhD)

TUBITAK 2209-A Project

TÜBİTAK 2209-A University Students Research Projects Support Program is a program that aims to provide financial support for research projects carried out by undergraduate and associate degree students. Two of our projects carried out within this scope have been accepted and supported by TÜBİTAK.

One of the faculty members of our department, Assist. Prof. Kenan ŞENTÜRK(PhD), researcher students Muhammed Hüseyin YILDIRIM, Emircan DEMİRALP and Yunus Emre IŞIK's project titled "Smart Shower System Project for Water Conservation and Awareness" was entitled to be supported within the scope of TÜBİTAK 2209-A University Students Research Projects Support.

One of the faculty members of our department, Assist. Prof. Kenan ŞENTÜRK(PhD), one of the faculty members of our department, responsible researcher student Furkan ONUR's project titled "Smart Glasses with Artificial Intelligence and Cyber Security Features for Visually Impaired Individuals" has been entitled to be supported within the scope of TÜBİTAK 2209-A University Students Research Projects Support.



With Strong Steps to the Future: Our Graduates

Taylan KARASOY
Field Engineer

The biggest reasons for writing IGU Mechatronics Engineering on my preference list were the support it offers to engineering students who are still in the education stage to realize their big projects, the quality of social elective courses and the competent academic staff in their field. During my student years, I was a finalist in the TEKNOFEST Rocket competition with my team, which included members from other departments in our faculty, and gained experience in teamwork and project management. My R&D studies, which started with the guidance of my teachers when I was a 1st year student, continued throughout my university life. While working on projects and developing my technical infrastructure, I had the chance to take Japanese as a social elective course by taking advantage of the foreign language education offered by my school. After graduation, I started working as a field engineer in the field of elevator control at the Chamber of Mechanical Engineers.

Abdullah Can AL
Research Assistant

The reason I chose Istanbul Gelisim University was its investments in aviation. At Gelişim University, there were aviation departments not only in the faculty of engineering but also in other faculties and vocational schools. In this way, I learned not only the engineering part, but also the mechanical, avionics, technician parts of aviation, and operation management from my friends studying those departments. In this way, I participated in the Teknofest competition, which I participated in the rocket category for the first time in 2019, with a total of 9 rockets in the following years. I also participated in competitions in the UAV category 4 times with my friends at Gelişim University, where I met in the Unmanned Aerial Vehicle category. I am currently doing my master's degree in Aircraft at Gelişim University.

Development is a process, not a destination.

Let's keep developing and improving.

MECHATRONICS ENGINEERING DEPARTMENT

For more information, please contact the head of the department:

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