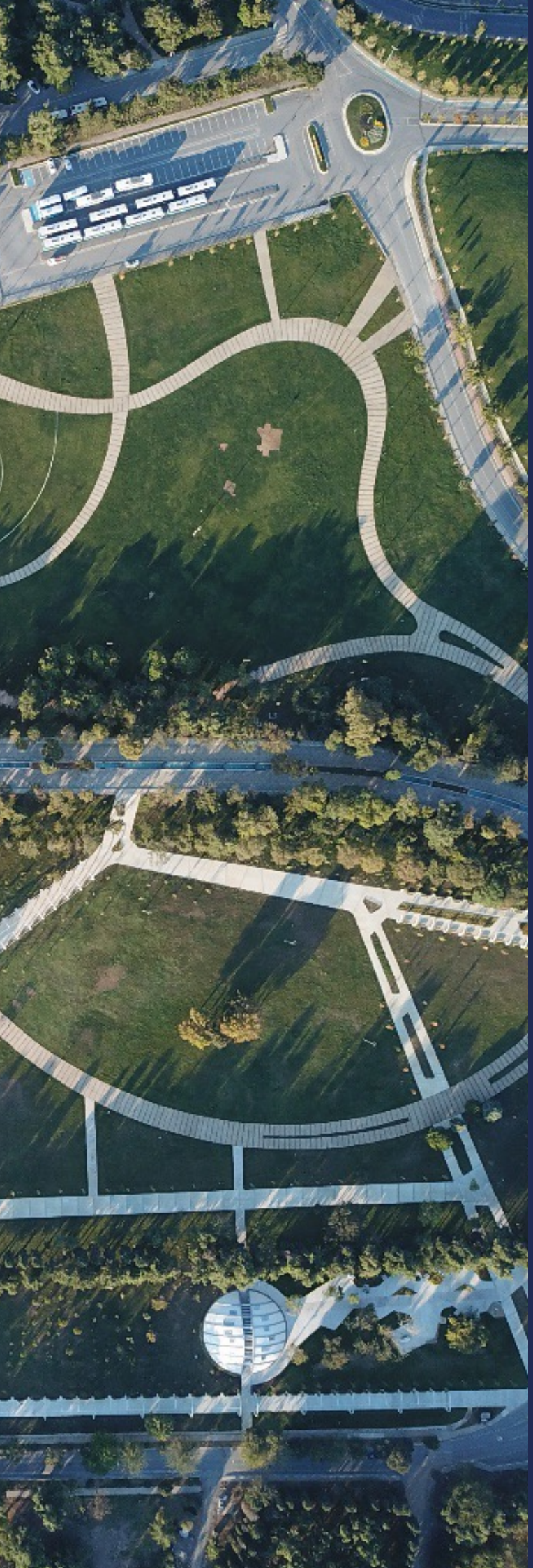
YILDIZ TECHNICAL UNIVERSITY

2024 SUSTAINABILITY REPORT







YILDIZ TECHNICAL UNIVERSITY

Yıldız Teknik Üniversitesi Sürdürülebilirlik Raporu 2024

Yildiz Technical University Sustainability Report 2024

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This report provides a written record of the activities and initiatives undertaken by Yildiz Technical University during the year of 2024 The major projects underway are given in a seperate section, and all the remaining activities, projects and initiatives are sorted under the seventeen sustainable development goals in the three seperate sections of policies and operations, research and development, and students and activities.

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A UNIVERSITY EMBRACING SUSTAINABLE HORIZONS

Join us as we embark on this journey - a journey towards embracing sustainable horizons. We invite you to explore the university's ongoing intitiatives, achievements, and aspirations.

YTÜ YILDIZ TECHNICAL UNIVERSITY

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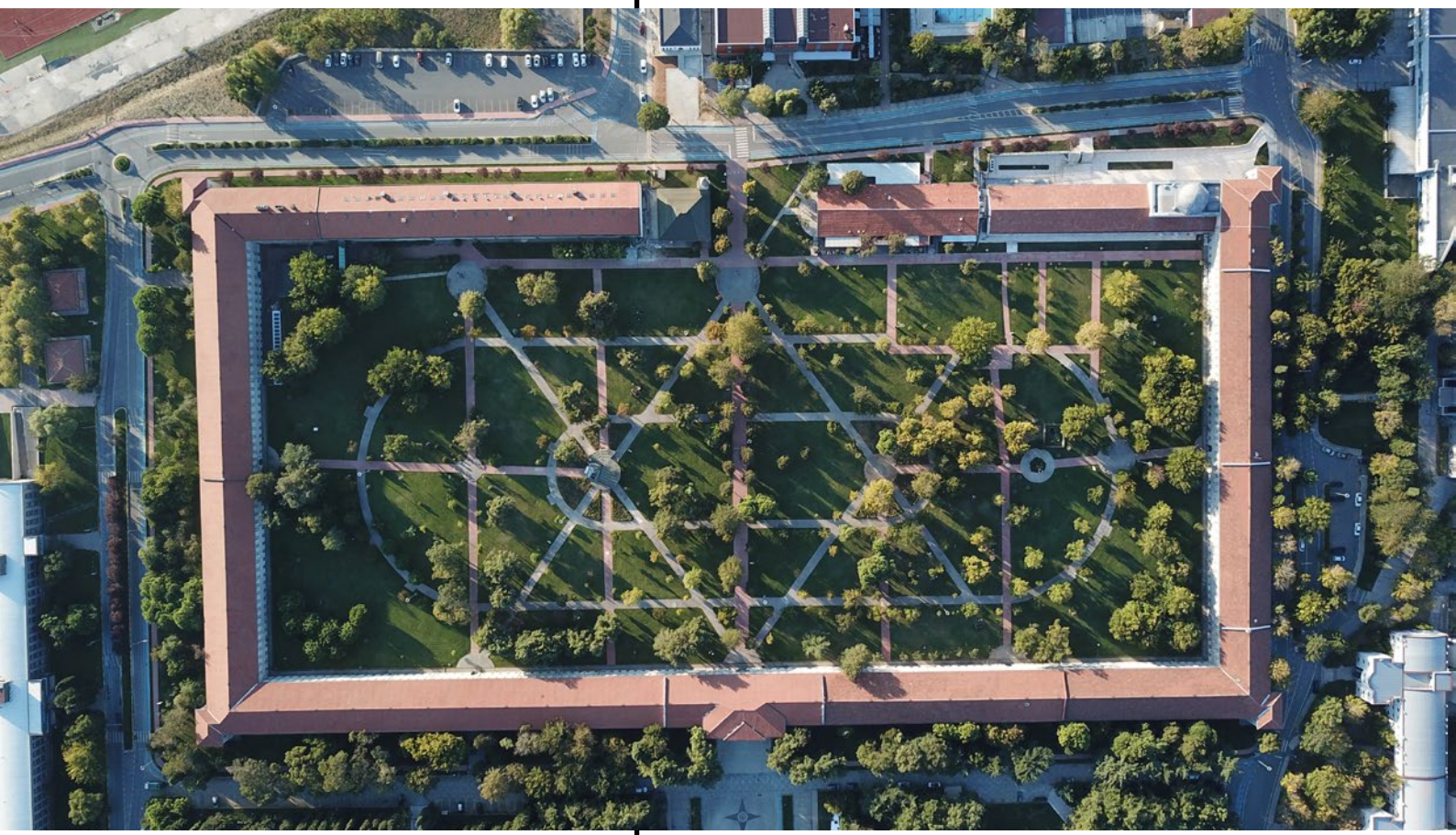
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A UNIVERSITY DEDICATED TO
ACHIEVING A SUSTAINABLE FUTURE

THE COMMITMENT TO SDGs

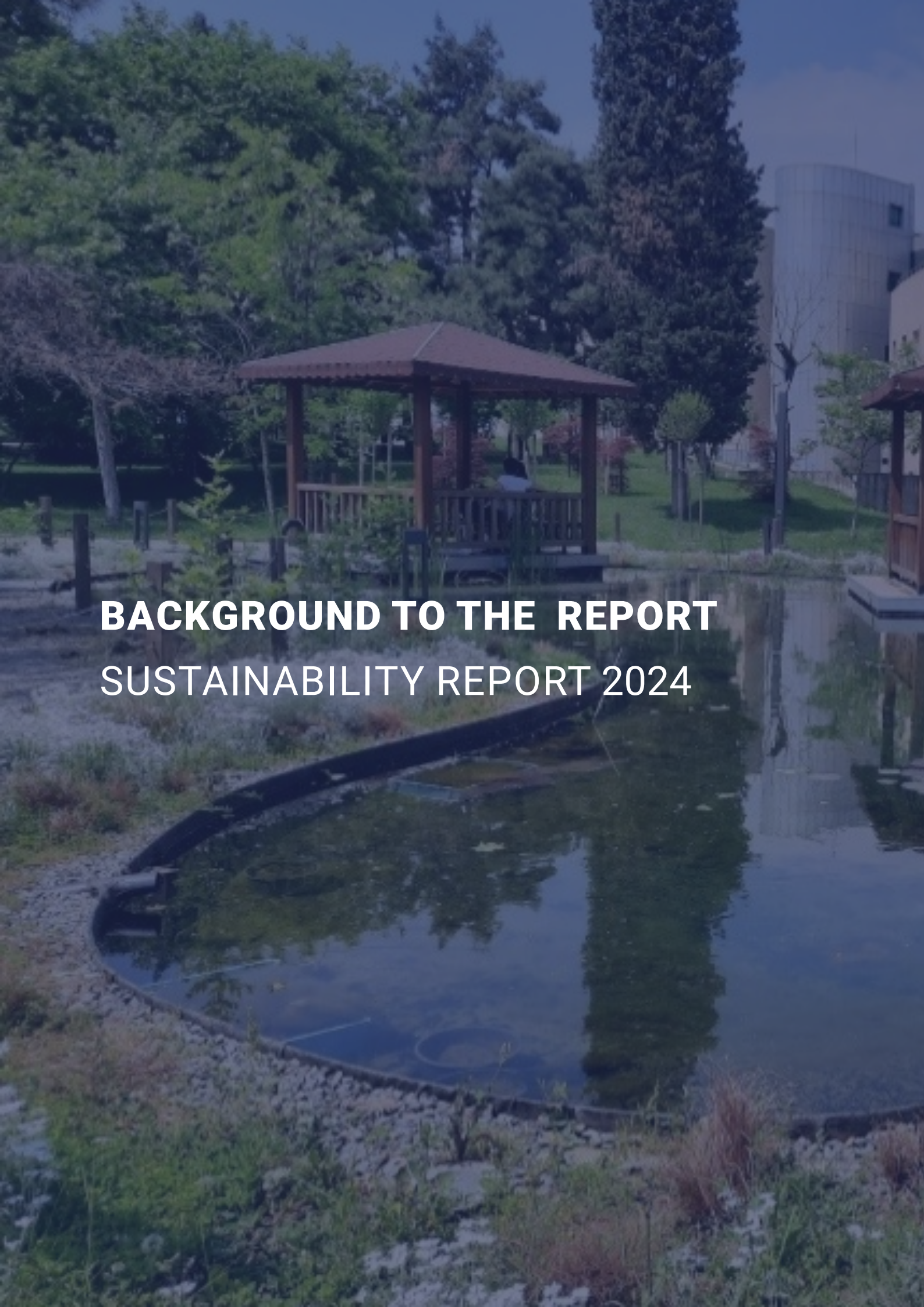
In the pursuit of a better world, where the harmony between humanity and the environment is paramount, Yildiz Technical University stands as a beacon of commitment to sustainable development goals.

As we navigate the complexities of the 21st century, the imperative to address environmental challenges has never been more pressing. Climate change, resource depletion, and ecological degradation loom as formidable threats to our planet's future. However, in the face of these challenges, Yildiz Technical University emerges not as a passive bystander, but as an active protagonist in the narrative of sustainability.

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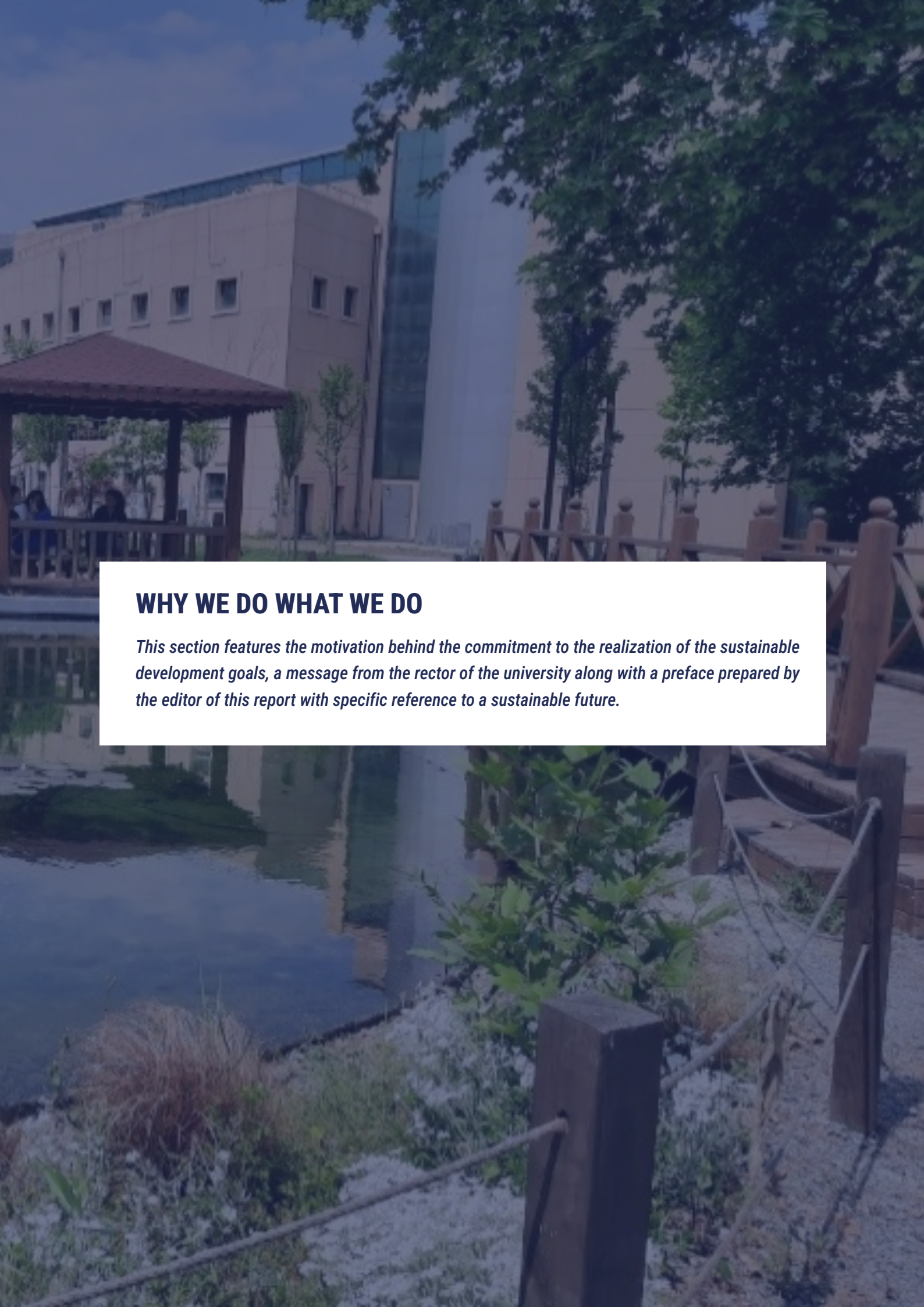
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BACKGROUND TO THE REPORT

SUSTAINABILITY REPORT 2024



WHY WE DO WHAT WE DO

This section features the motivation behind the commitment to the realization of the sustainable development goals, a message from the rector of the university along with a preface prepared by the editor of this report with specific reference to a sustainable future.

INTRODUCTION TO THE REPORT

This report not only highlights our achievements but also sets the stage for the ambitious goals we aim to reach in the coming years, fostering a culture of innovation and responsibility that propels us toward a sustainable future.



This report features the highlights the university's achievements towards a greener and more sustainable future.

A prominent university in the age of science.

This document is a detailed narrative of our steadfast commitment to inte-grating sustainable practices across all facets of our university operations. Over the past year, we have under-taken significant initiatives that not only underscore our dedication to the environment but also our role as leaders in the academic community for driving change.This report captures the essence of our efforts, showcasing the impactful projects, innovative re-search, and community engagements that define our sustainable journey.



MESSAGE FROM THE RECTOR



The environmental, economic, and social issues deepening on a global scale necessitate that higher education institutions adopt a holistic, ethical, and solution-oriented approach regarding knowledge production.

As Yıldız Technical University, we view sustainability as a value defined at the point where science, education, and social responsibility intersect. This approach is the primary directive of our research, education, and social contribution activities.

Our university has arrived at an effective position on a global scale through the studies conducted in line with the United Nations Sustainable Development Goals (SDGs). YTU has registered its contributions to the sustainable development goals at the international level by ranking 63rd in **Industry, Innovation, and Infrastructure (SDG 9)**, 81st in **Quality Education (SDG 7)**, and 98th in **Affordable and Clean Energy (SDG 7)**.

Our university's scientific capacity in the field of sustainability and intensive research and development activities conducted throughout 2024 have been increased significantly.

Our academicians have contributed to over 3,000 international publications based on the theme of sustainable development and have played a pioneering role with interdisciplinary collaborations in the areas of **Good Health and Well-Being (SDG 3)**, **Zero Hunger (SDG 2)**, and **No Poverty (SDG 1)**.

Projects carried out in the areas of health technologies, biomaterial engineering, energy conversion, nutrition science, and social innovation concretely demonstrate the power of science to transform social benefit.

Prof. Dr. Eyüp Debik

Rector

Yıldız Technical University

Our studies in the fields of hydrogen- and ammonia-based zero-carbon engine systems, nanotechnological agricultural applications, and biomaterial-based tissue engineering reflect the scientific depth we have achieved in sustainable technology production.

Our sustainability culture is not limited to research and innovation but permeates all areas of campus life. **Energy efficiency projects**, **zero waste practices**, **green campus investments**, and **social support programs** represent a holistic ecosystem where environmental awareness and social responsibility coexist.

As a 113-year-old university founded in 1911, we planted 113 trees varying between 5-7 years in age at our Davutpasa Campus as part of the **November 11 National Arbor Day** activities in 2024 with the motto **"Breath for the Future, Breath for Humanity."** We will carry on this tradition by adding one tree annually.

We have reduced energy consumption in our campus buildings by 50% within the scope of the **Energy Efficiency in Public Buildings Project (KABEV)**. In addition, we are currently able to meet approximately 30% of our electrical needs from renewable energy through the solar power plant we installed.

As a result of these works, we strengthen our position each year in the **UI GreenMetric World University Rankings**. According to the 2024 results, YTU ranks **59th globally** and **2nd** in Türkiye.

In addition, we are also proud to be the **first state university in Türkiye to receive the Zero Waste Certificate**. Within the scope of the YTU Zero Carbon Commitment, we aim to reduce **organic waste by 50%** and **plastic and paper waste by 20%** by the end of 2025, as well as **waste-sourced emissions by 80%** by the end of 2026.

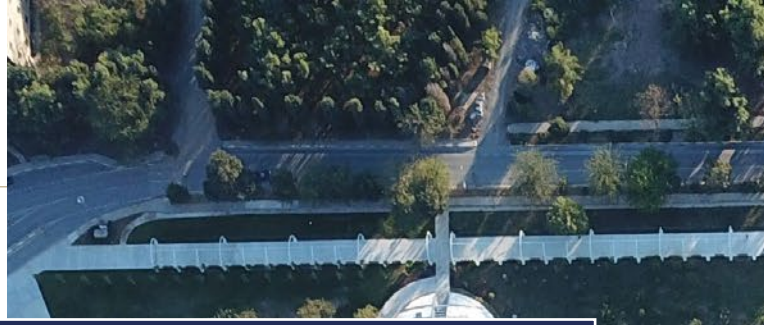
Additionally, we aim to lead universities in Türkiye and the region by creating a sustainable campus guide.

As Yıldız Technical University, we will continue to contribute to science-based sustainable development with increasing momentum, to integrate the production of knowledge with environmental and social responsibility, and to lead the way for a more equitable, habitable world of the future.

As Yıldız Technical University, in line with our commitment to the United Nations Global Compact, which encompasses the areas of human rights, labour standards, environment, and anti-corruption, we believe that universities play a critical role in bringing these universal principles to life through education, rese-arch, governance, and societal engagement. In this regard, we will continue to integrate the UN Global Compact principles into our institutional strategies, academic activities, and campus operations, and to transparently communicate our progress through our Sustainability Report and Communication on En-gagement (COE).

I would like to thank all our academicians, researchers, administrative staff, and students who make this vision possible.

With all my respect...

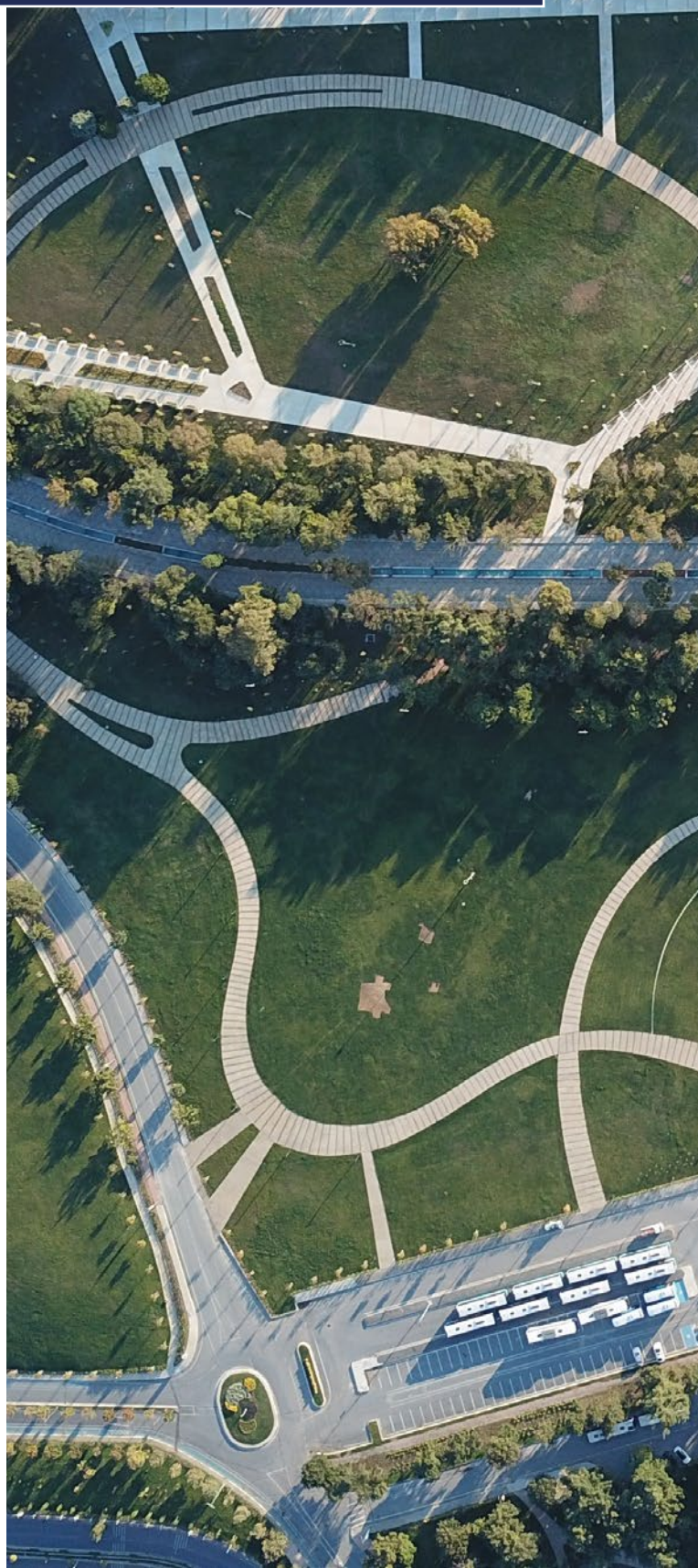


This report emphasizes our dedication to sustainability and our collective efforts towards achieving global goals.

Today, the website for the Smart and Green Campus has become the showcase of the university's commitment to the sustainable development goals and a platform where a sense of sustainable community culture has been thriving on new ideas every day.

On the other hand, depleting resources, increasing need for energy resources, and the increase in greenhouse emissions raises the question of efficient use of resources. In this context, Yildiz Technical University has put new policies into practice where the university is constantly revising the energy strategies as well as adjusting the strategies currently in place, setting new goals, and putting together action plans.

The university leverages its research capacities to develop sustainable solutions that address critical challenges in energy consumption and resource management.



INNOVATIVE SUSTAINABILITY

These are part of a broader commitment to sustainability that embraces innovative technologies and collaborative projects aimed at reducing our environmental footprint

SUSTAINABLE LEADERSHIP

By integrating sustainability into our core activities, we aim to lead by example in the academic community and contribute significantly to global efforts in combating climate change.





KEY RESEARCH PROJECTS

RESEARCH LEADS THE WAY

This section involves significant research and development projects that are under way on university campuses. These projects are directly targeted at creating change towards a more sustainable and greener campus environment for all campus residents.



THE KABEV PROJECT

The KABEV Project at Yıldız Technical University is an ambitious initiative aimed at enhancing energy efficiency and promoting renewable energy across the university's camouses. The project identified significant opportunities for energy saving and set YTU buildings on a path toward environmental sustainability.

Through KABEV, 11 buildings on the Davutpaşa Campus is undergoing extensive renovations to improve energy efficiency, which, in turn, reduced greenhouse gas emissions and enhanced comfort for the university community. The KABEV Project not only reflects YTU's dedication to energy



conservation and environmental stewardship but also sets an example for public buildings across Türkiye, potentially inspiring similar initiatives nationwide

2020

ENERGY FEASIBILITY WORK

- All YTU buildings were assessed.
- Energy performance classification study rated YTU buildings as Class C.
- Greenhose gas emission study rated YTU buildings as Class B.
- Energy identity certificates were obtained for all the buildings.

2021

GRANT RECEPTION

- 11 buildings on Davutpaşa Campus were found elligible for KABEV grants.
- The project was also endorsed by the General Directorate of Construction Affairs at the Ministry of Culture and Tourism, the Ministry of Environment, Urbanization, and Climate Change, and funded by the World Bank.

2022

RENOVATION PLANS

- The project was contracted for on-campus renewable enegy production.
- During the design phase, consultancy service agreement was executed for the renovations of the 11 buildings located on Davutpaşa Campus.

2023

COORDINATION OF THE WORK

- YTU Energy Efficiency Coordination Office was established.
- YTU's energy data were incorporated into the digital systems of the Ministry of Energy and Natural Resources.
- To highlight the importance of the project for the community, a Stakeholder Engagement Meeting was held.

2024

CONSTRUCTION KICK-OFF

- The construction of the energy efficient-systems and planned building renovations is scheduled to start around April.

UV COATINGS

UV coatings will be applied to campus buildings to enhance energy efficiency and block harmful UV rays.



SOLAR PANEL INSTALLATIONS

Solar panels will be installed on building rooftops to generate electricity for both campus use and to store excess energy.



WHAT DOES KABEV STAND FOR?

KABEV is an acronym for the Turkish equivalent of "Kamu Binalarında Enerji Verimliliği", which stands for "Energy Efficiency in Public Buildings".

PROJECT COMPONENTS

- Energy efficiency investments in public buildings
- Technical assistance and application support

ENERGY SAVING

8.0×10^6 kWh	the amount of electrical energy to be saved annually
4.2×10^6 m³	the amount of natural gas to be saved annually
55%	the estimated reduction in the university's overall energy consumption



THE GETAM PROJECT

The GETAM Project, supported by ISTKA and in collaboration with Çevko and Unilever, establishes the Recovery Testing and Research Center dedicated to advancing recycling technologies and methods. This center aims to bolster academic and industrial practices by enhancing the recyclability of materials through rigorous testing and research.

At GETAM, the focus is on bridg-ing the gap between academic knowledge and industrial appli-cation, specifically in the field of recyclable materials. This center is not just a testing ground for material recyclability but also a birthplace for pioneering research in developing new, sus-tainable materials that promise a greener future.

In its state-of-the-art facilities, GETAM employs advanced recycling lines and sophisticated testing equipment to assess and enhance the recyclability of various materials. By adhering to stringent international and domestic standards, the center ensures that its research meets global benchmarks.



Recycyle, Innovate, and Sustain: Shaping Tomorrow's Solutions

Since its foundation on April 1st, 2023, GETAM has quickly become a hub for cutting-edge research and testing in recycling. The center not only supports the academic community but also closely works with industry leaders to translate scientific research into practical, scalable recycling solutions.



By combining rigorous testing procedures with innovative research, GETAM is shaping the future of recyclable material development and sustainable product innovation.



INNOVATIVE RECYCLING

This initiative not only tests existing materials but also drives the R&D for next-generation recyclable materials, ensuring that sustainability is at the core of material innovation.

SETTING NEW STANDARDS

The center uses developed national algorithms to yield more accurate testing results, positioning it among the few facilities in the European Union with such capabilities.

SUSTAINABLE PRODUCTS

Through comprehensive testing, the center contributes to the development of innovative and environmentally friendly products, aligning with global sustainability goals.

HYDROGEN PRODUCTION SYSTEM

RENEWABLE ENERGY SUPPORTED





the potential of integrating renewable energy sources like solar power into urban settings



promoting sustainability and energy independence

THE EXTENSIVE COMPONENTS OF RENEWABLE ENERGY

01

Project Objective

The project aims to harness renewable solar energy to power an electrolysis system, producing hydrogen as a clean fuel alternative.

- high-efficiency solar panels
- converting sunlight directly into electricity
- powering an advanced electrolysis unit
- splitting water into hydrogen and oxygen

02

Strategic Importance

The university's proactive approach demonstrates how academic institutions can lead the transition to a greener economy by integrating cutting-edge technology into existing urban landscapes.

- a significant model for renewable energy projects
- the university's unique proactive approach
- an academic institution undertaking the transition
- creating a novel economic model

PROJECT OVERVIEW

Yildiz Technical University's Hydrogen Research Center has initiated a pioneering project to produce hydrogen using renewable energy. The project utilizes the extensive rooftop spaces of buildings on the university campus for solar panel installation.

This initiative is part of a broader effort to incorporate clean energy technologies into urban infrastructure, aligning with global trends towards energy sustainability and environmental responsibility.

The following are the key components involved in the project:

Feasibility studyInstallation of the solar panels

Energy production and usage

Hydrogen production and storage



leading the transition to a greener economy

a significant model for renewable energy projects in Türkiye and in the region

SUPPORTED HYDROGEN PRODUCTION SYSTEM PROJECT

03 Solar Panel Installation

Total Rooftop Area: 1896.8 m2
Usable Area: 1517.4 m2
Active PV Area: 121.9 m2

The layout of the solar panels is strategically planned to avoid shading, maximizing sunlight exposure. Solar panels chosen for this project are the Kalyon PV M10-144 CAM-CAM models, boasting an efficiency rate of 21.4%.

04 Energy Production & Storage Projections

93% Inverter Efficiency

67% Electrolyzer Efficiency

Annual Expected Amounts
Average DNI: 164.0 W/m2
Electricity Production: 373,216.6 kWh/year

The electricity will be primarily used to power an electrolyzer for hydrogen production.

Hydrogen Production Scenarios
Scenario I: All produced electricity is used - resulting in 59.1 kW capacity and 6941.8 kg/year of hydrogen.
Scenario II: Half the produced electricity is used — resulting in 29.6 kW capacity and 3470.9 kg/year of hydrogen.

CENTERS FOR RESEARCH AND DEVELOPMENT

NEWLY ESTABLISHED RESEARCH FACILITIES



- Hydrogen Technologies Research Center
- Radiation Technologies Research and Innovation Center
- Battery Second Life and Aging Analysis Laboratory
- Medical Implants Research and Layered Manufacturing Center

"CLEAN ENERGY" FOR A SUSTAINABLE FUTURE

Expanding frontiers in clean energy, medical implants, and radiation technology innovations.

Yildiz Technical University has significantly bolstered its research capabilities with the establishment of several state-of-the-art research centers. The Hydrogen Technologies Research Center, operating under the Institute for Clean Energy Technologies, pioneers pivotal advancements in the realm of sustainable energy. This center, together with the Radiation Technologies Research Center, which focuses on advanced medical imaging and sensor technologies, and the Artificial Intelligence Research Center, which propels developments in smart technology applications, places YTU at the forefront of interdisciplinary research and innovation. Complemented by initiatives in Clean Energy and Biotechnology, these centers emphasize YTU's commitment to leading transformative research efforts on both national and international levels in the path towards becoming a carbon neutral university.

Some Highligts Of The Most-Appreciated Projects

Take A Look At Ytu's Strong Clean Energy Research Infrastructure!



HYDROGEN TECHNOLOGIES

Research center

The center focuses on creating a 'renewable energy supported hydrogen park' for research, prototype design, and pilot applications across residential, industrial, and transport sectors. It also progresses the establishment of a lab for hydrogen research as aircraft fuel and prioritizes green hydrogen and alternative hydrogen-based fuels for industrial processes, transport, building, and power sectors.

https://bit.ly/3xIzuVj



RADIATION TECHNOLOGIES

Research and innovation center

This research and innovation Center advances medical imaging, device design, and sensor technologies. It leads the commercialization of innovative radiation technologies, aiming to reduce external dependencies and enhance product quality and cost-efficiency. Established in 2023, the center is dedicated to improving health, safety, and quality of life through cutting-edge research and development in radiation technology applications.

https://raterlab.yildiz.edu.tr/



BATTERY SECOND LIFE AND AGING

Analysis laboratory

The laboratory integrates battery analysis, design, and visualization from production to recycling. It establishes an ecosystem for second-life batteries, reducing external dependency in battery testing and enhancing YTÜ's new revenue streams from tests and analyses. The lab also contributes to high-value product manufacturing and export growth in Turkey by developing technologies in device subcomponent design and production.

https://bit.ly/4dlkIV9



MEDICAL IMPLANTS

Research and layered manufacturing center

The center in the joint coordination led by Yıldız Technical University with Bezmi Alem Vakıf University as partner, is funded by the Istanbul Development Agency under the 2021 Innovative Istanbul Financial Support Program. Its mission is to lead in the design and production of surgical implants using 3D printing technologies, aiming to become an international frontrunner in additive manufacturing for medical applications and beyond.

https://kimaum.yildiz.edu.tr/

GREENSTARS CERTIFICATION

The certification outlines a multi-step process to achieve sustainability benchmarks by independent panels with documentation.

The impact of the GreenStars Program extends beyond environmental benefits. By fostering an environment of inclusive growth and continuous learning, the program helps to equip future generations with the skills and knowledge necessary to sustain and expand these initiatives.





GreenStars
YILDIZ TECHNICAL UNIVERSITY

The GreenStars Program at Yıldız Technical University, crafted in alignment with the United Nations Sustainable Development Goals, is dedicated to enhancing climate resilience and fostering equitable economic growth through innovative approaches to circular economy and improvements in environmental and public health. This initiative serves as a cornerstone for defining rigorous environmental performance standards through comprehensive certification protocols, enabling the assessment and recognition of sustainable practices across various sectors.

Emphasizing a systematic approach to sustainability, the GreenStars Program supports the integration of environmental, social, and governance (ESG) criteria into corporate strategies, enhancing the accountability and sustainability of organizational operations. The program's framework is built on the principles of the European Green Deal, focusing on reducing carbon emissions and promoting carbon-neutral processes. This aligns with global efforts to mitigate the impacts of climate change and promotes the adoption of sustainable technologies and practices.

Furthermore, the GreenStars Program is instrumental in advancing research and development in sustainable technologies. It facilitates partnerships and collaborations with industry leaders and academic institutions to pioneer innovations that drive sustainable transformation. Through these collaborations, the program leverages expertise and resources to develop solutions that not only address immediate environmental challenges but also ensure long-term sustainability and resilience.

83%

Participation

The program orchestrates the alignment of institutional processes with national and international sustainability standards, fostering environmental, economic, and social dimensions. It targets the structured execution, monitoring, and evaluation of business operations to enhance compliance and sustainable development efficacy.

96%

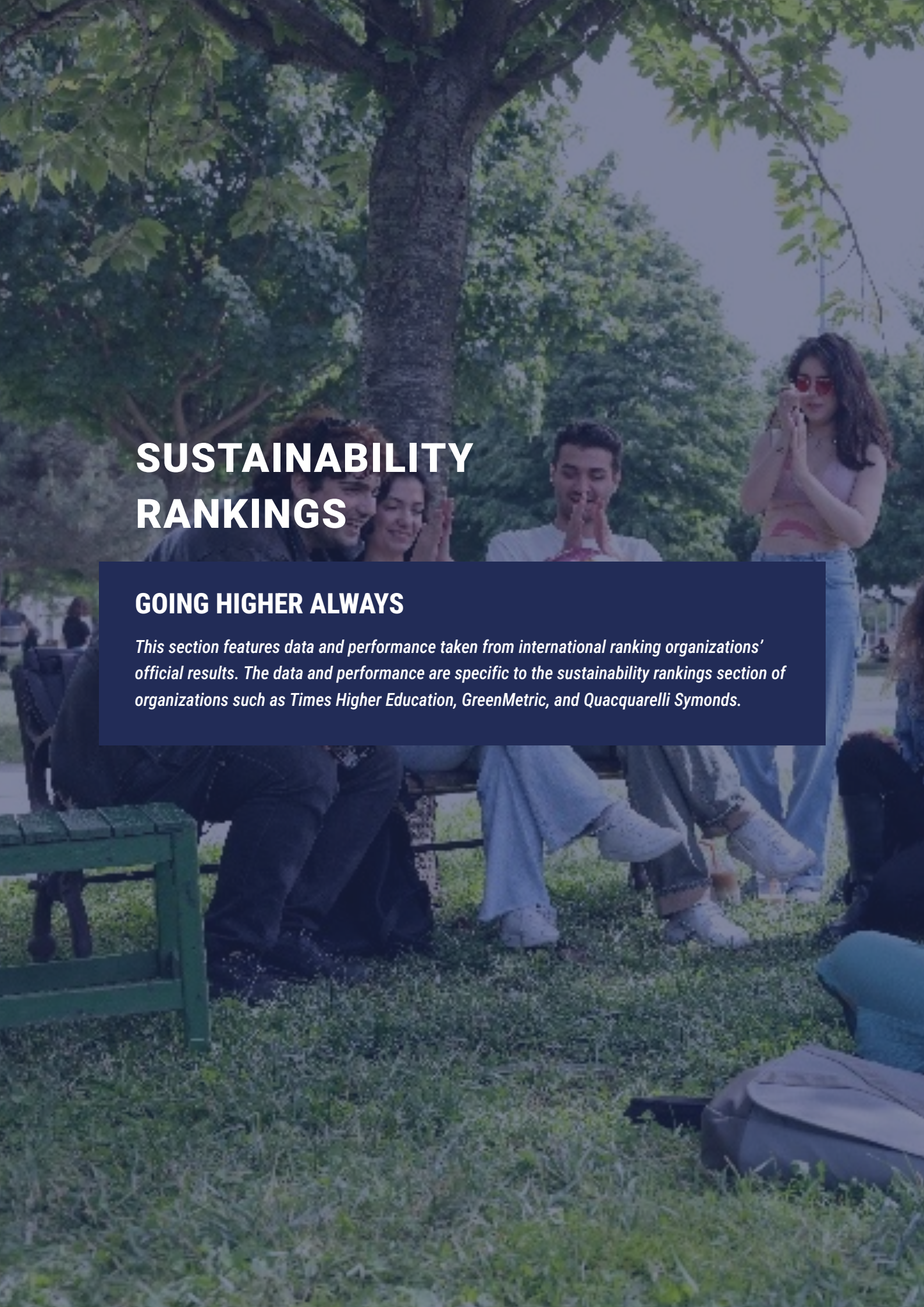
Certification

The certification process aims to motivate, evaluate, and reward institutions working towards Sustainable Development Goals, both domestically and globally. It ensures that organizations are recognized for their efforts in advancing sustainability and are encouraged to continue their impactful practices.

90%

National Awareness

This initiative aims to support institutions in aligning their visions and strategies with the 169 targets and 247 indicators under the 17 Sustainable Development Goals. It considers the conditions of the Paris Agreement and the priority areas of the Green Deal, facilitating national adaptation strategies and objectives while ensuring that corporate responsibilities are met effectively.



SUSTAINABILITY RANKINGS

GOING HIGHER ALWAYS

This section features data and performance taken from international ranking organizations' official results. The data and performance are specific to the sustainability rankings section of organizations such as Times Higher Education, GreenMetric, and Quacquarelli Symonds.



Times Higher Education
Impact Rankings

	1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	5 GENDER EQUALITY	6 CLEAN WATER AND SANITATION	7 AFFORDABLE AND CLEAN ENERGY	8 DECENT WORK AND ECONOMIC GROWTH
2024	201-300	301-400	401-600	1001+	81ST	301-400	401-600	98	401-600
2023	201-300	101-200	301-400	1001+	101-200	401-600	101-200	12	201-300

Yildiz Technical University's Commitment to Sustainable Development Goals and Times Higher Education Impact Rankings

Empowering Sustainable Futures

Yildiz Technical University has demonstrated a profound commitment to fulfilling the Sustainable Development Goals (SDGs), significantly enhancing its position in the Times Higher Education (THE) Impact Rankings.

By integrating sustainable practices across all aspects of our academic and operational activities, we aim to lead by example within the academic community and contribute meaningfully to global efforts in addressing critical environmental and social challenges.

The university's continuous amd dedicated efforts in embracing innovative technologies and fostering collaborative projects demonstrate and emphasize our dedication to reducing our environmental footprint and promoting sustainability on a global scale.

As a result, Yildiz Technical University has seen a remarkable rise in its rankings, reflecting our unwavering resolve to support and advance the Sustainable Development Goals worldwide.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	10 REDUCED INEQUALITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	13 CLIMATE ACTION	14 LIFE BELOW WATER	15 LIFE ON LAND	16 PEACE, JUSTICE AND STRONG INSTITUTIONS	17 PARTNERSHIPS FOR THE GOALS
63	301-400	301-400	301-400	201-300	301-400	301-400	601-800	801-1000
71	301-400	301-400	101-200	201-300	201-300	101-200	401-600	301-400



In addition to our impressive rankings, Yildiz Technical University has launched numerous initiatives aimed at driving sustainable development both locally and globally. Our research centers and academic programs are continuously aligned with the principles of the SDGs, ensuring that our students and faculty are at the forefront of sustainable innovation.

Collaborative efforts with international partners further amplify our impact, creating a network of knowledge and resources dedicated to sustainable progress. This firm dedication not only elevates our status in the global academic community but also reinforces our role as a catalyst for positive change.

Our commitment extends beyond the classroom and research labs, permeating every aspect of campus life. From implementing green technologies in our infrastructure to encouraging sustainable practices among our students and staff, we strive to create an environment that embodies our sustainability ethos.

These efforts are not only about meeting current environmental standards but also about pioneering new benchmarks for future generations. By fostering a culture of sustainability, Yildiz Technical University is preparing its community to be proactive leaders in the global effort towards a more sustainable and equitable world.

Together, we are not only elevating our university's impact but also shaping a brighter, more sustainable future for all by fostering a community that values and actively engages in sustainable practices, innovative research, and global collaboration.



The university's improved ranking in the GreenMetric rankings is a testament to its leadership in sustainability within the academic community.

The university's efforts are not only enhancing its global standing but also contributing significantly to global efforts in combating climate change and promoting sustainable development.

In 2024, YTU ranked 59th among universities globally in the UI GreenMetric World University Rankings.

This dramatic increase in the last three years on the rankings list reflects the university's ongoing commitment to environmental conservation, excellence, and sustainability. It also shows that the university has also been successful in raising institutional awareness."

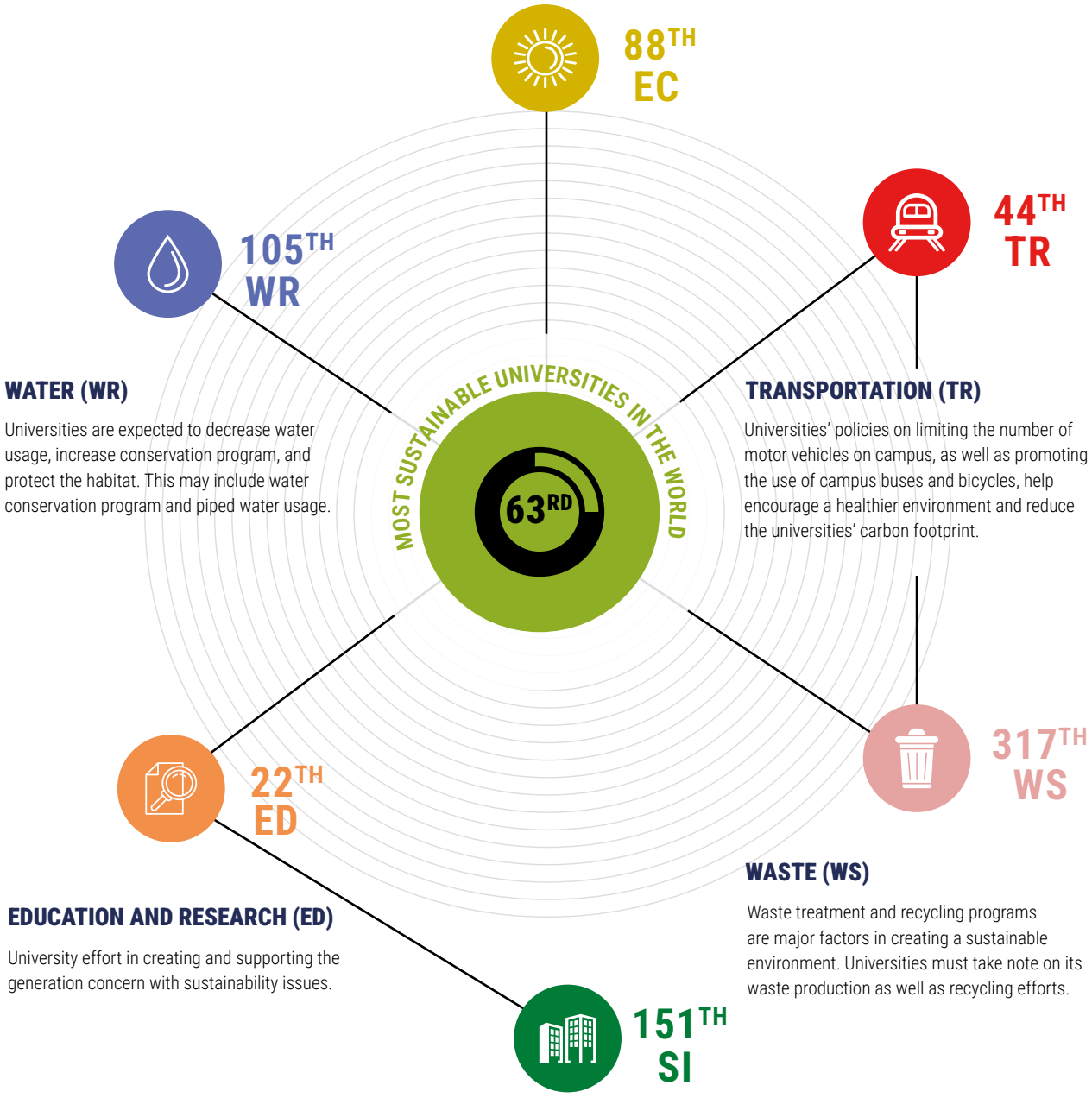
Yildiz Technical University's sustainable campus report highlights the university's comprehensive approach to achieving a greener and more sustainable future for all, showcasing a variety of initiatives and accomplishments. In terms of settings and infrastructure, the university has implemented extensive green policies, incorporating sustainable practices into campus operations. The university has made significant investments in energy-efficient appliances and renewable energy sources, adopting smart building technologies to enhance energy efficiency and reduce greenhouse gas emissions.

