

DEPARTMENT OF AERONAUTICAL ENGINEERING

Gelisim University Faculty of Engineering and Architecture

“Our aeronautical engineering department aims to equip students with the knowledge and skills to lead in the aviation industry, pioneering the development of future aircraft technologies.”

Prof. Ahmet Cihat BAYTAŞ (PhD)

Head of the Aeronautical Engineering Department



**Faculty of
Engineering and
Architecture**





Let Your Dreams Take Flight: Soar in Your Career and Shape the Future!

Our students build a solid foundation for successful careers in the aviation industry through comprehensive education at our university. Our program provides students with an in-depth knowledge and skill set in the field of aerospace engineering. They receive education in a wide range of subjects, including fundamental engineering principles as well as aerodynamics, material science, flight dynamics, aircraft design, and aviation systems. Additionally, we offer opportunities such as laboratory work, simulations, and industry collaborations to enhance their practical experience.

Upon graduation, our students possess the knowledge, experience, and skills necessary to excel in the industry and assume leadership positions. Thanks to the education they receive at our university, our students can pursue successful careers in areas such as aircraft design, flight testing, maintenance, and repair. Furthermore, they acquire important competencies such as teamwork, problem-solving, and leadership, enabling them to establish themselves in the aviation industry

With the high-quality education we provide to our students, we aim to shape them into the leading engineers of the future.





The Department's Objective

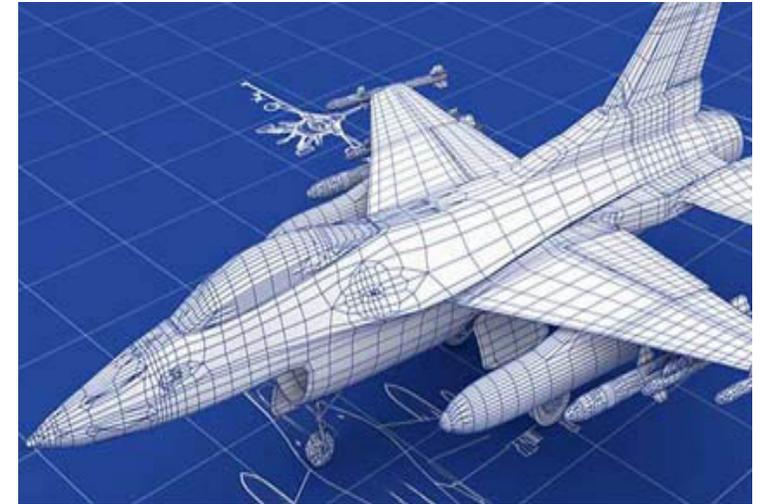
The aeronautical engineering department aims to provide students with in-depth knowledge and practical experience in areas such as aircraft design, aerodynamics, material science, and aviation systems, in addition to teaching fundamental engineering principles, to enable them to effectively contribute to the aviation industry.

“*The department provides students with a comprehensive education in aeronautical engineering and prepares them for their careers in the industry.*”



The Department's Future

The aeronautical engineering department aims to equip students with the technological knowledge and skills that will meet the needs of the future, adapting to the rapidly changing aviation industry. Considering the industry's focus on sustainability and technology, it focuses on developing students' innovation and leadership abilities. The department provides students with the necessary tools for a successful career in a competitive aviation sector.





Program and Curriculum Information

To graduate from the Aeronautical Engineering Department at Istanbul Gelişim University, Faculty of Engineering and Architecture, students need to complete a total of 124 credits and 256 ECTS credits.

In their first grade at the Faculty of Engineering and Architecture, our students take the 'Engineering Basic Sciences' courses offered jointly across the faculty. From the second year onwards, they start taking elective and compulsory courses specific to the field of aeronautical engineering. This framework, along with elective courses open to the entire faculty, facilitates interdisciplinary education. Additionally, students receive education in various subjects aimed at strengthening their worldview and acquiring additional skills through social elective courses. Throughout their education, students encounter theoretical courses, laboratory practices, and project-based assignments each semester. Moreover, the process of portfolio creation is a significant component, aiding students in enhancing their design abilities and styles.

In their fourth grade, students finalize their Graduation Project by deciding on the specialized area they will focus on and complete their four-year undergraduate education.