In the area of waste management, YTU has established robust recycling programs for organic, inorganic, and toxic waste, along with initiatives aimed at reducing the use of paper and plastic on campus. The university has also implemented effective sewage disposal systems, ensuring sustainable waste management practices. The university has introduced comprehensive water conservation and recycling programs and installed water-efficient appliances to promote sustainable water use. The university's commitment to sustainable transportation is evident through its promotion of zero-emission vehicles and the provision of shuttle services to decrease the number of private vehicles on campus. Additionally, the development of pedestrian paths and efforts to limit parking areas encourage walking and cycling, further supporting eco-friendly transportation options.

In terms of education and research, Yildiz Technical University boasts a high ratio of sustainability courses and research funding dedicated to sustainability projects. The university actively engages in numerous scholarly publications and events focused on sustainability, fostering a culture of environmental consciousness. Organizations carried out by students and community service projects related to sustainability play a significant role in the university's efforts, demonstrating the university's commitment to involving the entire academic community in its sustainability initiatives along with its major stakeholders.

ENERGY AND CLIMATE CHANGE (EC)

The university's attention to the use of energy and climate change issues. Universities are expected to increase the effort in energy efficiency on their buildings.



WATER (WR)

Universities are expected to decrease water usage, increase conservation program, and protect the habitat. This may include water conservation program and piped water usage.

TRANSPORTATION (TR)

Universities' policies on limiting the number of motor vehicles on campus, as well as promoting the use of campus buses and bicycles, help encourage a healthier environment and reduce the universities' carbon footprint.

WASTE (WS)

Waste treatment and recycling programs are major factors in creating a sustainable environment. Universities must take note on its waste production as well as recycling efforts.

EDUCATION AND RESEARCH (ED)

University effort in creating and supporting the generation concern with sustainability issues.

SETTINGS AND INFRASTRUCTURE (SI)

Basic information of the university policy towards green environment. Include space for greenery and in safeguarding environment, as well as developing

WORLD UNIVERSITY RANKINGS

SUSTAINABILITY

RANKED 2024

OVERALL RANK 406



ENVIRONMENTAL IMPACT

242

RANKED

The university has made significant strides in minimizing its environmen-tal footprint. By im-plementing compre-hensive energy efficiency measures and promoting renewable energy sources, the university has reduced its carbon emissions substantially. Our campus ini-tia-tives, such as extensive tree planting and waste reduction programs, reflect our commitment to sustainability.

ENVIROMENTAL EDUCATION 166 RANKED

ENVIROMENTAL SUSTAINABILITY 276 RANKED

SUSTAINABLE RESEARCH 601 RANKED

QS Sustainability Rankings

The QS Sustainability Rankings highlight Yildiz Technical University's holistic approach to sustainability, encompassing both environmental and social dimensions. This section reflects our performance on the QS Sustainability Rankings, where we are ranked among the leading institutions committed to sustainable development. Our efforts in sustainable research, education, and community engagement are reflected, demonstrating our comprehensive strategy to integrate sustainability into all aspects of university life. This report provides an in-depth look at our initiatives and achievements, showcasing how we are driving progress towards a more sustainable and equitable future. We are proud of the milestones we have achieved and remain dedicated to continuous improvement in all areas of sustainability.



SOCIAL IMPACT

718 RANKED

Our university has been proactive in promoting inclusive education, equality, and community engagement. Through various outreach programs, we support local communities and foster a culture of social awareness among our students. Initiatives such as scholarships for underprivileged students and partnerships with NGOs highlight our efforts to make a positive social impact.

EQUALITY

1251+ RANKED

KNOWLEDGE EXCHANGE

269 RANKED

IMPACT OF EDUCATION

1251+ RANKED

EMPLOYABILITY & OPPORTUNITIES

496 RANKED

HEALTH & WELL-BEING

912 RANKED



DEVELOPMENT GOALS

REALIZING GLOBAL GOALS

This section is dedicated to the initiatives and efforts by the university along with its students during the year 2024, carried out under the three subsections of policy and operations, research and development, and students and activities for each SDG seperately.





YILDIZ TECHNICAL UNIVERSITY

2024 SUSTAINABILITY REPORT



1 NO POVERTY

END POVERTY IN ALL ITS FORMS EVERYWHERE

Scan the QR code for SDG1 events

1 NO POVERTY



Yıldız Technical University (YTU) embraces an inclusive and human-centered approach to ending poverty in all its forms. The university recognizes that the fight against poverty is not limited to financial hardship but extends to barriers in education, health, access, and participation. Guided by the principles of Sustainable Development Goal 1, YTU integrates academic knowledge, research capacity, and community engagement to ensure that every individual – regardless of background – can reach their full potential. Poverty reduction, for YTU, represents both a social mission and a long-term institutional commitment rooted in the values of equality, justice, and collective well-being.

This section presents how YTU mobilizes its intellectual and social resources to promote inclusive growth and economic empowerment. Across faculties and research centers, the university develops innovative studies and initiatives that address social inequalities and advance sustainable livelihoods. Through education, training, and the creation of equitable learning environments, YTU provides pathways for students to overcome disadvantages and participate fully in society. The institution's social-responsibility culture encourages empathy, solidarity, and volunteerism, inspiring the university community to take an active role in improving lives within and beyond the campus.

Equally, YTU's partnerships with public institutions, industry, and civil organizations extend the reach of its anti-poverty efforts. Collaboration and knowledge-sharing enable the university to align academic insight with real-world impact – empowering individuals through employment readiness, lifelong learning, and entrepreneurship. In doing so, YTU transforms higher education into a platform for social transformation, proving that universities can be engines of fairness, opportunity, and human dignity. The projects and activities detailed in this section reflect YTU's enduring belief that sustainable poverty reduction begins with education, compassion, and innovation working hand in hand.

PUBLICATION STATISTICS

SCOPUS (2022-2024)

Name	Scholarly Output	% of 2047	Field-Weighted Citation Impact	Citation Count
SDG 01: No Poverty	15	0,51%	1,05	97

WoS (2022-2024)

Sustainable Development Goals	Number of Publications	% of 2.923
01 No Poverty	10	0,34%

Free Trainings for Writing EU Projects

Yildiz Technical University offers, at regular intervals, free training for researchers and academics on how to write EU project proposals. This endeavour is particularly increasing the university's involvement in poverty-focused European research initiatives.

Constant Increase in the Amount of Internally-Funded Projects by Scientific Research Projects Division

Yildiz Technical University has consistently increased the amount of internal funding for scientific research projects in order to eliminate the shortage of funds and address poverty. Internal funding has risen from 2 million Turkish lira in 2018 to approximately 60 million Turkish lira in 2024. A projected amount of 220 million Turkish Liras is expected in 2025.



PROJECTS RELATED TO SDG1

External Grant-Supported Projects

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Analysis of Socio-Economic, Demographic, and Spatial Transformation of Tahtakale in Modernizing Istanbul, 1876-1918	1	8	4
2	Cooperation For Integration Under Financial Inclusion Of Current Refugees And Newcomers	1	4	8

SUMMARIES OF KEY PROJECTS

COOPERATION FOR INTEGRATION UNDER FINANCIAL INCLUSION OF CURRENT REFUGEES AND NEWCOMERS

Cooperation for Integration under Financial Inclusion of Current Refugees and Newcomers aims to strengthen the financial inclusion and economic participation of refugees in Türkiye, Croatia, and Greece. The project will organize exploratory workshops in each country to discuss access to financial services, barriers to financial inclusion, and financial literacy needs. Semi-structured interviews will be conducted with refugees to assess their knowledge, skills, and competencies related to financial literacy and engagement with financial systems. Findings will guide strategies to improve financial capability and reduce access-related inequalities. Dissemination and communication activities will support knowledge-sharing among project partners, target groups, and policymakers, fostering collaborative approaches and evidence-based policy solutions for refugee integration.





Box by Box, Happiness" – Ramadhan Food Package Campaign

Organized by the YTU LÖSEV Student Club, this campaign invited students, faculty, and staff to donate food parcels throughout the holy month of Ramadan (March 11 – April 9, 2024). Donation boxes were placed at various faculty buildings on both Davutpaşa and Beşiktaş campuses.

The aim was to collect essential food items and deliver them to families in need, promoting solidarity, empathy, and active student engagement in addressing hunger and poverty.

Key components:

- Donation boxes placed strategically on campus
- Collection of non-perishable staple food items (e.g., legumes, rice, oil, tea)
- Distribution coordinated with local organizations and community leaders
- Awareness raised via social media and campus communications



The University 101

The University 101 event was designed to support newly enrolled students in navigating their transition to university life. The live-streamed session featured insights from Yıldız Technical University alumni, covering key topics such as how to make the most of academic life, strategies for personal development, and early preparation for professional careers.

By offering mentorship and guidance on adapting to university culture, managing academic and extracurricular responsibilities, and building transferable skills, the event aimed to empower students from all departments with foundational knowledge for their educational journey.

The session was open to all faculties and departments and served as an accessible and inclusive onboarding experience for new students.

Yeşil Atölye

On March 5, 2024 the YTU Children and Education Club organized a knitting workshop at Yeşil Atölye. The event brought together students to knit scarves and hats for children in need, combining creativity with community support.

Participants who were new to knitting received guidance from more experienced students, fostering a collaborative and inclusive atmosphere. All completed knitted items were collected for donation.





Village School Renovation and Functioning Project

On 31 January 2024, Yıldız Technical University Construction Society carried out the 'Village School Renovation and Functioning Project' within the scope of CivilIstanbul'24 Social Responsibility Initiative. The project involved the renovation of Şehit Halil Üleç Primary School in Sakarya/Akyazı to enhance its functionality, improve learning conditions, and provide children with better educational and social opportunities. By addressing community needs through hands-on student engagement, the initiative supported access to quality education, promoted reduced inequalities, and strengthened social responsibility.





The Investment and Finance Summit

The Investment and Finance Summit was held at Yıldız Technical University on 26 April 2024, bringing together leading experts in economics, investment, and financial markets. Hosted at the Faculty of Electrical and Electronics Conference Hall, the summit provided students with valuable insights into investor behavior, stock market dynamics, and emerging trends such as cryptocurrencies, while also offering hands-on technical analysis workshops.

Blood Donation Campaign

At YTU, a blood donation campaign was organized in collaboration with the Turkish Red Crescent. Held between 5–7 November at the Davutpaşa Campus, the initiative encouraged students and staff to contribute to saving lives through voluntary blood donation. The campaign not only supported public health but also fostered a strong sense of solidarity and social responsibility within the university community.

YTU champions inclusive education and research to eliminate barriers and expand opportunities for all members of society.



Meal Preparation and Distribution for Disadvantaged Communities

YTU GEMDEK collaborated with the Sokak Lambası Solidarity Association in Fatih to support meal preparation and distribution for disadvantaged communities. The initiative not only provided direct assistance to individuals in need but also encouraged students to actively engage in social responsibility, fostering empathy, solidarity, and community awareness.

Innovation Summit '24

The MiNT + Career Summit, held for the first time in 2024, brought together professionals, academics, and students to explore the theme "The Human in the Career Journey." The summit aimed to provide insights into the human-centered dimensions of career development, personal growth, and the evolving skill sets required in the 21st century.

The full-day program featured sessions on:

- Human-Centric Approaches to Career Development
- Learning to Learn
- 21st Century Skills
- Networking and Social Impact in Professional Life
- Resilience and Adaptability
- Innovation and Transformation in the Workplace
- The Role of Women in Career Development
- Can Happiness Be Learned?

The event created a space for participants to reflect on well-being, adaptability, and human connection in modern career paths.



Support to Students to Ensure Equitable Access to Higher Education

In 2024, the **YTU Scholarship Coordination Office** provided substantial financial and in-kind support to students to ensure equitable access to higher education.

A total of **1,208 scholarships** were granted, amounting to **21,536,875 TL** in financial aid. Additionally, YTU supported student well-being through **meal bursaries**, offering:

600 students meal assistance for **seven months**, and

1,000 students for **five months**, corresponding to a total of **39,205 meals** distributed throughout the academic year.

In 2024
YTU Scholarship Coordination Office

1,208
Scholarship

Amounting to
21,536,875₺
in Financial Aid

This initiative reflects YTU's ongoing commitment to promoting **inclusive education, equal opportunity, and student welfare**, in alignment with the university's **social responsibility framework.**



Dormitory Access for PhD and Postdoctoral Researchers

YTU provides on-campus accommodation specifically for PhD students and postdoctoral fellows to reduce housing-related financial barriers for graduate researchers. These facilities include Çağdaş Yaşam Sennur Selçuk Öztap Female Dormitory, Şehide Türkan Türkmen Tekin Female Graduate Dormitory, and İstanbul Kız Liseliler Male Graduate Dormitory, offering safe and affordable housing for over 147 students. This initiative enhances academic continuity and promotes social inclusion for low-income and international researchers.



Student Guidance and Career Center

YTU supports equitable access to education and employment through the activities of its Student Guidance and Career Center (ÖRKAM). The center provides integrated academic, psychological, and career guidance services to ensure that all students—particularly those from low-income and underrepresented backgrounds—can successfully complete their studies and transition into professional life. ÖRKAM's initiatives include personalized career planning, CV and interview workshops, mentoring programs, and partnerships with employers to expand internship and job opportunities. All activities are grounded in principles of equality, inclusion, and social responsibility, ensuring equal access for women and disadvantaged groups. ÖRKAM actively contributes to poverty reduction, promotes gender equity, and strengthens decent work opportunities by fostering lifelong learning, employability, and personal development.





GÜRİŞ Young Talent Program '24

GÜRİŞ Young Talent Program '24 – Career Development and Industry Integration YTU collaborates with leading industry partners to provide its students with hands-on learning and employment opportunities through structured talent programs such as the ***GÜRİŞ Young Talent Program***. The Spring 2024 term of this initiative aims to equip university students with practical experience in renewable energy and engineering sectors while fostering academic excellence and employability. The program supports students in developing professional competencies, networking with experts, and exploring sustainable career paths. High-performing students are offered competitive salary opportunities, contributing to the reduction of youth unemployment and income inequalities. This initiative exemplifies YTU's strong partnership with industry in supporting decent work, professional development, and equitable access to economic growth.





Mercedes-Benz Türk Professional Experience Program (PEP) – Long-Term Internship for University Students

YTU collaborates with Mercedes-Benz Türk to provide its students with valuable professional experience through the ***Professional Experience Program (PEP)***. This long-term internship program offers university students the opportunity to gain hands-on training in engineering, management, and digital innovation while continuing their education. The initiative enhances employability, professional skills, and industry exposure among youth, ensuring a smoother transition from academia to the workforce. By promoting fair recruitment and equal access to internship opportunities regardless of gender or background, the program supports decent work, quality education, and the reduction of inequalities.





Yıldız Technical University actively encourages its students to participate in the National Internship Program

Yıldız Technical University actively encourages its students to participate in the ***National Internship Program*** coordinated by the Presidency of the Republic of Türkiye Human Resources Office. This nationwide initiative connects university students with public and private sector employers through a transparent, merit-based platform. It provides paid internship opportunities across diverse industries, enhancing youth employability, skill development, and financial stability. The program particularly benefits students from economically disadvantaged backgrounds by enabling them to gain professional experience and income security during their studies.





YTU–Ata Holding A-TALENT Internship Collaboration

YTU actively collaborates with external partners such as Ata Holding to expand professional learning opportunities for its students. Through the *A-TALENT Internship Programme*, YTU students can complete their compulsory internships within Ata Group companies, gaining practical experience and professional mentorship in a real-world setting. The university's Career and Internship Office facilitates access to this programme by sharing calls for applications, guiding students through the process, and ensuring equal opportunity across disciplines. This collaboration helps students—particularly those from economically disadvantaged backgrounds—develop employability skills, strengthen career readiness, and gain financial stability through paid placements.





Enhancing Employability through Yetenek Kapısı (Talent Gate)

YTU provides its students with seamless access to the national digital career platform Yetenek Kapısı (Talent Gate). This system connects students and graduates with thousands of employers, enabling them to explore internship and part-time job opportunities, benefit from professional career counseling, and participate in nationwide career fairs. The university's Career and Internship Office supports students through guidance sessions, training workshops, and awareness activities that enhance their use of the platform. By facilitating equal access to employment and professional development resources, YTU contributes to improving employability and reducing socioeconomic inequalities among its student population.





Undergraduate R&D Leadership – TÜBİTAK 2209-A & 2209-B Student Research Programs

YTU stands at the forefront of undergraduate research and innovation in Türkiye.Within the scope of the TÜBİTAK 2209-B Program, YTU students achieved first place among 25 universities for two consecutive years, with 89 accepted projects, while 203 additional projects were approved under the 2209-A Program. These initiatives empower undergraduate students to conduct original research, fostering innovation, critical thinking, and collaboration with academia and industry.



Enhancing Employability through Yetenek Kapısı (Talent Gate)

YTU offers a structured **Part-Time Student Employment Program** that allows students to work within university departments for up to 15 hours per week at a rate of **100 TRY per hour**. The initiative aims to provide financial support for students in need while enabling them to gain professional experience and contribute to campus operations. Priority is given to students from disadvantaged backgrounds, including those affected by natural disasters, students with disabilities, and children of martyrs or veterans. Through this program, YTU enhances students' financial stability, promotes social inclusion, and ensures equitable access to higher education regardless of economic status.



Becoming a Boss at 20: Alternative Career Paths" – Talk by Dr. Erdem Genç

YTU hosted a seminar titled *"Becoming a Boss at 20: Alternative Career Paths"* featuring **Dr. Erdem Genç**, a prominent entrepreneur and leadership consultant. The session aimed to inspire students to explore entrepreneurship and innovative career alternatives beyond traditional employment routes. Participants learned about early-stage business development, self-leadership, and creating value-driven enterprises that contribute to sustainable economic growth.

EMDR Group Therapy for Earthquake-Related Anxiety

YTU conducted a specialized free **EMDR (Eye Movement Desensitization and Reprocessing)** group therapy program for students coping with earthquake-related anxiety. Facilitated by certified EMDR therapists, the sessions provided a safe and supportive environment for students to process trauma, build resilience, and improve emotional well-being. The initiative aimed to strengthen mental health and community solidarity among young people affected by disaster-related fears, fostering a sense of security and psychological stability within the university community.





Empowering Education and Promoting Equity in Education:"YTU Foundation to Support 1,000 Students with Scholarships

In the 2024–2025 academic year, the Yıldız Technical University Foundation announced its plan to provide scholarships for 1,000 students, supporting access to quality education and fostering social equity. Applications opened on September 1, 2024, and aimed to assist undergraduate and graduate students in continuing their studies by offering financial support based on academic merit and socioeconomic criteria.

YTU Promotes Student Participation in the Fulbright Scholarship Program

YTU encouraged student participation in the Fulbright Master's and PhD Scholarship Program, the most prestigious U.S. scholarship initiative promoting academic, cultural, and professional exchange. Through this program, graduate students were given the opportunity to pursue advanced studies in leading American universities, fostering intercultural understanding and academic development. The initiative supported YTU's commitment to enhancing access to quality higher education and promoting international academic collaboration.





Free Drinking Water

YTU provides free and safe drinking water to all students, staff, and visitors across its campuses. All water supplied through campus faucets meets drinking water standards and is safe for consumption. In addition, there are numerous drinking water fountains installed in various indoor and outdoor areas, ensuring easy access to fresh drinking water for everyone free of charge.

YTU provides free shuttle services to support the mobility of students and staff between and within campuses

Ring shuttles operate between the Davutpaşa and Beşiktaş campuses at scheduled times, ensuring convenient and safe transportation without additional cost. Within the Davutpaşa Campus, continuous shuttle service runs throughout the day, providing easy access to key areas such as the Faculty buildings, Library, and the School of Foreign Languages.

This initiative enhances equal access to education and campus resources by removing transportation barriers for students and staff. It also contributes to reducing carbon emissions and traffic density, aligning with YTU's sustainability goals.





YTU 2024 Orientation Days

YTU organizes comprehensive Orientation Days every academic year to support new students' adaptation to university life and promote an inclusive and sustainable campus culture.

The program includes sessions on effective learning and motivation, individual well-being, sustainable campus living, and introductions to university units such as the Dean of Students, Student Clubs, Sports Office, Erasmus+ Program, Scholarship and Support Office, and Career Planning Office. Students also meet the Innovation Hub, Startup House, and YTU Technopark, which foster innovation and entrepreneurship.

Throughout the event, participants gain access to essential information about financial support opportunities, academic resources, and social participation, ensuring equal access to education and campus life for all, regardless of economic background. The activities also promote well-being through sports, music, and open-air film screenings, strengthening social connections and student engagement.





Allianz K.A.M.P. Program – Wherever You Are, Your Internship Is There

Allianz's **K.A.M.P. Program ((Discover, Research, Be Curious, Share)** offers university students an engaging and flexible internship experience designed to inspire learning, exploration, and professional growth. With its hybrid model and motto *"Wherever you are, your internship is there,"* the program provides equal access to quality internship opportunities across Türkiye.

Participants gain hands-on experience within a global organization while discovering Allianz's agile working culture, dynamic teams, and purpose-driven environment. Through workshops, research projects, mentorship, and networking opportunities, students develop the skills and confidence needed for a successful transition into the professional world.





Star BİGG Program – Empowering Innovation and Entrepreneurship

YTU and TÜBİTAK jointly organize the Star BİGG Program, providing up to 900,000 TL in investment support for technology-driven and innovation-focused business ideas.

The program helps aspiring entrepreneurs transform their innovative concepts into sustainable business models through mentorship, training, and strategic guidance. By fostering partnerships with global and national institutions—including Akbank, Teknopark Çanakkale, and leading technology firms—Star BİGG strengthens Türkiye's entrepreneurial ecosystem and supports sustainable economic growth.

This initiative empowers young innovators to create scalable solutions that address real-world challenges, driving both technological advancement and inclusive prosperity.





TURCORN 100 Information Session at YTU Startup House

YTU, in collaboration with the Ministry of Industry and Technology, hosted an information session for the TURCORN 100 Program, which aims to support technology-based startups with high growth potential and help them become global-scale "unicorns."

The event featured Mert Çeliksoy, Tech Entrepreneurship Expert from the Ministry, who shared insights on the national innovation ecosystem, funding opportunities, and strategic pathways for emerging tech ventures.





Talent Fair – Empowering Young People for Employment and Economic Inclusion

Talent Fair Speed Connect event was organized in collaboration with 100sClub, bringing together students, graduates, and leading industry representatives to promote employability and career development.

Through this initiative, YTU helps young people access decent job opportunities, connect with employers, and develop professional skills—reducing economic vulnerability and supporting sustainable livelihoods.

Through its efforts to facilitate youth participation in the labor market, the university helps reduce poverty by expanding access to employment opportunities and fosters inclusive, sustainable economic growth.





TÜBİTAK 2247-C STAR Program – Fostering Research Culture and Equal Access to Opportunities

YTU actively supports the TÜBİTAK 2247-C STAR (Intern Researcher Scholarship Program), which enables undergraduate students and teachers to participate as research fellows in TÜBİTAK-supported and ADEP-funded research projects.

The program aims to help participants gain early research experience, develop R&D competencies, and engage with Türkiye's national innovation ecosystem. By providing scholarships and mentorship, STAR enhances the research capacity of young individuals while ensuring equal access to scientific education and opportunities regardless of socio-economic background.

This initiative not only strengthens research-oriented education but also supports poverty reduction through equitable access to education and income-generating opportunities. In addition, it contributes to innovation-driven growth and reinforces partnerships between universities, research institutions fostering a sustainable and inclusive research culture in Türkiye.



Welcome to Yıldız Gift Kit

YTU warmly welcomes its newly admitted undergraduate students each year with a special "Welcome to Yıldız" gift kit, designed to strengthen their sense of belonging and connection to the Yıldız community.

New members of the YTU Family can receive their gift set — consisting of a backpack, a bag badge, a thermal mug, and a woven keychain — from the YTU Yıldız Store at Davutpaşa Campus.

As a tangible reflection of university identity, the "Welcome to Yıldız" kit aims to foster school spirit, ease students' adaptation to campus life, and boost motivation. The kit features thoughtfully designed, functional items that reflect YTU's vibrant and innovative spirit.

Additionally, a coffee coupon valid until the end of the year is included in each kit, offered by YTU Yıldız Store.





Government-Funded Graduate Scholarship Program (YLSY 2024)

The Ministry of National Education of Türkiye (MoNE) launched the YLSY Scholarship Program to support the country's need for highly qualified human resources. Through this initiative, 668 students sent abroad to pursue master's and doctoral studies in 2024 under full government scholarships.

The program aims to enhance academic excellence and research capacity by providing equitable access to quality higher education opportunities for talented graduates across Türkiye. It supports the development of globally competent professionals who will contribute to national innovation and sustainable development upon returning.





Sustainable Marine Energy Research through TÜBİTAK International Fellowship Program

Dr. Ersegun Deniz Gedikli joined Yıldız Technical University under the TÜBİTAK 2232-A International Leading Researchers Program, bringing his expertise from the University of Hawaii at Manoa. His project, titled "Advanced Marine Energy Technologies for a Sustainable Future," focuses on harnessing the power of waves, tides, and ocean currents to produce clean, renewable energy.

The research aims to reduce dependence on fossil fuels, improve energy security, and promote sustainable blue energy innovation. Through advanced simulations, design optimization, and field validation, the project enhances energy efficiency while minimizing environmental impacts.

By leveraging Türkiye's 8,300 km coastline, this initiative also supports the development of local expertise, green employment, and international scientific collaboration.





Department of Naval Architecture and Marine Engineering achieved remarkable success at the National Ship and Yacht Design Competition 2024

YTU students from the Department of Naval Architecture and Marine Engineering achieved remarkable success at the National Ship and Yacht Design Competition 2024, winning awards in all categories. Projects such as ***"Freyr," "Aurora," "Samandağ,"*** and ***"Dalay"*** demonstrated cutting-edge design, sustainability, and technical excellence in marine engineering.

The competition fosters innovation, creativity, and sustainability in maritime design while strengthening the connection between academia and industry. It also promotes student engagement in applied engineering, equipping participants with real-world design and problem-solving skills.





YTU and Yıldız Technopark Participate in Take Off Istanbul 2024 to Boost Innovation and Entrepreneurship

YTU and YTU Yıldız Technopark participated as partners in Take Off Istanbul 2024, one of the region's leading technology and entrepreneurship events, held on December 11–12, 2024 at the Istanbul Expo Center.

The event brought together key stakeholders from government institutions, global tech companies, investors, and start-ups, creating a dynamic platform for innovation and collaboration. Participants engaged in technology showcases, inspirational panels, interactive experiences, and hands-on entrepreneurship workshops, gaining exposure to cutting-edge trends and networking opportunities.

Through this collaboration, YTU continues to strengthen Türkiye's innovation ecosystem, promote entrepreneurship-driven economic growth, and foster international partnerships.





YTU, in collaboration with TÜBİTAK and the YTU Technology Transfer Office, actively supports International Young Researchers Programs

YTU, in collaboration with TÜBİTAK and the YTU Technology Transfer Office, actively supports the 2232-A International Leading Researchers and 2232-B International Young Researchers Programs. These initiatives aim to attract accomplished Turkish and foreign researchers with international research experience to conduct high-level academic studies in Türkiye.

The programs provide significant financial and institutional support:

2232-A International Leading Researchers Program: ₺6,350,000 research grant + ₺156,000/ month scholarship for project leaders

2232-B International Young Researchers Program: ₺4,000,000 research grant + ₺120,000/ month scholarship for project leaders

YTU promotes international scientific cooperation, knowledge exchange, and technology-based innovation while strengthening Türkiye's global research ecosystem.





YTU's KOOP Program Bridges Academia and Industry, Empowering Students with Real-World Experience

Through the Cooperative Education (KOOP) Program, Yıldız Technical University enables students to gain hands-on professional experience in leading companies across various sectors.

With partnerships established with over 250 industry collaborators, more than 800 students have had the opportunity to integrate academic learning with practical workplace experience during their undergraduate studies.

This model bridges academia and industry, preparing students for professional life while fostering innovation and employability. The program strengthens sustainable university–industry collaboration and enhances students' readiness for the job market.

Through collaboration, empathy, and innovation, YTU strengthens resilience and empowers individuals to build sustainable futures.

POLICY & OPERATIONS

Student Housing Facilities

YTU provides secure, comfortable and well-equipped on-campus housing facilities for students arriving from outside Istanbul, ensuring an inclusive and supportive living environment.

Located within the **Davutpaşa Campus**, the university offers a total capacity of **138 students** in modern and fully furnished residence halls. These facilities serve undergraduate, postgraduate and international students, providing convenient access to campus resources.

Rooms are equipped with private bathrooms, workspaces, high-speed internet, and shared social-study areas to support academic success and personal well-being.

Residence Hall	Capacity	Target Group
Davutpaşa Çağdaş Yaşam Sennur Selçuk Öztap Residence	72	Undergraduate & Graduate female students
İstanbul Kız Liseliler Residence	42	Undergraduate & Graduate female students
Şehide Türkan Türkmen Tekin Residence	24	Undergraduate & Graduate female students





In 2024, YTU strengthened international learning mobility through the Erasmus+ Programme. During this period, 711 outgoing students participated in study and traineeship programmes abroad, while 188 incoming students studied at YTU. Additionally, 48 outgoing staff and 38 incoming staff engaged in academic and professional mobility activities.

These mobility opportunities support equitable access to international education, enhance academic and cultural competencies, and contribute to capacity-building among students and staff. They also foster intercultural understanding and reinforce YTU's global academic partnerships. Erasmus+ mobility at YTU is supported by a stable and sustainable financial structure. The Erasmus budget was to €1,661,831 in 2023–2024, demonstrating consistent institutional efforts to supporting international mobility and ensuring equitable access to global learning opportunities.

YTU transforms knowledge into action, ensuring that education becomes a pathway out of poverty and toward social equity.

YILDIZ TECHNICAL UNIVERSITY

2024 SUSTAINABILITY REPORT



2 ZERO HUNGER

END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE

Scan the QR code for SDG2 events



Yıldız Technical University (YTU) recognizes that ending hunger requires more than food provision – it demands a holistic framework that unites research, education, community engagement, and environmental awareness. Guided by Sustainable Development Goal 2, the university is dedicated to ensuring access to safe, nutritious, and sufficient food for every individual while promoting responsible consumption and sustainable production systems. YTU approaches food security not only as a global priority but also as an essential dimension of student well-being and human dignity.

This section highlights how YTU integrates scientific expertise and social awareness to advance sustainable nutrition and eradicate hunger in all forms. Through interdisciplinary research in food engineering, environmental sciences, and biotechnology, the university develops innovative solutions for food preservation, waste reduction, and functional nutrition. These research endeavors align with a broader institutional vision that links academic excellence with public health and ecological responsibility. On campus, YTU fosters an inclusive food culture that values diversity and accessibility – providing affordable dining options, vegan and vegetarian meals, and nutrition-awareness programs that encourage healthy lifestyle choices among students and staff.

Equally important are YTU's initiatives that strengthen empathy and solidarity through collective experience. Community iftars, food-sharing campaigns, and projects for feeding campus animals emphasize compassion as a cornerstone of sustainable living. By encouraging volunteerism and participation, the university nurtures a sense of shared responsibility toward people, nature, and society. Together, these actions reflect YTU's conviction that the path to zero hunger extends from laboratories and classrooms to dining halls and public spaces. Through innovation, collaboration, and human connection, YTU contributes to building resilient communities where no one is left behind.

PUBLICATION STATISTICS

SCOPUS (2022-2024)

Name	Scholarly Output	% of 2047	Field-Weighted Citation Impact	Citation Count
SDG 02: Zero Hunger	34	1,16%	1,73	438

WoS (2022-2024)

Sustainable Development Goals	Number of Publications	% of 2.923
02 Zero Hunger	80	2,74%

PROJECTS RELATED TO SDG2

Projects Supported by YTU Scientific Research Projects Unit

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Efficacy of polymeric nanoparticles in agrochemical applications	2	12	
2	Regeneration of Salvia officinalis (Medical Sage) under in vitro Conditions and Enhancement of Bioactive Compound Synthesis in Controlled Environment	2	3	
3	Investigation of the usage areas of microbial glucans with different structures to be produced with unique glucosyltransferases for prebiotic, antimicrobial effect and production of edible packaging materials	2	3	12
4	Determination of the effect of proteomic features of starter culture lactic acid bacteria in sourdough on the Ehrlich metabolism of Saccharomyces cerevisiae PFC121 strain through transcriptomic and metabolomic analyses and identification of aroma compounds	2	3	
5	Effect of Phenolic Compounds Extracted from Grape Leaves on Reducing Maillard Reaction and Advanced Glycation End Products in Bakery Products	2	3	12
6	Stabilization of Anthocyanin-Rich Fruit Extracts in Emulsion Matrix and the Effect of Fermentation on Their Enrichment with Bioactive Components	2	3	12
7	Determination of Adulteration of Edible Oils with Volatile Oils Important in the Food Industry by FTIR Spectroscopy and Chemometrics	2	3	
8	Development of non-dairy formulations from seed and legume micro sprout flours enriched with Lactobacillus plantarum SHEA7 and investigation of their nutritional quality and bioactive properties	2	3	12
9	Drying And Mathematical Modeling Of Different Exotic Fruits With Current Methods	2	12	

External Grant-Supported Projects

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Use of Novel Alpha-Glucans Produced by Glucansucrase for the Production of Innovative Hydrogel, Oleogel, and Bigel Systems Loaded with Bioactive Components, and Use of Produced Oleogel and Bigel Systems as Palm Oil Alternative in Cream Filling Production			
2	Investigation of the Effects of Nanoparticle-Mediated Foliar RNAi Applications in Triticum Aestivum-Fusarium Graminearum Phytopathology			
3	Production, Characterization, Determination of Functional Properties of Bacterial Cellulose, Its Use in Probiotic Encapsulation, and Development of Functional Products			
4	Codon Optimization of Irisin and Protein Expression in Tomato (Solanum lycopersicum) with Gateway Cloning System			
5	Change in Protein Fraction and Determination of Bioactive Properties in Tarhana Fermentation			
6	Investigation of the Effects of Microwave Application to a Diesel Engine Operated with Hydrogen-Ammonia Mixtures and Oxidation of Emissions with Hydrogen Peroxide Mixtures on Engine Emission and Performance Characteristics			

YTU unites science, education, and empathy to promote sustainable nutrition and food security across all dimensions of campus life.

SUMMARIES OF KEY PROJECTS



Investigation of the Effects of Microwave Application to a Diesel Engine Operated with Hydrogen-Ammonia Mixtures and Oxidation of Emissions with Hydrogen Peroxide Mixtures on Engine Emission and Performance Characteristics

Carbon emissions from internal combustion engines significantly contribute to global warming. While efforts to decarbonize road transport continue, the maritime sector is required by the International Maritime Organization (IMO) to achieve net-zero emissions by 2035. Alternative fuels such as biodiesel, ethanol, methanol, and natural gas still produce CO_2 and therefore cannot meet zero-carbon targets. Ammonia and hydrogen are promising carbon-free fuels; however, their combustion results in nitrogen oxide (NOx) emissions, which must be minimized under IMO regulations. This project investigates the performance of a diesel engine fuelled with hydrogen–ammonia blends and explores the reduction and conversion of NOx to nitric acid using water–hydrogen peroxide mixtures, inspired by the Ostwald process. Additionally, a novel microwave-assisted ignition concept will be evaluated to improve combustion stability and reduce NOx formation, with two antenna configurations tested in-cylinder and at the intake manifold. Artificial neural networks and genetic algorithms will be employed to identify optimal fuel blends and operating conditions. The findings will provide first-time insight into NOx capture and valorisation during ammonia–hydrogen engine operation, offering a pathway toward sustainable zero-carbon maritime propulsion.

Efficacy of polymeric nanoparticles in agrochemical applications

This project aims to enhance the biological efficacy and environmental safety of agricultural chemicals by encapsulating gibberellic acid (GA_3) into PLGA nanoparticles for controlled release. GA_3-loaded PLGA nanoparticles will be synthesized using a single emulsion (o/w) solvent evaporation method. Their physicochemical properties—including particle size, polydispersity index, and zeta potential—will be characterized by dynamic and electrophoretic light scattering. Encapsulation efficiency, drug loading, and release profile will be evaluated via UV spectroscopy, while functional groups and morphology will be examined using FTIR and SEM, respectively. Following characterization, in vivo efficacy will be tested on grapevine plants in greenhouse conditions. A single foliar application will be performed at flowering, and cluster and berry attributes at harvest will be compared with free GA_3 treatment. Although polymer-based nano-formulations of GA_3 exist, GA_3-loaded PLGA nanoparticles and their effects on grapevines under real growing conditions have not been previously investigated. This study is ex-

pected to introduce a more efficient and environmentally friendly GA_3 formulation, significantly improving growth regulation outcomes in viticulture.

Regeneration of Salvia officinalis (Medical Sage) under in vitro Conditions and Enhancement of Bioactive Compound Synthesis in Controlled Environment

Chelidonium majus L., commonly known as greater celandine, is a perennial herb from the Papaveraceae family, rich in valuable alkaloids and characterized by orange latex-producing canal systems. Owing to its anti-inflammatory, antimicrobial, immunomodulatory, anticancer, antifungal, hepatoprotective and analgesic activities, it holds significant importance in both modern pharmacology and traditional medicine. This project aims to establish in vitro regeneration of C. majus through plant tissue culture and compare bioactive metabolite production between naturally grown plants and regenerated samples exposed to abiotic stress factors and signalling molecules (elicitors). Phenolic compound profiles and antioxidant capacity will be quantitatively analysed via HPLC. The ultimate goal is to achieve controlled and continuous production of bioactive metabolites independent of environmental conditions, while enhancing metabolite accumulation through manipulation of culture parameters. Callus, tissue, and whole-plant regeneration will be induced using different media compositions, explant types, plant growth regulators, elicitors, and stress treatments. Extracts from natural and cultured tissues will be evaluated to optimize phytochemical yield under laboratory conditions.

DRYING AND MATHEMATICAL MODELING OF DIFFERENT EXOTIC FRUITS WITH CURRENT METHODS

This project aims to investigate the drying behaviour and quality characteristics of two exotic fruits, dragon fruit (Hylocereus undatus) and prickly pear (Opuntia ficus-indica), subjected to different pre-treatments followed by infrared drying and freeze-drying processes. Although several studies exist on exotic fruit drying, data specific to these two fruits remain limited. In this study, drying kinetics will be examined and mathematical models will be applied to experimental data to determine the most suitable drying model. The effects of pre-treatments on drying time and product quality will be evaluated. Quality attributes, including physicochemical properties (moisture content, colour) and phenolic compounds, will be analysed to assess product performance. The goal is to obtain dried fruit products with minimal browning, preserved antioxidant capacity, high porosity, and characteristics close to fresh fruit, while identifying optimal drying and pre-treatment conditions. This research is expected to contribute valuable knowledge toward improving processing efficiency and product quality in exotic fruit drying applications.





Feeding Our Furry Friends

On March 12, 2024, a collaborative event titled "Feeding Our Furry Friends" was held at Davutpaşa Campus by the YTU Poetry and Tale Club and the Animal Rights Club. The event aimed to feed stray animals sharing the campus environment by placing pet food at designated spots. It also sought to raise awareness on animal rights and promote a culture of sustainable and compassionate living on campus. The event fostered solidarity and sensitivity among students through collective volunteer action.





Community Iftar Gathering

The "Community Iftar Gathering" was organized on 3 April 2024 at Yıldız Technical University, Davutpaşa Campus. The event provided an opportunity for members of the Disaster and Emergency Community to come together, share a meal, and strengthen social bonds within the student community.

This activity highlights YTU's commitment to fostering solidarity, inclusivity, and a supportive campus environment.



Research, awareness, and inclusion drive YTU's holistic vision for ending hunger and ensuring equitable access to nourishment.



YTU has revised student meal prices

YTU has revised student meal prices to ₺23, aiming to promote healthy nutrition while providing a budget-friendly dining option for all students.

The university dining halls serve five different meal varieties daily, offering vegan, vegetarian, and gluten-free (celiac) menu options to ensure inclusivity for all dietary needs. With a daily capacity of 12,000 meals, YTU continues to support student well-being by encouraging balanced eating habits that contribute to both academic performance and overall health.

This initiative reflects the university's commitment to accessible, equitable, and sustainable food systems, ensuring that every student can access nutritious meals in a supportive campus environment.





YTU Offers Vegan Menus to Support Healthy and Environmentally Conscious Dining

YTU has expanded its on-campus dining services to include vegan menu options as part of its commitment to supporting healthy, sustainable, and inclusive nutrition for students and staff.

Starting from 28 February 2022, vegan meals have been made available in designated dining halls at Davutpaşa and Beşiktaş Campuses. The initiative ensures that students following vegan and vegetarian diets have access to nutritious and affordable meals within the university facilities.

This service is coordinated by the Department of Health, Culture, and Sports, aiming to promote well-being, inclusivity, and environmental awareness through diverse meal options.





Healthy Nutrition Among Youth

YTU Student Dean's Office organized a seminar titled "Healthy Nutrition Among Youth" led by Expert Dietitian Elif Bilgin Baş. The event aimed to promote healthy lifestyle awareness and encourage students to adopt balanced dietary habits during their academic life. Participants received guidance on maintaining nutritional well-being, preventing diet-related health issues, and understanding the impact of food choices on long-term health and sustainability. The session also contributed to broader awareness on responsible consumption and public health improvement within the university community.





Three Holy Months Commencement Iftar

YTU Intellectual Research Club (Fikrî Araştırmalar Kulübü) hosted the Three Holy Months Commencement Iftar at Kadem-i Şerif Tekkesi on January 1, 2024. The event aimed to celebrate the beginning of the holy months in an atmosphere of unity, peace, and shared spiritual reflection. Bringing together participants around a "table of brotherhood," the gathering emphasized compassion, solidarity, and mutual understanding among students.



By linking innovation with compassion, YTU transforms sustainability into daily practice for a hunger-free and resilient society.







Three Holy Months Commencement Iftar

YTU actively advances its Zero Waste Management System through hands-on environmental initiatives that promote awareness and sustainable practices among students and staff. The university continuously works to minimize the environmental impact of waste generation, encouraging recycling, recovery, and the reintegration of valuable materials into the circular economy.

As part of its Green Campus and Climate Action Strategy, YTU operates on-campus composting machines that convert organic waste into nutrient-rich compost. This compost is used in landscaping and urban agriculture areas across the Davutpaşa Campus, reducing landfill waste while contributing to soil health and sustainability.

On March 30, International Zero Waste Day, YTU organized a Composting Workshop led by KampüSıfır in collaboration with the YTU Environmental Club. The event included an informative session on composting methods followed by an interactive, hands-on activity where participants learned how to turn organic waste into compost. The workshop successfully raised awareness about waste reduction and sustainable living practices within the campus community.

YTU proudly congratulates the Environmental Club, which was selected as “Club of the Month” in recognition of its outstanding leadership in promoting sustainability and zero waste principles.



Prof. Dr. Ömer Şimşek Leads International Project on Functional Food Additives at Yıldız Technical University

Prof. Dr. Ömer Şimşek from the Department of Food Engineering at Yıldız Technical University leads a TÜBİTAK 2549 project, jointly funded under the Poland National Centre for Research and Development (NCBR) Bilateral Cooperation Program.

The project focuses on formulating functional food additives derived from lactic acid bacteria and their metabolites, designed to extend shelf life and provide health-promoting benefits to food products.

This research contributes to food safety, functional nutrition, and sustainable production, offering innovative approaches to reduce food waste and enhance public health through bioactive, naturally derived additives.





Traditional YTU Iftar

On March 21, Yıldız Technical University hosted its Traditional Iftar Dinner at both Davutpaşa and Yıldız Campuses, welcoming all students and staff to share in a sense of unity, inclusion, and community well-being.

The event fostered social cohesion, mental well-being, and a sense of belonging among the university community by bringing together individuals from diverse backgrounds in a collective cultural experience.



YILDIZ TECHNICAL UNIVERSITY

2024 SUSTAINABILITY REPORT



3 GOOD HEALTH AND WELL-BEING

ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AT ALL AGES

Scan the QR code for SDG3 events

3 GOOD HEALTH AND WELL-BEING



Yıldız Technical University (YTU) adopts a comprehensive and human-centered approach to promoting health and well-being, recognizing that a healthy society is fundamental to sustainable development. Guided by the principles of Sustainable Development Goal 3, the university integrates research, education, and community outreach to support both physical and mental health. YTU's perspective extends beyond disease prevention—it encompasses holistic well-being, quality of life, and equitable access to healthcare innovations.

This section showcases YTU's wide-ranging initiatives that advance health awareness, technological progress, and social responsibility. Through cutting-edge research in biomedical engineering, biotechnology, and artificial intelligence, the university develops solutions that transform healthcare delivery. From smart insulin pumps to diagnostic kits and tissue engineering programs, YTU fosters innovation that improves medical outcomes and expands the boundaries of knowledge. At the same time, it strengthens education in health sciences through interdisciplinary collaboration, preparing future professionals to address evolving global health challenges with creativity and empathy.

Equally vital are the university's efforts to cultivate a healthy, supportive, and inclusive campus culture. Seminars, workshops, and student-led activities raise awareness on topics such as mental health, addiction prevention, sleep hygiene, and resilience. Sports festivals, peer mentoring programs, and community visits further reinforce the value of balance, social connection, and mutual care. Together, these initiatives reflect YTU's belief that well-being is achieved through both innovation and compassion—combining scientific excellence with a shared responsibility for human and environmental health. Through this synergy, YTU contributes to building a healthier, more resilient, and empathetic society.

PUBLICATION STATISTICS

SCOPUS (2022-2024)

Name	Scholarly Output	% of 2047	Field-Weighted Citation Impact	Citation Count
SDG 03: Good Health and Well-being	401	13,72%	1,14	3.660

WoS (2022-2024)

Sustainable Development Goals	Number of Publications	% of 2.923
02 Zero Hunger	80	2,74%

PROJECTS RELATED TO SDG2

Projects Supported by YTU Scientific Research Projects Unit

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Synthetic Production Of Naturally Derived Peptides And Comparative Investigation Of Their Effects On Cancer Cells	3	9	
2	Investigation Of Biological Activities Of Polymeric Nanoparticles Loaded With Phenolic Compounds Against Cancer	3	12	
3	Production Of Hydrogel Biocomposite Bone Scaffold Containing Waste Eggshell Particles	3	12	
4	Use Of Artificial Neural Networks In The Diagnosis Of Oral Cancer	3	9	
5	Recombinant Production Of Fusion Protein Containing Single-Chain Variable Fragment-Anti Microbial Peptide For Targeted Cancer Therapy	3	9	
6	Determination Of The Radiation Dose Level Exposed To Oral Mucosa In Digital Cystoscopy Imaging	3	9	
7	Production And Partial Purification Of Beta-Galactosidase Enzyme From Kefir Yeast	3	2	
8	Investigation Of Structural, Mechanical, And Biocompatibility Properties Of Cross-Linked Chitosan/Silk Fibroin Biocomposites For Biomedical Applications	3	12	
9	Death Anxiety In Young Adults: A Mixed Methods Study	3	4	
10	Infrared Spectral Vein Imaging And Image Processing For Catheter Procedure In The Neck Region	3	9	
11	Development Of Antibacterial Quantum Dot Conjugates With Proteins	3	9	
12	Production And Characterization Of Wound Dressings Containing Apitherapeutic Components Using 3d Printing Method	3	12	
13	Multilayer Skin Tissue Biofabrication On A Phantom Tissue Model Designed With In Situ 3d Electrospinning Method For Deep Burn Tissues	3	9	

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
14	Development Of Regenerative Human Pulmonary Heart Valve By Decellularization Of Ovine Pulmonary Heart Valve, Evaluation With Heart Valve-On-A-Chip Model And Analysis Of Its Efficacy	3	9	
15	Production Of Multilayer Skin Tissues With 3d Bioprinting And Evaluation For Skin-On-A-Chip Applications	3	9	
16	Development Of Silver And Manganese Doped Bioactive Glass Structures For Bone Tissue Engineering And Investigation Of Their In Vitro Behaviour	3	9	
17	Design Of New Hybrid Molecules With A Coumarin Skeleton	3	9	
18	Development Of Inorganic Semiconductor-Based Glucose Sensor	3	9	
19	Preparation And In Vitro Characterization Of Chitosan-Based Semi-Polymeric Formulations With Retinol-Vitamin C For Dermatology Applications	3	12	
20	Production Of Smart Wound Dressings With 3d Printer Method To Support Diabetic Wound Healing	3	9	
21	Production And Characterization Of A Wound Dressing Containing Pteridium Aqua (Pa) Fern Extract Based On Polyvinyl Alcohol (Pva) And Chitosan (Cs)	3	12	
22	Scaffold Design And Production With 3d Printer For Use In Skin Tissue Engineering Applications	3	9	
23	Mathematical Modeling Of Factors Affecting Diabetes Disease And Improvement Suggestions With Machine Learning	3	4	
24	Investigation Of Cell Behaviour In Scutoid Structures With Different Surface Areas In 3 Dimensions	3	9	
25	Regeneration Of Polygonum Species In Plant Tissue Culture And Investigation Of Health Effects Enhancing Bioactive Compound Synthesis	3	2	12
26	Production Of Nanoformulations Of Metabolites Produced By Bacteria Belonging To The Turkish Soil Microbiome For Use In Cancer Treatment, And In Vitro Evaluation Of Their Efficacy And Safety	3	9	
27	Investigation Of The Therapeutic Mechanisms Of The Anticancer Effect Of New Synthetic-Doped Hybrid Compounds In Various Cancer Cell Lines	3	9	
28	Synthesis Of Isotopic Derivatives Of Favipiravir Used In The Diagnosis Of Covid-19 And Re-Emerging Influenza-Type Viruses And Their Trace Level Determination In Blood, Urine, And Wastewater Samples	3	6	
29	Evaluation Of In Vitro Anticancer Efficacy Of Bacterial Mini Cell Loaded Nanoparticles For Melanoma Treatment	3	9	
30	Isolation Of Bioactive Metabolites With Antimicrobial And Neuroprotective Activity From Galanthus L. Species Distributed In Turkey And Genomic Analysis Of Biosynthetic Gene Clusters	3	15	
31	Artificial Intelligence Supported Sensor-Based Biomechanical Motion Analysis For The Evaluation Of Athletic Performance In Archery	3	4	
32	Scaffold: An Integrated Approach For Innovative And Effective Treatment Of Diabetic Wounds	3	9	12
33	3d Printed Artificial Bone Graft Design	3	9	
34	Conductive Wound Dressing Doped With Tar Resin	3	12	

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
35	Development And Testing Of Nanoparticle-Based Functional Coating For Use In Local Drug Delivery	3	9	
36	Development Of Nanofiber Scaffolds Doped With Sambucus Nigra Extract Containing Decellularized Ecm For Skin Tissue Engineering Applications And In Vitro Investigation Of Their Effect	3	12	
37	Development Of Polymeric Nanotheranostic Systems Containing Carbon Quantum Dots	3	9	
38	Production And Characterization Of Natamycin-Loaded Pva-Chitosan-Alginate Composite Wound Dressings By 3d Bioprinting	3	9	
39	Digitalization Of Aging In Place: Solution Architecture For Internet Of Things-Enabled Homes	3	9	11
40	Development And Investigation Of A Biotechnological Drug Delivery System Doped With Calcium And Magnesium Nanoparticles Effective In Bone Metastases	3	9	
41	Design Of Bioactive Bone Graft With Osteoinductive Effect For Bone Regeneration	3	9	
42	Design And Development Of A Brain Ischemia On A Chip System	3	9	
43	Synthesis Of New Phthalocyanine Compounds For Photodynamic Therapy Applications And Investigation Of Their Photophysicochemical Properties	3	9	
44	Production Of Multifunctional Hydrogel Using Okra Extract-Metal Coated Degenerated Mos Nanozyme And Investigation Of Its Wound Healing Properties	3	12	
45	Development Of Polyurethane-Based Heart Valve	3	9	
46	Production Of Recombinant Protein Derived From Listeria Monocytogenes And Investigation Of The Inactivation Of L. Monocytogenes In Foods By The Autolysin Enzyme Activity	3	2	
47	Investigation Of In Silico And In Vitro Therapeutic Effect Of Folic Acid Conjugated Chitosan-Plga Nanoparticles Loaded With Biocanine A For Multi-Drug Resistant Ovarian Cancer	3	9	
48	Mechanical And Biological Improvement Of Intervertebral Cages Using Auxetic Structure And Production By Additive Manufacturing	3	9	
49	Development Of Hydroxyapatite Coating Containing Silver And Magnesium On Titanium Implants Using Hydrothermal Method	3	9	
50	Positive Youth And Adult Development: A Multifaceted Examination	3	4	
51	Production Of Recombinant Protein Containing Avrtag Peptide Sequence And Evaluation Of Its Potential Use In Diagnosis	3	9	
52	Investigation Of The Effect Of Helichrysum Arenarium Extract On Kidney Stone Formation	3	15	
53	Decellularization Of Aorta And Investigation Of Hydrogel Tissue Scaffold For Cardiovascular Tissue Engineering	3	9	
54	Production And Development Of 3d Biofunctional Neural Tissue Scaffold	3	9	
55	Production And Characterization Of Wound Dressing For Burn Treatment	3	12	

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
56	Development Of A Prototype Of Left Ventricular Assist Device For Use In Blood Experiments	3	9	
57	Development Of Left Ventricular Assist Device Hybrid Simulation Circuit	3	9	
58	Diagnosis Of Parkinson's Disease Using Artificial Intelligence Techniques	3	9	
59	Genome Analysis Of New Actinobacteria Producing Bioactive Metabolites	3	15	
60	Development And Implementation Of Autonomous Systems For Medical Diagnosis From Medical Images With Artificial Intelligence Models	3	9	
61	Developing And Characterizing Agarose-Hyaluronic Acid Wound Dressing Doped With Gold Nanoparticles Produced By Chemical Methods	3	12	
62	Investigation Of Mechanical And Conductivity Properties Of Chitosan Polypyrrole Wound Dressing Depending On Temperature And Time	3	9	
63	Analysis Of Microbial Risk Assessment Of Atatürk Dam Water For Public Health With Metagenomic Approach	3	6	
64	Production Of Conductive Wound Dressing From Corn Oil-Doped Silk Fibroin	3	12	
65	Preparation Of Protocatechuic Acid Ethyl Ester/Cyclohexanol Supramolecule And Evaluation Of Its In Vitro Antioxidant Activities	3	12	
66	Production Of Next Generation Hydrogel Cryogel And Nanofiber Biocomposite Wound Dressings Enriched With Antibacterial Chitosan Nanofibers	3	9	
67	Development Of Peel-Off Mask Formulation Containing Turkish Hazelnut Oil And Titanium Dioxide Nanoparticles	3	12	
68	In Silico-In Vitro Recombinant Production, Biochemical And In Silico Analysis Of 1-Deoxy-D-Xylulose-5-Phosphate Reductase Enzyme, A Drug Target For Suppressing Salmonella Typhimurium Infections	3	9	
69	Production And Characterization Of A New Formulation Bioactive Glass With Enhanced Antibacterial And Angiogenesis Properties	3	9	
70	Development Of Antifouling-Antibacterial Pvc-Based Urinary Catheters	3	9	
71	Synthesis, Characterization Of New Phthalocyanine Compounds With Furan Substituent Containing Imine Bridging Group And Comparison Of Their Sonophotocatalytic-Electrochemical Measurements	3	9	
72	Integration Of Bioinformatics And Experimental Approaches In Treatment For Prostate Cancer: Verification Of Pradc1ap1, Nfia And Col17a1 Gene Expression And Analysis Of The Effect Of Glutaminase Inhibitor	3	9	
73	Development Of Hydrocolloid Burn Wound Dressing	3	12	
74	Synthesis Of New Scissor Phthalocyanine Compounds And Investigation Of Their Inhibition Effects On Some Metabolic Enzymes	3	9	
75	Transfection Of Tumor Suppressor Gene Modified Polymeric Nanostructures Into Cancer Cells	3	9	
76	Synthesis Of Rosmarinic Acid Loaded Cell Membrane Coated Plga Nanoparticles For Potential Treatment Of Breast Cancer	3	9	

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
77	Determination Of The Effects Of Recombinant Macpf Proteins Isolated From Walnut Tree On Breast Cancer Cell Line	3	15	
78	Development Of Deep Learning Models For Gestational Diabetes Prediction From Retinal Images And Speech Sound Analysis	3	9	
79	Synthesis And Characterization Of Covalent Memantine Drug Delivery Systems	3	9	
80	Identification Of New Mirna Candidates In Herb Genome And Their Transfer To Agnps Produced By Green Synthesis Method	3	9	
81	Numerical Investigation Of Blood Flow In Arteries And Capillaries With Non-Newtonian And Multiphase Flow Model	3	9	
82	Induction Of Ferroptosis And Reduction Of Treatment Resistance By Rearranging Nrf2 And Acsl4 Gene Expression In Egfr-Tki Resistant Nsclc Cells Using Crispr/Cas9 Technology	3	9	
83	Investigation Of The Glucose Lowering Effect Of Carbon Quantum Dots Prepared From Juniper Berry Extract (Juniperus Communis L.)	3	12	
84	Photodynamic Therapy Of Diseases With Singlet Oxygen Quantum Yield Of Phthalocyanines Containing Carbon Quantum Dots As Additive	3	9	
85	Early Stage Electrochemical Evaluation Of Ovarian Cancer Using Mos2 Nanorods And Aunps Hybrid Nano-Architecture	3	9	
86	Rearrangement Of Nrf2 And Acsl4 Gene Expression In Egfr-Tki Resistant Nsclc Cells With Crispr/Cas9	3	9	
87	Drug-Eluting Stent Design And Determination Of Its In Vitro Performance	3	9	

External Grant-Supported Projects

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	R&D Of Endoscopic Ultrasound Imaging System	3	9	
2	Production Of Mxene-Reinforced Calcium Phosphate Biocomposite Bone Scaffolds By Additive Manufacturing	3	9	12
3	Komagataella Phaffii Cell Factory For Enzyme Replacement Therapy Of Gaucher Disease	3	9	17
4	Nextgen Advanced Health Assistants Research (Nahar)	3	9	17
5	Peptide-Functionalized 3d Therapy Platform For Skin Cancer Treatment	3	9	
6	Evaluation Of Vaccine Adjuvant Potential Of Bacterial Mini-Cells	3	9	
7	Analytical Approaches For The Determination Of Heavy Metals, Parabens, And Dyes In Cosmetic Products	3	12	
8	Development Of Antifungal Agents Against Candidiasis	3	9	
9	Production Of Plasmonic Metal-Organic Framework And Carbon-Based Biosensors	3	9	12

SUMMARIES OF KEY PROJECTS

Development of an Upper Limb Prosthesis With a Physiological Aware Novel Generative Adversarial Network

This project aims to develop an original bionic hand and a novel physiologically aware artificial intelligence algorithm to enhance motion recognition in upper-limb amputees. Conventional EMG-based prosthetic control suffers from limited and low-quality muscle signals, especially when residual musculature is weak or absent, leading to poor classification performance for movements such as grasp, release, supination, pronation, and thumb motions. Standard machine learning approaches struggle to generalize due to inter-individual EMG variability, amputation level differences, and the inability to incorporate physiological muscle parameters. To address this gap, we propose a Physiology-Based Generative Adversarial Network (PB-GAN) integrating critical muscle parameters—mass, stiffness, and damping—through a novel muscle model to synthetically generate and enrich EMG signals, including signals of non-existent muscles. A convolution-based discriminator will classify six key movements using enriched EMG and wavelet-based inputs. By virtually reconstructing lost muscle dynamics, the system will improve robustness, movement resolution, and functional control. Outcomes include an original prosthetic hand prototype and a physiologically grounded learning framework for advanced, personalized neuro-prosthetic control.



Evaluation of the Acceptance and Commitment Therapy-Based Psychological Flexibility Group Intervention Program on Psychological Flexibility, Self-Compassion, and Post-Traumatic Stress Symptoms of Female University Students Exposed to Intimate Partner Violence: Program Evaluation Through Participants' Experiences

The aim of this study is to evaluate an Acceptance and Commitment Therapy (ACT)–based group intervention program developed for female university students who have experienced intimate partner violence, based on participants' subjective experiences. The study included ten female university students who had been exposed to intimate partner violence and participated in a 12-session ACT group intervention. Data were collected through a focus group interview and a Process Evaluation Form, and a researcher diary was kept ensuring reliability. The data were analysed using thematic analysis, and MAXQDA Analytics Pro software was utilized for analysis and visualization.

The analysis revealed three main themes— "Pre-Intervention Status," "Contributions of the Intervention Process," and "Facilitators of Change"—each accompanied by three subthemes. Participants' statements indicated that, prior to the intervention, they experienced psychological inflexibility, lack of

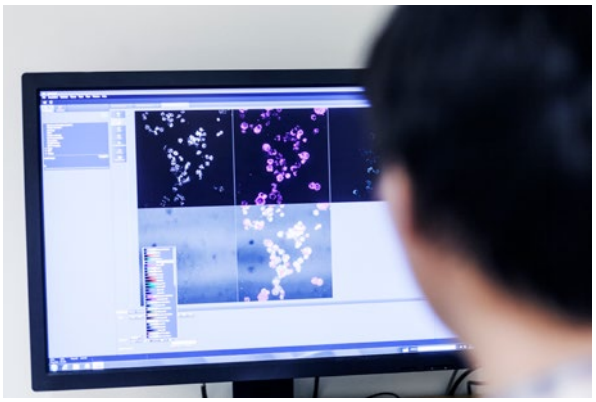
self-compassion, and symptoms of post-traumatic stress. Following the intervention, their statements reflected increased psychological flexibility and self-compassion, as well as experiences of post-traumatic growth. A positive group process, the facilitator's supportive characteristics, ACT-specific techniques, and homework exercises emerged as key factors facilitating change.

Development of a Novel Bioactive Glass Structure Containing B, Zn and Mg for Diabetic Wound Healing and Evaluation of Angiogenic and Antibacterial Properties of Wound Dressings Produced by Doping to Chitosan-Dextran-PCL Nanofibers

Diabetic chronic wounds represent a major health challenge, significantly reducing patients' quality of life and increasing healthcare costs. These wounds are characterized by persistent inflammation, microbial infection, impaired growth factor activity, and defective angiogenesis. Although growth factors such as VEGF, bFGF, and PDGF have been employed to promote angiogenesis, their clinical use is limited by high cost, instability, and adverse effects at high doses. Consequently, recent research has focused on biomaterial-based wound dressings capable of enhancing angiogenesis and preventing infection. Bioactive glasses (BGs) have drawn attention for their ability to stimulate angiogenesis, accelerate soft-tissue regeneration, and provide controlled release of therapeutic ions. In this project, 48S5-based BGs doped with boron, vanadium, and magnesium will be synthesized via the sol-gel method and incorporated into chitosan/dextran/PCL nanofiber membranes produced by electrospinning. The antibacterial activity, in vitro biocompatibility, angiogenic potential, and in vivo wound-healing performance will be evaluated. The goal is to develop a multifunctional wound dressing that promotes angiogenesis, offers antimicrobial protection, and accelerates healing in diabetic wounds.

Development of Biosensors and Advanced Technological Warning Systems for the Diagnosis, Monitoring, and Treatment of Neuron Damage-Related Diseases

Multiple Sclerosis (MS) is a chronic inflammatory, demyelinating, and neurodegenerative autoimmune disorder of the central nervous system, characterized by heterogeneous clinical courses and complex immunopathology. Increasing evidence suggests that non-coding RNAs, particularly microRNAs (miRNAs), play key regulatory roles in immune response, inflammation, and neurodegeneration in MS. Although numerous studies have examined miRNA expression profiles in various patient samples, inconsistencies in patient characteristics, sample types, and analytical platforms have limited the identification of reliable biomarkers. This project aims to integrate and analyse publicly available datasets from the NCBI GEO database to identify candidate miRNAs, focusing on hsa-miR-142-3p, as a potential diagnostic biomarker across different MS subtypes. Expression of the target miRNA will be validated in PBMCs and serum/plasma exosomes from MS patients, healthy controls, and individuals with other autoimmune and neurological diseases. Additionally, exosomal miRNA and mRNA sequencing will be performed to uncover novel biomarker candidates, followed by qPCR validation in an independent cohort. Ultimately, the project aims to establish clinically applicable miRNA–mRNA biomarker signatures for MS diagnosis and disease stratification.



Deep Learning Based Computer Assisted System Design for Sperm Morphology Analysis

Infertility is defined as the inability to achieve pregnancy after one year of regular unprotected intercourse, affecting approximately 15% of couples worldwide. Male factor infertility accounts for nearly 30% of all infertility cases, making semen analysis (spermiogram) an essential diagnostic tool. Conventional sperm morphology assessment relies on manual microscopic evaluation by trained specialists, which introduces subjectivity and significant inter-observer variability. Although Computer-Aided Semen Analysis (CASA) systems offer an automated alternative, their high cost and limited reliability prevent widespread use in clinical settings; in many clinics, CASA results are still cross-checked with manual observations. This project aims to develop a fully automated, low-cost, microscope-independent sperm morphology analysis system using computer vision and machine learning. The system will allow semen sample images to be captured via smartphones attached to any microscope and processed remotely on a cloud-based platform. By eliminating human-dependent variability, the system will provide more objective, consistent, and reproducible results while significantly reducing analysis costs. The approach also enables the creation of robust learning models through standardized image acquisition, ultimately supporting broader accessibility and improved diagnostic accuracy in male infertility assessment.

Highly Accurate and Sensitive Trace Determination of Capsaicin Found in Biological, Environmental, and Food Samples with Quadruple Isotope Dilution Mass Spectrometry Combined with Microextraction Methods

This project presents the sensitive determination of trace-level capsaicin in pepper, wastewater, and saliva samples using spray-assisted droplet formation liquid-phase microextraction (SEDO-LPME) and dispersive micro–solid phase extraction (DμSPE) followed by gas chromatography–mass spectrometry (GC-MS). In the SEDO-LPME method, acetic anhydride was used as a derivatizing agent to enhance chromatographic behaviour and facilitate extraction into the organic phase. Key parameters—including extraction solvent, spray cycles, mixing conditions, pH, buffer volume, salt effect, sample volume, and derivatizing agent volume—were optimized. Under optimum conditions, the LOD, LOQ, and linearity range were 0.33 μg/kg, 1.10 μg/kg, and 1.03–507.0 μg/kg, respectively, with recoveries of 94.9–104.0% (RSD ≤ 2.8%). In the DμSPE-GC-MS method, a synthesized reduced graphene oxide–Fe_3O_4 nanocomposite served as the adsorbent; LOD, LOQ, and linearity were 0.54 μg/kg, 1.80 μg/kg, and 2.66–487.35 μg/kg, respectively. Combining isotope dilution with DμSPE yielded improved recoveries (98.2–100.7%, RSD ≤ 3.4%). Overall, SEDO-LPME-ID-GC-MS and DμSPE-ID-GC-MS enabled highly accurate and sensitive quantification of capsaicin in complex matrices.

Development of Mechanical Circulatory Support System

For patients with end-stage chronic heart failure, cardiac transplantation remains the only non-palliative treatment; however, donor shortage significantly limits its availability. Mechanical circulatory support devices (MCSDs) have therefore become essential as a bridge-to-transplant or destination therapy. This project aims to develop a fully indigenous, next-generation left ventricular assist device (LVAD) featuring an innovative axial-flow turbine pump powered by a brushless DC motor. The turbine geometry will be optimized via CFD and validated using particle image velocimetry. The motor will be fabricated from low-conductivity titanium alloys and high-energy magnets, with minimized parasitic losses through segmented design. A smart control unit with bidirectional communication and a nonlinear adaptive backstepping controller will ensure physiologic speed regulation while minimizing hemolysis, suction, thrombosis, and ischemia risk. A physiologic cardiovascular test bench incorporating a Pontryagin-based optimal elastance model will be developed for validation. The project targets TRL-6 completion and prepares for subsequent biological testing, establishing a competitive, domestically developed MCSD technology with significant medical, scientific, and economic impact.



Culturhythmics: Global Beats in Sports Training

CultuRhythmics: Global Beats in Sports Training is an innovative project aimed at integrating diverse cultural dance styles and music into sports training routines. This initiative focuses on providing accessible and engaging training materials for coaches, particularly in grassroots sports clubs, to enhance the quality of sports practices and promote cultural diversity and inclusion. The literature points out cross- disciplinary, closely monitored and systemically structured training approaches to decrease early carrier injuries and pertaining to that career termination. Research conducted on Danish athletes engaged in gymnastics, tennis, swimming, and football demonstrated that individuals who commenced specialized training later in their lives, after participating in a variety of sports disciplines, achieved better results and experienced fewer instances of injuries compared to those who specialized earlier (Jayanthi et al, 2013). Two main intervention points are clearly addressed by the literature; a holistic approach to current training paradigms of the young athletes that will enable them to have flexibility to bounce between sport specializations as well as build their psychological resilience and secondly upskilling of coaches and trainers of young athletes. To achieve these objectives, an innovative training initiative has been devised, which represents a departure from conventional sports training methodologies. This initiative seeks to redefine traditional athletic training paradigms by integrating dynamic elements of dance, encompassing somatic techniques, contemporary dance exercises, and rhythmic dance styles, into the training regimens of sports Central to this initiative is the conception of a multisport training experience, wherein athletes from different professionalization domains converge to engage in a collaborative learning environment.



UniWell: Physical and Mental Awareness for University Students

The project aims to enhance the mental wellness of university students by fostering cross-border collaboration and promoting holistic educational methodologies. Recognizing the unique stressors faced by today's students, we're committed to crafting resources that address emotional, psychologi-

cal, and social well-being. By integrating traditional and digital tools, we seek to provide supportive environments, resources, and practices, empowering students to thrive academically and personally.



Save Life: Reorganizing Basic/Advanced Life Support Training Through the Use of Innovative Digital Materials (SDG3, SDG4, SDG9)

To ensure equal access , sustainability of the professional development and readiness of medical students, nurses, paramedics, and general practitioners on basic and advanced life support (B/ALS);- to provide continuously accessible, free, innovative, inclusive e-learning platform on 12 B/ALS topics; to increase the institutional capacity of the partaking organizations on their involvement in international and interdisciplinary cooperation; to raise awareness on social discrepancies of receiving CPR. The project will map the B/ALS topics to be covered by the e-learning modules through a survey among the target groups. A course syllabus, a clear course strategy outlining the pedagogical approach, and an assessment method will be determined under work package2. The content of the modules, e-books, and 2D videos will be prepared in WP3. Regular testing workshops will be held. Through LTT activities and the multiplier workshops target group will be informed about the eLearning platform in WP4.



New Inhibitors Targeting Neisseria Gonorrhoeae DXR

This project aims to identify novel small molecules, natural products, and repurposed approved drugs as therapeutic candidates against Neisseria gonorrhoeae, with a focus on dihydroxyacetone reductase (DXR) inhibition as a validated drug-targeting strategy. To maximize the likelihood of discovering effective lead structures, we will employ an integrated screening platform combining experimental and computational approaches across four distinct compound libraries. The project objectives include: (i) implementing a complementary high-throughput screening workflow to identify DXR inhibitors from synthetic molecules, natural compounds, and approved drugs; (ii) validating DXR inhibition and antimicrobial efficacy against multiple N. gonorrhoeae strains; (iii) characterizing promising candidates through structure–activity relationship (SAR) analyses and preliminary toxicity assessments; and (iv) generating experimental evidence confirming DXR as a viable therapeutic target in N. gonorrhoeae. Ultimately, this research will contribute to new antibacterial lead development and support therapeutic innovation against drug-resistant gonorrhoea.



Investigation on Fabrication and Characterization of Novel Ultrafine Grained Biodegradable Ureteral Stents

This project aims to develop novel ultrafine-grained biodegradable ureteral stents designed to prevent kidney damage in upper urinary tract obstructions while eliminating the need for secondary removal surgery. The research will focus on producing self-degrading stents with high radial strength, controlled degradation kinetics, and excellent biocompatibility under physiological conditions. Advanced processing routes will be used to achieve ultrafine grain structures, and mechanical, degradation, and cytocompatibility tests will be conducted. The expected outcome is a clinically promising, next-generation biodegradable stent offering improved patient outcomes and reduced healthcare burden.





Nursing Home Visit – Intergenerational Solidarity Project

Organized by student volunteers, this social responsibility visit took place at the Istanbul Nursing Home and Elderly Care Center, where students spent time with elderly residents, engaged in conversations, and participated in activities.

The visit aimed to:

- Support the emotional well-being of elderly individuals
- Foster intergenerational empathy and communication
- Encourage civic engagement among university students

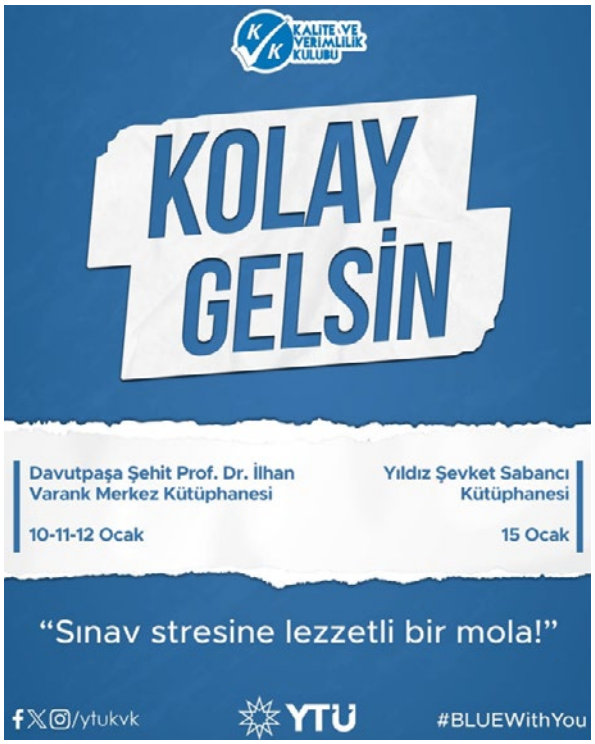


Wish Tree for Children with Leukemia" – Toy Donation Campaign

From December 13–26, 2024, the YTU LÖSEV Student Club organized a heartwarming donation campaign called the Wish Tree, aimed at supporting children undergoing leukemia treatment.

The project invited students and staff to donate new, age-appropriate educational toys listed on the campaign poster. These included sets such as legos, skill-development kits, coloring books, and board games. Plush toys and second-hand items were not accepted to ensure safety and hygiene standards.

More than seven student clubs contributed to the initiative, promoting a spirit of unity and care across the university. All collected items were delivered to LÖSEV for distribution to children during the New Year season.



"Kolay Gelsin" – A Delicious Break During Final Exams

During finals week, students were offered a brief moment of relief from exam stress with refreshments provided at stands set up in front of the libraries on both campuses.

From January 10 to 12, students at the Şehit Prof. Dr. İlhan Varank Central Library on the Davutpaşa Campus and on January 15 at the Şevket Sabancı Library on the Yıldız Campus were welcomed with a variety of surprise treats.



HIQ Nutrition Talks

On May 8, 2024, an event titled "HIQ Nutrition Talks" was organized at Yıldız Technical University Davutpaşa Campus in collaboration with HIQ Nutrition, one of Türkiye's leading sports supplement brands.

The event featured professional athletes supported by HIQ Nutrition as guest speakers, who shared their experiences on topics such as performance nutrition, supplementation, sports discipline, and personal development in athletic careers. In addition to the talks, participants had the opportunity to attend a tasting session and interact with brand representatives.

The event contributed to students' awareness of nutrition and health, while also fostering dialogue between students and industry professionals. It encouraged healthy lifestyle choices and supported knowledge transfer in the field of sports science.



Traditional Street Games event

The YTU Children and Education Club organized a Traditional Street Games event that brought students together through interactive and culturally significant outdoor games. The activity encouraged participation, collaboration, and physical movement in a fun and inclusive environment.

11 SUSTAINABLE CITIES AND COMMUNITIES

Traditional Street Games event

The "Comprehensive Women's Health" event held on April 24 aimed to raise awareness about women's health and health literacy. Led by TAP Foundation's health educator Eylem Çiçek, the event provided valuable information on women's health-related issues and contributed to improving participants' health knowledge and well-being.

5 GENDER EQUALITY





4 QUALITY EDUCATION

10 REDUCED INEQUALITIES

Traditional Street Games event

On April 4, 2024, YTU student organized an Ebru (traditional Turkish marbling) workshop for children as part of a collaborative event with YEÇED – Yeryüzü Çocukları Derneği. The activity aimed to offer young participants a joyful, hands-on experience with traditional art while fostering creativity, focus, and emotional engagement.

Through the one-on-one guidance of volunteers, children had the opportunity to explore the beauty of colors and movement in water-based art. The session not only introduced cultural heritage to a younger generation but also encouraged inclusion, positive social interaction, and a sense of achievement in children from diverse backgrounds.



2nd Cancer Day

On the occasion of World Cancer Day, YTUBiyogen Student Club organized the '2nd Cancer Day' as an online event on YouTube (4 February 2024). The program aimed to raise public awareness about cancer and emphasize the importance of early diagnosis, contributing to improved health and well-being. By offering accessible and science-based information to a wide audience, the event also fostered quality education.

From Genes to Behavior: Epigenetics as the Hidden Regulator of Long and Healthy Life

On 9 May 2024, a seminar was held at the Faculty of Arts and Sciences with Prof. Dr. Korkut Ulucan on the theme 'From Genes to Behavior: Epigenetics as the Hidden Regulator of Long and Healthy Life.' The event provided participants with scientific insights into epigenetics, linking genetics to human health and behavior.





Members of Yıldız Technical University Construction Society visited Derman Nursing Home

As part of World Elderly Week, members of Yıldız Technical University Construction Society visited Derman Nursing Home, where they organized handicraft activities, workshops, and games with the residents. The initiative strengthened intergenerational solidarity, enhanced awareness of elderly well-being, and encouraged students to embrace social responsibility, contributing to sustainable development goals.



First Aid Seminar in Natural Disasters and Emergencies

The "First Aid Seminar in Natural Disasters and Emergencies" was organized on 13 December 2024 at YTU. The seminar aimed to equip participants with essential knowledge and practical skills in first aid interventions during disasters and emergencies. Expert trainers provided guidance on effective and rapid response techniques, enabling participants to better protect themselves and assist others in crisis situations.

An awareness and outreach activity on campus

Yıldız Technical University Green Crescent (Yeşilay) Student Club, in collaboration with the Esenler Yeşilay Branch, organized an awareness and outreach activity on campus. A stand was opened to introduce the Green Crescent to university students, provide information about upcoming activities, and promote volunteer engagement.

This initiative contributed to SDG 3 (Good Health and Well-Being) by raising awareness on healthy living and addiction prevention, and to SDG 17 (Partnerships for the Goals) through collaboration with a local NGO branch.







Let's Not Be Captive on Social Media

YTU Green Crescent Student Club, in collaboration with the Student Dean's Office, organized a seminar titled "Let's Not Be Captive on Social Media" together with a screening of The Social Dilemma documentary at the Faculty of Electrical and Electronics Conference Hall. The event aimed to raise awareness among students about the psychological and social impacts of social media.

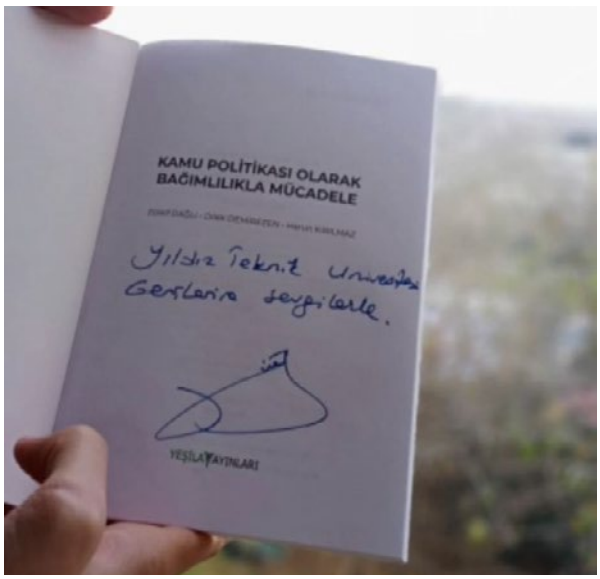


Addiction Prevention Education" program

Young Green Crescent Club, in collaboration with the Güngören Green Crescent Branch, organized an awareness activity at Polis Amca Primary School. Within the scope of the "Addiction Prevention Education" program, university students engaged with children through interactive activities to promote healthy living and raise early awareness about the risks of addiction. This initiative directly contributed to raising health awareness and supporting preventive education at an early age.

Combating Addiction as a Public Policy

YTU Green Crescent Club participated in the launch of the book "Combating Addiction as a Public Policy", authored by Assoc. Prof. Dr. Zülkif Dağlı, Inspector General of the Ministry of Interior, and hosted at the Green Crescent Headquarters. This engagement highlighted the university's active involvement in promoting health awareness, preventive strategies, and policy-oriented discussions on addiction.







A training session on psychological resilience

A training session on psychological resilience was conducted at Yıldız Technical University on 3 December 2024, conducted by author and trainer Mehpare Şayan Kileci. The program focused on strategies to strengthen emotional endurance, adaptability, and stress management, aiming to equip students with tools to navigate academic, professional, and personal challenges more effectively.

By integrating theory with practical exercises, the training enhanced students' mental well-being, self-awareness, and coping strategies. The initiative also contributed to creating a supportive academic environment that prioritizes holistic student development and sustainable mental health practices.





BioForm XII: Bridging Medicine, Biology, and Engineering at Yıldız Technical University

On 11–12 December 2024, Yıldız Technical University hosted BioForm XII, a flagship event bridging medicine, biology, and engineering. With the participation of leading companies such as Sanofi, Siemens Healthineers, Bilim Kimya, and Eczacıbaşı, the event provided a vibrant platform where students engaged directly with industry experts through keynote sessions, interactive panels, and a dynamic fair area.The two-day program featured talks on artificial intelligence in medicine, wearable health technologies, forensic sciences, oncology, and future innovations in biology and healthcare. In addition, social and cultural perspectives were integrated, including sessions on sports sciences, psychology, and perfumery, offering a multidisciplinary learning experience.

Through its blend of technical insights, applied science, and industry collaboration, BioForm XII enhanced students' employability skills, strengthened university–industry ties, and fostered innovation in health technologies.



YTU students had the opportunity to visit Birgi Mefar Group

YTU students had the opportunity to visit Birgi Mefar Group, one of Türkiye's pioneering companies in sterile pharmaceutical manufacturing. The program allowed participants to observe sterile injectable drug production and primary glass packaging processes first-hand, while also learning about the company's more than fifty years of expertise in the health sector. The visit enriched students' understanding of pharmaceutical technologies and quality standards, providing valuable insight into how innovation, safety, and regulatory compliance intersect in the production of critical medicines.





YTU hosted a Roll-On Perfume Workshop

As part of Science Festival 9, YTU hosted a Roll-On Perfume Workshop on 8 May 2024, facilitated by Zehra Koyuncu from Miss Valerie Organic Beauty. The session highlighted the use of natural ingredients and organic formulations in cosmetic product development, emphasizing the value of sustainability, health, and nature-inspired innovation in the beauty sector.

YTU students joined the 46th Istanbul Marathon

YTU students joined the 46th Istanbul Marathon in collaboration with the Tohum Autism Foundation. The initiative aimed to raise awareness of autism spectrum disorder (ASD) and support access to education for children with special needs. By participating as motivation volunteers, students demonstrated social responsibility, solidarity, and commitment to inclusive education and well-being.



The Biyobilim Conference, organized by YTU Chemical Technologies Club

The Biyobilim Conference, organized by YTU Chemical Technologies Club, focused this year on the central theme of Pharmacology. Held at the Davutpaşa Congress Center, the event brought together distinguished academics from leading universities, fostering an interdisciplinary dialogue across chemistry, chemical engineering, biomedical sciences, and pharmacy.

The program featured a series of keynote sessions that explored diverse aspects of pharmacology, ranging from its historical development and societal impact to emerging trends in toxicology, pharmacovigilance, and microbiome-based personalized therapies.



MedCast Session with Prof. Dr. Erhan Akdoğan



YTU hosted a MedCast podcast featuring Prof. Dr. Erhan Akdoğan, President of the National Center for Medical and Biological Engineering (TÜSEB). The session focused on the emerging field of brain–computer interfaces and medical robotics, offering students and researchers insights into the integration of neuroscience, engineering, and healthcare technologies.

YTU organized Medifest 2024

YTU organized Medifest 2024, a large-scale event bringing together students, academics, and industry leaders in the fields of health, technology, and engineering. The program featured keynote sessions, interactive workshops, and company exhibitions, fostering innovation in healthcare technologies while promoting interdisciplinary collaboration. Through active participation of civil society organizations and leading firms, the event contributed to raising awareness of public health challenges, encouraging innovation in medical engineering, and building sustainable partnerships.

MEDİFEST



A MEDdays Talk with Assoc. Prof. Dr. Mustafa Ünal on Biomechanics and Health Innovation

As part of the MEDdays series, YTY hosted Assoc. Prof. Dr. Mustafa Ünal, a biomedical engineer and visiting researcher at Harvard Medical School, who shared his career journey in biomechanics and biomedical engineering. The program provided students with insights into international academic pathways, advanced research in astronaut biomechanics, and the role of biomedical innovation in improving health outcomes.



Grad Talks – Additive Homeopathy and Quality of Life in NSCLC Patients

YTU hosted the 44th session of the Grad Talks Seminar Series on 29 May 2024, featuring Prof. Dr. Michael Frass from the Medical University of Vienna. The online seminar titled "Additive Homeopathy Improves Quality of Life and Prolongs Survival in Patients with NSCLC" explored integrative medical approaches to cancer care, highlighting evidence-based outcomes and interdisciplinary research in health sciences. The event strengthened YTU's commitment to advancing public health awareness, promoting graduate-level academic exchange, and fostering international research collaborations.

YTU integrates technology, education, and empathy to advance innovation and strengthen well-being across all areas of university life.



Yıldız Technical University Develops World's First Human-Compatible Heart Valve from Sheep Tissue

Researchers from Yıldız Technical University's Department of Biomedical Engineering have successfully developed the world's first human-compatible heart valve produced from decellularized sheep tissue.

This innovation offers a safer and more sustainable alternative to conventional mechanical and porcine-derived bioprosthetic valves, addressing the risk of viral transmission associated with existing methods.

The project represents a milestone in biomedical innovation and demonstrates YTU's contribution to advancing human health, medical technology, and sustainable biomaterial use. It also reflects Türkiye's growing capacity for developing indigenous and globally competitive biomedical solutions.





Future and Vision in Health Technologies

The sixth edition of Medivation was organized at YTU Davutpaşa Campus, under the theme "Future and Vision in Health Technologies." The summit brought together leading experts, academics, and students to discuss emerging trends in digital health, biomedical innovation, and the role of technology in shaping the future of healthcare.



Future and Vision in Health Technologies

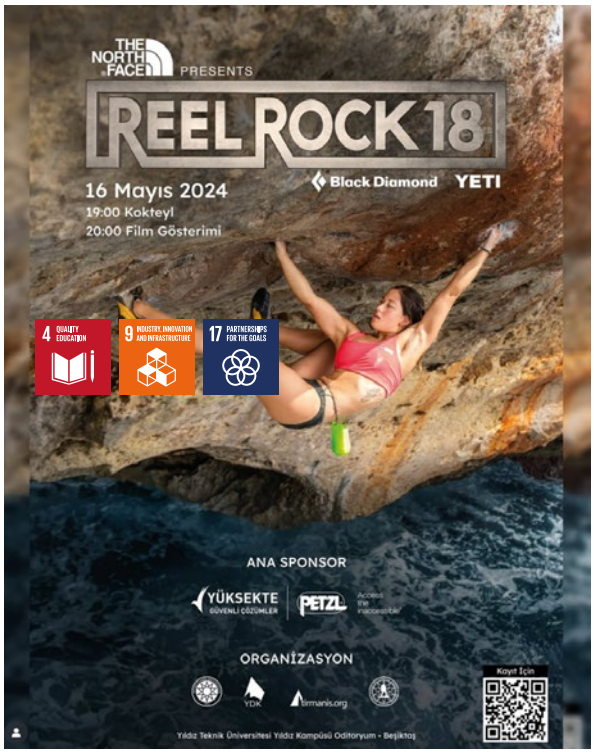
Yıldızlı Gülüşler 2024 was held between March 4–6, 2024, in Mersin and Hatay. This social responsibility project brought together university student volunteers and local children in earthquake-affected regions to spread joy, hope, and encouragement through interactive games, art workshops, and educational activities. The initiative aimed to foster emotional recovery, strengthen community ties, and create lasting smiles by supporting children's well-being and confidence.



the Bottle Cap Collection Project

Organized by the Yıldız Technical University Business Club, the Bottle Cap Collection Project aimed to promote environmental awareness and social responsibility on campus. Throughout the 2024 academic year, students collected thousands of plastic bottle caps, which were donated to the Turkish Spinal Cord Injury Association (TOFD) to support the purchase of wheelchairs for individuals with mobility impairments. This initiative highlights the importance of waste recycling, disability inclusion, and civic engagement among university students.





REEL ROCK 18 Film Screening

The REEL ROCK 18 Film Screening was held on May 16, 2024, at the Yıldız Campus Auditorium, Yıldız Technical University (Beşiktaş).

Hosted by the YTU Mountaineering Club (YDK) in collaboration with Tirmanis.org, the event brought together outdoor enthusiasts for an evening celebrating climbing, adventure, and the beauty of nature. Supported by brands such as The North Face, Black Diamond, and PETZL, the program began with a friendly cocktail hour followed by the film screening.

The event encouraged participants to embrace an active lifestyle, discover the values of teamwork and perseverance, and deepen their appreciation for natural environments and outdoor sports.

YTUHAVK Instructor Mahmut Yalçın Achieves 3rd Place at Akşehir International XC Open 2024

The Akşehir International XC Open 2024 Paragliding Distance Competition was held between June 18–23, 2024, in Akşehir, Konya. Representing Yıldız Technical University Aviation Club (YTUHAVK), instructor and pilot Mahmut Yalçın earned third place in the Sport Class category, bringing pride to the university community.