“ I have full confidence that our Aeronautical Engineering Department will contribute to our country and the academic world through the successful projects and research and development activities carried out by its graduates.. ”

Prof. Cemalettin KUBAT (PhD) ”



Learning Outcomes

The learning outcomes of the department are as follows:

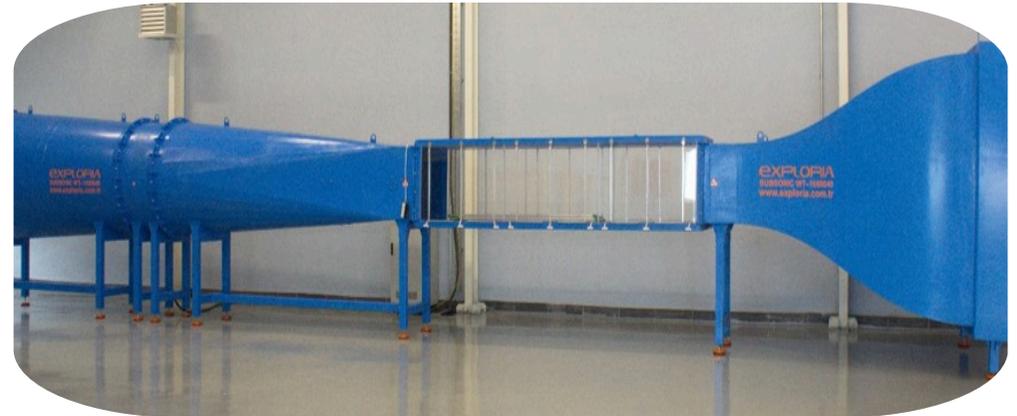
- Expertise in material science and structural analysis.
- Understanding of aerodynamic principles and flight dynamics.
- The ability to consider aesthetic and ergonomic factors in aircraft design.
- Project management and teamwork skills.
- Knowledge and skills in the design and analysis of aircraft systems.
- The ability to use aviation engineering software tools.
- Effective communication and presentation skills in the aviation industry.
- Ability to monitor and evaluate current technological developments in the aviation industry.
- Understanding and developing fundamental principles in aircraft engineering.



Gaining experience in laboratories and workshops.

- **Subsonic Wind Tunnel**

Subsonic wind tunnels are laboratory environments used for aerodynamic testing. These tunnels are designed to examine the movement and aerodynamic properties of objects exposed to wind speeds. In wind tunnels, measurements are taken to test the performance of models used in various fields, particularly in aviation, automotive, and structural engineering. Such tunnels are essential tools for engineering design, research, and development efforts.





Gaining experience in laboratories and workshops.

- **Unmanned Aerial Vehicle (UAV) Design Workshop**

Unmanned Aerial Vehicle (UAV) Design Workshop is a laboratory or workshop environment that provides practical experience in the design, production, and operation of UAVs for students or professionals. In UAV design workshops, participants typically receive training in areas such as computer-aided design (CAD), prototype production, flight simulations, control and navigation systems, and work on applied projects. These workshops offer participants the opportunity to translate theoretical knowledge about UAV technology into practice and prepare them for their future careers.





Innovative and Artily Courses

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Due to incorporating the most advanced technology applications across various engineering fields, aeronautical engineering is a profession in constant development.
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Prof. Osman Ergüven VATANDAŞ (PhD)

- Aircraft Design
- Aerospace Materials
- Strength of Materials I
- Strength of Materials II
- Thermodynamics
- Fluids Mechanics
- Aerodynamics I
- Aerodynamics II
- Flight Mechanics
- Principle of Aircraft Design
- Flight Stability and Control
- Propulsion Systems
- Artificial Intelligence
- Aeronautical Engineering and Design





Academic Staff



PROF. AHMET CİHAT
BAYTAŞ (PhD)
HEAD OF THE DEPARTMENT



PROF. ALİ KODAL (PhD)



PROF. NECMETTİN
MARAŞLI (PhD)



PROF. OKTAY ÖZCAN
(PhD)



PROF.
BAHRİ ŞAHİN (PhD)



PROF. MAHMUT ADİL
YÜKSELEN (PhD)



PROF. OSMAN ERGÜVEN
VATANDAŞ (PhD)



PROF. OSMAN
KOPMAZ (PhD)



Assist. Prof. SARA FAWAL
(PhD)

Bölümümüzde, akademik kadro çok çeşitli uzmanlık alanlarına sahip öğretim elemanlarından oluşmaktadır. Bu çeşitlilik, öğrencilerimizin geniş bir perspektiften beslenmesine ve etkili uçak mühendisleri olmalarını sağlar.