Fall 2024 Theoretical Training Sessions Organized by YTU Aviation Club

The Fall 2024 Theoretical Training Sessions organized by the Yıldız Technical University Aviation Club (YTUHAVK) were held on October 12–13, 2024, at the Şevket Erk Conference Hall, located within YTU Davutpaşa Campus, Taş Bina.

These sessions aimed to provide participants with the foundational theoretical knowledge required for paragliding, covering topics such as flight dynamics, meteorology, safety procedures, and equipment use. Attendance was mandatory for all trainees preparing for the upcoming flight season.

Spring Sporfest Tournaments 2024

The Spring Sporfest Tournaments 2024 took place between April 30 and May 2–3, 2024. The event featured a variety of sports competitions, including basketball, football, volleyball, tennis, foot tennis, table tennis, and foosball, encouraging students to engage in teamwork, physical activity, and friendly competition.







"My Mind Through Architecture: Flow of Consciousness in Sculpture" – Talk by Architect Neslihan Demircioğlu

YTU hosted a seminar and exhibition talk by architect and artist Neslihan Demircioğlu, titled "My Mind Through Architecture: Flow of Consciousness in Sculpture." The event explored the intersection of architecture, art, and psychology, emphasizing how artistic expression can enhance spatial awareness, creativity, and emotional well-being. Students were introduced to interdisciplinary perspectives that integrate design thinking with cultural and spiritual dimensions of architecture. The talk also highlighted the role of women in art and architecture, inspiring students through a female professional's creative journey.

"Don't Postpone!" Workshop – Coping with Procrastination and Decision-Making Skills

YTU organized a student development workshop titled "Don't Postpone!" led by Psychologist Nagihan Şen on 4 April 2024. The workshop aimed to help students overcome procrastination, strengthen decision-making skills, and develop effective study habits, particularly during the exam period. By addressing the psychological dimensions of academic performance, the event supported student well-being, self-management, and academic resilience.





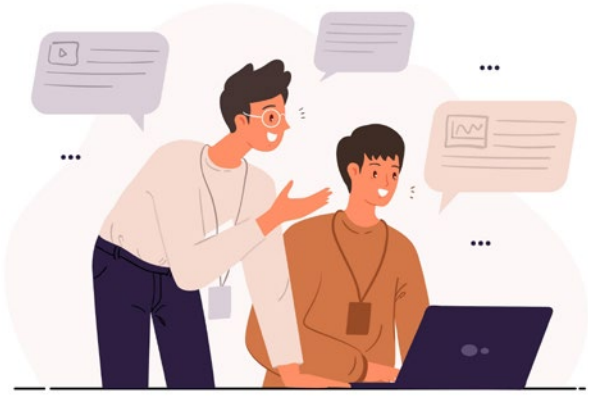
Stress Management Workshop – Coping with Academic and Career Anxiety

YTU organized a Stress Management Workshop on 27 March 2024, led by Psychological Counselor Emel Bulut. The session focused on coping strategies for academic, exam-related, and career-related stress, helping students strengthen resilience and emotional balance. Through this interactive workshop, students learned practical techniques for managing anxiety, improving focus, and maintaining well-being during challenging academic periods. The event reflects YTU's commitment to supporting students' mental health, academic success, and personal development.

"Sleep Well" Workshop – Key Tips for Healthy Sleep and Restorative Routines

YTU hosted a Sleep Workshop on 1 April 2024, led by Clinical Psychologist Neslihan Tekgül. The session focused on understanding the science of sleep, identifying factors that disrupt healthy rest, and developing personalized strategies to improve sleep quality—particularly during exam periods. Participants learned evidence-based methods for managing stress, balancing daily routines, and enhancing overall well-being.





Peer Mentoring Program

YTU implements a comprehensive Peer Mentoring Program coordinated by the Student Dean's Office to foster academic success, social inclusion, and student well-being. Through this initiative, senior students provide guidance and support to first-year peers, helping them adapt to university life and develop essential study and communication skills. The program promotes a sense of community, reduces adjustment-related stress, and ensures that all students—regardless of background—can thrive academically and socially.



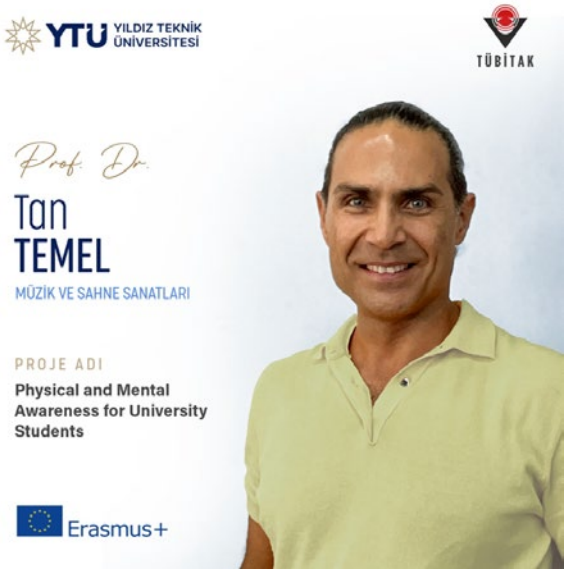
Acoustic Concert

YTU Music Club organized its annual Acoustic Concert, bringing together students and prominent Turkish artists such as Ogün Sanlısoy, Bulutsuzluk Özlemi, Badem, Can Güngör, and Selin Çıngır. The event created an unforgettable experience filled with music and community spirit as students and artists shared the stage in a vibrant, creative atmosphere.

Physical and Mental Awareness for University Students

Prof. Dr. Tan Temel, Faculty of Art and Design – Department of Music and Performing Arts, coordinates the Erasmus+ project titled “Physical and Mental Awareness for University Students.”

The project aims to improve the mental health and holistic well-being of university students by promoting physical and psychological awareness. It fosters cross-border collaboration and develops integrated educational methodologies addressing emotional, social, and cognitive dimensions of student life.

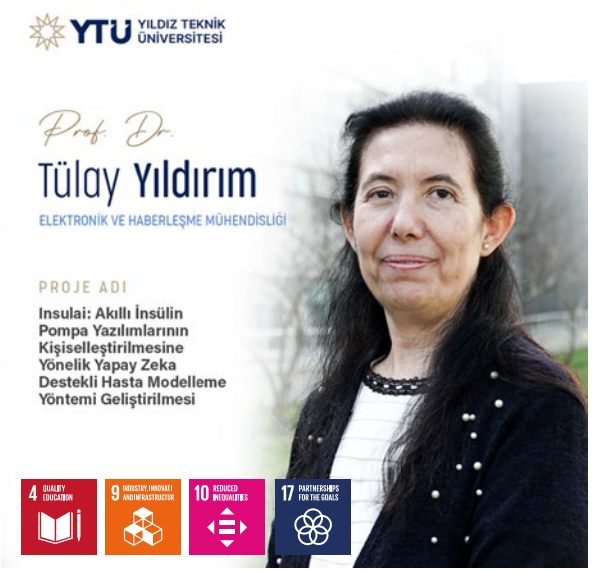




YTU’s Korfball Team became the champion of the NİLİG

YTU’s Korfball Team became the champion of the NİLİG (Interuniversity Korfball League)! This victory symbolizes not only athletic success but also the university’s commitment to promoting physical health, teamwork, and gender equality in sports.

Korfball, as a mixed-gender team sport, directly supports inclusivity and cooperation between male and female students, encouraging respect and mutual understanding while improving overall well-being.



Transforming Healthcare with Artificial Intelligence: The InsulAI Project

Prof. Dr. Tülay Yıldırım, faculty member at Yıldız Technical University, Faculty of Electrical and Electronics Engineering, Department of Electronics and Communication Engineering, is leading an innovative research initiative supported by TÜBİTAK 1001 – Scientific and Technological Research Projects Support Program, titled "InsulAI: Development of an Artificial Intelligence–Assisted Patient Modeling Method for the Personalization of Smart Insulin Pump Software."

The InsulAI project aims to develop AI-based smart insulin pump software that enhances the quality of life for diabetes patients through personalized and adaptive treatment solutions. By enabling accurate insulin dosage adjustment without the need for continuous glucose monitoring, the project offers a new perspective on digital health technologies.

Bringing together artificial intelligence, biomedical engineering, and software technologies, this interdisciplinary study contributes significantly to digital transformation in healthcare the development of educational and research capacity, and the strengthening of scientific collaboration ecosystems.



Development of a Rapid Staphylococcus aureus Diagnostic Kit by Lateral Flow Assay Using Bacteriophage Receptor Binding Proteins

Prof. Dr. Tülin Özbek, faculty member at Yıldız Technical University, Faculty of Science and Letters, Department of Molecular Biology and Genetics, is conducting a groundbreaking study supported by the TÜBİTAK 1001 – Scientific and Technological Research Projects Support Program, titled "Development of a Rapid Staphylococcus aureus Diagnostic Kit by Lateral Flow Assay Using Bacteriophage Receptor Binding Proteins."

The project aims to prevent the growing health and economic threats caused by antibiotic-resistant pathogens through the development of rapid, reliable, and cost-effective diagnostic tools. By utilizing phage receptor binding proteins with host-specific sensitivity, the study seeks to establish a lateral flow bioassay (LFA)-based rapid detection system for S. aureus, contributing to early diagnosis and improved infection control strategies.



Yıldız Technical University and Koç University met in an interuniversity American football match

Yıldız Technical University and Koç University met in an interuniversity American football match held at YTU Davutpaşa Campus. The game fostered a spirit of sportsmanship, teamwork, and fair competition among students, while encouraging participation in physical and social activities.

The event strengthened student engagement and contributed to the promotion of healthy lifestyles, reflecting the university's dedication to holistic student development and extracurricular learning.

Workshop of the Environmental Festival: Aromatherapy Workshop with Petarya

As part of the Environmental Festival, YTU hosted an Aromatherapy Workshop in collaboration with Petarya. Participants explored the use of natural, plant-based products and learned about sustainable approaches to personal well-being, connecting environmental awareness with everyday lifestyle choices.



From biomedical research to mental health awareness, YTU promotes holistic well-being and sustainable health practices for all.

Innovations in Tissue Engineering and Biomaterials Development Master's Program for Excellence

Prof. Dr. Cem Bülent Üstündağ, a faculty member of the Department of Bioengineering at Yıldız Technical University, is leading the INNOTISSUE project (Innovations in Tissue Engineering and Biomaterials Development Master's Program for Excellence), which has been awarded funding under the Erasmus Mundus Design Measures call. Yıldız Technical University is the sole applicant and coordinator of the project.

The project aims to design a comprehensive joint master's program in the fields of biomaterials and tissue engineering, emphasizing interdisciplinary integration, scalability, and sustainability to address the needs of an aging and growing global population. Under YTU's coordination, the project will be carried out in collaboration with Politehnica University of Bucharest and Universitat Internacional de Catalunya. It also aims to establish a network involving public institutions, higher education providers, and industry partners to promote multi-dimensional mobility. INNOTISSUE will contribute to the enrichment of global knowledge transfer and the culture of strategic collaboration, while also considering social awareness, cultural elements, gender balance, and equal opportunity.









Development of a Rapid Staphylococcus aureus Diagnostic Kit by Lateral Flow Assay Using Bacteriophage Receptor Binding Proteins

Assoc. Prof. Dr. Hüseyin Üvet, faculty member of Mechatronics Engineering, is the coordinator of the project CultuRhythmics: Global Beats in Sports Training, which has been supported under the Erasmus+ Cooperation Partnerships in the Field of Sport call. This innovative project aims to integrate various cultural dance styles and music into sports training routines. It seeks to enhance the quality of sports practices and promote cultural diversity and inclusivity by providing accessible and engaging training materials, especially for coaches working in local sports clubs.

POLICY & OPERATIONS

The Health Biotechnology Center of Excellence (SABİOTEK)

The Health Biotechnology Center of Excellence (SABİOTEK) represents a strategic partnership between Yıldız Technical University (lead institution), Marmara University, and Istanbul University–Cerrahpaşa,established to strengthen Türkiye's competitiveness in the global biotechnology landscape. The center focuses on translational medicine, advanced diagnostics, immunology, virology, molecular biology and genetics, nanobiomaterials, and AI-powered biomedical technologies, aligning its mission with national innovation and health priorities.

SABİOTEK advances global health and well-being by conducting cutting-edge research in diagnostics, vaccines, therapeutics, molecular biology, immunology, and medical biotechnology. The center plays a strategic role in strengthening national preparedness against infectious diseases and public health emergencies, while supporting innovation in life-saving technologies, from medical devices to bioinformatics. Training programs, collaborative research platforms, and translational studies contribute directly to building a healthier society and improving healthcare quality and accessibility. hrough advanced R&D infrastructure, interdisciplinary expertise, and technology transfer capacity, the center accelerates biotechnology commercialization, strengthens high-tech manufacturing, and contributes to Türkiye's innovation-driven economic growth. As a joint initiative of three prominent universities, SABİOTEK exemplifies large-scale institutional cooperation, cultivating strong partnerships with government agencies, healthcare institutions, and global research organizations to expand knowledge exchange, shared facilities, and co-development programs.

SABİOTEK plays a transformative role in building a resilient biotechnology ecosystem, improving healthcare outcomes, and fostering sustainable innovation for regional and global impact by integrating scientific excellence, sectoral collaboration, and national health priorities,

YTU Fitness Center

The YTU Fitness Center has officially opened on our Davutpaşa Campus, offering a modern and comprehensive sports facility designed to support healthy living and athletic development. With a capacity for 75 users at the same time, the center features dedicated cardio and strength training zones, along with scheduled men-only, women-only, and mixed-access training days. In women-only sessions, female trainers supervise and support participants, reflecting our commitment to inclusivity and comfort for all users.

The center's environmentally friendly architecture contributes to our sustainable campus vision. A significant portion of its energy needs is supplied through solar panels, reinforcing our dedication to renewable energy use and responsible resource management.

Athletic Performance Center

The complex includes a state-of-the-art Athletic Performance Center, specially designed for functional and Olympic-standard strength training. This area serves university sports teams and offers an ideal environment for former athletes and professional sports players. Upon request, customized performance programs can also be provided for professional athletes from top-tier leagues.

Scientific Training & Performance Analytics

As a research-oriented university, YTU integrates sports science with data-driven performance evaluation. The center features testing and analysis stations where athletes can undergo 1RM, vertical jump, sprint, grip strength, flexibility, balance





and coordination assessments. The equipment portfolio will continue to expand with new sports science technologies in the upcoming period.

Supporting National Sports and Talent Development

Alongside the fitness center, our campus semi-Olympic swimming pool has been fully modernized and reopened, operating with solar-powered systems to support energy efficiency and environmental goals. YTU aims to contribute to Türkiye's sports ecosystem by hosting special training camps for national athletes and teams. In addition, coaching certification programs will be offered across various sports branches, creating new development opportunities for students and athletes.

Impact and Strategic Contribution

The center fosters physical and mental well-being through inclusive access to modern fitness infrastructure, structured training options, and performance monitoring systems. By supporting student, staff, and elite athlete development, YTU contributes to a healthy campus culture and long-term societal well-being.

With advanced biomechanical testing, data-driven performance analysis, and research-compatible sports facilities, the center strengthens YTU's innovation capacity in sports science and human performance technologies, supporting Türkiye's growing innovation ecosystem.

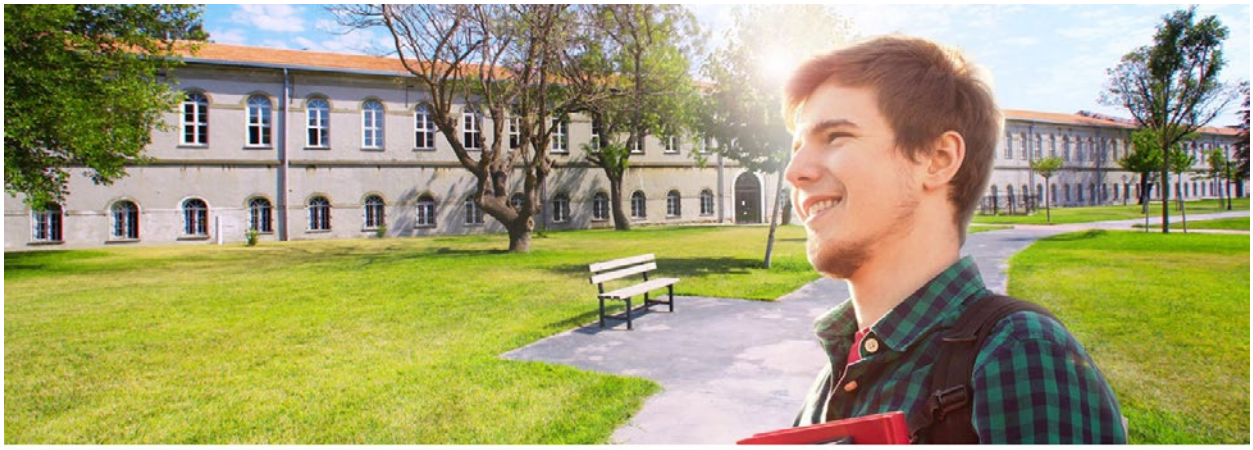
Through cooperation with national sports federations, professional athletes, and expert trainers, YTU promotes talent development, knowledge sharing, and professional certification programs. These partnerships contribute to strengthening Türkiye's sports ecosystem and expanding collaborative capacity-building.

Psychological Counseling Unit

In 2024, the Psychological Counseling Unit operating under the YTU Office of the Dean of Students continued to provide psychological support services to university students through face-to-face, online, and e-mail applications. A total of 221 students applied for individual psychological support, with 149 students successfully completing the counseling process.

Applications were received through various channels, including face-to-face interviews (6), e-mail (35), and the online appointment system (180), reflecting the unit's accessibility and inclusiveness in mental health support.

Throughout the year, the expert team—consisting of professional psychologists, psychological counselors, and volunteer practitioners—conducted 1,948 individual sessions and 101 preliminary consultations, amounting to a total of 2,049 counseling interactions.



Yıldız Technical University's Student Dean's Office provides comprehensive psychological support and student well-being services that prioritize confidentiality, accessibility, and ethical standards. The unit delivers free, professional psychological counseling, crisis-response procedures in coordination with campus security and national emergency services, and structured referral mechanisms for students at risk, contributing directly to mental health and safety on campus. In addition, evidence-based peer mentoring and peer counseling programs are implemented to strengthen academic, social, and emotional adaptation, supported by specialized training delivered by psychologists and counselors, reinforcing student success, resilience, and lifelong learning skills. All services operate under a strict non-discrimination framework, ensuring equal, safe, and respectful access for all students regardless of gender, identity, disability status, socioeconomic background, or cultural differences. Addiction-prevention initiatives, awareness programs, and student satisfaction surveys further enhance well-being, support inclusion, and ensure continuous improvement of services. Through this holistic model of student support, YTÜ strengthens a healthy, equitable, and secure campus community aligned with global sustainability and student empowerment goals.

YILDIZ TECHNICAL UNIVERSITY

2024 SUSTAINABILITY REPORT



4 QUALITY EDUCATION

ENSURE INCLUSIVE AND EQUITABLE QUALITY EDUCATION AND PROMOTE LIFELONG LEARNING OPPORTUNITIES FOR ALL

Scan the QR code for SDG4 events



Yıldız Technical University (YTU) stands at the forefront of advancing quality education through a vision that unites academic excellence, inclusiveness, and innovation. Guided by Sustainable Development Goal 4, the university is committed to making learning accessible, equitable, and transformative at every stage of life. YTU regards education not only as an academic pursuit but also as a human right that cultivates critical thinking, creativity, and civic responsibility.

This section highlights how YTU integrates research, teaching, and social engagement to strengthen the foundations of lifelong learning. The university's academic programs and scientific research in educational technologies, digital transformation, and teacher education contribute to modernizing learning systems and reducing inequalities in access to knowledge. Pedagogical conferences, interdisciplinary workshops, and faculty development projects foster innovation in curriculum design and instructional methods. Simultaneously, YTU's commitment to early-childhood education, gifted-learner support, and school-revitalization initiatives reflects an inclusive approach that bridges the gap between academic expertise and community needs.

Beyond its classrooms, YTU expands learning into real-world contexts through mentorship, industry partnerships, and global collaborations. Students participate in technical visits, research colloquia, and entrepreneurial events that connect theory with practice. Cultural festivals, art workshops, and science fairs further enrich the educational experience, linking knowledge with creativity and empathy. Through these combined efforts, YTU sustains a learning ecosystem where innovation and inclusion coexist – empowering individuals to become adaptable professionals, responsible citizens, and lifelong learners. In doing so, the university continues to shape an educational model that inspires sustainable progress, equality, and intellectual curiosity for generations to come.

PUBLICATION STATISTICS

SCOPUS (2022-2024)

Name	Scholarly Output	% of 2047	Field-Weighted Citation Impact	Citation Count
SDG 04: Quality Education	89	3,04%	0,92	518

WoS (2022-2024)

Sustainable Development Goals	Number of Publications	% of 2.923
04 Quality Education	106	3,63%

PROJECTS RELATED TO SDG2

Projects Supported by YTU Scientific Research Projects Unit

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Sustainable Leadership Practices of Green Flag Eco-School Administrators	4	17	
2	Eigenvalue Regularization Problem for a Fourth-Order Singular Differential Operator with Unbounded Operator Coefficients on a Banach Space	4	17	
3	Investigation of Yıldız Technical University Faculty of Education Students' Level of Possessing Living Values According to Some Personal Variables	4	16	
4	Mathematical Modeling of Factors Affecting Educational Achievement with Machine Learning Methods	4	9	
5	A Study on Classification Analyses with Genetic Algorithm	4	9	
6	Comic Book And Interactive Comic Book: A Comparative Study To Improve Design Students' English Reading Skills And Learning Experiences	4	17	
7	Applications of Lie Groups and Algebras	4	9	
8	A Study on the Digitization and Animation of 18th Century Miniatures	4	11	
9	Analytical and approximate solutions of fractional order optimal control problems	4	9	
10	A Cultural Study on Food Magazines Published in Turkey: Yemek ve Kültür Dergisi (Food and Culture Magazine)	4	11	
11	Computation of the Square Root of a Complex Tridiagonal Matrix and Some Complex Factorizations	4	17	

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
12	The Effect of Place-Based Education on Primary School Students' Sustainable Development Awareness and Attitudes	4	12	
13	On the Derivation and Solutions of Difference Schemes with Unconditional Energy Stability	4	9	
14	New Approaches for Text Representation and Text Generation of Neural Language Models	4	9	
15	Exact Solutions of the Fokas Equation	4	9	
16	Investigation Of Engagement And Psychological Outcomes In Individual And Collaborative Designs Of Gamification: A Gamified Application In Organizational Context	4	3	
17	The Importance of Statistical Programs in University Students' Satisfaction	4	10	
18	Development Of Optimization Algorithms For Training Language Models	4	9	
19	Information Transfer Between Language Models	4	9	
20	Reinterpretation of Film Poster Designs with Printmaking Technique	4	11	
21	Mathematical Modeling with Machine Learning Methods	4	9	
22	Performance Analysis of Machine Learning Methods	4	9	
23	Investigation of the Ideal and Real Childhood Perception of the Tanzimat in the Scope of Children's Magazines	4	16	
24	Reinterpretation of Music Album Cover Designs with Printmaking Technique	4	11	
25	Rope Art: A Historical Research From The 19th Century To The Present	4	11	
26	Investigation of Teachers' Trust towards School Principals: Implications for Theory and Practice	4	16	
27	Investigation of the views of lecturers teaching English as a foreign language on education for sustainable development	4	17	
28	Investigation of Knowledge Construction Processes of Gifted Students on the Topic of Circle and Disc with the RBC-C Model	4	10	
29	On the Analytical Solutions of Wave Equations Used in Optical Fiber	4	9	
30	Investigation of Some Special Partial and Integral Differential Equations in Fluid Mechanics	4	9	
31	The Effect of Earthquake Disaster on Education: The Case of Hatay	4	11	
32	The Effect of Psychoeducation Program Based on Acceptance and Commitment Therapy on Psychological Flexibility Levels of Counselor Candidates	4	3	
33	Application of Neutrosophic (Neutroosophic) Sets to Algebraic Structures	4	9	

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
34	On the Solutions of Differential Equations with Artificial Intelligence Methods	4	9	
35	Development of Writing Skill in Teaching Turkish to Foreigners Using Artificial Intelligence	4	9	
36	Preparation of Original Compositions from Turkish Carpet Kilim Motifs with Deep Learning Based Artificial Intelligence Algorithms	4	9	11
37	Investigation of Data Literacy in Construction Projects	4	9	
38	Investigation Of The Effect Of Artificial Intelligence On Art And Design Creative Processes	4	9	11
39	The Use Of Books And Cinema Films In The Development Of Comprehension Skills In Teaching Turkish To Foreigners	4	10	
40	Effect Of Flipped Learning Model On Grammar Learning In Teaching Turkish As A Foreign Language	4	10	
41	The Effect Of Philosophy For Children Education Program On The Development Of Critical Thinking Skills In 60-72 Month Old Children	4	3	

External Grant-Supported Projects

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Mehmed Fahri Pasha's "Manzum İşkodra Tarih-i Harbi" Named Self-Narrative and the Tradition of Writing Poetic Memoirs in Military History	4	11	
2	Collaborative Language Models	4	9	
3	Possible Istanbul Earthquake, Development of Sustainability of Education in Disaster Response Process	4	11	13
4	Doctoral Personnel Development For Improving Performance And Durability Of Pem Type Fuel Cells And Electrolyzers	4	7	9
5	Reading Support Device for the Visually Impaired	4	4	10
6	Training Qualified Doctoral Human Resources and Ensuring Industrial Integration for the Development of Advanced Technology Enamel (Glass-Ceramic) Materials and Surfaces	4	9	13
7	Development, Implementation and Evaluation of the "Polar Star Education Program Model" (Polar Star Project)	4	10	
8	Development of an Electronic Knowledge Building System for Computational Thinking Skills Training: Mobiforum Project	4	9	
9	Proposal of a Detachable/Portable Greenhouse Design on the Roof for Applied Environmental Education in Middle Schools	4	13	15
10	Human Capital in the Ottoman Society at the Beginning of the Nineteenth Century: A Cliometric Analysis on Levels of Mental and Physical Development	4	8	10
11	Aerodynamic Investigation of a Generic Warship with a Flight Deck	4	9	13

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
12	A Hybrid Model Proposal Revealing the Contributions of Incubation Firms to the Entrepreneurship Ecosystem	4	8	9
13	InclusiVET: Bridging Skills and Accessibility in Vocational Training for the Hearing-Impaired	4	8	10
14	Improving Artificial Intelligence (AI) Skill of Visual Impaired Students SenseCode-AI	4	10	8
15	Digital Comics of Migration	4	10	16
16	Teachers' Action for Health	4	3	9
17	Promoting e-VET inclusion in digital economy	4	8	
18	Empower students as the agents of change (SHORE)	4	10	
19	The Agripreneurship MAPS for NEETS	4	8	13
20	ESPERANTO (Enhancing Sustainability of PhotopolymERS ANd photoinduced processes)	4	9	13
21	Digital stories Reducing Early School Leaving by Increasing Academic Achievement with Digital Applications in Storytelling Techniques	4	10	9
22	Enhancing VET Textile innovation	4	8	
23	Multicultural Classrooms. Inclusive Learning and Teaching in Higher Education	4	10	9
24	Xpress Yourself Digital Storytelling	4	10	
25	Empowering Adult Education Centers in The Labour Market Reintegration of Recently Disabled Adults	4	8	10
26	Empowering Youth Work towards the European Green Deal	4	8	13
27	Redesigning Introductory Computer Programming Using Innovative Online Modules	4	9	17
28	Professional Development of Teachers to Promote Design Thinking Skills and Academic Success of Students	4	8	9
29	Integration of Online Vocational Education into the Digital Economy	4	8	9
30	Empowering Adult Education Centers in the Labor Market and Integration of Disabled Individuals into the Market	4	8	10
31	EmpOweR Students as the agents of cHangE	4	14	13

SUMMARIES OF KEY PROJECTS



A Hybrid Model Proposal Revealing the Contributions of Incubation Firms to the Entrepreneurship Ecosystem

Incubation centres play a critical role in improving the survival and growth prospects of new ventures, while contributing to employment generation, regional economic development, technology commercialization, and innovation-driven competitiveness. Start-ups operating within incubation programs—typically for a maximum of 36 months—undertake R&D activities that are strategically important for economic and commercial advancement. This project aims to evaluate the performance of incubated firms within the entrepreneurship ecosystem by integrating social and technical determinants. Initially, a survey will be administered to collect data on incubator firms, their operational conditions, innovation activities, support mechanisms, and growth trajectories. Using this dataset, a strategic and hybrid decision-making model will be developed to assess firm performance, identify key success drivers, and determine the effectiveness of incubation mechanisms. The findings will enable a systematic evaluation of incubation centre effectiveness, support evidence-based policy recommendations, and contribute to strengthening entrepreneurial capacity, regional development, and technology-driven economic transformation.

InclusiVET: Bridging Skills and Accessibility in Vocational Training for the Hearing-Impaired

The primary objective of this project is to create an inclusive online vocational training platform, integrating AR and VR technologies to foster a rich, interactive learning environment for the hearing-impaired. By developing standardised sign language tools and fostering industry partnerships for apprenticeships and job opportunities, we aspire to empower the hearing-impaired individuals with necessary vocational skills, thus facilitating their seamless integration into the labour market.

Teacher's Action for Health

The project aims to develop an innovative high-performing digital education platform to ensure the sustainability of teacher development with digital educational materials, with a particular focus on Continuing Professional Development (CPD) of preschool and primary school teachers on first aid interventions/practices and chronic illnesses, through 8 modules prepared based on the needs determined by the needs analysis. Increase the digital capacity and cooperation among partnering institutions. The project will identify the top priority issues in the field of first aid and chronic illnesses and develop teachers' knowledge, awareness, and experience by using digital education materials: facilitate the production of interactive videos of a maximum of 5 minutes on 13 first-aid titles and 8 chronic diseases determined at the end of the survey studies. Design and development of E-Learning System in-

tegrated into Moodle to ensure the sustainability of the teachers' learning process. Supporting the professional development of early and primary school teachers on digital skills, intervention methods to first aid, and chronic illnesses. Developing school-based first aid modules, and intervention in physical injury and some chronic diseases. Increasing institutional capacity and professionalism to work at EU/international level: enhanced management competencies and internationalization strategies. Extending the network of each partner to different new geographies and sectors.



ESPERANTO (Enhancing Sustainability of PhotopolymERs ANd phoToinduced prOcesses)

The ESPERANTO project aims to train a new generation of researchers equipped with advanced scientific skills and a strong sustainability mindset. Supported within an international, cross-sectoral research network of academic institutions and industry partners specializing in photopolymers, the project will fund individual doctoral research focused on sustainable innovation. ESPERANTO—Enhancing the Sustainability of PhotopolymERs ANd phoToinduced prOcesses—seeks to strengthen Europe's human capital in sustainable R&D by cultivating highly skilled, employable researchers with strong environmental awareness. Through a sustainability-oriented training program, the project will foster creative, entrepreneurial, and innovative researchers committed to environmental responsibility. Participants will gain transferable competencies to lead and manage innovation in photopolymerization technologies from a sustainability-driven perspective, contributing to green transformation in materials science and enhancing their long-term career prospects.



Digital stories Reducing Early School Leaving by Increasing Academic Achievement with Digital Applicatinons in Storytelling Techniques

The main objective of our project is to prevent early school leaving by helping the student develop a positive attitude towards the lessons in which he/she has a negative attitude due to the subjects he/she has learning difficulties. In our project, we are planning to create a Digital Storytelling Techniques Training Module with Multi-Sensory Learning Model to improve students' four skills (listening-speaking-reading-writing) that form the basic dynamics of their learning processes. We aim to ensure that students continue to school by reducing the problems that cause students to have learning difficulties due to the lack of these skills and to leave the school by getting away from the lessons. When this problem of students with learning difficulties decreases, their academic success will increase, and their school attendance rate will increase. Another goal of our project is to develop a new teaching model and approach to support teachers professionally. Professional equipment of teachers will be increased with learning modules, teacher guides and online learning platform, which are among the project products. Thus, it is expected that the academic success of the students will increase by providing a better and higher quality education to the students. The school attendance rate of students whose academic success increases will also increase. Another goal of our project is to contribute to the development of the student's key competencies by using digital content, technology and applications. It is expected that the key competencies of the students will increase with the new learning model that will be created by combining animation and video tools with the Storytelling technique. One of the other objectives of the project is to increase cooperation

between project partner institutions and stakeholder institutions, thus improving institutional capacities and increasing internationalization.



Multicultural Classrooms: Inclusive Leaming and Teaching in Higher Education

The general objective of the project is; to increase the quality and multicultural dimension of Higher Education in Europe. The specific objectives are; 1. to develop an innovative short-term staff training curriculum, a didactical guideline, and a set of teaching materials for HE teaching staff for better management of multicultural and diverse classrooms. 2. to develop an innovative Learning Management System (LMS) 3. to develop, implement and test short-term staff training courses.



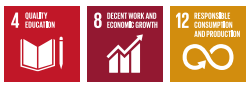
Empowering Youth Work towards the European Green Deal

The main purpose of the proposed project; To increase the quality of youth work in the preparation of young people (especially university students) for the European Green Deal. Specific Objectives of the project are: - To build the capacity of youth workers to better integrate the Green Deal topics in their practice and to transfer into informal and non-formal training. - To empower youth with new competencies and enhance their employability in green/ circular economy - To raise awareness on environmental challenges and climate-change as well as to develop knowledge and critical understanding of the European Green Deal concepts and actions.



Integration of Online Vocational Education into the Digital Economy

Providers in the ICT field, play an important role to contribute to SMEs to develop themselves in Digital Technologies. Furthermore, European Commission will update the Skills Agenda for Europe, including by launching a Pact for Skills. It will include a dedicated component for SMEs. Vocational education and training (VET) is particularly relevant for SMEs to make sure that their workforce has the skills needed in the labour market. The project mainly aims to create a digital entrepreneurial culture of ICT students by Improving the image of digital entrepreneurs and promote their role in society. In this way, it is targeted that to adapt vocational education and training according to labour market needs. In addition to the general purpose of our project, there are also specific targets: - Increasing the quantity and quality of digital entrepreneurial skills and talent of ICT Students - Developing an entrepreneurial mindset and promoting ICT entrepreneurship among ICT Students- Provide VET teachers with the main target group of our project consists of students continuing their vocational education in the field of ICT, VET teachers on ICT field and SMEs in need of digital transformation. The activities to be carried out within the scope of the project have been prepared by considering the needs of the project partners and target groups. It is planned to create 3 connected outputs each other within the framework of the project results: necessary knowledge about digital start-ups and SMEs, starting business, cross-sectoral opportunities with ICT industry - Easing the access of ICT entrepreneurs to finance and enhance investments - Increasing the cooperation between ICT entrepreneurs and SMEs for Digital Transformation. 1. Innovative Training Module 2. “e-VET” Digital Platform 3. “Digipreneur” Game





Transforming Healthcare with Artificial Intelligence: The InsulAI Project

The "GeceKodu – The Star of the Night" event, organized by the SKY LAB Computer Science Club, was held on November 8 at a historic venue. The event featured two interactive workshops:

"Active Directory" by
SKY-SEC team member Muzaffer Emer

"Big-O Notation" by
ALGOLAB team leader Barış Ergün

In addition to the educational content, the event fostered a collaborative atmosphere where students worked on individual coding challenges, networked with peers, and engaged in practical skill development in software and system technologies.

Gifted and Talented Individuals Day 2024– "Different, Yet the Same"

Organized by the Child and Education Club of Yıldız Technical University in collaboration with TÜZDER, Marmara University, Istanbul Technical University, and The International Center for Innovation in Education (ICIE), the 9th Day of the Gifted was held on November 23, 2024, at the Yıldız Campus, Beşiktaş.

Themed "Different, Yet the Same," this full-day academic event aimed to raise awareness about the educational, psychological, and social needs of gifted and talented individuals. It brought together national and international experts in the field, fostering inclusive dialogue and knowledge exchange on gifted education.

Program Highlights:

10:00–11:00 | Prof. Dr. Bonnie Cramond, "What is Divergent Thinking, Why Should We Nurture It, and How?"

11:20–12:20 | Prof. Dr. Taisir Subhi Yamin, "New Research Directions in Gifted Education"

13:15–14:00 | Assoc. Prof. Dr. Ayça Köksal Konik, "Why Do They Call Me Different?"

14:15–15:00 | Cihan Çelik, "Is It a Crime to Be Gifted?"

15:15–16:15 | Trudy Dawson, Workshop: "How Can We Develop Divergent Thinking Skills in Ourselves and Others?"

The conference featured three main sessions, expert panels, and an interactive workshop. It was also broadcast live via Facebook and Instagram, ensuring wider outreach and accessibility.

All participants received official Certificates of Attendance, and a strict registration limit was applied to maintain engagement quality.



The Winter Workshop

The Winter Workshop was successfully held with the participation of kindergarten students from YTU Preschool. The event aimed to support the cognitive, creative, and social development of young children through fun, hands-on activities including:

- Crafting snowmen using cotton
- Designing personalized postcards
- Building igloos with modeling clay

Each session offered children the opportunity to engage in interactive learning experiences while fostering creativity and seasonal awareness. Participation was limited to ensure an intimate and effective environment.



JEKTalks

On December 3, 2024, the Jeoinformatics Club of Yıldız Technical University successfully hosted a compelling session of JEKTalks, welcoming sector professional Cemre Şalcı as the guest speaker.

During the event, Ms. Şalcı shared her valuable professional experiences and insights with our students, offering inspiring perspectives on career planning, personal development, and the evolving demands of the industry. Her genuine and transparent communication style fostered an engaging atmosphere that encouraged participant interaction and reflection.



"321 Kayıt!" talk series

As part of its signature "321 Kayıt!" talk series, the Yıldız Technical University Cinema Club (Yıldız Sinema) hosted acclaimed director Pınar Fontini for an inspiring session with students and film enthusiasts. Prior to the event, attendees had the opportunity to watch two of her thought-provoking films, ***Dream Workers*** and ***Filmin Adı Ne?***, which set the stage for a rich discussion.

During the session, Ms. Fontini shared behind-the-scenes insights, discussed her creative journey, and provided valuable advice on filmmaking and artistic expression. The event not only deepened students' understanding of cinema as an art form but also empowered them to engage more actively in cultural and creative disciplines.





Students collected and delivered children's books to underserved communities

In this social responsibility project, students collected and delivered children's books to underserved communities to support the development of school libraries. The initiative aims to promote equal access to educational resources and cultivate a reading culture among children.

Organized by student volunteers, the project includes:

- Book donation drives across campus and social media outreach
- Coordination with local schools to identify book needs
- Logistics support for sorting, packaging, and delivery of materials
- Sustained partnerships with NGOs, educational institutions, and donors





Yıldız Children's Festival

Organized by the YTU Child and Education Club in collaboration with the Social Responsibility Club, this festival provided an engaging and educational experience for children through interactive and creative workshops. The event was held on April 22 at Davutpaşa Campus and included the following activities:

Recycling Workshop – Teaching children the importance of environmental awareness through fun, hands-on activities.

Pen Pal Activity – Encouraging communication and empathy-building among children from different backgrounds.

Bookmark Design Station – Inspiring creativity and promoting reading habits.



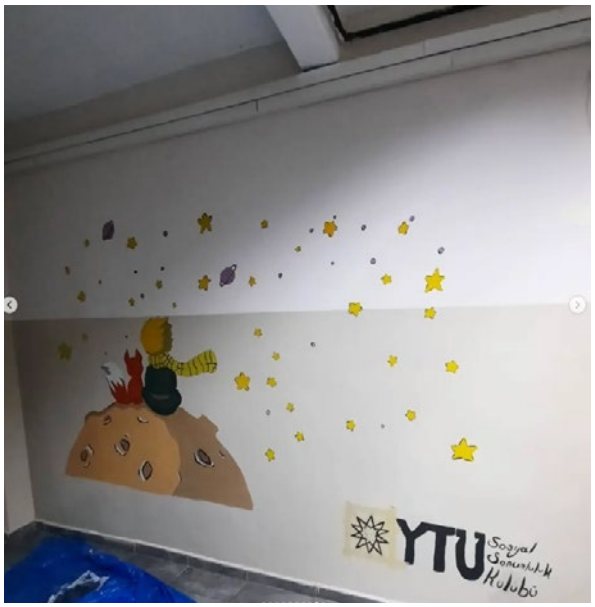


Let Your Star Shine" – Department Introduction & Career Guidance Project

Organized by YTU students, this outreach initiative aims to introduce high school students to various academic departments at Yıldız Technical University. The project provides firsthand insights into university life and academic options, helping students make informed decisions about their future careers.

The first session of the Fall term took place on Tuesday, November 26, at Necmettin Erbakan Science High School in Bağcılar, Istanbul. During the session, university students met with high schoolers, answered their questions, and shared their own academic experiences.





"Bright Colors, Bright Futures" – School Revitalization Project

Organized by the YTU Social Responsibility Club, this project aimed to improve the physical and emotional atmosphere of Sururi Middle School by repainting and decorating the school's common areas. Volunteers added colorful visuals and created a more vibrant, welcoming space to support students' motivation and joy in learning.

Through this activity, university students:

- Strengthened ties with the local community
- Promoted positive educational environments
- Fostered well-being and inspiration among children
- The project was carried out with the support of the Beyoğlu Municipality. and promoting reading habits.



Pi Day Celebration: "Play with Math"

On the occasion of International Mathematics Day, multiple university student clubs—including YTU's Science and Mathematics Club (BMK)—collaboratively organized a large-scale event.

The celebration featured:

- A live "Mathematics Stage" with guest academics and educators
- A panel titled "Mathematics Education in Turkey"
- Workshops and hands-on math activities
- Exhibitions and social interaction areas

This event brought together students, educators, researchers, and science communicators to promote mathematical thinking, curiosity, and collaboration in an inclusive and joyful setting.



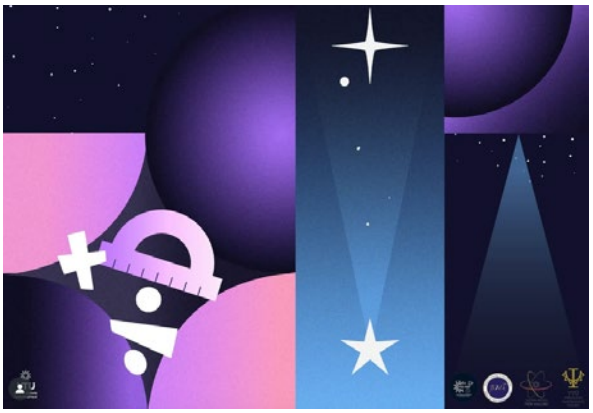
SciFiesta – Career Talk with Serdar Başkan

Organized by the YTU Science and Mathematics Club (BMK), this event hosted renowned content creator Serdar Başkan as part of the SciFiesta series on February 27. Held at the Historical Hamam venue on campus, the session explored Serdar Başkan's personal and professional journey in science communication and social media.

The Second Annual "Paradox Day" – Organized by the YTU Science and Mathematics Club

On April 25, 2024, the YTU Science and Mathematics Club successfully held its second edition of "Paradox Day" at the university's Central Garden (Orta Bahçe). The event attracted students from various departments who were eager to explore the fascinating and puzzling world of paradoxes.





A Multidisciplinary STEM Festival from Yıldız

Held on May 2–3, 2024, at the Historical Hamam venue, the "Yıldızdan Bilim Kesitleri" event brought together multiple student clubs to deliver a rich, hands-on science experience for university students and visitors. The event promoted interdisciplinary thinking, scientific exploration, and student-led learning.



Panel: "Stages of Educational Development in Azerbaijan and Its Relations with Turkish Education"

On **May 15, 2024**, the Faculty of Arts and Sciences at Yıldız Technical University hosted an international panel featuring **Prof. Dr. Misir Mardanov**, former Minister of Education of Azerbaijan and current senior member of the Azerbaijan National Academy of Sciences.

Moderated by **Prof. Dr. Salim Yüce**, Dean of the Faculty of Arts and Sciences, the panel addressed:

- The historical and modern evolution of education in Azerbaijan
- Structural and curricular comparisons with the Turkish education system
- Shared cultural and educational values within the Turkic world
- Opportunities for cooperation in higher education and research

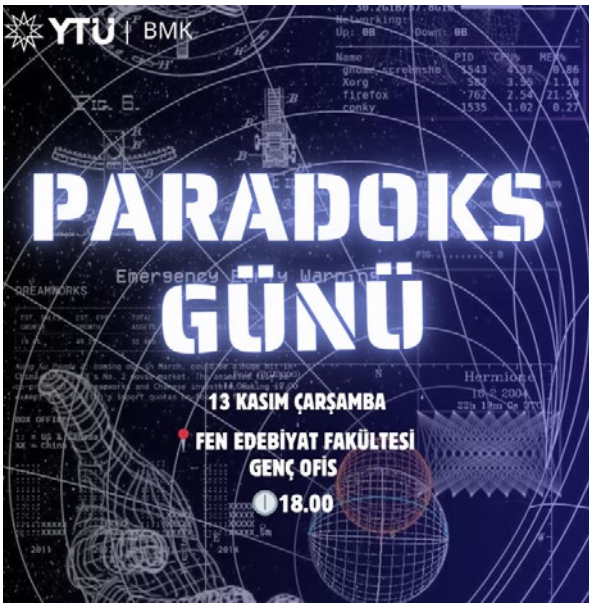


Python Study Group – From Basics to Advanced Programming

Organized by the YTU Science and Mathematics Club (BMK), the **Python Study Group** was successfully conducted starting on **November 5, 2024**, at the Faculty of Arts and Sciences Youth Office. The training sessions were designed to guide students from beginner to advanced levels in Python programming.

Throughout the sessions, participants:

- Acquired practical skills in coding and scripting
- Learned computational thinking and basic algorithm design
- Gained exposure to applications in data analysis and automation



Paradox Day – Exploring the Limits of Logic

On Wednesday, November 13, the YTU Science and Mathematics Club (BMK) hosted its highly anticipated Paradox Day at the Faculty of Arts and Sciences Youth Office. The event brought together mathematics enthusiasts to explore some of the most famous paradoxes in logic, set theory, and probability.

Mediterranean Regional Coordination Meeting (MedRCM)

From January 20 to 25, 2025, Yıldız Technical University hosted the Mediterranean Regional Coordination Meeting (MedRCM).

Organized under ESTIEM (European Students of Industrial Engineering and Management), the event brought together active members from Local Groups across the Mediterranean Region. During the meeting, participants discussed the current status of their Local Groups, exchanged insights, and collaborated on strategies for regional development and stronger cooperation.

The week-long program featured various training sessions and workshops, allowing attendees to gain new perspectives, develop soft skills, and strengthen the well-known “Hotties Spirit” — a core cultural element of the region.

With a creative Harry Potter theme, the event successfully combined academic content with social engagement, providing an enriching international experience for all participants.





Unilever U-House Plaza Visit & MeetUp

As part of the KVK Akademi, a corporate visit to Unilever U-House Plaza was organized on February 28, 2024. This event provided university students with a unique opportunity to gain firsthand exposure to one of the world's leading companies in the fast-moving consumer goods (FMCG) sector.

Participants toured Unilever's modern office environment, explored its sustainability-driven workspace design, and took part in an insightful meetup session with professionals working in various departments. They had the chance to ask questions, hear about career paths, and deepen their understanding of corporate life.

The event served as an inspiring experience that supported students' personal and professional development, in alignment with the mission to bridge the gap between academia and industry.





YTU organized the first edition of the Grad Colloquium

YTU organized the first edition of the Grad Colloquium on 4 June 2024 at the Historic Hamam Hall on the Davutpaşa Campus. The event, titled ***"Artificial Intelligence"***, provided an international platform for early-stage graduate researchers to present and discuss their work with peers and experts in the field. Featuring panel discussions, poster sessions, and oral presentations, the colloquium aimed to foster innovation, collaboration, and academic excellence in one of the most transformative areas of modern science. The event strengthened YTU's mission to promote interdisciplinary research and contribute to sustainable technological advancement by connecting young researchers with experienced academics.





Technology Management Days in Istanbul Symposium

YTU hosted the "Technology Management Days in Istanbul Symposium" on January 17 at the Beşiktaş Auditorium, in collaboration with the IEEE Technology and Engineering Management Society. The event featured keynote speeches and discussions on cutting-edge topics such as technology transfer, innovation management, energy systems, and cybersecurity The symposium fostered interdisciplinary dialogue and contributed to strengthening Türkiye's innovation ecosystem.





CERN Masterclass Event at YTU

On 20 February 2024, YTU hosted the CERN Masterclass Event at the Davutpaşa Campus, as part of the global initiative engaging 60 countries and over 225 centers. The program enabled high school students to conduct real data analyses from particle physics experiments under expert guidance. This educational collaboration between YTU and CERN provided an early exposure to advanced scientific research, fostering curiosity, analytical thinking, and STEM-oriented learning among young participants. The event exemplifies YTU's commitment to science education, innovation, and international collaboration.



A technical visit was organized to Turkish Technic

Within the scope of a career development program, a technical visit was organized to Turkish Technic, one of the world's leading aircraft maintenance, repair, and overhaul (MRO) organizations. The visit took place on March 18, 2025, at the Sabiha Gökçen International Airport campus in Istanbul.

The primary objective of the visit was to provide participants with a comprehensive understanding of aviation maintenance operations and to introduce them to real-world industrial practices within a technologically advanced engineering environment. Throughout the program, students had the opportunity to learn about Turkish Technic's corporate structure, operational workflows, quality control mechanisms, and sustainability initiatives implemented within the aviation sector.



This experience played a significant role in enhancing participants' professional development by linking theoretical knowledge with practical applications. Furthermore, the visit contributed to raising awareness of potential career paths in aviation, engineering, and innovation-driven industries.

Book Analysis Session

A book analysis session was organized on Cemil Meriç's work ***Bu Ülke***, guided by a faculty member. The event promoted critical thinking, academic dialogue, and cultural literacy, directly supporting Quality Education.





Technology Management Days in Istanbul Symposium

On March 9, 2024, a full-day training program was held at YTU Yıldız Campus to enhance the competencies of students. The event focused on practical skills that support both organizational functioning and professional development.

Topics covered included:

- Google tools
- Excel training
- Business and strategy development
- Branding and marketing planning
- Content creation and creative thinking
- Corporate process management

The trainings were delivered by the student club's (KVK) executive board members and alumni, aiming to build peer-to-peer learning opportunities and institutional memory within the organization.





"Education Map" Program

Within the scope of the "Education Map" program, a seminar titled ***"Introduction to Corporate Departments"*** was held to enhance students' understanding of organizational structures in the corporate world. The event was conducted by YTU graduate Ali Can Arıcı, currently serving as a Methods Engineering Manager at Ekol Logistics.

The session focused on the purpose, responsibilities, and interrelations of various departments within a corporate setting. Participants had the opportunity to gain insights into departmental workflows and functional dynamics through real-life examples shared by the speaker. The event contributed to the participants' career readiness by bridging theoretical academic knowledge with practical business context.



A technical visit and meet-up were conducted at Anadolu Isuzu

As part of the Blue Route program, a technical visit and meet-up were conducted at Anadolu Isuzu, a leading commercial vehicle manufacturer in Turkey. The visit aimed to provide students with exposure to industrial practices and corporate operations in the automotive sector.

Participants had the opportunity to explore Anadolu Isuzu's office and production facilities, gaining firsthand insights into company workflows, engineering and manufacturing systems, and organizational structure. The event also facilitated networking opportunities with professionals from the industry.



8 DECENT WORK AND ECONOMIC GROWTH

Problem-Solving and Decision-Making Techniques

A training session on "Problem-Solving and Decision-Making Techniques" was held with the participation of PMO Specialist and alumni Ayşenur Fırat. The training took place on March 28, 2024, at Yıldız Technical University's Davutpaşa Campus.

The event focused on equipping participants with practical strategies to analyze problems, generate effective solutions, and make informed decisions both in academic and professional settings. Participants explored structured decision-making models and critical thinking methods that can be applied to real-life scenarios.



8 DECENT WORK AND ECONOMIC GROWTH



CASE Yıldız'24

CASE Yıldız'24, one of Yıldız Technical University's most prominent student-led events, was held on April 29–30, 2024. This national-level case analysis competition brought together outstanding university students from various institutions across Türkiye, providing a dynamic platform for problem-solving and innovation.

Throughout the two-day event, participants formed teams to tackle real-world business cases provided by leading companies in the sector. A distinguished jury panel comprising senior executives and industry experts evaluated the teams' strategic approaches and offered direct feedback. In addition to the competition, the event featured networking sessions, professional development workshops, company booths, and interactive training programs.

CASE Yıldız'24 contributed to students' practical understanding of strategic thinking, decision-making under pressure, and interdisciplinary teamwork.



Quality and Efficiency Club visited Sazlıbosna Primary School

On the occasion of National Sovereignty and Children's Day, celebrated annually on April 23 in Türkiye, students from Yıldız Technical University's Quality and Efficiency Club visited Sazlıbosna Primary School in Arnavutköy, Istanbul.

This outreach activity was aimed at engaging with children through meaningful interaction, celebrating the spirit of the day, and creating joyful memories. Club members organized games, distributed gifts, and spent quality time with the students, contributing to their happiness and well-being.

The event also reflected the students' social responsibility awareness and their commitment to inclusive community engagement. We celebrate the National Sovereignty and Children's Day of all children and reaffirm our commitment to supporting child-centered initiatives.

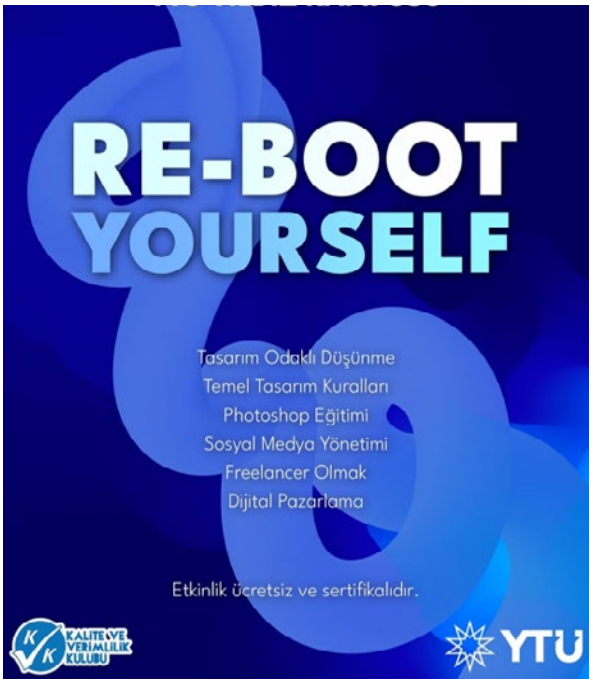


The StarsUp Entrepreneurship Festival

The StarsUp Entrepreneurship Festival, organized on May 15–16, 2024, at Yıldız Technical University Davutpaşa Campus Ortabahçe, brought together students, startups, and entrepreneurship enthusiasts in one of the most dynamic and engaging campus events of the year.

The festival featured startup booths offering internship opportunities, interactive workshops, an open-air cinema, and live music performances. It provided a vibrant platform for students to explore entrepreneurial ecosystems, connect with innovative companies, and experience a wide range of career and learning opportunities in an informal, festival-like atmosphere.

StarsUp played a significant role in promoting innovation culture, fostering youth engagement in entrepreneurship, and encouraging interdisciplinary collaboration.



Re-Boot Yourself

Re-Boot Yourself is a one-day training event designed to empower students with essential design and digital marketing skills. Participants gained practical insights and hands-on experience through a series of workshops led by industry professionals.

Main topics covered: Design Thinking, Basic Design Principles Adobe Photoshop Training, Social Media Management, Becoming a Freelancer, Digital Marketing Strategies

The event was free of charge and certificate-based, offering a valuable opportunity for students aiming to upskill themselves in creative and marketing domains and take a step closer to building their personal brand.



The Visual Verse Summer Academy

The Visual Verse Summer Academy was a two-week digital education program aimed at enhancing students' skills in creativity, design, and self-expression. Conducted entirely online, the academy featured a combination of structured trainings, inspiring talks, and interactive sessions designed to foster personal development and creative confidence among participants.

Program highlights included:

- Comprehensive training modules
- Inspirational keynote sessions
- Interactive and engaging content
- Creative output challenges

The academy was open to all students who wanted to explore their artistic and digital design potential. The event encouraged self-development and was accessible regardless of location.

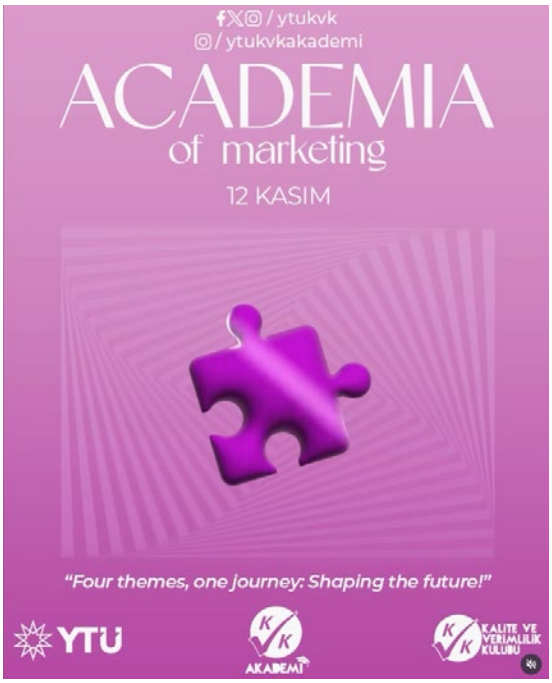
Re-Boot Yourself

The Interaction & Development Camp is Turkey's first large-scale company–student club interaction event. Now in its 16th edition, the camp brings together leading companies and student clubs from across the country in a dynamic three-day program aimed at enhancing communication, collaboration, and professional development.

The Quality and Efficiency Club of Yıldız Technical University actively participated in the 2024 edition of the camp. The program offered participants the opportunity to engage in workshops, networking activities, and company presentations, promoting mutual understanding between student communities and the corporate sector.

Through this initiative, students gained exposure to real-world organizational structures and recruitment dynamics, while companies had the chance to interact with motivated and talented young professionals.





The Academia of Marketing Event

The Academia of Marketing event opened the doors to the dynamic world of marketing through insightful talks delivered by industry professionals. The event, held under the theme "Four themes, one journey: Shaping the future!", explored emerging trends, strategies, and innovations that shape modern marketing.

Attendees had the opportunity to learn from marketing leaders, engage with practical case studies, and gain critical insights into how to navigate a rapidly evolving industry. As the first stop in a larger academic series, the event aimed to bridge the gap between academia and the business world while empowering students with applicable skills and future-oriented thinking.

Show Yourself'24

TEMSA participated in the Show Yourself'24 event held on December 4–5, 2024, at Yıldız Technical University Davutpaşa Campus, organized by the Quality and Productivity Club.

On the first day (December 4), TEMSA's Human Resources team engaged with students, providing detailed information about the company, sharing available career opportunities, and answering participants' questions.

On the second day (December 5), a mock interview session was conducted, offering students a realistic job interview experience designed to enhance their preparedness for future recruitment processes.

The event served as a valuable platform to strengthen university–industry collaboration, enabling students to connect directly with sector representatives and gain insights to support their career development.





Intelligence and Mind Games Workshop

As part of its social responsibility activities, the YTU Children and Education Club organized a four-week "Intelligence and Mind Games Workshop" for children. The workshop focused on enhancing children's cognitive skills through engaging and educational games, while encouraging logical thinking, problem-solving, and strategic planning.

In addition to supporting the development of participating children, the program also offered YTU students the opportunity to gain hands-on experience in educational activities and working with children.







Re-Boot Yourself

On March 12, 2024 the YTU Children and Education Club hosted a conference titled "Education of Gifted Individuals" at the Faculty of Education, featuring Prof. Dr. Şahin Oruç as the keynote speaker.

The event aimed to broaden participants' understanding of the educational needs of gifted children and offer insights into pedagogical approaches that support their cognitive and emotional development. Future educators and interested students had the opportunity to engage in academic discussion and reflect on inclusive and differentiated learning strategies.



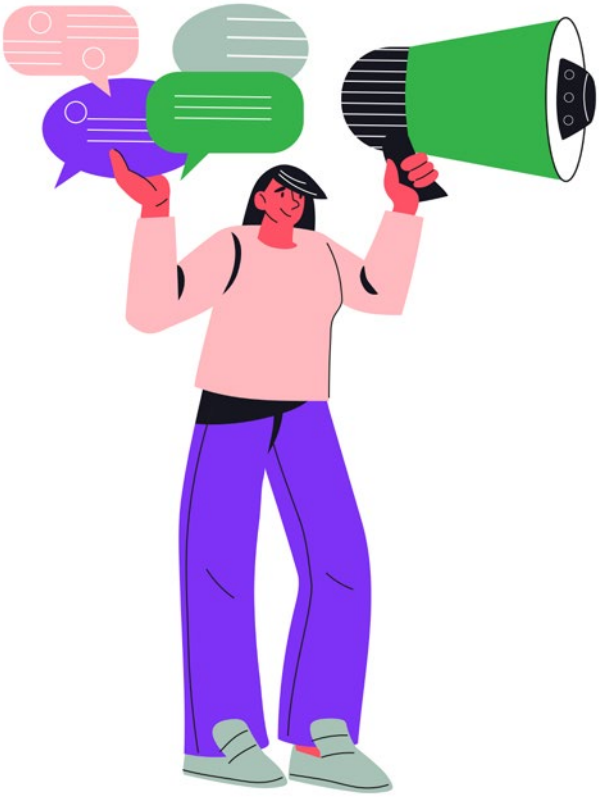


Storytelling Training program

The YTU Children and Education Club organized a five-week-long Storytelling Training program, held every Tuesday between 15:00 and 16:30 at the Faculty of Education.

This training focused on improving participants' narrative skills, with sessions covering the cognitive and emotional impact of storytelling on children, techniques for delivering stories without memorization, the use of motifs and rhymes, and how stories are perceived by children.

Participants gained hands-on experience in creative communication and developed a deeper understanding of how storytelling can be used as an educational tool. The sessions were designed to foster both self-expression and pedagogical competence in future educators.



Diction Training Program

The 2-month Diction Training Program was organized to improve students' oral communication skills and provide practical tools for effective speech. The course focused on the correct use of language, effective articulation, proper intonation, and emphasis in spoken Turkish. Certificates of participation were awarded to students who successfully completed the program.



The 9th Education Summit

The 9th Education Summit brought together educators, designers, and practitioners to explore key themes in the field of education, including effective teaching, gamified learning, rural education, and digital pedagogy. The event featured keynote speeches and four speaker sessions:

- Being an Effective Teacher by Tuğba Coşkuner (Educator/Author)
- Games and Education by Dilek Aşıkoğlu Aydemir (Educator/Game Designer)
- Teaching in a Village School by Recep Bingöl (Teacher)
- Being a Digital Teacher by Görkem Şahin (Teacher)

The event began with an official opening ceremony and speeches by the Rector of YTU, the Club Advisor, and the Club President. Participants who attended at least three sessions and were registered club members received a digital certificate of participation.





Re-Boot Yourself

On January 5, 2024, a book and stationery donation campaign was organized by the YTU Poetry and Tale Club for Arnavutköy Deliklikaya Primary School. With the motto, "Place a book on the shelf so that little feet can roam the worlds you know," the campaign aimed to support children with limited access to educational materials. Students received donated books and stationery collected at Davutpaşa Campus, and the initiative was carried out based on volunteer participation and solidarity.



Two-session Excel training program to enhance students

The Mentorship Club at Yıldız Technical University organized a two-session Excel training program to enhance students' digital competencies during the semester break. The training, conducted by Batuhan Ateş, aimed to improve participants' proficiency in Microsoft Excel — a widely used tool in academic and professional settings. The online sessions were free and open to all students, supporting their skill development regardless of department or academic level.

This event contributes to digital literacy and employability skills among university students. Although the event was open to all, it also provided inclusive opportunities for young women to engage in personal and professional development through accessible mentorship activities.





Case In Point

A case study competition titled Case In Point was organized in collaboration with NTT Data. The event aimed to develop participants' analytical thinking, teamwork, and business problem-solving skills through real-world case analysis. Students competed in teams of three, with a requirement that each team include at least one junior (3rd year) or senior (4th year) student to ensure advanced academic engagement.

The top three teams were awarded surprise gifts, and the event took place in a professional environment at NTT Data's corporate office. Students had the opportunity to apply theoretical knowledge in a practical setting and gain insight into real-life business challenges.

This competition provided an inclusive and engaging platform for students to enhance their strategic thinking and collaborative problem-solving capabilities. It also encouraged upper-year students to mentor their peers, indirectly supporting peer learning.





A Corporate Visit was Organized to Denizbank Headquarters

The event provided participating students with an in-depth office tour, enabling them to gain first-hand insights into the working culture and corporate structure of a leading financial institution. In addition, students attended a structured Data Literacy Training session delivered by DenizBank professionals.

The aim of the training was to equip students with fundamental data interpretation and analysis skills, enhance their understanding of data-driven decision-making, and introduce them to the role of data literacy in the banking and finance sector.

This event bridged the gap between academic learning and industry practices by allowing students to directly engage with professionals in a real-world setting. The data literacy training contributed to the development of digital competencies, a key skill set for the modern workforce. Moreover, the event strengthened university–industry collaboration and enhanced students' employability.



A Corporate Visit to The Headquarters of Turkish Technology

On 8 May 2024, Yıldız Technical University Mentorship Club organized a corporate visit to the headquarters of Turkish Technology. During the visit, participants explored the workspaces and corporate culture of the company, gaining insights into real-world engineering and project management practices.

As part of the program, students received a training session on Agile Project Management, a widely adopted methodology in modern tech and engineering fields. The training included practical insights into iterative development, team collaboration, and responsiveness to change. Additionally, the Maintenance and Engineering Solutions Directorate of Turkish Technology provided an in-depth presentation about their operations and innovative approaches.

This visit provided students with direct exposure to agile working environments and engineering management processes, bridging theoretical knowledge with industrial practice. It contributed to students' professional development in line with the competencies required in the aviation and technology sectors.



A Corporate Visit To The Amadeus Office

On 16 May 2024, the Mentorship Club of Yıldız Technical University organized a corporate visit to the Amadeus office. As part of the visit, participants attended a specialized training session titled "AI Horizons at Amadeus", where they explored the latest advancements and applications of artificial intelligence technologies within the company.

The program also included an interactive session featuring YTU alumni currently working at Amadeus. This segment allowed students to engage in meaningful discussions, gain career insights, and expand their professional networks.

The visit offered students direct exposure to cutting-edge AI practices and workplace dynamics in a global tech company. It provided a platform to connect academic knowledge with industry experience, supporting participants' career development in the fields of AI, data science, and technology-driven innovation.



Mentee Training

On October 9 and 10, 2024, as part of the mentorship program, Mentee Training sessions were held at to inform students about the structure and operation of the program. Guest speakers shared their professional experiences, and participants were introduced to key aspects of the mentoring process in preparation for the upcoming mentor-mentee matching.



A Training on Career Planning and CV Preparation

On October 15, 2024, the YTU Students hosted the first session of its MENT-EĞİTİM series with a training on career planning and CV preparation. The guest speaker, Serpil Kalyoncuoğlu from Ford Otosan, shared her insights and experience on how to effectively plan a career path and prepare a professional CV. Students gained practical knowledge and had the opportunity to engage with a sector expert in the field of engineering and automotive design.



Speed Networking

On October 21, 2024, Speed Networking event was organzied at Yıldız Campus to help students expand their professional and academic networks. Participants had the opportunity to engage in short, structured conversations with peers and mentors to build meaningful connections, improve communication skills, and explore potential collaborations.

Ment-Talk

On October 30, 2024, the YTU Mentorship Club hosted the Ment-Talk with a session focused on e-commerce. Barış Karakum from Trendyol shared valuable insights about data analytics and logistics within the digital commerce ecosystem. The talk provided students with a real-world perspective on how technology, data, and consumer behavior intersect in one of Turkey's leading e-commerce companies.





Case Study Workshop

As part of its development-focused training series, the YTU Mentorship Club organized a Case Study Workshop on November 5, 2024. Halit Gökdağ, an experienced process and efficiency expert, began the session with a training on case study methodology. Participants then engaged in a hands-on case study exercise, applying strategic thinking and analytical skills in a collaborative setting.



Ment-Talk

YTU welcomed Ahmet Seyfi Ergül on November 8, 2024, for an insightful session on marketing and product management. Drawing from his experience at Logo Yazılım, Ergül shared practical strategies on market segmentation, product lifecycle management, and pricing dynamics. Students gained valuable industry knowledge and had the opportunity to ask direct questions about career paths in marketing and tech-based product strategy.

Flagship Annual Event

The YTU Mentorship Club successfully organized the 12th edition of its flagship annual event, "Büyük Buluşma", bringing together a wide network of mentors, mentees, and university stakeholders.

Held on December 8, 2024, the event attracted hundreds of participants, providing a dynamic platform for experience sharing, professional networking, and intergenerational learning. Throughout the day, distinguished mentors shared insights from their career journeys, while mentees had the opportunity to engage in meaningful dialogue and expand their professional networks.

The event was honored by the presence of YTU Rector Prof. Dr. Eyüp Debik, along with numerous alumni and professionals who continue to support the mentorship ecosystem.

The Grand Gathering remains a core pillar of the club's mission to foster personal and professional development through peer and alumni mentoring. With the guiding motto, "Even if you know a thousand things, #AskAYıldız", the club continues to strengthen its commitment to building a collaborative and supportive learning environment.









An On-Site Company Visit

On December 16, 2024, the an on-site company visit was organized to Rollic, a leading mobile gaming company. The visit aimed to introduce students to the dynamic structure of the gaming industry and provide direct exposure to a creative and fast-paced working environment. During the visit, participants received a corporate presentation about Rollic's mission, work culture, and project pipeline, followed by detailed explanations on recruitment processes, role structures, and potential career paths within the company. The event provided valuable insights into the tech and gaming sectors while fostering direct interaction between students and industry professionals.



Case Study Workshop

On December 20, 2024, an online training session was held titled "Pharmaceutical Industry 101" as part of its Ment-Eğitim series. The event was delivered via Microsoft Teams and featured Zeynep Demirel Topuz, Regulatory Affairs Manager at AstraZeneca.

The session aimed to provide students with an introductory understanding of the pharmaceutical sector, covering key topics such as drug development stages, regulatory processes, market authorization, and career opportunities in the life sciences industry. On December 20, 2024, an online training session was held titled "Pharmaceutical Industry 101" as part of its Ment-Eğitim series. The event was delivered via Microsoft Teams and featured Zeynep Demirel Topuz, Regulatory Affairs Manager at AstraZeneca.

The session aimed to provide students with an introductory understanding of the pharmaceutical sector, covering key topics such as drug development stages, regulatory processes, market authorization, and career opportunities in the life sciences industry.



The 3rd Astrobiology Conference

The 3rd Astrobiology Conference was organized at Yıldız Technical University on 10–11 February as an online event streamed on YouTube. The program brought together leading international scholars to discuss the origins of life, planetary habitability, and synthetic biology, providing participants with the opportunity to engage directly with experts and ask questions. By promoting accessible scientific dialogue on emerging interdisciplinary fields, the event contributed to advancing quality education and fostering global partnerships in research and innovation.

YTU BIOGEN organized a Tea-Talk

YTU BIOGEN organized a Tea-Talk on 23 February 2024 with Kürşat Incik, CEO of The Qlinic and Head of Umbrella Biotechnology, streamed as an online event. The discussion focused on biotechnology and R&D, exploring the science behind innovative projects and offering students the opportunity to interact directly with an industry leader. The event contributed to quality education by connecting students with real-world expertise, supported innovation in science and technology, and strengthened collaboration between academia and industry.



YTU integrates research, innovation, and inclusion to ensure equitable, lifelong, and transformative learning opportunities for all.



The first episode of the podcast series In Vivo

The first episode of the podcast series In Vivo was launched, featuring popular science articles written by the Culture and Publishing Committee and discussions on recent developments in biology, science, and culture. By making scientific knowledge accessible through a digital platform such as Spotify, the initiative contributed to quality education, promoted innovative approaches to science communication, and strengthened the link between academia and the wider community.

Tea-Talk

A Tea-Talk was organized on 5 March 2024 with doctoral researcher Kumsal Ecem Çolpan, focusing on education and career opportunities in Germany. The session addressed challenges and success stories of studying and building a career abroad, offering students valuable insights into international academic mobility. By promoting access to knowledge, sharing real-world experiences, and inspiring students to explore global opportunities, the event contributed to quality education and supported reduced inequalities in access to international learning.





Tea-Talk - Buse Bıyıklı

On 31 July 2024, an online Tea-Talk was held on Instagram with Yıldız Technical University Bioengineering alumna Buse Bıyıklı, focusing on the experience of studying bioengineering at YTU. The session provided prospective and current students with valuable insights into the academic journey, opportunities, and challenges of the program.



The 4th SciGether Science Days

The 4th SciGether Science Days was held online on 20–21 April 2024. Bringing together multiple student clubs and academic groups, the event offered a series of talks and discussions across diverse scientific fields. By providing accessible education opportunities, promoting interdisciplinary scientific dialogue, and fostering collaboration between student organizations and academia, the event contributed to advancing quality education, supporting innovation, and strengthening partnerships for sustainable development.

Adobe InDesign Training

On 16–17 October 2024, an online Adobe InDesign training was delivered via Zoom and YouTube by instructor Alaaddin Karadaş. The program aimed to equip students with practical digital design skills, supporting their professional and academic development. By making digital literacy training widely accessible and enhancing students' creative competencies, the event contributed to quality education and promoted innovation in education and technology.





The 3rd Bioinformatics Conference

The 3rd Bioinformatics Conference was held on 7–8 November 2024 at Tarihi Hamam venue, bringing together leading academics and industry representatives to discuss the latest developments in bioinformatics. The event provided students and participants with insights into cutting-edge research and applications at the intersection of biology, data science, and technology.



The first episode of the podcast series In Vivo

The 3rd Evolution Conference was held on 9–10 December 2024 at the Historical Bath, Yıldız Technical University. The event brought together leading scholars and researchers working on evolutionary biology, providing participants with an opportunity to learn about scientific perspectives on evolution and engage in critical discussions.

The 2nd Yıldız Stage Theatre Festival

The 2nd Yıldız Stage Theatre Festival was held on 13–19 May 2024, featuring a week of performances, workshops, and cultural activities at Yıldız Technical University. Open to the public and free of charge, the festival offered students and the community opportunities to experience theatre, engage in creative expression, and participate in cultural dialogue. By promoting inclusive access to the arts, enhancing cultural learning, and strengthening community engagement, the event contributed to sustainable development.





A Three-day Street Theatre Workshop

As part of the Yıldız Stage Theatre Festival, a three-day Street Theatre Workshop was held on 14–16 May 2024 with theatre practitioner Nazlı Masatçı. Open to the public and free of charge, the workshop provided participants with an interactive learning experience on performance in public spaces, encouraging creativity, expression, and community participation. By making arts education accessible and inclusive, the workshop supported quality education and promoted cultural engagement within the university community.



A Seminar on Acting and Dubbing

On 9 December 2024, a seminar on Acting and Dubbing was held at the YTU Faculty of Electrical and Electronics Conference Hall. The event provided students with insights into theatre, performance, and voice acting, creating a platform for dialogue on the creative arts. By supporting cultural education, promoting creative expression, and encouraging student engagement, the seminar contributed to sustainable development goals.

Adobe Photoshop Training

In February 2024, a three-week Photoshop training program was organized at Yıldız Technical University by the Construction Society with contributions from the Communication and Education Department. The program, delivered by Nezihi Gözen, aimed to equip students with digital design skills that support both academic and professional development. The initiative offered accessible training in digital literacy and creative tools, contributing to quality education and promoting innovation in education and technology.





The 3rd Bioinformatics Conference

On 26 February 2024, the Ice Breaking event was held at YTU Technopark Conference Hall as part of the Startup House program. Designed to strengthen team dynamics, leadership skills, and creativity ahead of the Hackathon, the event provided students with an interactive platform to build confidence and prepare for collaborative innovation. This event contributed to quality education by enhancing soft skills and supported innovation and entrepreneurship within the university community.



Autodesk Revit Training

An online Autodesk Revit training was organized by Yıldız Technical University Construction Society in collaboration with the Communication and Education Department, held on 13–15 February 2024. The evet delivered by civil engineer Hüseyin Çınar, the two-session program provided students with practical digital skills widely used in architecture and construction, helping them strengthen both academic performance and professional readiness. The training enhanced digital literacy, supported quality education, and promoted innovation and technological competence.

The 12th CivilIstanbul Conference

The 12th CivilIstanbul Conference was held on 2 March 2024, bringing together leading speakers, academic experts, and industry sponsors to discuss current issues in civil engineering. The event provided students with opportunities to engage with sector leaders, gain insights into contemporary challenges, and strengthen links between academia and industry, while also promoting accessible, practice-oriented education that contributed to quality education, supported innovation in engineering, and enhanced collaboration with industry partners.





A Three-day Street Theatre Workshop

The online seminar 'Career Journey and Global Experiences,' held on 29 March 2024 with architect Tolga İpek, aimed to inspire students by sharing international experiences in architecture and construction, providing insights into project management and career opportunities, and thereby contributing to quality education and supporting decent work and economic growth.



A Technical visit to AkçanSa Concrete Plant

On 3 May 2024, Yıldız Technical University students participated in a technical visit to AkçanSa Concrete Plant, gaining first-hand insights into concrete production processes and learning about innovations in the sector. The visit contributed to quality education, supported innovation in civil engineering, and strengthened collaboration between academia and industry.

RECODE'24, an 'Open Learning Platform'

RECODE'24, an 'Open Learning Platform' organized by the Construction Society under the theme 'Rhythm: Spatial Harmony,' was hosted at Yıldız Technical University on 20–21 May 2024. The program combined seminars, panel discussions, and workshops with art, music, and exhibitions within the Biennial framework, creating an interactive and multidisciplinary environment for participants. The event provided opportunities to reflect, learn, and create collectively, enhancing cultural and scientific awareness, supporting quality education, and promoting sustainable community engagement.





Autodesk Revit Training

Held annually since 2013 as a tradition of Yıldız Technical University, the 11th edition of 'İlk Baretim' took place on 7–8 November 2024 at Davutpaşa Congress and Cultural Center. The program brought together engineers, architects, planners, academics, and entrepreneurs for career sessions, workshops, technical visits, and the symbolic helmet ceremony that marks students' first step into the construction sector. The program aimed to integrate academic learning with industry experience and the initiative contributed to quality education, supported innovation in engineering, and strengthened partnerships with professional stakeholders.

Improving the Facilities of the Village School

Yıldız Technical University students carried out a social responsibility project on 26 October 2024 at Gürsü İğdir Primary School in Bursa, renovating and improving the facilities of the village school. The initiative aimed to enhance learning environments for children, provide equal opportunities in education, and strengthen the culture of social responsibility among university students.





Managing Communication and Relationships

On 28 November 2024, Yıldız Technical University hosted a training session titled 'Managing Communication and Relationships' with Bahar Önderol. The program focused on developing effective communication skills and strategies for managing relationships more consciously in both professional and social contexts. The event contributed to quality education and supported students' personal and professional growth by strengthening interpersonal competencies and promoting self-development.



Artificial Intelligence and BIM: The Future of Smart Design' with Rumet Şahin

Yıldız Technical University hosted an event titled 'Artificial Intelligence and BIM: The Future of Smart Design' with Rumet Şahin, on 14 December 2024. The program explored how emerging technologies such as AI and Building Information Modeling are shaping the future of architecture and engineering, offering students insights into innovative design practices and digital transformation in the sector. The event contributed to quality education, supported industry innovation, and encouraged sustainable approaches in design and construction by integrating technology with education.





What We Dreamed And Beyond #oneteamtwocars

YTU's student-led YTU Racing Team unveiled two groundbreaking Formula Student vehicles:

YTR09-ÖZCÜ: A fully electric car, featuring a 10-inch wheel package, a 450-volt battery, and an Emrax motor, capable of accelerating 0–100 km/h in just 2.7 seconds.

YTR09-KEREM: A combustion vehicle powered by a 4-cylinder CBR600RR engine with 98hp, achieving 0–100 km/h in 3.4 seconds.

These vehicles embody the passion, creativity, and engineering expertise of students, combining both sustainable electric mobility and advanced combustion technologies within the Formula Student framework. Together, they highlight how applied STEM education and hands-on learning at YTU empower students to innovate across diverse technological pathways.



YTU's Formula Student Team participated in the Formula Student Alpe Adria competition

YTU's Formula Student Team participated in the Formula Student Alpe Adria competition, representing both the university and Türkiye. The team competed with their newly developed racing prototypes (YTR09-ÖZCÜ and YTR09-KEREM), which combine advanced engineering design, innovation, and teamwork.

The participation culminated in significant success, as the team returned with trophies, further enhancing YTU's visibility in international student competitions and contributing to experiential learning.





Racing Toward Innovation: YTU & SPEEDOL Partnership

YTU's Racing Team was hosted at SPEEDOL | Koçak Petrol's R&D and Production Facilities in Gebze as part of their preparations for the 2025 racing season. During the visit, discussions were held on product development and the testing of high-performance oils in racing environments, leading to a formal cooperation agreement between the team and the company.

This collaboration not only strengthens the technical development of student engineers but also builds bridges between academia and industry. The upcoming visit of SPEEDOL's management to YTU Racing's garage was also planned, further deepening the partnership.

This activity demonstrates YTU's contributions to SDG 4 (Quality Education) through experiential learning, SDG 9 (Industry, Innovation and Infrastructure) by fostering advancements in automotive engineering and lubrication technologies, and SDG 17 (Partnerships for the Goals) through robust university–industry collaboratio



Investing in Learning: YTU Finance & Investment School

The Finance & Investment School was conducted between February and May 2024 with the participation of YTU Economics Club students. The programme provided practice-oriented training in investment and corporate finance, complemented by company presentations, site visits, and career simulations. Two fully funded places were allocated exclusively to YTU members, enhancing equitable access to high-quality learning opportunities.

This activity provided opportunities for experiential learning in finance, improving students' career readiness and strengthening university–industry linkages through structured partnerships.





Members of Yıldız Technical University's Economics Club visited the Presidential Finance Office of Türkiye

On 28 February 2024, members of Yıldız Technical University's Economics Club visited the Presidential Finance Office of Türkiye. The visit provided students with the opportunity to gain first-hand insights into national financial governance, economic strategy, and institutional operations at the highest policy level.

Through direct interaction with experts, participants were able to bridge their academic learning with practical exposure to the country's central financial institutions. The experience also helped enhance their career readiness and understanding of the dynamics of financial policy and management.





The technical visit to Gedik Yatırım

The technical visit to Gedik Yatırım, organized on 5 March 2024 by Yıldız Technical University's Economics Club, provided students with direct exposure to the operations of one of Türkiye's leading brokerage and investment firms. Through presentations and discussions with sector professionals, participants gained insights into financial markets, investment strategies, and corporate practices.

This activity contributes to SDG 4 (Quality Education) by strengthening experiential learning in finance, and to SDG 8 (Decent Work and Economic Growth) by equipping students with practical skills and knowledge relevant to their future careers. The collaboration also supports SDG 17 (Partnerships for the Goals), reinforcing links between higher education and the private sector to expand opportunities for youth engagement and career development.



Racing Toward Innovation: YTU & SPEEDOL Partnership

On 5 March 2024, YTU Economics Club hosted the "Stock Market and Technical Analysis Training", delivered by sector professionals from A1 Capital, Mehmet Baki Atılal (Deputy General Manager of Research) and Göksel Tekiner (Director of Technical Analysis). The training introduced students to fundamental and technical aspects of stock markets, investment tools, and analytical approaches.



Stars of the Economy

On 22 March 2024, Yıldız Technical University Economics Club organized "Stars of the Economy", one of the largest-scale events in the university's history in the fields of economy and finance. Moderated by Cansu Özen (Corporate Communications Specialist, ALB Yatırım), the program hosted distinguished speakers including Prof. Dr. Erhan Aslanoğlu (Vice Rector, Topkapı University), Murat Sağman (Economist, Board Member of FODER), Prof. Dr. Emre Alkin (Rector, Topkapı University), Vahap Taştan (Investment Strategist and Consultant at Yatırım Finansman), and Ahmet Deniz Yağbasan (Research Analyst, ALB Yatırım).

The event created a platform for students to engage with leading professionals, gain insights into the Turkish economy, and explore career paths in finance and economics.



Alumni on Campus

As part of its efforts to enhance career readiness and strengthen alumni relations, Yıldız Technical University Economics Club organized the "Alumni on Campus" event on 29 March 2024, featuring graduates who have excelled in diverse professional fields. The event hosted Canan Yıldız (Data Engineer at İş Bankası), Melike Eraslan (Communication Manager at Google), Kaan Sekban (Comedian), and Sercan Akkaş (Product Director at Yemeksepeti).

The program provided students with the opportunity to learn from alumni working in diverse fields including finance, technology, communications, and entrepreneurship. It strengthened career awareness, networking opportunities, and the sense of community between graduates and students.



ATechnical Visit to Ace Trading

YTU Economics Club organized a technical visit to Ace Trading on 5 March 2024. During the visit, students had the opportunity to gain insights into the financial sector, investment strategies, and professional practices in capital markets.

A Technical Visit was Organized to DenizBank Headquarters

On 28 March 2024 a technical visit was organized to DenizBank Headquarters. During the visit, YTU students were warmly welcomed by Mustafa Karacan and had the opportunity to engage with Utku Eldut, former Deputy Chairman of the Board of Directors, who shared his valuable professional experiences and insights into the banking sector.

The visit provided participants with direct exposure to financial practices, corporate culture, and career development opportunities within the banking industry.





A Technical Visit To The HSBC Turkey Headquarters

YTU Economics Club organized a technical visit to the HSBC Turkey Headquarters on 24 April 2024. During the program, students were introduced to the operational structure of the bank, gained insights into global and national financial practices, and explored career opportunities in the banking sector.

This visit provided participants with a deeper understanding of international finance and corporate banking operations, while also fostering university–industry collaboration. Through such initiatives, YTU Economics Club aims to enhance students' professional competencies and contribute to their career readiness.



A fund competition was held at YTU

A fund competition was held at YTU in collaboration with Yancep between 6–23 May 2024, enabling students to engage in experiential investment practices. Each participant was provided with a virtual budget of 500 TL to manage over a three-week period, fostering practical financial literacy and decision-making skills.

Following the competition, on 24 May 2024, an Investment Training session was held at the Faculty of Economics and Administrative Sciences, Prof. Dr. Murat Demircioğlu Conference Hall. The training brought students together to consolidate their learning, deepen their understanding of financial markets, and strengthen their career readiness in the field of investment.

YTU students visited the headquarters of Yemeksepeti

YTU students visited the headquarters of Yemeksepeti as part of a technical field trip. The visit enabled students to gain practical insights into digital business models, e-commerce operations, and innovation in the food delivery sector, strengthening the link between academic learning and industry practices.



From classrooms to communities, YTU connects knowledge, creativity, and empathy to strengthen quality education and social impact.



Financial Literacy Training

Students at Yıldız Technical University had the opportunity to participate in a Financial Literacy Training on 30 October 2024, organized in partnership with Info Yatırım. The training was delivered by Info Yatırım Research Specialist Egehan Turgut and Investment Analyst Oğuzhan Bıkmaz.

The event focused on enhancing students' financial literacy skills by introducing fundamental concepts of budgeting, financial planning, and investment strategies. Participants were encouraged to learn how to manage resources effectively, regardless of budget size, and to strengthen their understanding of responsible financial decision-making.

The Investment and Economy Training

On 5 November 2024, the Investment and Economy Training was organzied at the YTU Faculty of Economics and Administrative Sciences. With the participation of distinguished speakers Tuncay Turşucu and Serdar Pazı, the event provided students with valuable insights into economic dynamics, financial markets, and investment strategies.

By fostering financial literacy and bridging the gap between theory and practice, the training supported the development of practical skills that contribute to career readiness and lifelong learning. This initiative also highlighted the role of academic–industry collaboration in strengthening student competencies.





A fund competition was held at YTU

On 27 November 2024, 'Alumni on Campus' event was organized at YTU Davutpaşa Campus, bringing together graduates from leading companies such as Ford, Turkish Airlines, Paribu, and Koçfinans to share career insights with current students. The event strengthened university–industry linkages, enhanced students' career readiness, and fostered partnerships aligned with SDGs.

A technical Visit to Akbank Teknoloji

A technical visit to Akbank Teknoloji was organized on 2 December 2024, where students participated in multiple sessions, including Human Resources, Technology, and Data Center briefings, along with a tour of the ABM building. The program also featured networking opportunities with industry leaders, enhancing students' understanding of digital banking, innovation, and career pathways.





Jerusalem Through History

At Yıldız Technical University, an exhibition titled "Jerusalem Through History" was organized to raise awareness about the historical and cultural significance of the city. The event encouraged students and participants to reflect on the broader context of world history through the lens of Jerusalem.



A Cultural Conference

At YTU, a cultural conference was organized in partnership with the Balkar Association and KYK Dormitories to commemorate the national poet Mehmet Akif Ersoy. The event fostered cultural literacy, national identity awareness, and student engagement beyond the classroom.

The Event Bilimin Serüveni in Collaboration With Balkar

YTU hosted the event Bilimin Serüveni in collaboration with Balkar, providing a platform for academic dialogue and interdisciplinary perspectives. The activity enhanced scientific literacy among students and faculty, directly contributing to quality education, while also fostering institutional collaboration.





Growing Awareness: YTU & Bağcılar Atatürk Primary School

YTU, in collaboration with Bağcılar Atatürk Primary School, organized an oak acorn planting activity aimed at fostering early environmental awareness among children.Through this initiative, students engaged in hands-on learning about biodiversity and ecosystem protection, fostering environmental stewardship from an early age while also strengthening university–community engagement.





Yıldız Technical University hosted 4th-grade students from Bağcılar Atatürk Primary School

On 25 April 2024, Yıldız Technical University hosted 4th-grade students from Bağcılar Atatürk Primary School. Through activities such as a birdhouse workshop, interactive games, and guided tree recognition in the campus garden, children engaged in experiential learning about biodiversity and nature conservation. This initiative fostered early-age environmental awareness while strengthening collaboration between the university and local schools.

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15 LIFE ON LAND
17 PARTNERSHIPS FOR THE GOALS

Astronomy Conference

YTU Astronomy Club organized a comprehensive Astronomy Conference, bringing together leading experts to engage students and the wider community in scientific exploration. The event featured sessions on dark matter, dark energy, light phenomena, and the depths of the universe, alongside practical insights into becoming an amateur astronomer. By fostering scientific literacy and curiosity, the conference strengthened knowledge-sharing between academia and the public, while also creating an inclusive platform for dialogue on space sciences.



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
17 PARTNERSHIPS FOR THE GOALS



Astronomy Days

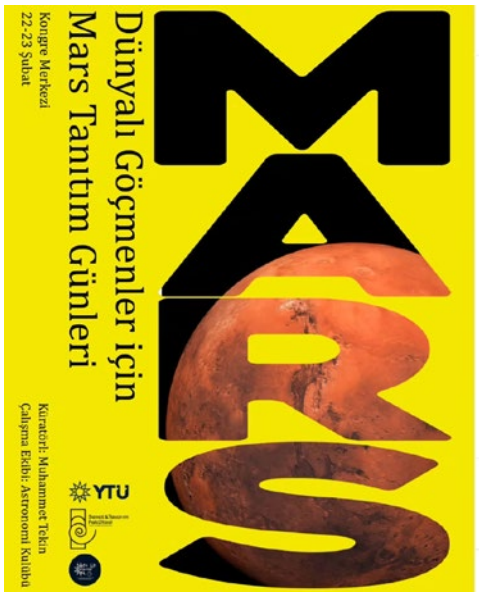
"Astronomy Days" was held on 22–23 February at the YTU Davutpaşa Campus Congress Center, bringing together experts and students to explore the latest developments in astronomy and space sciences. The program included lectures, interactive discussions, and knowledge-sharing sessions designed to spark scientific curiosity and strengthen public understanding of space-related research. By creating an open platform for academic–community dialogue, the event fostered scientific literacy and supported the integration of students into the global scientific community.