Uçak mühendisliği alanında öğretim elemanlarının yanı sıra makine mühendisliği alanında da yetkin öğretim elemanları bölümümüzde yer almaktadır.

 **Academic
Staff**



Res. Assist.
M. CEM AVCI



Assist. Prof.
MURAT METEHAN
TÜRKOĞLU (PhD)



Res. Assist.
OKTAY MAYUK



Assist. Prof.
MELTEM UZUN (PhD)



Res. Assist.
ZİYA ATAY



Res. Assist.
ÖZLEM YALÇIN



Res. Assist.
MELİS ÖZŞAHİN TOKER



Res. Assist.
HÜSEYİN FURKAN ÇELİK



Res. Assist.
ONUR CAN ARAS



The Future Aeronautical Engineers are Being Trained at IGU Faculty of Engineering and Architecture!

Our university and department not only contribute to acquiring knowledge and skills but also support individuals in their journey to create their own distinctiveness and contribute to society.

The activities held in our department are as follows:

- Atelier
- Workshops and Trainings
- Technology Festivals
- Teknofest Competitions
- Social Responsibility Projects
- Student Club Activities
- Seminars and Symposia





Career Opportunities

The continuous technological advancements in the aviation sector and its growth potential offer exciting opportunities for those aspiring to pursue a career in this field.

- In Türkiye, there are numerous aviation companies offering job opportunities in various areas such as aircraft production, maintenance, repair, and modification.
- Aeronautical engineers can work on the design and development of defense systems such as military aircraft and unmanned aerial vehicles. Companies like Aselsan, Roketsan, and Havelsan provide job opportunities for aeronautical engineers in the defense industry.
- Universities offer opportunities for research and teaching positions in the field of aeronautical engineering.
- Private airlines may offer job opportunities for aeronautical engineers in maintenance and repair departments



Who Should Choose ?

- Aeronautical engineering is an exciting profession for individuals who are passionate about aviation and interested in the design of complex systems.
- Those considering a career in aeronautical engineering are typically individuals who stand out with their passion for the aviation industry, have a strong interest in mathematics, science, and engineering, possess strong problem-solving skills, and demonstrate creative thinking abilities. Additionally, they should have a keen interest in technology and innovations and be open to continuous learning and development.

“Above, the blue sky,
beneath, the infinite
emptiness, and within, the
endless potential are the
fundamental source of
aeronautical engineering.”

William Samuel Henson

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Free Double Major Opportunity

The purpose of the double major program is to enable students who excel in their major programs to pursue a second major and obtain a diploma in a different field free of charge. Students with a minimum cumulative grade point average of 2.90 out of 4.00 in their major program and who rank within the top 20% of their undergraduate program can start a second major diploma program free of charge.



Minor Program Opportunity

A minor program refers to a program that allows a student enrolled in a diploma program to obtain a document (minor certificate) by taking a limited number of courses related to a specific subject within the same higher education institution, provided that they meet the specified requirements, which does not replace the diploma. A student can apply for a minor program at the beginning of the third semester at the earliest and the sixth semester at the latest of the major undergraduate program. Students who have successfully completed all credit-bearing courses in the undergraduate program until the semester they apply for can apply for the minor program.

"When engineering meets different aspects, it empowers the wings of innovation with a bidirectional force."

Frank Whittle



Start Your Internship Journey, Shape Your Future!

Aeronautical engineering students have the opportunity to intern at various aviation companies, defense industry firms, and airlines in Türkiye. Particularly, organizations focused on the aviation industry in major cities like Istanbul, Ankara, and Izmir are among the potential places where students can intern.