Shaping the Future of Education: AI, Digitalization, and Big Data

YTU hosted a strategic meeting on Artificial Intelligence, Digitalization, and Big Data with the participation of the President of the Council of Higher Education (YÖK), Prof. Dr. Erol Özvar, and Rectors from leading Turkish universities.

Held in the historic atmosphere of Otağ-ı Hümayun, the meeting emphasized the integration of digital transformation, AI, and data science into higher education programs. The discussion aimed to align academic structures with the needs of Industry 4.0, encourage interdisciplinary cooperation, and shape future-ready education systems.



Mars Orientation Days for Earth Migrants

As part of the Astronomy Days organized by the Yıldız Technical University Astronomy Club, the exhibition "Mars Orientation Days for Earth Migrants" was curated to engage participants in imaginative and scientific reflections on space exploration. Hosted at the Davutpaşa Campus Congress Center on 22–23 February, the exhibition combined scientific perspectives with creative design, fostering critical awareness about the future of humanity in space.

The Astronomy 102 course

The Astronomy 102 course was organized at YTU in Spring 2024, focusing on advanced topics such as light, observational instruments, atmospheric physics, space weather, and binary star systems through weekly sessions. The lectures, held from 12 March to 23 April 2024, provided students with sustained exposure to advanced concepts in astronomy, fostering scientific literacy and strengthening extracurricular learning opportunities.





Astro Talks

As part of the "Astro Talks" series, YTU hosted Dr. Berat Z. Haznedaroğlu, an award-winning scientist specializing in applied microbiology, biotechnology, and functional genetics. The lecture highlighted cutting-edge research on microalgae and cyanobacteria with applications in food, pharmaceuticals, energy, and environmental sustainability. By engaging students with internationally funded projects and interdisciplinary perspectives, the event fostered scientific literacy and awareness on the role of biotechnology in addressing global challenges.



Astronomy 101.5

Before the launch of Astronomy 102, YTU offered an introductory session titled "Astronomy 101.5" focusing on the science of light. The session provided students with a foundational understanding of the visible spectrum, wave properties, and stellar temperatures, linking theoretical knowledge with everyday observations such as fire color changes and solar phenomena. By making complex astrophysical concepts accessible, the activity fostered scientific curiosity and strengthened early-stage academic engagement in astronomy.

"Astronomy 101.5" Focusing on Observational Instruments

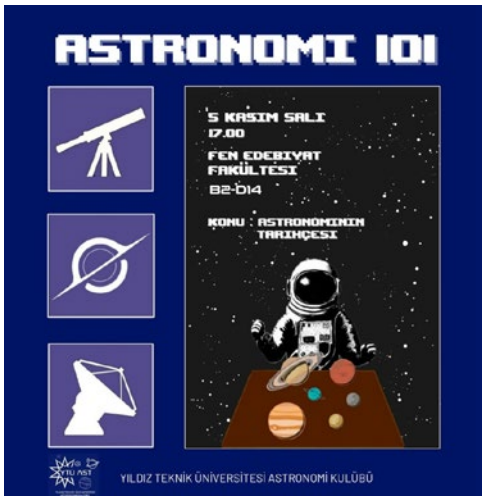
Prior to Astronomy 102, YTU conducted a bridging lecture titled "Astronomy 101.5" focusing on observational instruments. The session highlighted how space telescopes such as Hubble and James Webb have revolutionized our understanding of exoplanetary atmospheres, dark matter, and the early universe. By connecting technological innovation with foundational astronomy education, the activity fostered both scientific literacy and research-oriented curiosity among students.





Starlit Nights

The "Starlit Nights" observation activity provided students with an engaging platform to deepen their knowledge of astronomy while promoting collaborative learning. By combining theoretical introductions with practical sky observations, the event strengthened student engagement in science and technology, aligned with SDG 4 (Quality Education). Furthermore, by bringing together new and existing members of the club, it encouraged networking, teamwork, and sustained student-led initiatives, thereby supporting SDG 17 (Partnerships for the Goals).



The Astronomy 101 lecture series

The Astronomy 101 lecture series was launched at Yıldız Technical University with the opening session on "The History of Astronomy." Open to all students, the session provided participants with an accessible introduction to the evolution of astronomical knowledge, fostering curiosity in science and technology. By creating an inclusive learning environment beyond formal curricula, the activity directly supported Quality Education while strengthening student engagement with research-oriented thinking.

YTU AESK achieved first place at TEKNOFEST 2024

YTU AESK achieved first place in the Robotaxi Passenger Autonomous Vehicle Competition under TEKNOFEST 2024, standing out as the only team to successfully complete the course. This remarkable achievement demonstrates the team's expertise in autonomous driving technologies and reflects the university's dedication to fostering innovation, applied engineering skills, and teamwork. By integrating the contributions of students, alumni, faculty, and supporters, the success also highlights the collaborative ecosystem that strengthens YTU's role in advancing quality education and industry–academia partnerships.





YTU AESK hosted a visit from Ford Otosan

YTU AESK hosted a visit from Ford Otosan, during which students engaged in direct discussions with industry experts on autonomous vehicle technologies. This interaction not only motivated the team but also strengthened their vision for future goals, highlighting the value of academia–industry collaboration. Such visits provide students with practical insights and foster meaningful partnerships that enhance applied learning and innovation capacity.



A Technical Site Visit to a Wind Power Plant in Geyve, Sakarya, Hosted by Eksim Enerji

YTU CIGRE Club organized a technical site visit to a wind power plant in Geyve, Sakarya, hosted by Eksim Enerji. As one of Türkiye's leading companies in the energy sector, Eksim Enerji shared insights into its projects on renewable energy, including wind, hydroelectric, solar, and biomass.

The visit allowed students to observe clean energy technologies on-site and gain a deeper understanding of sustainable energy production. By combining theoretical learning with practical exposure, the activity enhanced student awareness of renewable energy systems and their role in ensuring national energy security.

YTU hosted the inaugural "Sector Talks" event

YTU hosted the inaugural "Sector Talks" event on 26 November 2024, bringing together leading professionals from engineering, energy, and business sectors. The session provided students with valuable insights into career planning, entrepreneurship, management, and the practical applications of engineering in industry.The event created an opportunity for students to engage directly with sector leaders, supporting career readiness while fostering stronger academia–industry collaboration.





Rising Sectors: The Power of Wind

YTU hosted the event "Rising Sectors: The Power of Wind", featuring Sedef Budak, a leading figure in the renewable energy sector. The session explored the potential of wind energy in Turkey, recent innovations, and its role in shaping a sustainable future. The discussion not only offered students an in-depth understanding of renewable energy developments but also encouraged them to connect academic perspectives with real-world industry practices.

3D Art 101: Introduction to Blender

YTU's DOGDOK Club launched a weekly training program titled "3D Art 101: Introduction to Blender" to familiarize students with the fundamentals of digital art and design. The course offered a structured pathway covering Blender's core interface and tools, 3D modeling techniques, and material and texture creation. Through regular practice-based sessions, the program enabled students to build essential skills in 3D modeling and digital design while making creative technologies more accessible across disciplines.





Unity training program

YTU DOGDOK continued its Unity training program with an advanced-level course, focusing on game mechanics, optimization techniques, and lighting design. Building on the knowledge gained in previous sessions, the program offered students the opportunity to further develop their technical expertise in digital game development.As one of the fastest-growing creative industries, game development provided students with valuable skills that strengthened their career prospects and opened new opportunities in the digital economy.



Digital Gaming Days Reborn

YTU hosted "Digital Gaming Days Reborn," a three-day event (19–21 March) that brought together students, developers, and industry representatives around the rapidly growing field of digital games and interactive technologies.

The program featured tournaments, workshops, and talks from leading professionals, including Sebahattin Akay (Roko Game Studios), Ersoy Balkış (Hit and Boom), Mustafa Egemen (CREW Medya), and Furkan Necati Ürkmez (Funverse Games) who shared insights into MMORPG development, game design challenges, and teamwork in the creative industries. Alongside competitive sessions such as League of Legends, Valorant, and Rocket League tournaments, the event also provided interactive experiences including VR gaming, motion capture, and indie game showcases.

Through this diverse program, the initiative not only fostered creativity, collaboration, and entrepreneurial thinking among students but also created an accessible platform to explore the academic, cultural, and economic dimensions of the gaming industry.



YTU DOGDOK Student Club Co-organized Jamination 7

YTU DOGDOK Student Club co-organized Jamination 7 (10–12 May 2024), a nationwide game development event held simultaneously across Istanbul, Ankara, and Izmir, with additional online participation. Bringing together eight student-led game development communities and supported by industry sponsors such as TaleWorlds Entertainment, the event provided students with hands-on experience in creative technologies and collaborative innovation. amination 7 offered students the opportunity to collaborate with peers from different universities, experiment with new tools, and present creative projects to industry professionals. The event provided students with hands-on opportunities to develop technical and creative skills and fostered stronger connections between universities and the game development sector in Türkiye.



DevDay event

DevDay event was organzied at YTU on 31 August 2024 at the Clubs Valley on Davutpaşa Campus. The activity provided a productive environment where students gathered to focus on their projects, exchange ideas, and collaborate on game development. By combining a relaxed setting with peer-to-peer learning, the event encouraged creativity, teamwork, and continuity in student-led initiatives.

'Sektörün Devleri' talk series

As part of its 'Sektörün Devleri' talk series, YTU hosted Emre Buğday, a Technical Game Designer at Wargaming with prior experience at Bohemia Interactive. The online session provided students with insights into the responsibilities and career pathways of technical game design, offering first-hand perspectives from the gaming industry.





Introductory Training Sessions On Game Development

YTU launched introductory training sessions on game development, designed for students eager to explore creative technologies. The program combined Unity and Blender workshops, guiding participants through the fundamentals of game mechanics, 3D modeling, and collaborative project development. The program provided a structured introduction to digital creation, enabling students from diverse disciplines to develop technical skills, strengthen teamwork, and gain early exposure to industry-relevant tools.

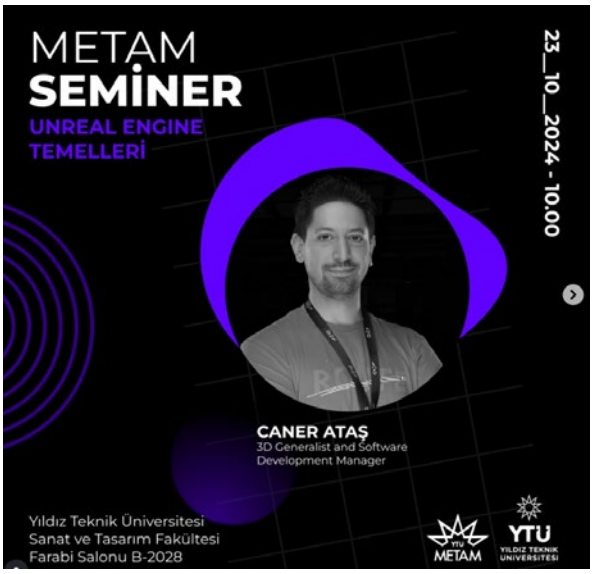


Digital Gaming Days Reborn

As part of its 'Sektörün Devleri' talk series, YTU hosted Berke Boz, a Software Engineer at EA Sports, who shared his career journey, experiences in game development, and insights from working on major international projects. The event provided students with valuable exposure to the professional pathways in software engineering and the global gaming industry, while encouraging interactive dialogue through Q&A sessions.

'Sektörün Devleri' talk series

YTU METAM organized a seminar titled "Unreal Engine Basics", delivered by 3D Design Specialist and Software Development Manager Caner Ataş. The session introduced students to the fundamentals of Unreal Engine, one of the most widely used tools in game development and digital design. By combining theoretical insights with practical demonstrations, the seminar offered participants an accessible entry point into interactive technologies and creative industries. The open-access format ensured broad participation, encouraging interdisciplinary learning and supporting students' creative and technical development.





Creating AR Filters with Snapchat Lens Studio

YTU METAM hosted an online workshop on "Creating AR Filters with Snapchat Lens Studio", led by augmented reality developer Cansu Türkmen. The session introduced participants to the fundamentals of AR design, guiding them through hands-on filter creation while fostering creativity and digital literacy.



AntsJam 2.0

YTU's Blockchain and Metaverse Technologies Application and Research Center, in collaboration with Istanbul Kültür University's Design Factory, organized AntsJam 2.0, a game jam dedicated to raising awareness about the challenges faced by individuals with disabilities. The two-day event brought together developers, designers, and students from diverse disciplines to create innovative games addressing accessibility and inclusion. The event highlighted how creative game design can serve as a powerful tool for social advocacy, inspiring participants to channel their skills into projects that advance inclusion and generate tangible social impact.

'Metaverse Creative Processes

YTU METAM organized the workshop 'Metaverse Creative Processes: Concept and Application' to introduce students to the fundamentals of virtual world design. The program provided both conceptual insights and hands-on practice in metaverse creation, emphasizing its potential as a platform for creativity, innovation, and collaboration.





AntsJam 2.0

YTU students participated in the National Physics Students Summit, organized in collaboration with 13 universities across Türkiye. Held at İzmir Institute of Technology, the summit provided a platform for knowledge exchange, scientific discussion, and peer-to-peer learning in physics and engineering. Through this engagement, participants gained exposure to diverse perspectives in the physical sciences while fostering a stronger nationwide student community.



YTU's s Quantum Science and Technology Society (QSB) hosted an online seminar with Dr. Yusuf Karlı

YTU's s Quantum Science and Technology Society (QSB) hosted an online seminar with Dr. Yusuf Karlı, a postdoctoral researcher at the University of Cambridge Cavendish Laboratory. The session introduced participants to the foundations of quantum physics and emerging quantum technologies, combining historical perspectives with technical insights. The event broadened understanding of frontier scientific fields and encouraged engagement with transformative technologies by connecting students with leading international researchers.

Wednesday Seminars

YTU's Physics Department organizes weekly "Wednesday Seminars," providing students with exposure to a wide range of topics in both fundamental and applied physics. The series enhances scientific literacy, develops research skills, and strengthens the culture of academic inquiry across the university, by hosting leading academics from national and international institutions.









The 'Quantum Technology Days

"The 'Quantum Technology Days,' held on December 26–27 at YTU's Davutpaşa Campus, provided a multidisciplinary platform where advanced research intersected with practical applications. The program explored the transformative potential of quantum technologies in communication, health, finance, and energy, featuring talks on quantum computing, quantum AI, and optimization delivered by leading national and international experts. Alongside seminars, hands-on workshops enabled participants to gain practical skills, fostering knowledge exchange, innovation, and global collaboration.

11th Ship Engineering Summit

YTU hosted the 11th Ship Engineering Summit on 6–7 March at the Beşiktaş Auditorium, providing students with direct engagement opportunities with leading engineers and executives from the maritime industry. The summit served as a career-focused platform where students expanded their understanding of global and national trends in shipbuilding and maritime technologies, gained practical insights from professionals, and built valuable networks for future collaboration.





Python-II Training Program

YTU GEMDEK Student Club organized the Python-II Training Program, providing students with advanced skills in programming and data analysis. Building on the success of the introductory course, the program offered hands-on projects and deeper exploration of Python applications, enabling participants to strengthen their technical competencies and problem-solving abilities. Through this initiative, the university expanded access to digital literacy and supported students in acquiring future-ready skills.



Career Days

As part of the 'Career Days' series, a session was organized featuring Ahmet Kandeniz, Regional Sales Manager at Parker Hannifin. The program provided students with insights into career development, industry expectations, and professional pathways, thereby enhancing their employability skills and creating opportunities for direct engagement with industry leaders.

Wednesday Seminars

The 13th edition of "Denizin Yıldızları" was organized on 6–7 November 2024 by YTU GEMDEK, bringing together leading companies in the maritime and shipbuilding industries such as Arkas, Beşiktaş, DFDS, and Columbia Shipmanagement. The two-day program featured keynote speeches, company presentations, and networking opportunities, enabling students to directly engage with industry leaders and explore career pathways in shipping, logistics, and maritime engineering. By fostering university–industry collaboration, enhancing employability skills, and promoting sustainable practices in the maritime sector, the event made a significant contribution to advancing both academic and professional development.





JekTalk

On April 25, YTU hosted Abdullah Gün in a JekTalk session that explored the applications of laser scanning and photogrammetry in the gaming industry. The event introduced students to innovative digital tools and practical applications, reinforcing the integration of creative industries with technological education. Through its emphasis on interdisciplinary learning and direct industry engagement, the initiative not only advanced students' technical competencies but also fostered innovation-oriented skill development.

İHA-1 Commercial Drone Pilot Training Program

YTU's Geoinformatics Club organized the İHA-1 Commercial Drone Pilot Training Program, led by Prof. Dr. Burak Akpınar, equipping students with certified skills in one of the fastest-growing technology sectors. The program provided participants with both theoretical knowledge and practical training on unmanned aerial vehicle (UAV) systems, preparing them for professional certification and future career opportunities. By integrating advanced digital tools into education, the initiative enhanced students' technical competencies, fostered innovation across disciplines, and strengthened the link between higher education and emerging industry needs.





A two-day technical trip to Ankara

YTU organized a two-day technical trip to Ankara on May 2–3, 2024, providing students with the opportunity to connect academic learning with real-world professional environments.

On the first day, participants visited Mescioğlu Engineering, the General Directorate of Geographic Information Systems (CBS), and Atay Engineering, where they were introduced to current applications of geospatial technologies and engineering practices. These visits allowed students to deepen their understanding of how geographic information and engineering design are integrated into national-scale projects.

The second day included a comprehensive program featuring a visit to the TÜBİTAK Space Technologies Research Institute (UZAY), where students engaged with experts on satellite systems, space research, and technological innovation. The group also visited Anıtkabir, strengthening their awareness of national heritage, and the Chamber of Survey and Cadastre Engineers (HKMO), which provided insights into professional standards and career pathways in the field.



YTU's Department of Geomatics Engineering hosted a distinguished lecture by Fabio Remondino

On May 15, 2024, YTU's Department of Geomatics Engineering hosted a distinguished lecture by Fabio Remondino, Head of the 3D Optical Metrology Unit at Fondazione Bruno Kessler, Italy. The session, titled "Towards Photogrammetric AI", brought together students, researchers, and faculty members to explore the intersection of artificial intelligence and photogrammetry.

As one of the world's leading experts in the field, Remondino shared insights into cutting-edge applications of AI in spatial data analysis, 3D reconstruction, and digital mapping. The event not only advanced participants' understanding of emerging technologies but also emphasized the importance of international academic exchange and collaboration



UZAL-CBS Symposium

From 17–19 October 2024, YTU Geoinformatics Students participated in the UZAL-CBS Symposium hosted by Aksaray University, which brought together experts, academics, and students in the fields of remote sensing and geographic information systems.

During the symposium, YTU representatives introduced the club's activities and departmental initiatives to participants and stakeholders. The YTU stand was honored by visits from Mehmet Ali Kumbuzoğlu, Governor of Aksaray, and Major General Osman Alp, Director General of Mapping, who received detailed briefings about the university's contributions to geoinformatics education and research.

This participation enhanced YTU's visibility in the field by engaging with national stakeholders and strengthening collaboration networks.



The 20th edition of RLC Days

The 20th edition of RLC Days, recognized nationwide as "the most prominent student-led event in the sector," was held on 27–29 February 2024 at YTU Davutpaşa Congress Center. The program featured leading industry representatives, expert panels, and a dynamic fairground designed to foster professional engagement and knowledge exchange.Through direct engagement with industry leaders, exposure to emerging technologies, and participation in multidisciplinary dialogue, the initiative enhanced students' employability while simultaneously strengthening university–industry collaboration and promoting an innovation-oriented ecosystem.



Boston Scientific Office Visit

YTU organized "Boston Scientific Office Visit" to provide students with direct exposure to the biomedical and biotechnology sector, introducing them to innovative medical technologies and professional practices. During the visit, students had the opportunity to engage with company executives and the human resources team, receiving training on CV preparation techniques.

YTU hosted a high-impact workshop in collaboration with FEV,

YTU hosted a high-impact workshop in collaboration with FEV, a global engineering services provider, focusing on automotive functional safety, cybersecurity, artificial intelligence/ machine learning, and cloud computing. The event brought together students, academics, and industry experts to explore the intersection of emerging technologies and automotive engineering. Participants gained insight into critical digital competencies through interactive sessions, exploring the role of advanced technologies in shaping the future of sustainable mobility. The workshop enhanced students' employability skills and strengthened university–industry collaboration and fostered innovation-driven learning.





The 19th edition of İLTEK Days

The 19th edition of İLTEK Days was held on March 26–28, 2024, at YTU Davutpaşa Campus, bringing together leading companies under the theme "Today's and Tomorrow's Technologies." The program has provided students with direct exposure to cutting-edge technological trends and emerging innovations, while enabling interaction with industry experts and sector leaders.

Through panels, presentations, and networking opportunities, the event has strengthened the bridge between higher education and the technology sector, enhanced students' career readiness, and fostered innovation-driven learning.

8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

The IEEE YTU CASMarine Team achieved remarkable success at the 2024 TAC Challenge

The IEEE YTU CASMarine Team achieved remarkable success at the 2024 TAC Challenge, an international underwater systems competition held in Rogaland, Norway. Competing with their self-developed vehicle Asteria, the team proudly represented both Türkiye and Yıldız Technical University, securing 6th place worldwide in their very first year of participation.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
14 LIFE BELOW WATER





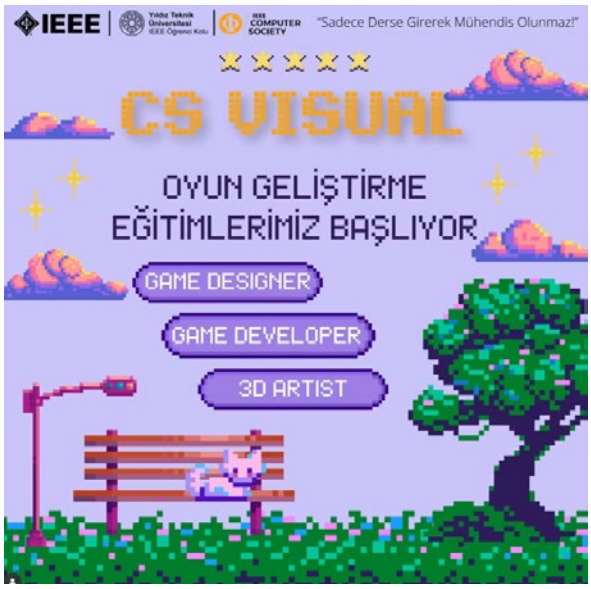
Python and Data Science from Scratch

YTU IEEE Computer Society Committee organized an intensive training program titled "Python and Data Science from Scratch" between 3–26 September 2024. Delivered by industry expert Mehmet Fatih Önkol (Data Scientist), the program introduced participants to Python programming and fundamental concepts in data science, equipping them with both theoretical knowledge and practical skills.

Conducted online via the IEEE YouTube channel, the training provided accessible learning opportunities for a wide range of students. Participants who attended four or more sessions received certificates, further enhancing their academic and professional credentials.

This initiative strengthened digital literacy, advanced technical competencies, and supported employability in one of the most in-demand fields of the digital economy.





CS Visual Game Development Training Program

The IEEE YTU Computer Society launched its CS Visual Game Development Training Program in November 2024, offering students hands-on learning in one of the fastest-growing creative industries. The program covered three main areas: Game Development (C# & Unity), Game Design, and 3D Art (Blender).

Held weekly with in-person sessions, the program provided participants with structured training on both the technical and creative aspects of game development. Upon completion of the training phase, interviews were conducted for team recruitment, ensuring that motivated and skilled participants could formally join the CS Visual Game Development Team.





Yıldızlı Söyleşiler series

YTU hosted Sadettin Saran, Chairman of the Board of Saran Group, as part of the ***Yıldızlı Söyleşiler*** series at the Faculty of Electrical and Electronics Engineering Conference Hall.

The session provided students with an opportunity to gain first-hand insights into leadership, entrepreneurship, and the dynamics of the media and investment sectors, guided by one of Türkiye's most prominent business leaders. Mr. Saran shared his professional journey, strategic perspectives, and reflections on sustainable business practices, while also engaging in a dynamic Q&A session with participants.

YTU hosted the 8th edition of its flagship event Kutup Yıldızı

On 5 November 2024, Yıldız Technical University hosted the 8th edition of its flagship event Kutup Yıldızı under the theme "Guide Your Future" at the Historic Bath in Davutpaşa Campus. The program brought together distinguished figures from business, arts, sports, and science, offering students a rare opportunity to engage with prominent leaders and gain perspectives across diverse fields.





Workshop on graphic design using Adobe Illustrator

YTU hosted a hands-on workshop on graphic design using Adobe Illustrator, led by Elif Buse Yeter, an experienced designer with a strong background in the creative industry. The session introduced students to the fundamentals of visual communication and design, combining theoretical knowledge with practical exercises.

Participants enhanced their digital literacy and creative competencies, learning how to translate imagination into professional design outputs. The training also contributed to strengthening students' career readiness by equipping them with transferable skills relevant to both engineering and creative sectors.



Introduction to Mechanics with SolidWorks & Technical Drawing

A certified training program entitled "Introduction to Mechanics with SolidWorks & Technical Drawing" was held at the Faculty of Electrical and Electronics Engineering. Conducted by the YTU IEEE club's R&D team, the training provided participants with essential knowledge in computer-aided design (CAD), 3D modeling, and technical drawing principles. The program aimed to bridge theoretical learning with practical design skills, offering students the opportunity to develop competencies widely sought in engineering and industrial applications. The program enabled participants to practice transforming mechanical concepts into accurate digital models, while also familiarizing them with professional standards in technical drawing.



Yıldızlı Söyleşiler series

A technical visit to Microsoft provided students with a unique opportunity to experience one of the world's leading technology companies up close. YTU students explored Microsoft's dynamic and innovative working environment, gaining first-hand insights into how cutting-edge solutions are developed and implemented on a global scale.

Chemistry Sector Event

KİMSEK'7 (Chemistry Sector Event) was organized on 28–29 February 2024 at YTU Davutpaşa Historical Bath by YTU KİMTEK. The seventh edition of this annual event brought together leading companies from the chemical industry, providing students with opportunities to explore the wide scope of the sector, gain insights into industrial practices, and discover internship prospects.





Yıldızlı Söyleşiler series

Şişecam Technical Visit was organized on 6 March 2024 by the Chemistry Technologies Student Club (KİMTEK). The visit took students to Şişecam's Flat Glass Factory in Bursa and the Yenişehir R&D Regional Laboratory, where they observed large-scale industrial production processes and research operations in one of Türkiye's leading industrial groups. The visit offered students a unique opportunity to observe real-world applications of glass and chemical production, while gaining insights into industrial research practices.



Annual Science Festival

YTU hosted the ninth edition of the annual Science Festival at Davutpaşa Campus. The event transformed the central courtyard into a vibrant hub of learning and creativity, where students and visitors engaged in hands-on workshops, interactive experiments, and showcases spanning cosmetics, skincare, food science, and beyond.

The festival combined scientific exploration with cultural activities such as music and dance, creating an inclusive and dynamic atmosphere that attracted a broad audience. The initiative fostered science communication, enhanced student engagement, and promoted the public understanding of science in an enjoyable and accessible format.

Second Technical Knowledge Session

On 2 April 2024, the Chemical Technologies Club organized its second technical knowledge session of the semester, featuring Assoc. Prof. Dr. Ömer Tahir Günkara, Head of the Günkara Research Group. The program offered students a guided laboratory tour, during which they explored current research projects in organic chemistry and gained valuable insights into advanced scientific methodologies. Dr. Günkara, who completed his undergraduate, master's, and doctoral studies in chemistry at Yıldız Technical University, shared his academic journey, international research experiences, and perspectives on interdisciplinary collaboration in chemistry, cosmetics, and food sciences. His presentation not only highlighted pathways for scientific excellence but also inspired students to pursue impactful careers in both academia and industry.





Career Planning Training

At YTU, the Chemical Technologies Club, in collaboration with Startern, organized a Career Planning Training session on 24 April 2024. The program featured İlker Canbulut, founder of the Leadership Development Program and a certified PCC trainer, who has been delivering leadership and personal development trainings to university students for over four years.

The session enabled students to reflect on their own career journeys, explore strategies for effective planning, and gain first-hand insights into professional goal setting.

Science Festival

On 8 May 2024, annual Science Festival (Bilim Şenliği) brought together students, academics, and industry representatives in a dynamic open-air setting at the Davutpaşa Campus, featuring interactive workshops, live demonstrations, and networking opportunities. The event aimed to foster scientific curiosity, practical learning, and collaboration across disciplines, while also raising awareness of sustainability and innovation in everyday applications.



Workshops and Activities

Roll-On Perfume Workshop (Miss Valerie Organic Beauty): Participants learned about natural ingredients and sustainable approaches to cosmetic formulation, while creating their own personalized roll-on perfumes.

Atıksız Mutfak ve Mikrofiliz Atölyesi (EkBiçYeİç): A hands-on session led by a dietitian and pastry chef introduced participants to zero-waste cooking practices and the nutritional benefits of microgreens, aligning with sustainable food systems.

Micellar Face Cleanser Workshop (Parkim Group): This session explored the formulation of micellar-based skincare products, combining chemistry with health-conscious cosmetic innovation.

Cream Workshop (Kale Kimya): Participants gained insights into emulsion science and practical techniques in cream formulation, supported by an industry-leading chemical company.

Cologne Workshop (Rebul): A historical Turkish brand guided students through the cultural and chemical aspects of cologne production, connecting tradition with modern perfumery practices.



Oksijen

In April 2024, the KIMTEK at Yıldız Technical University published a special issue of its digital science magazine Oksijen, dedicated to the theme of sustainability. The e-magazine featured original articles, interviews, and analyses exploring ecological footprints, innovative green technologies, and responsible production practices.

The magazine encouraged students to actively participate in science communication while raising awareness of sustainability challenges at both local and global levels. In addition, it created a space for knowledge sharing and collaboration, strengthening the link between scientific research, societal awareness, and industrial practice.

Machine Learning

YTU organized a four-week online training program on Machine Learning, delivered by Fethi Tekyaygil via Zoom, between 31 January and 23 February 2024. The course was scheduled twice a week (Wednesday–Friday, 18:00–20:00) and aimed to strengthen students' skills in software development, data science, and artificial intelligence applications.





Excel for Modeling

YTU Meditek Club organized a free online training program on 'Excel for Modeling,' held on 12–13 May 2024 and delivered by Bahadır Ören. The two-day course enhanced students' digital competencies in data analysis and practical modeling, equipping them with skills highly relevant for both academic research and professional careers. By providing accessible training opportunities, the initiative contributed to advancing quality education and supporting students' employability.



Frequently Confused Disciplines: Biomedical Engineering

On 6 March 2024, YTU Meditek Club released a podcast episode titled 'Frequently Confused Disciplines: Biomedical Engineering.' The program, broadcast on Spotify, aimed to clarify misconceptions about the field, support students in making informed academic choices, and enhance public understanding of biomedical sciences.

17 PARTNERSHIPS FOR THE GOALS

Science Festival

The BioCreators team from YTU Medical Technologies Club was selected as a finalist in the Teknofest 2024 Biotechnology Innovation Competition in the university and above category, standing out among more than 2,300 applications. The team presented an innovative concept on designed microbial bio-ink and 3D bioprinting for osteoarthritis treatment, addressing critical healthcare challenges. This achievement enhanced students' capacity in research, innovation, and interdisciplinary collaboration.

17 PARTNERSHIPS FOR THE GOALS





Project Development Camp

Between 28 November and 12 December 2024, YTU Meditek organized a four-session online Project Development Camp via Zoom, led by Education Coordinator Sadiye Arsoy. The certified training program introduced students to the fundamentals of project preparation and proposal writing, with a special focus on TÜBİTAK 2209 A/B applications. The sessions covered project idea generation, structure and methodology, literature review, budgeting, time planning, writing techniques, and presentation skills.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
17 PARTNERSHIPS FOR THE GOALS



The Stars of the Year Awards

Organized by Yıldız Technical University Business Club, The Stars of the Year Awards is recognized as one of Turkey's most prestigious student award ceremonies. The event celebrates excellence across 34 categories, highlighting individuals, brands, and projects that have made outstanding contributions in their fields. Held at the YTU Davutpaşa Congress and Culture Center on January 11, 2024, the ceremony strengthens the bridge between academia and the business world while fostering students' leadership, organizational, and communication skills.

Machine Learning

BizBize Talks is a signature event that brings together successful figures from the arts, television, and entertainment sectors to share their professional experiences and personal insights with students. The 2024 session, held on February 20 at the Davutpaşa Congress and Culture Center, hosted renowned guests including Murat Aygen, Onur Tuna, Atiye, and Gözde Kansu. The event fosters dialogue, motivation, and knowledge exchange between students and professionals, contributing to personal and professional growth within the university community.





Walk-Up Career

Organized by the Yıldız Technical University Business Club, Walk-Up Career is a long-running professional development initiative that enables students to visit the headquarters and factories of leading companies such as Ford Otosan, Mercedes-Benz, ShiftDelete.net, Otokar, and KPMG. In its 10th year, the 2024 spring tour included stops in Eskişehir, İstanbul, and Sakarya. The program aims to strengthen students' understanding of industry practices, enhance career readiness, and build meaningful connections between academia and the corporate sector.

8 DECENT WORK AND ECONOMIC GROWTH 17 PARTNERSHIPS FOR THE GOALS

Science Festival

TIME to TALK is an annual conference that connects students with professionals and executives from leading companies. Held on April 24–25, 2024, at Eresin Hotels Topkapı, the event featured keynote talks, sustainability and finance panels, and sessions on digital transformation and leadership. The program aimed to inspire students, expand their professional networks, and enhance awareness of industry trends and sustainability practices



8 DECENT WORK AND ECONOMIC GROWTH 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 17 PARTNERSHIPS FOR THE GOALS



Career Fair

Career Fair is a three-day campus festival that brings together dozens of companies, NGOs, and partners for employer booths, career talks, skills workshops, and evening concerts. Held 7–9 May 2024 in the main tent area (in front of the refectory), the event connects students with recruiters, showcases internship and job opportunities, and strengthens university–industry engagement across multiple sectors.

8 DECENT WORK AND ECONOMIC GROWTH 17 PARTNERSHIPS FOR THE GOALS



MeetWork

Organized by the Yıldız Technical University Business Club, MeetWork is a long-standing networking summit that brings together some of Turkey's most successful student clubs. The 9th edition took place on September 16, 2024, at Komün Galataport, creating a platform for knowledge exchange, collaboration, and peer learning among student leaders from various universities. The event fostered inspiration, teamwork, and strategic partnership opportunities, enhancing student engagement and inter-university cooperation.

Just In Case

Just In Case 2024 was held on November 5–7, 2024, at Uranus Hotel Cevizlibağ. The event brought together students and industry professionals for interactive recruitment simulations, case studies, and skill-based workshops designed to enhance participants' real-world business understanding. Over the course of 48 hours, attendees engaged with expert company representatives, learned about hiring processes, and developed problem-solving, analytical, and communication skills critical for professional success.





Vokalik

Vokalik is a long-term social responsibility project that makes books accessible to everyone, especially to individuals with visual impairments. Through volunteer-based audiobook recordings, the project promotes inclusive education, accessibility, and the love of reading across all audiences. In 2024, the initiative continued to expand its digital audiobook collection, bringing literature and knowledge to those who face barriers to traditional reading.



Update Yourself

Update Yourself is one of the longest-running student-led career events in Türkiye. The 19th edition took place on December 5–6, 2024, at the Tarihi Hamam venue, bringing together students and professionals through seminars, company booths, and interactive networking sessions. The event provided career guidance, personal branding tips, and employment opportunities, supported by leading national and international sponsors across various industries.

Startup MockUp 2024

Organized by the Yıldız Technical University Entrepreneurship Club, Startup MockUp 2024 is an entrepreneurship and innovation competition designed to empower early-stage startups and aspiring entrepreneurs. The program offered participants access to mentorship, open office spaces, pre-incubation opportunities, and training sessions, culminating in a major final event in May 2024. Through education, mentorship, and collaboration, the competition encouraged creativity, problem-solving, and sustainable business development among young innovators.





Career Fair

Tea Talk session held on March 13, 2024, at the Faculty of Arts and Sciences – Genç Office, featured Eray Uğurelli, Co-Founder and CEO of Kidolog. The event provided an informal yet insightful discussion on entrepreneurship, digital innovation, and leadership. Students had the opportunity to learn about startup culture, business scaling, and the challenges of founding a tech-driven enterprise directly from an industry leader.



Entrepreneurship Club students visited Türk Telekom Ventures

On April 30, 2024, YTU Entrepreneurship Club students visited Türk Telekom Ventures for an inspiring office tour at the Tahtakale Santral Office. Throughout the visit, students discovered how innovative ideas grow into successful startups, met with professionals from the venture ecosystem, and explored internship and career opportunities that connect creativity with technology.

Members of the Yıldız Technical University Entrepreneurship Club Visited IdeaSoft's Headquarters

On May 21, 2024, members of the Yıldız Technical University Entrepreneurship Club visited IdeaSoft's headquarters in Üsküdar, Istanbul. During the visit, students explored how one of Turkey's leading e-commerce technology companies operates and learned about the fundamentals of digital business through an E-Commerce 101 session. The program also provided networking opportunities, internship prospects, and insights into innovation-driven career paths.





Global Entrepreneurship Days

Held on November 4, 2024, Global Entrepreneurship Days brought together leading entrepreneurs and investors to inspire young innovators at Yıldız Technical University. The opening session featured Kenan Açıkelli, Co-Founder and CEO of Mükellef (a Workhy company), and Kenan Çolpan, General Partner at Boğaziçi Ventures. Participants had the chance to hear real-world experiences about building startups, managing companies, and establishing strong relationships with investors. The event aimed to bridge between academia and the entrepreneurial ecosystem by offering students practical insights into business creation, funding, and innovation management.



Turkcell Tea Talk

Hosted by the Yıldız Technical University Entrepreneurship Club, the Turkcell Tea Talk took place on November 27, 2024, at the Faculty of Arts and Sciences (Block C, Room 152). The event featured a team of experts from Turkcell, one of Turkey's leading technology companies, who shared insights on software development life cycles, agile project management, mobile application experience, and business analysis practices at Turkcell.

Through this engaging and interactive session, students gained a deeper understanding of real-world software processes, innovation management, and career opportunities in the tech industry.

Startup MockUp 2024

Held on December 7, 2024, Ideathon 2024 brought together imaginative students and young professionals eager to turn their ideas into impact. During this open-innovation challenge, participants formed teams, brainstormed creative concepts, and developed practical solutions to real-world problems.

Throughout the day, they joined inspiring workshops on Design Thinking, Business Model Canvas, and Artificial Intelligence, led by experienced mentors from the field. The event helped participants strengthen their teamwork, creativity, and problem-solving abilities while encouraging cross-disciplinary collaboration.





Flash Forward 2024

Flash Forward 2024, organized by the Yıldız Technical University Erasmus Club, took place on December 9, 2024, at the Faculty of Arts and Sciences. The event aimed to guide students who plan to apply for Erasmus exchange or internship programs by connecting them with peers who have already participated in these international experiences.

During the session, returning Erasmus students shared practical insights on academic life abroad, cultural adaptation, and the application process. The event fostered an open environment for sharing advice, answering questions, and motivating new applicants to take part in international learning opportunities.



Swingin' Stars 2024

Organized by the Faculty of Art and Design, Music Department, Swingin' Stars 2024 was held on May 13, 2024, at Yıldız Technical University's Davutpaşa Campus. The event featured live performances by acclaimed jazz artists Tamer Temel, Kuzey Sinan Aktuğ, Volkan Topakoğlu, and Sergy Malvetz, creating an inspiring atmosphere that celebrated creativity and musical expression.

The Acoustic Concert Series 2024

The Acoustic Concert Series 2024, hosted at the Davutpaşa Congress Center on November 5, 2024, brought together some of Turkey's most beloved artists for a day filled with music, conversation, and inspiration. Featuring performances and talks by Ogün Sanlısoy, Bulutsuzluk Özlemi, Badem, Can Güngör, and Selin Çıngır, the event offered students and the university community a chance to experience the unifying power of art and music.





Global Entrepreneurship Days

Organized by the YTU Child and Education Club, the 9th Education Summit was held on November 12, 2024, at the Davutpaşa Congress Center. The event featured a live acoustic performance, organized in collaboration with the YTU Music Club, and a photography exhibition prepared by the YTU Photography Club in the foyer area.

This vibrant event blended education, art, and music, creating a dynamic atmosphere that emphasized creativity, collaboration, and student engagement across disciplines.



A Documentary Perspective on Photography: The Aesthetics of Objectsk

"A Documentary Perspective on Photography: The Aesthetics of Objects" took place on March 4, 2024, at the Faculty of Art and Design. The event featured Kâmil Fırat, one of Turkey's most prominent photographers and academics, who shared his insights on visual storytelling, aesthetics, and the philosophical dimensions of documentary photography.

The session encouraged students to view photography not merely as a technical skill, but as a medium of expression, cultural documentation, and creative communication — blending art, culture, and education in a single frame.



Digital Photography Workshop with Erman Çivici

"Digital Photography Workshop with Erman Çivici" took place on April 26, 2024, at Estanbul Studio as part of the Fkare Photography Festival organized by the Yıldız Technical University Photography Club (YTÜFOK). The session was led by photographers Erman Çivici and Berkay Karakaya, who guided participants through the creative and technical aspects of digital photography.

Throughout the workshop, students practiced composition, lighting, and camera techniques in a real studio setting. The event offered an inspiring space for creative exploration, helping participants express their artistic vision while enhancing their practical photography skills.



Fkare '24: What If We're Wrong?

"Fkare '24: What If We're Wrong?" was held on April 25–27, 2024, at Yıldız Technical University's Davutpaşa Campus. Organized by the YTU Photography Club (YTÜFOK), the festival aimed to highlight the artistic and emotional depth of photography while fostering dialogue, creativity, and cultural exchange among participants.

Since its inception in 2011, Fkare has been recognized as Turkey's first university-based photography festival, blending amateur spirit with professional artistry. 2024's theme, "What If We're Wrong?", encouraged participants to rethink visual perception, challenge assumptions, and explore photography as both an art form and a medium for critical reflection.

The three-day event featured workshops, talks, and exhibitions that brought together artists, academics, and students to engage in shared learning and creative exploration.



Basic Photography Training with Ali Enes Hangün

"Basic Photography Training with Ali Enes Hangün" took place on October 23, 2024, at the Faculty of Art and Design (Room B-2029). The session was organized by the Yıldız Technical University Photography Club (YTÜFOK) in collaboration with Nikon Türkiye and Karacasu Group.

The training provided participants—both beginners and enthusiasts—with fundamental knowledge of photography, including camera settings, composition, and lighting techniques. Led by Ali Enes Hangün from Nikon Türkiye, the session focused on bridging theoretical understanding with practical insights, encouraging students to develop visual awareness and creativity through hands-on learning.



Adobe Lightroom Training with Dayk Danzig

Adobe Lightroom Training with Dayk Danzig took place on November 6, 2024, at the Faculty of Art and Design. The event was organized by the Yıldız Technical University Photography Club (YTÜFOK) and featured Dayk Danzig, President of the Board of Directors at İFSAK (Istanbul Photography and Cinema Amateurs Association).

The session introduced participants to the fundamentals of Adobe Lightroom, focusing on editing techniques, workflow management, and visual storytelling. The workshop encouraged students to explore creative post-production methods while enhancing their technical and artistic skills in photography.



Existence, Uniqueness, and Regularity of Problems in Degenerate Elliptic Differential Equations

Prof. Dr. Yusuf Zeren from Yıldız Technical University's Department of Mathematics conducts the project "Existence, Uniqueness, and Regularity of Problems in Degenerate Elliptic Differential Equations" under the TÜBİTAK 2501–NSF Bilateral Cooperation Program.

The project contributes to theoretical mathematics and provides a foundation for computational and applied sciences, including engineering and data modeling. This collaboration with the U.S. National Science Foundation (NSF) enhances international research capacity, promotes knowledge exchange, and strengthens mathematical innovation at the global level.



Characterizations of Input-to-State Stability Related Properties for Time-Delay Systems

Dr. Gökhan Göksu from the Department of Mathematical Engineering at Yıldız Technical University leads a bilateral research project titled "Characterizations of Input-to-State Stability Related Properties for Time-Delay Systems" under the TÜBİTAK 2509–France Ministry of Foreign Affairs Cooperation Program.

The project aims to investigate the integral input-to-state stability (iISS) and the strong iISS Lyapunov–Krasovskii conditions for time-delay systems, bringing together Turkish and French research teams.

Beyond its scientific outcomes, this collaboration contributes to the advancement of control theory, strengthens international academic partnerships, and enhances the training of undergraduate and postgraduate researchers.



Basic Photography Training with Ali Enes Hangün

Prof. Dr. Mehmet Fatih Amasyalı, faculty member at the Department of Computer Engineering, Faculty of Electrical and Electronics Engineering, Yıldız Technical University, received support under the TÜBİTAK 1001 – Scientific and Technological Research Projects Support Program for his project titled "Collaborative Language Models."

The project aims to enable large language models (LLMs), such as ChatGPT, to collaborate effectively in order to achieve more scalable, efficient, and adaptive problem-solving. By developing a cooperative framework among language models, the study contributes to the advancement of artificial intelligence systems that can integrate distributed reasoning, improve contextual understanding, and enhance performance across multiple computational tasks.



5th Yıldız Cinema Festival – Short Film Selection

"5th Yıldız Cinema Festival – Short Film Selection" took place from May 6 to 10, 2024, across several venues including Kadıköy Cinema, Grand Pera Cinema, and Yıldız Technical University Davutpaşa Campus. The festival was organized by the Yıldız Technical University Cinema Club, celebrating the art of filmmaking and providing a platform for young filmmakers to showcase their works.

The event featured screenings of short films, panel discussions, and talks with directors, writers, and actors such as Melisa Önel, Şerif Erol, and Murat Meriç. The festival also included an open-air screening of My Neighbor Totoro, fostering a community atmosphere through cinema and culture.

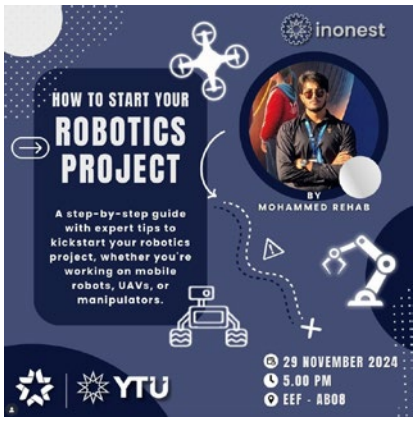
By combining film, education, and artistic expression, the festival encouraged cultural dialogue and creative engagement among students and the wider public.

3D Designing on SolidWorks Workshop"

"3D Designing on SolidWorks Workshop" was organized by the YTU International Students Club on November 6, 2024, at the Faculty of Electrical and Electronics Engineering, Room C155.

The workshop introduced participants to the fundamentals of 3D modeling and design using SolidWorks software. It provided hands-on training to help students understand the basics of digital product design, mechanical visualization, and simulation. Open to all skill levels, the session encouraged practical learning and skill-building through interactive exercises.





How to Start Your Robotics Project Workshop

"How to Start Your Robotics Project Workshop" was held on November 29, 2024, at Yıldız Technical University, Faculty of Electrical and Electronics Engineering (EEF - AB08).

The workshop, led by Mohammed Rehab and organized in collaboration with Inonest, guided participants through the fundamentals of initiating robotics projects. The session provided a step-by-step framework and practical advice for selecting suitable robotics topics and implementing projects involving mobile robots, UAVs, or robotic manipulators.

Computer Science 101 Workshop

"Computer Science 101 Workshop" was held on December 10, 2024, at Yıldız Technical University, Faculty of Electrical and Electronics Engineering (EEF - C153).

Organized by Inonest, the workshop was conducted by Osama Elbagory and introduced participants to the fundamental principles of computer science. Topics included algorithmic thinking, programming logic, and practical problem-solving through basic coding applications.

This beginner-friendly session provided a valuable foundation for students interested in exploring software development, computational thinking, and the digital technologies shaping the future.





The Kamp Akademisi (Camp Academy)

The Kamp Akademisi (Camp Academy), organized in collaboration between the YTU Nature and Outdoor Sports Club (YTÜGEKA) and Esenler Municipality, offered participants a hands-on introduction to the essentials of camping and outdoor living.

Throughout the sessions, participants explored practical topics such as tent setup, equipment selection, cooking outdoors, and basic safety.



The GÖÇEBE'24

The GÖÇEBE'24 event, organized by the YTU Nature and Outdoor Sports Club (YTÜGEKA), took place on April 30, 2024, at the Historic Bath in Davutpaşa Campus.

This annual gathering brought together students and guest speakers for engaging talks, discussions, and interactive sessions focused on travel, exploration, and sustainable living. Alongside the inspiring conversations, participants enjoyed prize draws and activities that fostered community spirit and environmental awareness.

The Chess Festival

The Chess Festival was held on March 15, 2024, at Orta Bahçe. This outdoor event brought together chess enthusiasts from across the university for a fun and interactive day. Participants enjoyed friendly matches, exchanged strategies, and strengthened their analytical and social skills in a relaxed atmosphere. The event encouraged intellectual engagement, sportsmanship, and community building..





Flash Forward 2024

The Yıldız Sailing Team proudly represented Yıldız Technical University at the Presidency International Yacht Races – Republic Cup, held between October 26–29, 2024.

After two intense days of competition, the team achieved an impressive 3rd place in the Sportsboat B class category.



The BRCGS Quality Standards Training,

The BRCGS Quality Standards Training, organized by the YTU Food Club, took place on May 7, 2024, at KMB-327, Faculty of Chemical and Metallurgical Engineering.

Led by expert Okşan Bitirmiş, the full-day certified training covered global food safety standards, audit procedures, and risk-based quality management principles. The event provided participants with valuable insights into international compliance and quality assurance systems, supporting their professional development in the food industry.

CV Training and Interview Simulation

The CV Training and Interview Simulation event, organized by the YTU Food Club, was held on October 23, 2024, at the Historic Bath (Tarihi Hamam).

The first session, starting at 10:00, featured career experts from Eriş Gıda and Anadolu Efes, who provided certified training on professional CV preparation. In the afternoon session, participants engaged in mock interviews conducted by HR professionals from various industries. This hands-on experience helped students strengthen their self-presentation and communication skills, preparing them for real-world recruitment processes.





Global Entrepreneurship Days

The Yıldız Semi-Open Debate Tournament, organized by the YTU Debate and Negotiation Club, was held on January 20–21, 2024, at Yıldız Campus (Beşiktaş).

The tournament brought together 64 teams from various universities, offering participants the opportunity to enhance their skills in argumentation, critical thinking, and persuasive communication. The event fostered meaningful dialogue among young people and promoted a culture of open-minded, respectful debate.



2nd Yıldız Science Workshop

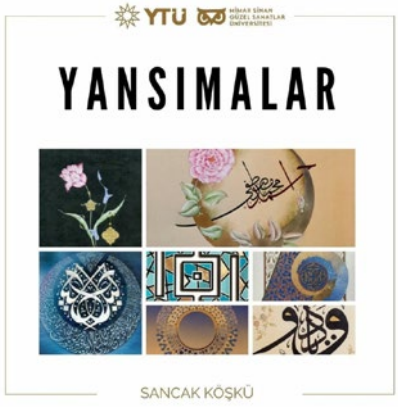
The 2nd Yıldız Science Workshop, organized by the YTU Debate and Negotiation Club, took place on April 27–28, 2024.

The event brought together students from different disciplines to explore innovative scientific ideas and develop teamwork skills. Participants joined various teams, including social media, public relations, finance, and academia, contributing to the organization and execution of the workshop.

3D Designing on SolidWorks Workshop”

The “Reflections” (Yansımalar) exhibition was hosted at YTU Sancak Mansion, a restored cultural heritage site on the YTU Davutpaşa Campus, in collaboration with Mimar Sinan Fine Arts University.

The exhibition featured the exquisite works of Dr. Faruk Taşkale, Dr. Hüseyin Gündüz, and their students, showcasing the beauty of traditional Turkish arts such as calligraphy, illumination (tezhip), and ornamentation.





YTU Startup House – Community Reunion: Artificial Intelligence Theme

The YTU Startup House Community Reunion, held on March 7, 2024, brought together entrepreneurs, innovators, and ecosystem partners around the theme of Artificial Intelligence (AI).

This engaging event aimed to strengthen collaboration, foster partnerships, and create new opportunities within Yıldız Technical University’s entrepreneurial ecosystem. Participants had the chance to connect with like-minded professionals, exchange ideas, and explore how AI is transforming the world of entrepreneurship.

Rector Prof. Dr. Eyüp Debik Honors YTU Innovators at TEKNOFEST and ISIF'24 Awards Ceremony

YTU Rector Prof. Dr. Eyüp Debik hosted an award ceremony to celebrate the remarkable achievements of YTU students and entrepreneurs who excelled at TEKNOFEST and ISIF'24 (International Invention Fair). During the event, Rector Debik personally presented awards to the winners, recognizing their innovative spirit and dedication to advancing technology and research.

Competing among 354 submissions, YTU teams and startups received gold, silver, and bronze medals, as well as the prestigious Turkish Patent "Best Domestic Invention Special Award", showcasing the university's leadership in science, technology, and entrepreneurship.

In his opening speech, Prof. Dr. Eyüp Debik highlighted the significance of innovation and entrepreneurship, stating:

"Entrepreneurship is not only about creating a business or technology; it's about taking risks, overcoming challenges, and shaping a better world with an innovative mindset. Each of you has turned theory into practical success, contributing not only to your own growth but to our country's technological and economic development. At Yıldız Technical University, we are here to support and empower you on this journey — together, we will continue to grow."

The event was attended by YTÜ Yıldız Teknopark General Manager Assoc. Prof. Dr. Muhammet Garip, company representatives, students, and senior university officials including Vice Rectors Prof. Dr. Vatan Karakaya, Prof. Dr. Hüseyin Yılmaz, Prof. Dr. Ahmet Göksel Ağargün, and Secretary-General Ahmet Yüksel Karahan.





Awards

Best Domestic Invention Award (TÜRKPATENT): Biolive – Olive seed waste-based bioplastic granule production.

Gold Medals: Thread in Motion (Smart Glove), Baktek Environmental Technologies (Hybrid Bioremediation Device).

Silver Medals: Rass Technology (Helmet Lock & Phone Holder), Haus Gıda (Snack Boza), Oraytbe Technology (H_2S Fuel Cell System), Afara Agricultural Technologies (Cotton Harvest Robot).

Bronze Medal: YTU Academic Team (Hydrophobic Additive from Waste Blood).

TEKNOFEST Student Achievements

AESK Team – Multiple awards in Electromobil and Autonomous Vehicle categories.

HERMES Team – 1st Place in Wireless Communication.

WIND, STARLOOP, COGITATORS, BAZZLAMA, AG4TECH, and AFARA Teams – Top positions across AI, e-commerce, and innovation competitions.

These achievements reaffirm Yıldız Technical University's commitment to fostering entrepreneurship, innovation, and research excellence, empowering its students and researchers to contribute to Turkey's technological advancement and global competitiveness.



GEIKSTEM+A Technical Visit to Tech Istanbul Başakşehir

The GEIKSTEM+A team visited Tech Istanbul | Başakşehir, one of the leading innovation and entrepreneurship hubs of the Istanbul Metropolitan Municipality, to explore the city's vibrant technology and startup ecosystem.

During the visit, participants engaged in interactive discussions on data-driven innovation, emerging technologies, and entrepreneurship opportunities, gaining valuable insights into how Tech Istanbul supports startups through mentoring, networking, and acceleration programs.

The program provided a unique opportunity for students to observe the real-world applications of STEM-based innovation, understand urban technology initiatives, and explore potential collaboration opportunities within the local tech ecosystem.

Yıldız Technical University extends its gratitude to Tech Istanbul for their hospitality and inspiring contributions to the entrepreneurial community.



Innovation Summit

The Innovation Summit (İnovasyon Zirvesi), organized for the first time by the Development and Innovation Club of Yıldız Technical University, took place on February 19, 2024, at the Historic Bath (Tarihi Hamam) on the Davutpaşa Campus.

The event brought together students, entrepreneurs, and innovators interested in entrepreneurship, startups, and innovation, offering an inspiring platform for those who have ideas but are unsure where to start.

Throughout the summit, participants discussed innovative ideas aimed at solving global and local challenges, explored how to improve existing systems through creativity and technology, and listened to the success stories of leading figures who are shaping the world of innovation.

The event served as a dynamic bridge between academia and the entrepreneurial ecosystem, empowering students to take their first steps toward creating impact-driven, sustainable, and future-oriented solutions.



Development Week (13-14 May 2024)

Organized within the scope of Development Week, YTU hosted a series of creative workshops, inspirational talks, and artistic experiences designed to encourage personal growth, innovation, and hands-on learning.

Workshops and Activities

Held at the Experience Center (Deneyim Merkezi), the two-day event featured multiple design-oriented and artistic sessions with limited participation:

- Canvas Bag Painting Workshops
- Porcelain Cup Design
- Punch Badge Making
- Ceramic Workshop

Customized Shoe Design Workshop (MAI Shoes) – where participants brought their own shoes and created unique hand-painted designs.

Guest Speakers

In addition to the workshops, students had the opportunity to meet creative professionals and influencers who shared their experiences and career journeys:

- Robin Yayla – Illustrator
- Arda Baloğlu – Athlete, Trainer & Content Creator
- Berk Armağan – Travel Artist (Seyyahart)

Through these diverse sessions, Gelişim Haftası created an engaging and inspiring atmosphere that combined creativity, entrepreneurship, and self-expression, reflecting YTU's commitment to fostering innovation-driven personal and professional development.



Innovation Summit '24

The Innovation Summit '24, organized by the Development and Innovation Club of YTU, brought together leading experts, entrepreneurs, and industry professionals to discuss emerging trends in entrepreneurship, startups, and innovation. The event, held at the Historical Hamam, marked the club's first major innovation summit and became a hub for students passionate about creating change through creative thinking and technology.

The summit featured a full day of sessions, panels, and interactive activities, including a Kahoot session to engage participants in innovation-themed learning. Esteemed speakers represented globally and nationally recognized companies such as Microsoft, Vestel Mobility, Enerjisa, Aygaz, DeFacto, Hummel, and Digital Turbine

Speakers included:

Gizem Ün Işıldak – Brand Strategy & CSM Team Lead, Digital Turbine

Kerim Cantürk – Group Manager, Digital Innovation & Business Solutions, DeFacto

Kürşad Koç – Ecosystem & Business Developer, Vestel Mobility

Daron Yöndem – Tech Lead, Microsoft

Semih Dilsiz – Innovation and Intellectual Property Manager, Aygaz

Tümay Solak – Innovation Manager, Enerjisa

The Innovation Summit '24 successfully inspired participants to explore innovative solutions for today's challenges and encouraged interdisciplinary collaboration among students, academics, and professionals. The event fostered a culture of creativity, innovation, and entrepreneurship, aligning with YTU's vision of becoming a leader in technology-driven transformation.



Interactive Seminar

This interactive seminar, organized by YTU MiNT (Mentorship and Networking Team), explored the fundamental concepts of entrepreneurship, addressing both traditional entrepreneurship models and the emerging frameworks of advanced entrepreneurship shaped by digitalization and innovation.

Participants gained insights into:

- The evolution of entrepreneurship from traditional to innovation-driven models,
- The dynamics of startup ecosystems and technopark initiatives,
- Strategies for idea generation, business modeling, and scaling,
- Success stories from YTU Technopark entrepreneurs.

The session provided a hands-on perspective on transforming creative ideas into viable business ventures and introduced students to opportunities within YTU Technopark's startup ecosystem.



Introduction to Artificial Intelligence

Organized by YTU MiNT (Mentorship and Networking Club) and supported by Huawei Student Developers (HSD), this session introduced participants to the foundations and applications of Artificial Intelligence (AI) through a hands-on and engaging format.

The event covered:

- Core concepts of AI and Machine Learning,
- Practical examples of AI use in everyday technologies,
- The structure of AI models and data-driven learning,
- Future trends and career opportunities in AI research and development.

Led by Huawei AI Research Engineer Ege Kesim, the session emphasized the importance of interdisciplinary learning and human-centered AI, encouraging participants to explore how intelligent systems are shaping industries and innovation ecosystems.



How To Generate And Refine Innovative Business Ideas

Hosted by YTU MiNT, the session focused on how to generate and refine innovative business ideas, combining creativity with strategic thinking.

Throughout the event, participants explored:

- Techniques for creative thinking and identifying market needs,
- Steps to transform an idea into a sustainable business model,
- The influence of digital transformation and AI on entrepreneurship,
- Methods for testing, validating, and scaling innovative concepts.

Drawing on his experience in growth strategy and AI transformation, Veli Bahçeci inspired attendees to think beyond conventional frameworks and adopt a resilient, data-driven, and future-oriented entrepreneurial mindset.

Entrepreneurship and Artificial Intelligence Summit

The Entrepreneurship and Artificial Intelligence Summit, organized by YTU MiNT (Mentorship and Networking Team), brought together leading innovators, entrepreneurs, and technology experts to explore the intersection of AI, business innovation, and digital transformation.

The event featured a diverse lineup of industry professionals who shared their insights on the evolving dynamics of entrepreneurship in the AI era:

- **Aydın Cankat** (Innovation & Entrepreneurship Director, Yapı Kredi) – ***Corporate innovation and startup collaboration***
- **Erkan Yıldırım** (CEO & Founder, DigitalWisers) – ***Data-driven entrepreneurship and AI-powered business design***
- **Oğuz Alper Öktem** (CEO & Founder, Martı) – ***Scalability and smart mobility solutions***
- **Mustafa Can & Mustafa Acungil** (Açık Beyin) – ***Human intelligence, learning, and adaptability in entrepreneurship***
- **Devrim Danyal** (Founder, Blockchain & AI Academy) – ***Blockchain-AI synergy and future skills***
- **Turhal Temizer** (VP of AI and Open Banking, Akbank) – ***AI integration in finance and customer experience innovation***



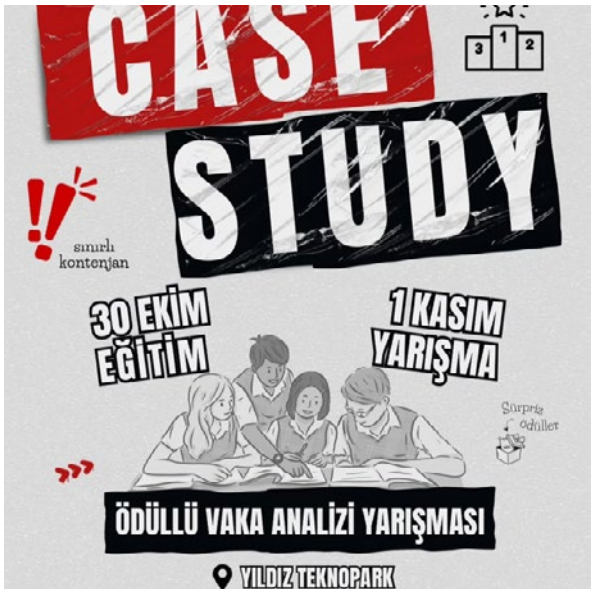


Mintoloji

Mintoloji marked the opening of the new academic year with an interactive orientation and networking program designed to welcome students into Yıldız Technical University's innovation, entrepreneurship, and sustainability ecosystem. The event featured inspiring talks on the university ecosystem and club culture, career opportunities in technology, and the influence of digital media on professional growth, delivered by speakers from the private sector and creative industries, including representatives from Techcareer.net and leading content creators.

The event encouraged collaboration, interdisciplinary communication, and professional networking. Students gained awareness of the university's ecosystem, while learning about career planning, digital innovation, and influencer-based entrepreneurship.





Mintoloji

The Case Study Competition offered an engaging platform for students to apply analytical and strategic thinking skills to real-world business challenges. The two-day event began with an educational session on October 30, equipping participants with essential case-solving techniques and teamwork strategies. On November 1, students competed in teams to develop innovative and practical solutions to complex scenarios, fostering collaboration, creativity, and decision-making under pressure.

Participants benefited from mentorship opportunities, exposure to problem-solving methodologies, and direct interaction with industry experts. The event emphasized experiential learning, empowering students to develop both critical thinking and communication skills in a simulated corporate environment.





Marketing+ Summit

YTU hosted the Marketing+ Summit, a multidisciplinary event that brought together professionals, entrepreneurs, and students to strengthen the bridge between academia and industry in the fields of marketing, communication, and digital innovation. The event provided a platform for knowledge exchange and career-oriented dialogue between university students and leading industry figures.

Through interactive panels, keynote sessions, and networking activities, participants gained insights into emerging marketing technologies, digital transformation, consumer behavior, and sustainable branding strategies. The summit contributed to the professional development of students by exposing them to real-world marketing practices and encouraging collaboration across disciplines.

The Defence Industry Summit 2024

The Defence Industry Summit 2024 marked the third edition of Yıldız Technical University's flagship event dedicated to national defence technologies and industrial innovation. Hosted at the Historical Hamam in Davutpaşa Campus, the summit convened prominent representatives from Türkiye's leading defence and technology companies alongside academic experts and aspiring engineers.

The two-day program featured a series of technical presentations, innovation panels, and career-oriented sessions, offering insights into next-generation defence systems, materials science, and digital transformation within the sector. Company stands in the exhibition area provided students with the opportunity to engage directly with human resources professionals regarding internship and career prospects.

The event strengthened university–industry cooperation by creating a direct dialogue between students and professionals in Türkiye's high-technology and defence sectors. Participants enhanced their understanding of advanced manufacturing, R&D processes, and innovation-driven competitiveness. The summit also contributed to capacity building in strategic technological areas while supporting student employability and sectoral awareness.





The Interview Simulation Training

The Interview Simulation Training was organized to enhance the employability skills of Yıldız Technical University students through interactive and practical learning experiences. Conducted online, the event focused on professional communication, interview strategies, and CV preparation, providing participants with hands-on guidance from leading professionals in education technologies and human resources.

The session included simulated interview practices, individual feedback opportunities, and discussions on common industry expectations—equipping students with the necessary competencies to enter the job market with confidence and preparation.

Technical Talk

Technical Talk was held to deepen students' understanding of simulation technologies and embedded system applications, essential areas in both academic research and industrial innovation. Delivered by Burak Ali Arslan from FIGES A.Ş., Türkiye's official representative of ANSYS and MATLAB, the session explored real-world engineering applications and multidisciplinary integration of simulation-based design and embedded systems.

The event emphasized the intersection of theoretical engineering education with practical simulation tools, providing insights into model-based design, system optimization, and embedded control strategies. The speaker also shared professional experiences from ongoing R&D collaborations under the "Sektör Kampüste" program at Yıldız Technical University.

Participants gained hands-on knowledge of MATLAB simulation environments and embedded engineering workflows, enhancing their technical



readiness for defence and industrial automation projects. The talk fostered the development of problem-solving, analytical thinking, and digital engineering skills among students, bridging academic learning with real engineering practice.

This activity contributed to YTU's strategic vision of cultivating engineers equipped with industry-relevant digital competencies, aligning with national and global innovation priorities.

The Aerospace Seminar

The Aerospace Seminar (HUZ) brought together leading experts from Türkiye's aerospace and defence industries to share advancements in aerospace materials, design, and flight technologies. The two-day seminar provided a platform for students to explore cutting-edge research and innovation in the aviation and space sectors, featuring technical presentations, panel discussions, and networking opportunities with industry professionals from TÜBİTAK, Turkish Aerospace, DowAksa, and DELTAV.

The event enhanced participants' understanding of the technological ecosystem behind national aerospace and defence projects, fostering interest in high-tech R&D careers. Attendees gained insight into aerodynamics, composite materials, control systems, and UAV technologies, all within the framework of sustainable innovation and advanced engineering practices.

By enabling direct engagement between students and industry experts, the seminar supported experiential learning and promoted collaboration between academia and industry — reinforcing Yıldız Technical University's mission to cultivate future-ready engineers in national priority areas.

The Talk Data to Me

The Talk Data to Me session explored how individuals from non-technical or social science backgrounds can successfully transition into the data science and machine learning (ML) fields. Conducted by Mehmet Talha Şahin, an AI/ML Solutions Architect at Practicus AI, the event offered an accessible and motivational perspective on building a data-driven career.

Topics included:

- Understanding the foundations of data science and artificial intelligence,
- Practical steps for developing technical competence without a traditional STEM background,
- Recommended educational resources, online platforms, and self-learning strategies,
- Real-world examples of interdisciplinary applications of AI and ML across industries.

This talk empowered students and professionals from diverse academic disciplines to engage with emerging data technologies, breaking down the misconception that data science is exclusive



to computer scientists or engineers. Participants gained awareness of upskilling pathways, enabling a broader participation in the digital economy and promoting inclusive access to AI education.

The session contributed to digital literacy, employability, and interdisciplinary innovation, aligning with YTU's vision of fostering an inclusive and adaptive academic ecosystem responsive to technological transformation.



The Yıldız Data Days Summit

The Yıldız Data Days Summit brought together professionals from eight diverse industries—including finance, e-commerce, logistics, automotive, technology, sports, biostatistics, and textiles—to explore the transformative role of data science and analytics across sectors. Over two days, the event featured keynote talks and Q&A sessions with experienced data professionals who shared their career journeys, applied data strategies, and insights into the evolving analytics landscape.

Participants gained firsthand exposure to real-world applications of data-driven decision-making, learning how data science integrates with traditional industries to drive innovation and efficiency. The summit also served as a networking platform, fostering meaningful connections between students and industry experts. The event strengthened students' understanding of interdisciplinary data applications, empowering them to view data literacy as a universal skill across all professional domains. By connecting academia with leading organizations like Deloitte, TCMB, and Hepsiburada, Yıldız Data Days reinforced YTU's commitment to preparing data-fluent graduates who can navigate and lead in digital transformation contexts.





The Career Map 7

The Career Map 7 event, jointly organized by the YTU Data Science Community and the Department of Statistics, connected current students with YTU alumni now working in top companies across data analytics, software engineering, and business intelligence. The event aimed to bridge academic education with real-world applications, empowering participants to explore diverse career paths shaped by data-driven decision-making.

Throughout the session, guest speakers shared their transition journeys from university to industry, offered insights into emerging trends in data science, and provided guidance on the skills, mindset, and strategies needed to succeed in evolving data and technology-driven roles. Students also had the opportunity to ask questions directly, engaging in valuable dialogues about interdisciplinary collaboration and career planning. The event strengthened students' career readiness and data literacy, helping them align their academic focus with industry expectations







The Yıldız Data Days 2024 Summit

The Yıldız Data Days 2024 Summit served as one of Yıldız Technical University's flagship interdisciplinary events focused on data science, artificial intelligence, and digital transformation. Bringing together leading companies and professionals from multiple industries, the summit explored the ubiquitous impact of data in business, science, and society.

The two-day program featured keynote sessions, networking opportunities, and interactive discussions on data-driven innovation, AI ethics, predictive analytics, and industry applications. Attendees learned from top experts about the future of data-centric decision-making and gained insights into emerging professional skills essential for the digital economy.

The event empowered participants to develop critical data literacy and analytical thinking, supporting YTU's goal of equipping students with cross-sectoral digital competencies. The summit helped bridge the gap between theoretical knowledge and real-world application, enhancing both employability and innovation capacity among students by fostering direct engagement between academia and industry.

The initiative also promoted an inclusive data culture, encouraging participation from diverse academic disciplines under the shared vision of a data-driven, sustainable future.

7th International Conference on Advances in Mechanical Engineering

YTU hosted the 7th International Conference on Advances in Mechanical Engineering (ICAME 2024) on 24 December 2024 at the Yıldız Campus Auditorium. Organized by the Faculty of Mechanical Engineering, the conference provided an international platform for researchers, industry professionals, and academics to share their latest findings in mechanical systems, materials science, energy technologies, and applied engineering innovations. The event contributed to global knowledge exchange on sustainable technologies and reinforced YTU's commitment to advancing industrial innovation and research excellence.



Shining Star Program



YTU implemented the ***Shining Star Program***, which allowed outstanding undergraduate students to take graduate-level courses starting from their fifth semester and transition directly into a master's degree upon graduation. The program aimed to accelerate academic and research competencies, nurture innovation-driven students, and strengthen the link between undergraduate and graduate education. This initiative contributed to the enhancement of educational quality and academic excellence within the university.

2024–2025 Academic Year

The 2024–2025 Academic Year at YTU commenced with an inspiring opening ceremony at the Davutpaşa Congress and Culture Center. The event began with an opening speech by Rector Prof. Dr. Eyüp Debik and a keynote lecture delivered by the Minister of Industry and Technology, Mr. Mehmet Fatih Kacır. The ceremony highlighted YTU's continuous efforts to strengthen quality education, promote academic collaboration, and foster innovation-driven partnerships between academia and the public sector.



Aviation-Focused Seminar

YTU organised an aviation-focused seminar featuring Can Erel and Sinem Akkaya (MNG Airlines). The event aimed to equip students with knowledge on career pathways in the aviation sector and offered internship opportunities to support youth employability and industry-academia collaboration.





Procurement Management in Biomedical Engineering

The Biomedical Engineering Department organised a professional seminar led by Özlem Kesici Uğurlu (Biomedical Engineer – Procurement Manager). The session provided students with insights into strategic procurement, supplier evaluation, and sustainable purchasing practices in the biomedical sector, improving their understanding of industrial operations and ethical management.

Quality Management Systems in Biomedical Engineering

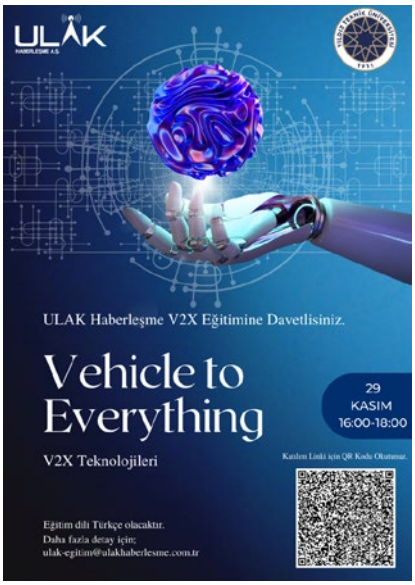
Within the "Introduction to Biomedical Engineering – Company Seminars" series, Handenur Akbaş (Biomedical Engineer – Quality Management Systems Manager) delivered a talk on ISO standards, regulatory compliance, and continuous improvement processes in biomedical engineering. The seminar enhanced students' competencies in industrial quality management and innovation.



Central Operations Management in Biomedical Engineering

Hamdi Armağan (Biomedical Engineer – Operations Manager) gave a seminar on central operations, coordination, and logistics management within biomedical systems. This industry-integrated session aimed to strengthen students' technical and managerial skills for employment in healthcare technology industries.





Vehicle to Everything (V2X) Technologies Training

YTU, in collaboration with ULAK Communication Inc., organised a professional training session on "Vehicle to Everything (V2X) Technologies." The event provided students and academic participants with insights into next-generation communication systems enabling real-time data exchange between vehicles, infrastructure, and networks. The session enhanced participants' knowledge on sustainable mobility, intelligent transportation systems, and the role of communication technologies in smart city infrastructures.

FSMH 101: Entrepreneurship and Intellectual Property

YTU, through YTU Startup House and YTU Yıldız Teknopark, organized the event "FSMH 101: Entrepreneurship and Intellectual Property" to raise awareness on the protection of intellectual and industrial property rights among early-stage entrepreneurs.

The session, led by Güler Turhan, Patent and Licensing Expert at YTU Yıldız Teknopark, focused on the importance of intellectual property in innovation-driven business development, patenting strategies, and technology commercialization.

YTU empowers young entrepreneurs to safeguard their innovations, enhance competitiveness, and contribute to sustainable economic and technological growth by fostering knowledge on IP protection.





YTU Sailing Club Achieves 3rd Place at the Presidential International Yacht Races – Republic Cup

YTU Sailing Club proudly represented Yıldız Technical University at the Presidential International Yacht Races, securing third place in the Sportsboat B category of the Republic Cup.

This achievement highlights the university's commitment to youth development through sports, teamwork, and sustainable maritime practices. The club's participation in national and international competitions fosters students' leadership, environmental awareness, and physical well-being.

YTU Sailing Club Achieves 3rd Place at the Presidential International Yacht Races – Republic Cup

At the SAHA EXPO Defense and Aerospace Fair organized by SAHA Istanbul, Yıldız Technical University representatives met with key figures from the Presidency of Defense Industries, Roketsan, TUSAŞ, STM, and other major national defense companies.

This engagement reflects YTU's commitment to advancing national technology capacity, fostering industry-academia collaboration, and preparing students for careers in defense, aerospace, and engineering innovation. The university plays an active role in training future engineers who will contribute to Türkiye's sustainable development and technological independence.





24/7 Library Access

YTU offers 24/7 library access with extensive academic resources to support students, researchers, and lifelong learners. The university libraries provide:

- **6,636,967** electronic resources
- **158,145** printed books
- **20,826** periodicals
- **15,930** theses
- **2,700**-seat capacity

These facilities ensure continuous learning opportunities, academic excellence, and inclusive access to information. YTU's library system promotes open access, supports research infrastructure, and encourages collaborative learning in line with global educational standards.



Ytu Provides Students With The Opportunity To Learn And Engage With 10 Foreign Languages

YTU provides students with the opportunity to learn and engage with 10 foreign languages, including English, German, French, Spanish, Italian, Russian, Arabic, Persian, Japanese, and Chinese.

This multilingual approach promotes global citizenship, enhances cross-cultural understanding, and supports international collaboration in education and research.



YTU Ranks #1 in Overall Student Satisfaction in Türkiye

According to the 2024 Turkey University Student Satisfaction Survey, Yıldız Technical University achieved the #1 position in the category of Overall Satisfaction.

This recognition reflects YTU's strong efforts to providing a high-quality educational experience, inclusive learning environment, and strong student engagement through academic excellence, social participation, and international opportunities.

YTU's Erasmus+ exchange program and extensive global partnerships further enhance students' academic development and intercultural learning.

Türkiye's First Hybrid Rocket Engine Created Entirely by Students

YTU Rocket Team successfully developed and launched Demirkazık-I, Türkiye's first hybrid rocket engine created entirely by students after six years of dedicated research and development. The ignition was carried out at the team's own testing facility, showcasing their advanced engineering skills and innovative mindset.

This achievement highlights YTU's strong focus on innovation, applied research, and hands-on learning in aerospace and engineering fields.





Ytu Has Become a Full Member Of The European Organization For Nuclear Research

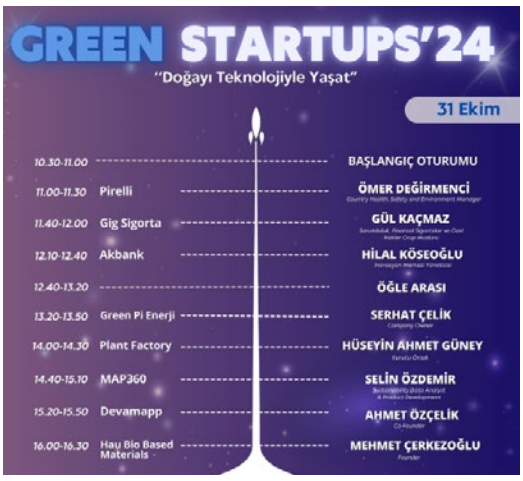
YTU has become a full member of the European Organization for Nuclear Research (CERN). The university will take part in the Compact Muon Solenoid (CMS) Experiment, one of the four major experiments conducted on the Large Hadron Collider, the world's largest particle physics laboratory.

Through this collaboration, YTU strengthens its role in high-energy physics and advanced research infrastructure. The partnership promotes international scientific cooperation, enhances research capacity, and offers YTU students and researchers access to world-class experimental environments expanding Türkiye's visibility in global science and innovation.

International Summer School on Urban Ecology at Yıldız Technical University

YTU hosted the International Summer School on Urban Ecology, bringing together students, researchers, and experts from different countries to study the interaction between urban environments and natural ecosystems. The program covered topics such as green infrastructure, biodiversity conservation in cities, ecosystem services, and sustainable urban planning, combining lectures with hands-on fieldwork.





Green Entrepreneurship and Innovation

Green Entrepreneurship and Innovation Event - In this event, we welcomed well-equipped companies and green entrepreneurs from various fields. Participants had the chance to find answers to their questions on topics like entrepreneurship, innovation, and eco-friendly solutions through interactive sessions-.

the Sustainable Development Goals (SDG) Education Program

YTU implemented the Sustainable Development Goals (SDG) Education Program to raise awareness and build knowledge among students, staff, and the broader community about the 17 SDGs. The program included lectures, workshops, and interactive sessions focusing on the importance of sustainable development, global challenges, and actionable solutions at the individual and institutional level.





SDG Education Program

YTU carried out the SDG Education Program to introduce participants to the 17 United Nations Sustainable Development Goals. Through lectures, discussions, and interactive activities, the program aimed to increase awareness, build capacity, and encourage action toward achieving the SDGs both on campus and in the community.

Quality Management Systems in Biomedical Engineering

Prof. Dr. Fazıl Kayıkçı, a faculty member of the Department of Economics at Yıldız Technical University, is leading the ECONENGIN project (Economic Engineering), which has been awarded funding under the Erasmus Mundus Design Measures call. Yıldız Technical University is the sole applicant and coordinator of the project. The project aims to design an innovative master's program in the emerging field of Economic Engineering. The program will equip students with contemporary techniques such as quantitative economics, econometrics, big data analytics, and machine learning, aiming to train a highly skilled workforce for both academia and industry.By integrating engineering methods with economic principles, this interdisciplinary approach will enable engineers and technical professionals to contribute more effectively to economic evaluation and decision-making processes.The ECONENGIN program will be developed in collaboration with University of Zurich, WSB University, University of Minho, WSGE University, Centro Universitario Integrado, and the University of Johannesburg, under the coordination of Yıldız Technical University.







Artificial Intelligence in Education Summit

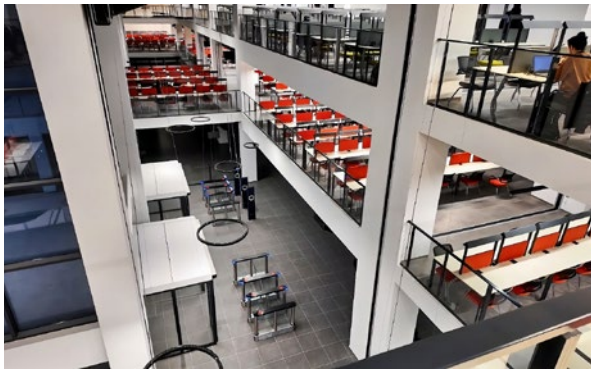
YTU strengthens its R&D ecosystem with innovative winds.

At the 'Artificial Intelligence in Education Summit' organized by the Istanbul Provincial Directorate of National Education at YTÜ, our Rector Prof. Dr. Tamer Yılmaz was on the stage together with our esteemed guests such as the Minister of National Education Mr. Yusuf Tekin, Governor of Istanbul Mr. Davut Gül, Istanbul Provincial Director of National Education Assoc. Dr. Murat Mücahit Yentür, TIM & İHKİB President Mustafa Gültepe. During the event, important opinions were shared on the educational technologies of the future.

Construction of a Modern Library to Expand Study Capacity and Enhance Academic Success at Yıldız Technical University

To support the growing academic needs and enhance the overall learning experience of its students, Yıldız Technical University has constructed a new, modern library on campus. This facility significantly increases the capacity for study and research, offering spacious, well-designed areas equipped with the latest technology and resources. The library provides quiet zones for focused individual study, collaborative spaces for group work, and access to extensive digital and physical collections. By creating a comfortable and inspiring environment, the new library encourages academic excellence, innovation, and intellectual growth among students and faculty alike. This investment reflects YTU's commitment to fostering quality education and supporting its students' academic success through improved infrastructure.





POLICY & OPERATIONS

7th International Conference on Applied Mechanical Engineering (ICAME 2024)

YTU hosted the 7th International Conference on Applied Mechanical Engineering (ICAME 2024). The first day of the conference was held on 24 December 2024 at the YTU Beşiktaş Campus Auditorium, with the participation of the University Rector, Prof. Dr. Eyüp Debik, the Dean of the Faculty of Mechanical Engineering, Prof. Dr. Zehra Yumurtacı, and internationally invited speakers. One of the keynote speakers was Prof. Dr. İbrahim Dinçer, a globally leading scholar in energy systems and a distinguished member of YTU's academic staff, together with experts from the USA, UK, Palestine, Qatar, Iran, Bulgaria, and Malaysia. The opening session featured keynote addresses from institutional leaders and researchers, highlighting current advancements and future directions in applied mechanical engineering.







On 3 December 2024, Yıldız Technical University held an academic seminar featuring Emeritus Prof. Dr. Salim Hiziroglu from Oklahoma State University, specializing in Natural Resource Ecology and Management. During the session at YTU's Beşiktaş Campus, Prof. Hiziroglu delivered three talks: "Lignocellulosic Products Research at Oklahoma State University: An International Perspective", "Some Suggestions on How to Organize Your Career", and "Graduate Study in the USA."

The seminar provided valuable insights into advanced biomass and lignocellulosic material research, shared international research approaches, and offered strategic guidance on academic career planning and graduate studies abroad. The activity supported students' academic development, global research awareness, and international mobility aspirations, while strengthening academic ties between YTU and Oklahoma State University.



Yıldız Technical University strengthened its lifelong learning ecosystem and alumni engagement strategy by expanding the YTU Alumni Platform and launching the official YTU Alumni Card. Through this initiative, graduates can remain actively connected to the university community and benefit from access to academic, cultural, and social activities, campus services, and professional network opportunities.

The program aims to maintain long-term engagement with alumni, enhance career support systems, and create intergenerational academic and professional collaboration. The initiative reinforces YTU's commitment to supporting its graduates beyond their student years and fostering a strong academic community that contributes to national and global development.



Yıldız Technical University welcomed its incoming Erasmus+ KA131 and KA171 exchange students for the spring semester. As part of the university's commitment to fostering inclusive international learning environments, an orientation program was organized to support their academic and cultural integration.

The event included briefings on academic and administrative procedures, an on-campus tour, and social interaction activities, including a group lunch with international students. Through these activities, YTU ensured that exchange students received comprehensive support in adapting to campus life and accessing university services.



Yıldız Technical University provided structured support services for incoming Erasmus+ KA171 exchange students through its International Relations Office. A dedicated Welcome Desk assisted students arriving from diverse regions with academic orientation, administrative guidance, and campus integration. This initiative ensures equitable access to university resources, promotes intercultural engagement, and strengthens international student mobility.

In 2024, YTU strengthened its collaboration with YTU Schools through a series of applied learning and research activities across various faculties. These initiatives enabled preliminary school students to directly engage with university laboratories, academic staff, and real-world projects, fostering hands-on learning and career readiness.

Key activities included seminars, lab visits, and interactive workshops organized by different faculties and departments:

Through these partnerships, YTU promotes inclusive and interdisciplinary learning, bridging primary and higher education to strengthen students' STEM and innovation competencies while encouraging early engagement with research and sustainable technologies.

Shore Project – Department of Guidance and Psychological Counseling (Assoc. Prof. Dr. Begüm Satıcı)

Renewable Energy Resources – Faculty of Electrical and Electronics Engineering (Prof. Dr. Ozan Erdinç)

Innovation and Entrepreneurship Seminar – Rectorate (Prof. Dr. Tamer Yılmaz)

Food Science and Processing Seminar – Faculty of Chemical and Metallurgical Engineering Department of Food Engineering (Assoc. Prof. Dr. Ruşen Metin Yıldırım)

Healthy Ice Cream Production Workshop – Faculty of Chemical and Metallurgical Engineering Department of Food Engineering (Assoc. Prof. Dr. Ruşen Metin Yıldırım)

Tsunami Laboratory Visit – Faculty of Civil Engineering (Prof. Dr. Anıl Güner)

Visit of YTU Young Tema and Water Community – YTU Young TEMA Club

Opening Lecture for Technology Week – Faculty of Electrical and Electronics Engineering (Prof. Dr. Ozan Erdinç)

YTU GDSC "Algorithmic Adventures" Workshop (as part of Science and Technology Week) – YTU Google Developer Student Club (GDSC)

Digital Creativity Workshops (Makey Makey, Coding, and Avatar Design) – Faculty of Education and YTU BÖTE

Academic Orientation and Opening Trainings – Faculty of Education (Prof. Dr. Sertel Altun & Assoc. Prof. Dr. Emre Er)

Glass Research Laboratory Visit – Department of Metallurgical and Materials Engineering (Prof. Dr. Miray Çelikbilek Ersundu & Prof. Dr. Ali Erçin Ersundu)



Yıldız Technical University organized the Erasmus+ KA-131 Student Information Session for the 2024–2025 academic year on 8 May 2024 at the Davutpaşa Campus Congress Center, with the participation of the Rector. The event provided comprehensive guidance on learning and internship mobility opportunities in European Union countries.

During the session, students received detailed information on application procedures, academic requirements, mobility funding, and intercultural preparation. Staff from the International Relations Office delivered presentations, followed by a Q&A session to address students' questions. Additionally, ESN members conducted experience-sharing panels, enabling students who previously participated in mobility programs to share best practices and insights.



Yıldız Technical University hosted Prof. Halina Murasiewicz from the West Pomeranian University of Technology (Poland) as part of the Erasmus+ staff mobility programme. During her visit, Prof. Murasiewicz delivered a two-part seminar series on Chemical Engineering Design: Principles, Practice, and Computer-Aided Methods, providing our students with exposure to contemporary design approaches and engineering software environments. This activity supported knowledge transfer, strengthened academic cooperation, and enhanced international teaching capacity within our institution.



2024–2025 Academic Year Erasmus+ Outgoing Student Orientation

YTU proudly held the "2024–2025 Academic Year Erasmus+ Outgoing Student Orientation" at Davutpaşa Campus Congress Center, reaffirming our position as Türkiye's leading institution in Erasmus+ student mobility for four consecutive years.

The event brought together hundreds of students who are set to begin their international journeys. During the program, participants received comprehensive briefings on academic processes, cultural integration, and practical aspects of living abroad. In addition, our team introduced diverse study and traineeship destinations across Europe, helping students explore pathways that align with their academic and career goals.

By equipping our students with the tools and confidence needed to thrive in global environments, we continue to cultivate internationally minded young professionals and strengthen YTU's presence in the international academic arena.



17 PARTNERSHIPS FOR THE GOALS



YTU has officially become a member of the European University Association (EUA), which brings together more than 850 universities across 48 countries in Europe.

This membership positions YTU among Europe's leading higher education institutions and expands its participation in international academic networks, collaborative research initiatives, and strategic development platforms. Through this affiliation, YTU strengthens its role in the European higher education area.

Yıldız Technical University welcomed Prof. Francisco Ortín from the University of Oviedo as part of the Erasmus+ staff mobility program in June 2024.

Throughout his visit, Prof. Ortín met with our Computer Engineering students, delivering two seminar sessions and exchanging perspectives on current developments in computer science. His contribution offered our students valuable international academic exposure and fostered meaningful dialogue on research and innovation.





The Erasmus+ Programme, which began its inspiring journey at Yıldız Technical University in 2004, is celebrating its 20th year on campus.

This milestone was marked with a special ceremony hosted by YTU, the leading university in Türkiye in Erasmus+ student mobility for the past three years. Rectors, vice-rectors, international office representatives, and students from eight partner European universities attended the event, highlighting strong academic ties and long-standing cooperation.

For two decades, YTU has served as a key gateway for students to explore Europe, gain global perspectives, and build meaningful academic and cultural networks.

Yıldız Technical University ranked among the top universities in Türkiye for securing Erasmus+ mobility funding, enabling high-achieving students to participate in study and traineeship programs across Europe. This financial support removes socio-economic barriers and ensures equal access to international academic opportunities.





YTU successfully completed its Erasmus+ application cycle, receiving over 5,500 student applications for study and traineeship mobility. This marks the third consecutive year of increased application numbers, demonstrating the strong demand and student engagement in international learning opportunities.