Hundreds of our students open the doors to a bright future by interning at leading aviation, defense, automotive, and R&D companies in Türkiye such as Turkish Airlines (THY), Turkish Airlines Technic (THY Technic), TUSAŞ, Baykar, Kale Group, Aselsan, Havelsan, Roketsan, Ministry of National Defense (MSB), Pegasus, Onur Air, My Technic, FNSS, Otokar, BMC, Arçelik, Vestel, and many others.



TÜRK HAVA YOLLARI

FNSS



BMC

BAYKAR

TÜRKHAVACILIK
UZAYSANAYII

HAVELSAN



roketsan



Step by Step Towards Internationalization

Our department stands out as an educational institution that not only imparts academic knowledge and skills but also places great importance on equality and diversity. In this context, we strive to create an environment where different cultures and perspectives come together, including our international students. Our aim is to provide our students with a global perspective and to equip them as competent individuals both professionally and personally. International students not only bring different perspectives and experiences to our classrooms but also contribute to creating a global atmosphere on our campus and in our region. With their different languages, traditions, and artistic richness, they bring color and vitality to our campus. This cultural diversity enables our students to grow into more open-minded and tolerant individuals and enriches the intellectual environment of our university.





TUBITAK 2209-A Projects

TÜBİTAK 2209-A University Students Research Projects Support Program aims to provide financial support to research projects conducted by undergraduate and associate degree students. A project conducted within the scope of TUBITAK 2209-A, under the academic supervision of Prof. Osman Ergüven VATANDAŞ, has been successfully accepted for support:

PROJECT TITLE: Vertical Takeoff and Landing Capable Electric Fan Motor Driven Unmanned Aerial Vehicle

PROJECT CONTENT: This project aims to develop an innovative unmanned aerial vehicle (UAV) capable of vertical takeoff and landing, propelled by an electric fan motor. The UAV, distinguished by its high maneuverability and energy efficiency, can be utilized in various applications in both civilian and military fields. The project aims to integrate advanced aviation technologies and develop autonomous flight systems.



Towards the Future with Strong Steps: Our Graduates



Ece KUZU
Aeronautical
Engineering Graduate

Since my childhood, I have always been interested in airplanes. I have always been curious about the systems and what lies behind the ability of large heavy structures to stay in the air. I have always taken Atatürk's words, 'The future is in the skies!' as a reference. Therefore, I decided to pursue a degree in aerospace engineering. The reason I chose Istanbul Gelisim University for my education is its international accreditations, being recognized by aviation companies, and having an excellent faculty in the aerospace engineering department. Based on the knowledge I gained from the distinguished professors at Istanbul Gelisim University, I have participated in many projects. A project I worked on made it to the finals of Teknofest, and Istanbul Gelisim University filed a patent application for it. I completed my first mandatory internship at Ayjet Flight School located at Hezarfen Airport and worked as a part-time researcher at Istanbul Gelisim University Technology Transfer Office. For my internship in the spring semester of 2023, I applied to and was accepted by Baykar Makine Sanayi Ticaret Ve Sanayi A.Ş. I am currently continuing my internship at Baykar Makine Sanayi Ticaret Ve Sanayi A.Ş.



Ayberk ERMUTUŞ
Aeronautical
Engineering Graduate

With its solution-oriented approaches and the addition of new faculty members every year, both the Aeronautical Engineering Department and Istanbul Gelisim University are becoming more dynamic. Over the past three years, I have been involved in rocket and UAV competitions. During my ongoing education, I am also conducting my internship in the defense industry alongside projects. I have gained a clear understanding of how knowledge can be acquired and how we can be equipped from our developmental years to our entry into the workforce. I have a strong grasp of how to conduct research and engineer solutions, and alongside this, I have gained respect and achieved success in various fields with my designs. I would like to express my gratitude to all the staff of Istanbul Gelisim University's Aeronautical Engineering Department for their contributions to helping me achieve my goals and success.

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"Create
Revolution in
the Sky:
Shape the
Future with
Aircraft
Engineering!"

DEPARTMENT
OF
AERONAUTICAL
ENGINEERING

*For more information, you can
contact the department head:
acbaytas@gelisim.edu.tr*

CONTACT:

 mmf@gelisim.edu.tr

 [gelisim_mmf](https://www.instagram.com/gelisim_mmf)

 0212 422 70 00