17 PARTNERSHIPS FOR THE GOALS

Participation in the VEX Turkey Robotics Championship

The YTU Maçka Vocational and Technical Anatolian High School Robotics Team participated in the VEX Turkey Robotics Championship with their robot named 34035A MVR on March 10, 2024. Demonstrating outstanding technical and problem-solving skills, the team achieved first place in the Skills category and earned the right to represent Türkiye at the VEX World Championship to be held in Dallas, USA.

10 REDUCED INEQUALITIES

17 PARTNERSHIPS FOR THE GOALS





Outstanding Student Achievement in Social Sciences

On April 22, 2024, Muhammed Rıza Kaynak, an 11th-grade student at YTU Maçka Vocational and Technical Anatolian High School, received the “Best Speaker Award” at the Social Sciences Workshop.



National Achievement in Underwater Sports

On April 28, 2024, Can Mert, a student at YTU Maçka Vocational and Technical Anatolian High School, achieved third place in Türkiye at the TSSF Inter-Club Senior Fin Swimming Championship.



TÜBİTAK 4006 Science Fair Opening Ceremony

On May 14–15, 2024, students from YTU Maçka Vocational and Technical Anatolian High School presented their year-long research and innovation projects at the TÜBİTAK 4006 Science Fairs Support Program exhibition.

The opening ceremony was attended by İstanbul Provincial Deputy Director of National Education Hüseyin Aydın, Şişli District Director of National Education Sevgi Yücel, Şişli District Branch Director Mustafa Hoşyiğit, School Principal Kemal Biricik, and several distinguished guests.

This event provided students with an opportunity to apply scientific methods, exhibit creative problem-solving skills, and engage in inquiry-based learning. Through such activities, YTU Maçka MTAL promotes STEM education, student-led innovation, and scientific literacy.



Visit of the Minister of National Education

The Minister of National Education, Prof. Dr. Yusuf Tekin, visited YTU Maçka Vocational and Technical Anatolian High School, on July 7 2024 to review and observe the ongoing collaborative projects conducted within the framework of the partnership between the Ministry of National Education and Yıldız Technical University.

During the visit, the Minister met with school administrators, teachers, and students to evaluate the outcomes of joint education initiatives aimed at improving technical training quality and strengthening school–university cooperation.





Entrepreneurship and Innovation Training at YTU Yıldız Technopark

On May 11, 2024, 9th-grade students from the Information Technologies Department of YTU Maçka Vocational and Technical Anatolian High School participated in an entrepreneurship-oriented training event held at YTU Yıldız Technopark. The program included interactive sessions on "Entrepreneurship 101," TÜBİTAK BIGG (Individual Young Entrepreneur Program), and YTU Yıldız Technopark Start-Up initiatives, where students learned about innovation processes, start-up culture, and the role of technology in business development.

The event contributes directly to students' understanding of entrepreneurship, innovation, and digital transformation, supporting YTU's mission to foster future-ready, entrepreneurial young talents.





Entrepreneurship and Career Development Visit to YTU Yıldız Technopark

Students from the Electrical and Electronics Technology Department of YTU Maçka Vocational and Technical Anatolian High School participated in an entrepreneurship-themed training event at YTU Yıldız Technopark on May 20, 2024.

The program featured sessions on "Entrepreneurship 101" and YTU Yıldız Technopark Start-Up initiatives, introducing students to innovation, technology-driven business models, and the entrepreneurial ecosystem. Students also visited the Career Fair organized by the YTU Entrepreneurship Club, where they had the opportunity to explore potential career paths and interact with professionals from various sectors. During the visit, students met with YTU Rector Prof. Dr. Tamer Yılmaz. The event strengthened the link between technical education, entrepreneurship, and university–industry collaboration.

CHINT Türkiye Supports Vocational Education through Laboratory Establishment

CHINT Türkiye launched the CHINT Panel Assembly Laboratory Project at YTU Maçka Vocational and Technical Anatolian High School on June 10, 2024, to support the advancement of vocational and technical education. The newly established training laboratory provides students with hands-on experience in electrical and electronic systems, bridging the gap between theoretical learning and industrial applications. Following the opening ceremony, YTU Rector presented a plaque of appreciation to CHINT Türkiye Marketing Director for the company's contribution to technical education.

This collaboration exemplifies Yıldız Technical University's commitment to strengthening industry–education partnerships, enhancing practical training environments, and promoting innovation-driven learning.





YTU Rector Prof. Dr. Eyüp Debik visited YTU Maçka Vocational and Technical Anatolian High School on December 25, 2024, to observe the ongoing educational projects and review upcoming initiatives.

During the visit, the Rector met with the school administration and instructors to evaluate the outcomes of current collaborative efforts and to discuss future strategies aimed at enhancing technical and vocational training quality.





English Proficiency Exam at YTU School of Foreign Languages

Preparatory-class students from YTU Maçka Vocational and Technical Anatolian High School took their end-of-term English exams at the YTU School of Foreign Languages on December 26, 2024.

This collaboration between YTU Maçka MTAL and the School of Foreign Languages allows students to experience a university-level language learning environment, helping them improve their English skills and gain confidence in academic communication.



YILDIZ TECHNICAL UNIVERSITY

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5 GENDER EQUALITY

TO ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS

Scan the QR code for SDG5 events



Yıldız Technical University (YTU) recognizes gender equality as a fundamental pillar of sustainable development and human progress. Guided by Sustainable Development Goal 5, the university strives to eliminate all forms of discrimination and ensure equal rights, participation, and opportunities for everyone. YTU's commitment extends far beyond policy – it is embedded in its research agenda, learning environments, and social outreach. Gender equality, for YTU, represents not only fairness but also the empowerment of creativity, innovation, and leadership across all spheres of life.

This section presents YTU's multidimensional approach to advancing gender equality through research, education, and community initiatives. Academic projects and public events highlight the central role of women in sustainability, technology, and entrepreneurship, emphasizing that inclusion drives progress. Through interdisciplinary panels, STEM empowerment programs, and creative forums, YTU provides platforms where women's voices are heard, achievements are celebrated, and barriers are challenged. Training sessions, mentorship programs, and awareness campaigns reinforce a culture of respect, solidarity, and empowerment, while fostering critical reflection on social norms and representation.

Equally, YTU cultivates spaces where equality becomes lived experience. Student clubs, sports programs, and outdoor activities encourage women to lead with confidence and to collaborate across disciplines and cultures. Partnerships with national and international institutions amplify the university's impact – connecting gender awareness with environmental sustainability, digital transformation, and inclusive economic growth. Together, these initiatives illustrate YTU's vision of a community where diversity is strength, participation is equal, and progress is shared. Through knowledge, empathy, and collaboration, the university continues to empower individuals who shape a more just and equitable future for all.

PUBLICATION STATISTICS

SCOPUS (2022-2024)

Name	Scholarly Output	% of 2047	Field-Weighted Citation Impact	Citation Count
SDG 05: Gender Equality	12	0,41%	0,98	45

WoS (2022-2024)

Sustainable Development Goals	Number of Publications	% of 2.923
05 Gender Equality	36	1,23%

Number of YTU Academicians by gender

	Professors	Assoc. Prof.	Asst. Prof.	Lecturer	Res. Asst.	Total
Female	180	136	134	163	228	841
Male	266	167	149	95	240	917
Total	446	303	283	258	468	1758
% of Female Academics	40,4 %	44,9 %	47,3 %	63,2 %	48,7 %	47,8 %

Number of YTU Academicians by gender

	Bachelor	Master	Doctorate	Total
Female	11831	4871	1559	18261
Male	14880	4455	1289	20624
Total	26711	9326	2848	38885
% of Female Students	44,29 %	52,23 %	54,74 %	46,96 %



The Leading Role of Women in the Green Economy – Zero Waste Initiative (ISEDAK, 5 November 2024)

As part of the 40th Ministerial Session of the COMCEC (Standing Committee for Economic and Commercial Cooperation of the Organization of Islamic Cooperation), the special panel titled "The Leading Role of Women in the Green Economy: Zero Waste Initiative" was held on 5 November 2024 in Istanbul.

The event highlighted the critical role women play in advancing sustainability, circular economy, and zero-waste practices across OIC member countries. Among the distinguished panelists was Asst. Prof. Dr. Üyesi Ayşe Kübra Tatar, who contributed insights on integrating gender-sensitive approaches into environmental innovation and waste management strategies.

The session emphasized cross-sector collaboration, inclusive green transformation, and the empowerment of women in environmental leadership, aligning with the Zero Waste Initiative.



Fairy Tales and Gender

The 1002 Poetry and Tale Club and the Women's Studies Society co-hosted a special talk featuring Melek Özlem Sezer, author of the book Fairy Tales and Gender. This event provided a platform to explore how traditional fairy tales reflect, reinforce, or challenge gender norms and stereotypes. Through an engaging and thought-provoking conversation, the speaker shared insights into the cultural, educational, and social dimensions of storytelling from a gender perspective.

The event encouraged critical thinking and awareness around gender representation in narratives, aligning with the broader mission of fostering inclusive and reflective student discourse on campus.

Members of the 1002 Poetry and Tale Club visited the Beşiktaş Women's Labor Market

On International Women's Day (March 8, 2024), members of the 1002 Poetry and Tale Club visited the Beşiktaş Women's Labor Market, an initiative coordinated by the Istanbul Metropolitan Municipality and its Women Volunteers platform. The aim of the visit was to raise awareness about women's labor, support local women entrepreneurs, and highlight the importance of inclusive and sustainable economic participation.

Participants explored a variety of stands showcasing handmade goods, crafts, and artisanal products, engaging directly with women producers and supporting their work. The activity served as a meaningful opportunity to observe the social and economic value of women's contributions, particularly in informal and local economies.





YTU students proudly took part in the 46th Istanbul Marathon

YTU students proudly took part in the 46th Istanbul Marathon, organized by Türkiye İş Bankası, running together with the Foundation for the Support of Women's Work (KEDV) for a more equal and inclusive future.





Building Our Future Together

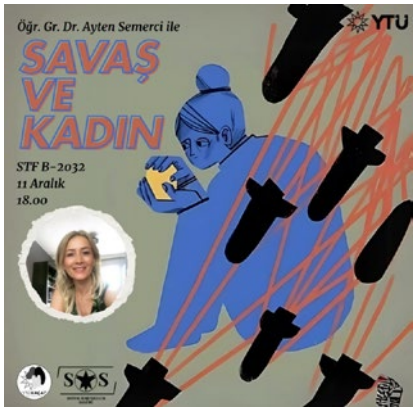
On March 7, 2024, an event titled “Building Our Future Together” was held as part of the International Women’s Day (March 8) celebrations. The event took place at the Faculty of Art and Design, where participants engaged in a comprehensive discussion on the historical background of March 8, current challenges faced by women in society, and their legal rights.

Designed as an interactive session, the event encouraged active participation and facilitated an exchange of ideas not only to raise awareness but also to explore potential solutions to ongoing issues.

Building Our Future Together

On November 5th, 2024, a forum was organized as part of the International Day for the Elimination of Violence Against Women. During the event, participants collaboratively planned activities for the month of November and engaged in an interactive discussion on needs, expectations, and potential solutions in the fight against gender-based violence. The forum, conducted with guiding questions and interactive games, concluded with active participation from all attendees.





Building Our Future Together

On December 11, 2024, a talk titled “War and Women” was held at Yıldız Technical University, Faculty of Art and Design, with the participation of Lecturer Dr. Ayten Semerci. The event focused on the multifaceted impacts of wars on women, the challenges they face during wartime, and the roles they undertake. With active audience participation, the discussion aimed to raise awareness from a gender equality perspective.



WomEngineering

The "WomEngineering" event was organized to empower and inspire women in the field of engineering through a series of talks, networking sessions, and interactive discussions. Female professionals, academics, and students came together to address the challenges faced by women in STEM (Science, Technology, Engineering, Mathematics), share success stories, and develop collective strategies to increase women's representation and leadership in engineering disciplines.

YTU BIOGEN

The International Day of Women in Science was organized by YTU BIOGEN on 9 March 2024. The program highlighted role models in science, promoted gender equality in research and education, and encouraged young women to aspire to scientific careers.





Self-Defence Training for Female Search and Rescue Personne

On the occasion of International Women's Day, Yıldız Technical University organized a special training session entitled "Self-Defence Training for Female Search and Rescue Personnel." Delivered by self-defence expert Rafet Uysal, the event aimed to empower women in search and rescue teams by equipping them with practical skills to enhance their safety and resilience during emergency operations.



The "Doğa Ana Kampı" (Mother Nature Camp)

The "Doğa Ana Kampı" (Mother Nature Camp), organized by the YTU Nature and Outdoor Sports Club (YTÜGEKA), was held on March 9–10, 2024, in Şile, in celebration of International Women's Day.

This all-women camping event aimed to empower female students by fostering solidarity, self-reliance, and confidence in nature. Participants engaged in outdoor activities such as setting up tents, cooking, and campfire gatherings, creating a safe and supportive environment for women to challenge stereotypes and enjoy nature together.

328Yıldız Women Event

Organized by the Development and Innovation Club of Yıldız Technical University, the Yıldız Women (Yıldız Kadınlar) event took place on February 26, 2024, at the Historic Bath (Tarihi Hamam) on the Davutpaşa Campus.

The event brought together inspiring women who have made an impact in various fields such as art, sports, science, philosophy, and business, highlighting their success stories and journeys of personal and professional growth.

Throughout the day, participants listened to remarkable speakers including:

- Aysu Türkoğlu, Ultra Marathon Swimmer
- Jale Balcı, Chef & Author
- Zülal Tannur, Founder & CEO of From Your Eyes
- Yasemin Yapanar, Self-Researcher
- Dilşat Erdil, CEO & Creative Director of Deauty Skin
- Pelin Dilara Çolak, Philosopher & Publisher
- Şenceylik, Singer & Songwriter

The event served as a platform to celebrate women's leadership, creativity, and resilience, while encouraging YTU students to pursue their passions and drive positive social change.



Women's Flag Football Team (YTU Stallions)

YTU organized tryouts for the Women's Flag Football Team (YTU Stallions), inviting all female students—regardless of prior experience—to join. The initiative promotes gender equality in sports by empowering women to participate in competitive athletic activities, fostering leadership, teamwork, and confidence. Conducted at the YTU Davutpaşa Stadium, the event aimed to build a strong and inclusive community of student athletes. Beyond athletic performance, the program contributes to physical and mental well-being and advances women's representation in university-level sports.





YTU Startup House Supports Women Entrepreneurs in Technology

YTU Startup House proudly supports the success stories of women entrepreneurs through its collaboration with Microsoft on the "Women Leaders of Technology" competition.

Now in its 7th year, the program highlights women who inspire change and lead innovation in the technology sector. By empowering female founders and innovators, YTU contributes to promoting gender equality, inclusive entrepreneurship, and sustainable economic development.

YILDIZ TECHNICAL UNIVERSITY

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6 CLEAN WATER AND SANITATION



TO ENSURE ACCESS TO WATER AND SANITATION FOR ALL AND TO GUARANTEE SUSTAINABLE WATER MANAGEMENT

Scan the QR code for SDG6 events

6 CLEAN WATER AND SANITATION



Yıldız Technical University (YTU) recognizes that ending hunger requires more than food provision – it demands a holistic framework that unites research, education, community engagement, and environmental awareness. Guided by Sustainable Development Goal 2, the university is dedicated to ensuring access to safe, nutritious, and sufficient food for every individual while promoting responsible consumption and sustainable production systems. YTU approaches food security not only as a global priority but also as an essential dimension of student well-being and human dignity.

This section highlights how YTU integrates scientific expertise and social awareness to advance sustainable nutrition and eradicate hunger in all forms. Through interdisciplinary research in food engineering, environmental sciences, and biotechnology, the university develops innovative solutions for food preservation, waste reduction, and functional nutrition. These research endeavors align with a broader institutional vision that links academic excellence with public health and ecological responsibility. On campus, YTU fosters an inclusive food culture that values diversity and accessibility – providing affordable dining options, vegan and vegetarian meals, and nutrition-awareness programs that encourage healthy lifestyle choices among students and staff.

Equally important are YTU's initiatives that strengthen empathy and solidarity through collective experience. Community iftars, food-sharing campaigns, and projects for feeding campus animals emphasize compassion as a cornerstone of sustainable living. By encouraging volunteerism and participation, the university nurtures a sense of shared responsibility toward people, nature, and society. Together, these actions reflect YTU's conviction that the path to zero hunger extends from laboratories and classrooms to dining halls and public spaces. Through innovation, collaboration, and human connection, YTU contributes to building resilient communities where no one is left behind.

PUBLICATION STATISTICS

SCOPUS (2022-2024)

Name	Scholarly Output	% of 2047	Field-Weighted Citation Impact	Citation Count
SDG 06: Clean Water and Sanitation	193	6,60%	1,11	1.958

WoS (2022-2024)

Sustainable Development Goals	Number of Publications	% of 2.923
06 Clean Water And Sanitation	244	8,35%

Projects Supported by YTU Scientific Research Projects Unit

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Photocatalytic Degradation Of Ciprofloxacin With Magnetic Photocatalyst: Optimization Of Synthesis Parameters/ Optimization Of Synthesis Parameters For Photocatalytic Degradation Of Ciprofloxacin With Magnetic Photocatalyst	6	12	
2	Treatment of Wastewater from the Plasticizer Chemical Production Industry with Electrochemical Technologies	6	12	
3	Treatment of Membrane Bioreactor Effluents with Modified Fenton Process	6	12	
4	Treatment of Wastewater from the Plasticizer Chemical Production Industry with Advanced Chemical Oxidation Processes	6	12	
5	Synthesis of Quaternary MoFe$_2$O$_4$/ZIF-8/GO Nanocomposite for Electrochemical Degradation and Detection of Antibiotics	6	9	
6	Development of Preconcentration and/or Enrichment Strategies Using Metal-Organic and Covalent-Organic Frameworks for Trace Level Determination of Cadmium, Lead, Copper and Some Endocrine Disruptors	6	12	
7	Application of Advanced Technologies in Micropollutant Removal	6	12	
8	Removal of Anionic and Cationic Dyes from Aqueous Solutions by Adsorption Method Using Cadmium Sulfide Doped Chitosan Composite Microspheres	6	12	

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
9	Determination of Iznik Lake Water Level Change and Drought Effects Around the Lake with Local Methods and Satellite Observations	6	13	
10	Removal of Cationic and Anionic Dyes from Aqueous Solutions by Adsorption Method Using Lead Sulfide Doped Sodium Alginate/Carboxy Methyl Cellulose Biocomposites	6	12	
11	Photocatalytic Degradation of Crude Oil Pollutants in Water	6	12	
12	Use of Activated Carbon Obtained by Chemical Activation from Horse Chestnut (Aesculus Trilobatun) Shell in Dye Removal	6	12	
13	Piezoelectric Sensors in the Detection of Heavy Metal Ions Based on Surface Acoustic Wave	6	9	
14	Application of Alternative Environmentally Friendly Treatment Processes Using Peroxide Oxidants in the Recovery of Membrane Bioreactor Effluent	6	12	
15	Removal of Recalcitrant Organic Matter After Treatment with Peracetic Acid Oxidation Activated by Transition Metals and Process Optimization	6	12	
16	Effect of Titanium Loading onto Membrane on PFAS Removal	6	12	
17	Removal of Anionic Methyl Orange and Cationic Methylene Blue Textile Dyes from Aqueous Solutions by Adsorption Method Using Graphitic Carbon Nitride Doped Polypyrrole Composites	6	12	
18	Synthesis of Titanium Dioxide and Phthalocyanine Hybrid Photocatalysts and Photocatalysis Applications Under Visible Light Illumination	6	12	
19	Treatment of Dyes Diluted with Waste Soda Ash Using Lignocellulosic Biomass and Analysis by Derivative Spectroscopy Method	6	12	
20	Removal of Dyes from Aqueous Solutions by Adsorption Method Using Zinc Cobalt Oxide Doped Sodium Alginate Matrix Biocomposite Microspheres	6	12	
21	Synthesis of magnetic activated carbon, performance analysis and life cycle assessment for the removal of dyes and heavy metals from wastewater	6	12	

Research University Support Projects

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Sustainable Monitoring of Wastewater Systems with Robotic and Artificial Intelligence Technologies	6	9	11
2	Development of an Electrochemical Sensor Based on Fuzzy Logic and Machine Learning Using a Guar Gum/Zinc Oxide Nanoparticle/Carbon Nanotube-Modified Electrode for the Detection of Heavy Metal Ions	6	9	3
3	Sustainable Management of Mature Leachate by Boron-Doped Green Oxidation Processes	6	12	13

External Grant-Supported Projects

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Borax Production Wastewater Assessment in Sustainable Management of Solid Waste Landfill Leachates with a Circular Economy Approach	6	9	12
2	Investigation Of Protein Electrosorption In Capacitive Deionization Process	6	9	12
3	UK-Turkey Capacity Building for Wastewater Treatment Integrated with Renewable Energy and Safer Reuse for Sustainable Communities	6	7	9

YTU advances innovation and awareness in sustainable water management, uniting science, technology, and social responsibility for global impact.

SUMMARIES OF KEY PROJECTS

UK-Turkey Capacity Building for Wastewater Treatment Integrated with Renewable Energy and Safer Reuse for Sustainable Communities

This project aims to build interdisciplinary capacity between the UK and Türkiye in wastewater treatment integrated with renewable energy systems, focusing on generating added value and enabling safe reuse in industrial and agricultural settings. Efforts will strengthen three core domains: (i) research and innovation through advanced technical expertise, novel treatment technologies, and renewable energy integration; (ii) policy development supporting strategic planning, investment, and regulatory frameworks for sustainable water reuse; and (iii) behavioural understanding to assess user perceptions and promote adoption of safe reuse practices. By combining scientific, policy, and socio-behavioural approaches, the initiative seeks to support resource-efficient, low-carbon wastewater management and foster resilient, sustainable communities.



Sustainable Monitoring of Wastewater Systems Using Robotic and Artificial Intelligence Technologies

This project focuses on developing an AI-based system for real-time detection of faults in urban wastewater networks using Robotic-CCTV footage. Periodic monitoring of sewer systems is vital, as undetected leaks can threaten public health and the environment, and blockages may cause flooding—especially with increasing rainfall due to climate change. Current monitoring relies on human operators, who may overlook faults, leading to delayed maintenance, higher costs, and ineffective rehabilitation planning. Using Robotic-CCTV video data from İSKİ, the project will create an automated fault-detection model to identify sewer defects, including water leakage, pests, tree roots, voids, surface deterioration, cracks, and pipe breaks. The goal is to achieve at least 80% detection accuracy and enable fast, economical, and reliable wastewater system assessment. This AI-supported approach will contribute to proactive infrastructure management, minimize environmental and public-health risks, and support sustainable, efficient sewer rehabilitation planning in metropolitan areas.



Development of an Electrochemical Sensor Based on Fuzzy Logic and Machine Learning Using a Guar Gum/Zinc Oxide Nanoparticle/Carbon Nanotube-Modified Electrode for the Detection of Heavy Metal Ions

This project aims to develop an innovative electrochemical sensor for rapid and precise detection of heavy metal ions—including Hg^{2+}, Pb^{2+}, Cu^{2+}, and Zn^{2+}—in water sources. Heavy metal contamination resulting from agricultural, industrial, and medical activities poses serious risks to environmental and human health, making real-time monitoring essential for water safety and sustainable resource management. Within the project, a Guar Gum/ZnO nanoparticle/carbon nanotube (GG/ZnO NPs/CNT) nanocomposite will be synthesized, optimized,



and characterized, then shaped into cylindrical electrodes using a double-action hydraulic press. Pressing conditions will be optimized to achieve maximum sensing performance. The sensor will detect heavy-metal concentrations between 0.5 and 2000 ppb with rapid (1–10 min) measurements from small-volume samples (<1 mL), offering high selectivity and resistance to interference from other ions. Artificial intelligence, fuzzy logic, and machine-learning techniques will also be applied to enhance detection and recovery performance. This approach provides a cost-effective, portable, and scalable solution for real-time water-quality monitoring and pollution control.

3 GOOD HEALTH AND WELL-BEING

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Sustainable Management of Mature Leachate by Boron-Doped Green Oxidation Processes

This project investigates the treatment of mature leachate—one of the most challenging wastewaters due to its high refractory organic content and toxicity—using innovative, environmentally friendly oxidation technologies. Green oxidants (calcium peroxide and percarbonate), green activators (Fe^{2+} and Fe^{3+}), and boron as a green catalyst will be applied and compared with conventional hydrogen peroxide–based oxidation. Fe^{2+} will be supplied both externally and through dissolution of iron electrodes under electric current. The study will first conduct control experiments, followed by optimization of key operational parameters such as pH, oxidant dose, activator concentration, applied current, and catalyst dose to achieve maximum pollutant removal. Machine learning algorithms will be used to optimize process conditions and model experimental results. Under optimal conditions, COD fractions, BOD_5/COD ratio, and toxicity reduction will be analysed. Additionally, a life cycle assessment will evaluate environmental and economic performance. This study represents the first application of boron-enhanced green oxidation with machine-learning integration and LCA for leachate treatment.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

Through circular systems and education, YTU transforms water conservation into a shared commitment for future generations.



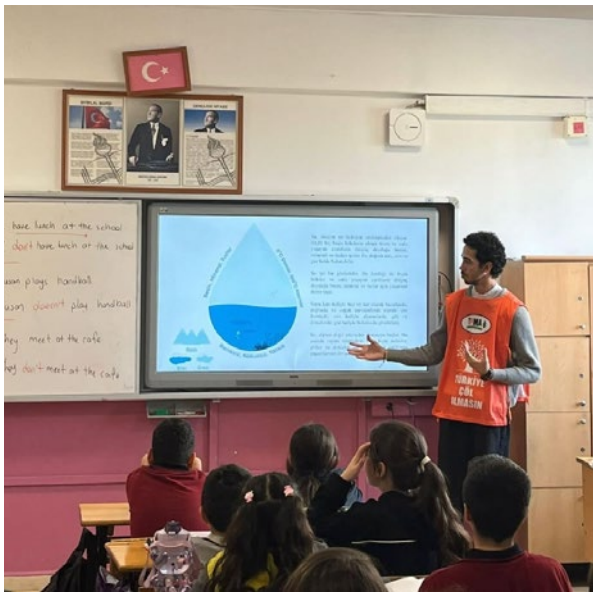
Technical visit to İSKİ Ambarlı Advanced Biological Wastewater Treatment Plant

On 9 May 2024, Yıldız Technical University Construction Society organized a technical visit to İSKİ Ambarlı Advanced Biological Wastewater Treatment Plant, which serves nearly 1.6 million residents with a daily capacity of 400,000 m³. The visit provided students with first-hand insights into wastewater treatment processes and their integration with environmental technologies, offering a deeper understanding of environmental engineering, sustainable urban infrastructure, and water management.

Water Resources Education Program

On World Water Day, YTU Schools hosted a Water Resources Education Program in collaboration with TEMA Foundation. The initiative engaged primary school students in interactive learning on water conservation and ecosystem protection, directly contributing to clean water and sanitation efforts, while also reinforcing quality education through awareness-raising and strengthening partnerships between the university and civil society organizations.





Water Awareness

At Toki Middle School, members of YTU Genç TEMA delivered an interactive session on "Water Awareness" for younger students. The program aimed to raise awareness of water consumption patterns and the importance of protecting water resources. By introducing concepts such as virtual water use and freshwater scarcity, the initiative provided early-age environmental education while fostering sustainable values among students.

Innovative Research on Sustainable Treatment and Resource Recovery from Industrial Wastewaters

"Evaluation of Borax Production Wastewaters and Leachates from Solid Waste Landfills through a Circular Economy Approach for Sustainable Management" and "Treatment and Recovery of Metal Plating Wastewaters Using Membrane Processes" Projects. These projects contribute significantly to water efficiency and wastewater management by introducing innovative and sustainable treatment methods. The evaluation of borax production wastewaters and landfill leachates through a circular economy approach promotes the recycling and reuse of water resources, thereby reducing freshwater consumption and minimizing environmental pollution. By integrating sustainable management practices, this project supports the reduction of industrial wastewater discharge and enhances resource recovery. Similarly, the treatment and recovery of metal plating wastewaters using advanced membrane processes enable the efficient purification and reclamation of contaminated water. This not only improves water quality but also facilitates the reuse of treated water within industrial processes, leading to substantial water savings. Together, these projects exemplify cutting-edge solutions that advance sustainable water management, decrease environmental impact, and align with global efforts to improve water resource efficiency and wastewater treatment.



Circular Water Management

Ms. Şebnem Aybige Barlas from Ökotek Çevre was hosted at the Faculty of Civil Engineering Conference Hall.In the training session titled "Circular Water Management", participants explored innovative strategies for sustainable water use. The session focused on minimizing water waste, reusing and recycling water resources, and integrating closed-loop systems in urban and industrial water management. Through real-life case studies and practical insights, Ms. Barlas emphasized the importance of designing water systems that reduce dependency on freshwater sources and lower environmental impact—key goals aligned with both national sustainability agendas and global climate targets. Under her guidance, attendees gained a deeper understanding of how circular practices can be implemented at both local and systemic levels, from rainwater harvesting and greywater reuse to advanced treatment technologies in infrastructure planning.

This engaging and informative session not only broadened participants' perspectives but also inspired future action toward more resilient and resource-efficient water systems.



YTU's integrated vision ensures clean water and sanitation remain essential pillars of health, equity, and sustainability worldwide.

YTU YILDIZ TECHNICAL UNIVERSITY

2024 SUSTAINABILITY REPORT

7 AFFORDABLE AND CLEAN ENERGY



ENSURE ACCESS TO AFFORDABLE, RELIABLE, SUSTAINABLE, AND MODERN ENERGY FOR ALL

Scan the QR code for SDG7 events

7 AFFORDABLE AND CLEAN ENERGY



Yıldız Technical University (YTU) recognizes that ending hunger requires more than food provision – it demands a holistic framework that unites research, education, community engagement, and environmental awareness. Guided by Sustainable Development Goal 2, the university is dedicated to ensuring access to safe, nutritious, and sufficient food for every individual while promoting responsible consumption and sustainable production systems. YTU approaches food security not only as a global priority but also as an essential dimension of student well-being and human dignity.

This section highlights how YTU integrates scientific expertise and social awareness to advance sustainable nutrition and eradicate hunger in all forms. Through interdisciplinary research in food engineering, environmental sciences, and biotechnology, the university develops innovative solutions for food preservation, waste reduction, and functional nutrition. These research endeavors align with a broader institutional vision that links academic excellence with public health and ecological responsibility. On campus, YTU fosters an inclusive food culture that values diversity and accessibility – providing affordable dining options, vegan and vegetarian meals, and nutrition-awareness programs that encourage healthy lifestyle choices among students and staff.

Equally important are YTU's initiatives that strengthen empathy and solidarity through collective experience. Community iftars, food-sharing campaigns, and projects for feeding campus animals emphasize compassion as a cornerstone of sustainable living. By encouraging volunteerism and participation, the university nurtures a sense of shared responsibility toward people, nature, and society. Together, these actions reflect YTU's conviction that the path to zero hunger extends from laboratories and classrooms to dining halls and public spaces. Through innovation, collaboration, and human connection, YTU contributes to building resilient communities where no one is left behind.

PUBLICATION STATISTICS

SCOPUS (2022-2024)

Name	Scholarly Output	% of 2047	Field-Weighted Citation Impact	Citation Count
SDG 07: Affordable and Clean Energy	679	23,23%	1,65	9.515

WoS (2022-2024)

Sustainable Development Goals	Number of Publications	% of 2.923
07 Affordable And Clean Energy	565	19,33%

PROJECTS RELATED TO SDG7

Projects Supported by YTU Scientific Research Projects Unit

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Synthesis of Zinc Ferrite Nanoparticles for Energy Storage Devices and Investigation of Their Dielectric Properties	7	9	
2	Improvement of Structural and Dielectric Properties of Zinc Ferrite-Based Nanosupercapacitors	7	9	
3	Synthesis of Chalcone Derivatives with Different Terminal Groups and Investigation of Their Effects on Perovskite Solar Cells	7	9	
4	Synthesis of Two-Dimensional Functional Hybrid Materials for Energy Applications and Investigation of Their Performance	7	9	
5	Development and Establishment of Green Hydrogen Production System	7	13	
6	Production of Two-Dimensional Functional Composite Materials and Energy Applications	7	9	
7	Effect of Synthesis of Boron Doped Perovskite Type Electrocatalysts on Hydrogen Production in Photoelectrochemical Reactor	7	12	
8	Thermoelectric Properties of Conductive Polymer-Based Inorganic/Organic Nanocomposites	7	9	
9	Production and Characterization of Polymer-Based Lithium Sulfur Batteries	7	12	

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
10	Development of Boron Nitride and Carbide Based Electrode Materials with 3D Phase Separation for Supercapacitor Applications in Next-Generation Electric Vehicles for the Automotive and Defense Sectors Using Local Resources	7	9	
11	Development of Next Generation Proton Conducting Membranes for High Temperature Fuel Cells and Investigation of Their Performance	7	9	
12	Development of Luminescent Glass-Based Spectral Converters as Solar Cell Cover Glass to Increase the Energy Conversion Efficiency of Photovoltaic Cells	7	9	
13	Synthesis of Phosphonium-Based Polymer Electrolytes and Their Application in Lithium-Ion Batteries	7	9	
14	Investigation of Tunable Photoluminescence and Energy Transfer Properties of Dy^{3+} Doped $\text{NaCaGd}(\text{WO}_4)_3$ Based Phosphors and Their Development for Phosphor-Converted White Light Emitting Diode (pc-WLED) Applications	7	9	
15	Development of New Generation Transition Metal-Based Electrocatalysts and Investigation of Their Effect on Hydrogen Production Efficiency	7	9	
16	Experimental investigation on cooling the efficiency of photovoltaic solar panels with phase change materials	7	13	
17	Development Of Fom-Containing Aerogel Structures With 3d Printer Technique For Solar Cells	7	9	
18	Investigation of the Performance of Supercapacitor Electrodes Doped with Carbon Nanotube and Titanium Dioxide Produced by Electrochemical Method	7	9	
19	Next Generation Anode Materials: Production and Performance Investigation of Carbon Based Materials for Li-Ion Batteries	7	9	
20	Investigation of Energy Content Recovery and Use in Energy Production of Different Industrial Wastes	7	12	
21	Effect of Different Electrodes on Hydrogen and Chlorine Gas Production in the Chlor-Alkali Process	7	9	
22	Evaluation of Hydrogen and Chlorine Gas Production Performance of Different Commercial Membranes in the Chlor-Alkali Process	7	9	
23	Optimization of Chlorine and Hydrogen Gas Production with Chlor-Alkali Process	7	9	
24	Investigation of Sodium Storage Behavior of Graphene-Supported Material with High Phase Stability as a New Anode Material	7	9	

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
25	Effect of Chloride Compounds on the Performance Stability of Perovskite Solar Cells	7	9	
26	Investigation of the Effect of Cation Derivatives in the Production of Perovskite Solar Cells Prepared by Sol-Jet Method	7	9	
27	Design and Implementation of Soft-Switching Phase-Shifted Full-Bridge DC-DC Converter	7	9	
28	Production and Investigation of Nanoparticle-Based Next Generation Electron Transport Layers for Perovskite Solar Cells	7	9	
29	Cooler Design for Receiver in Wireless Power Transfer with Laser	7	9	
30	INVESTIGATION OF THE EFFECT OF 2D NANOMATERIAL USAGE ON SUPERCONDUCTOR PERFORMANCE	7	9	
31	Numerical Investigation of the Effect of Ventilation on Transient Characteristics in Radiant Surface Heating Systems	7	9	
32	Optimum Battery Pack Design for Minimum Cost Rental of Electric Scooters	7	8	12
33	Development of Next Generation Ni-Cu Alloy g-C_3N_4 Catalysts for High Efficiency Hydrogen Production	7	9	

Research University Support Projects

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Energy Production from the Seabed and Microplastic Pollution: Sustainable Solutions with SMYH Technologies	7	14	13
2	Comparison of Different Air Conditioning Systems in Terms of Thermal Comfort and Energy Efficiency	7	11	13
3	Highly Efficient Photostable Perovskite Solar Cells with Luminescent Glass Substrates and Innovative Layer Technologies	7	9	13
4	Energy Storage and Radiation Shielding Applications of Nanocomposites via Sol-Gel Technique	7	9	3
5	Energy Production by Reverse Electrodialysis with Electrospun Cation Exchange Membranes	7	9	13
6	Development of Transparent and Colored Photovoltaics Integrated into Buildings	7	11	13
7	Efficiency Enhancement in Resistive-Based Heating Systems	7	9	13
8	Innovative Research Center for the Development of Energy-Efficient, Carbon-Neutral Buildings and Settlements	7	11	13

External Grant-Supported Projects

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Energy Management and Performance Optimization of Second-Life Batteries: Development of Smart Energy Management Systems and Aging Models	7	9	12
2	Design of Actuator Saturated Adaptive Energy Efficient Active Suspension System with Reinforcement Learning	7	9	11
3	Development of Multi-Stage Robust Optimization Method for Unit Commitment and Economic Dispatch Problems Including Renewable Energy Generation	7	9	13
4	Development Of 250kw Pem Electrolyzer	7	9	13
5	Fractional Order PID Controller Parameter Tuning and Applications for Isolator Boost Type DC-DC Converters Operating in Continuous Conduction Mode with the Help of Hybrid Meta-Heuristic Algorithm	7	9	13
6	Battery Second Life And Aging Analysis Laboratory (Batlab)	7	9	12
7	Investigation, Development, Optimization, and Performance Improvement of Hydrogen Vehicle Systems for Different Vehicle Applications	7	9	13
8	Estimation of Synthesis Gas and Exergy Data as a Result of Gasification of Lignite Coal and Biomass Mixtures with Machine Learning Algorithms	7	9	12
9	Development of High-Performance Flexible Asymmetric Supercapacitors without Binder Using Recycled Materials from Industrial and Organic Wastes	7	9	12
10	Development of Heterojunction Structured Floating Photo-Catalysts by Electrospinning Technique for $\text{H}_2\ text{-N}_2$ Cyclic Energy Storage with Artificial Solar Energy $\ text{N}_2$ Fixation	7	9	13
11	Development of Energy Storage System Compatible with Polar Conditions	7	9	13
12	Production of Sulfur-Doped Graphene-Molybdenum Disulfide Powders and Investigation of Their Use as Anode Material for Li-Ion Batteries	7	9	12
13	Evaluation of Theoretical and Usable Current Energy Potential of the Istanbul Strait in Light of Climate Change Scenarios	7	9	13
14	Improvement of Efficiency and Stability Performance of Perovskite Solar Cells Using Microalgae	7	9	12
15	ECHO. Energy Communities excellence Hubs: catalyzing energy innovation ecosystems	7	9	13

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
16	Increasing the Performance of Gel Type Lead Acid Batteries with Conductive Polymer-Graphite Composites	7	9	12
17	Development of Power Generating Perovskite-Based Architectural Components	7	9	11
18	Economic-Environmental and Risk Analysis of Multi-Energy Microgrids Using Power-To-X Conversion Technologies	7	9	13
19	AgriPV system with climate, water and light spectrum control for safe, healthier and improved crops production	7	2	13
20	Star-Shaped Donor-Acceptor Triazine Based Liquid Crystals for Nonlinear Optical Applications	7	9	12
21	Development of Highly Sensitive Beam-Beam Luminometer for CMS Hi-LHC (CERN)	7	9	11
22	Distributed control architecture for resilient operation of combined distribution and district heating networks	7	9	13
23	Development of Strategies for Identifying, Evaluation and Using Density-Driven Ocean Currents for Power Generation by Turbines	7	9	13

SUMMARIES OF KEY PROJECTS

Improvement of Efficiency and Stability Performance of Perovskite Solar Cells Using Microalgae

Organic–inorganic perovskite materials have attracted significant interest for photovoltaic applications due to their high power conversion efficiency, tunable bandgap, long carrier diffusion lengths, high absorption coefficient, and low production cost. In recent years, halide perovskites have achieved power conversion efficiencies comparable to conventional silicon solar cells, while offering simpler and more cost-effective large-scale fabrication. However, despite rapid efficiency improvements—from 3.8% to nearly 25% within twelve years—long-term stability remains a major challenge, largely due to the hydrophilic nature of perovskites and their sensitivity to oxygen and moisture. Optimizing the structural and morphological properties of perovskite films is therefore critical for improving device durability. This project investigates, for the first time, the incorporation of microalgae into perovskite layers to enhance film morphology, stability, and photovoltaic performance. Preliminary studies indicate that microalgae additives promote improved structural uniformity and device efficiency. By pioneering the integration of biotechnology and perovskite photovoltaics, this research aims to develop a novel bio-enhanced perovskite solar cell platform with improved efficiency and environmental stability.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Increasing the Performance of Gel Type Lead Acid Batteries with Conductive Polymer-Graphite Composites

Electrolytes play a critical role in the performance and safety of energy-storage systems such as batteries and supercapacitors. Gel valve-regulated lead-acid (VRLA) batteries are widely used in backup power systems, emergency lighting, telecommunications, electric vehicles, marine systems, and medical devices due to their low cost, recyclability, and high performance. Fumed silica is commonly employed in gel VRLA electrolytes for its high thixotropy and strong three-dimensional network formation; however, it also causes drawbacks including low chemical stability, high electrical resistance, and rapid gelation. Existing attempts to overcome these limitations often rely on costly or environmentally harmful additives. This project proposes, for the first time, the incorporation of pure conducting polymers and conducting polymer/graphite nanocomposites as additive materials in gel VRLA electrolytes. The objective is to enhance both the chemical stability and electrical conductivity of the gel phase. By improving electrolyte characteristics, the project aims to increase overall battery performance and extend operational reliability in diverse applications.



Development of Power Generating Perovskite-Based Architectural Components

In cities, where the available rooftop area is only a small fraction of the total building surface, BIPV will become an important resource of solar energy which, however, is not yet fully exploited for electricity generation. The project REFORM pretends to exploit this opportunity with a widespread deployment of perovskite BIPVs, combining the use of scalable processes, device integration and aesthetics, to deliver new architectural solutions for power generation. As we will only employ scalable methods for the device fabrication, our scientific achievements will also have a technological impact. The project has strategic importance, as the results will foster Europe independency on the energy and material supply. Commercially, we envisioned the full scheme going from research and development, to upscaling, validation and verification, aiming at technological transfer and exploitation. The objective is particularly relevant for the Module 7.1 of the Transition Initiative (TRI) 7 "Integration in the built environment - R&I in clean energy integration in the built environment". REFORM will provide solutions for a number of the proposed challenges, among others: PV integration in buildings, structural and functional integration, aesthetics solutions, decommissioning and disposal; Seamless integration of renewable energy technologies in the urban environment; Create climate-neutral buildings or building environment blocks.

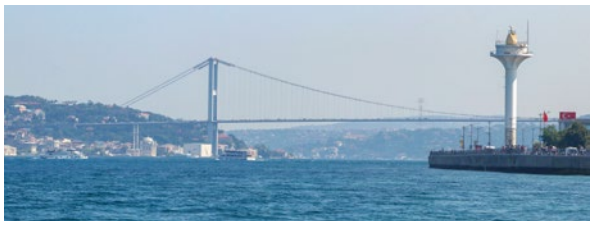


AgriPV system with climate, water and light spectrum control for safe, healthier and improved crops production

PV4Plants boosts the energy-agricultural synergy of agriPV technologies to enhance growth conditions and increase land-use efficiency, crop yield and renewable energy generation. This is achieved by optimising the light transmission of PV panels through cutting edge nanoparticles spraying on the PV glass surface. PV4Plants system is specifically designed to meet healthy harvesting and to be adaptable to different cli-

matic conditions and crop varieties that will be demonstrated in 3 highly replicable demo sites in Turkey, Spain and Denmark. PV4Plants optimises the system parameters (panels tilt, irrigation level, amount of fertilisers, etc) based on a multi-indicator real-time monitoring system that allows a continuous improvement of the microclimate underneath the agriPV panels to increase crop health and yield. Recyclability and reutilization of components and materials both for the manufacturing and End of Life of the PV4Plants system are central aspects of the project. The PV4Plants system will be certificated through the Environmental Product Declaration (EPD), compliance with ISO 14021 and the Sustainability Excellence Label by UNEF. Finally, PV4Plants will boost its market penetration and uptake through innovative farmers' engagement strategies to enhance their acceptance and trust in innovative agriPV systems; new financing schemes and business models to improve investment performance and through a set of policy recommendations that will be developed together with public authorities to create new mechanism designed to accelerate the uptake of agriPV systems in Europe.





Development of Strategies for Identifying, Evaluation and Using Density-Driven Ocean Currents for Power Generation by Turbines

Harnessing energy from ocean and marine current systems has gained significant global interest, with numerous applications under development worldwide. This project aims to assess the energy potential of the current system in the Istanbul Strait and develop a suitable turbine system tailored to its hydrodynamic characteristics. Comprehensive current measurements will be conducted throughout the strait, followed by numerical modelling to characterize flow behaviour and seasonal variations. Based on the model results, optimal turbine deployment locations will be identified to maximize energy extraction efficiency. The project is expected to contribute to sustainable marine renewable energy research by providing a site-specific design framework for current-driven turbine technologies suitable for narrow strait conditions such as the Bosporus.



YTU accelerates the global energy transition through innovation, education, and collaboration focused on sustainability and equitable access.



20th anniversary launch of YTU AESK

The 20th anniversary launch of YTU AESK provided a dynamic platform for showcasing innovative student-led projects on sustainable vehicle design and energy-efficient technologies. The event emphasized applied learning by enabling students to present the outcomes of their engineering research while also fostering collaboration between academia and industry partners. By highlighting clean energy solutions and responsible approaches to production and mobility, the launch not only demonstrated the university's commitment to sustainability but also reinforced its role in nurturing innovation, practical skill development, and impactful partnerships across sectors.

YTU AESK achieved notable recognition

YTU AESK achieved notable recognition through the TÜBİTAK 2209-A/B (2023/2) University Student Research Projects Support Program, with 10 projects under 2209-B and 6 projects under 2209-A successfully funded. This achievement underscores the university's strong commitment to fostering student-led research and applied innovation. Developed under the guidance of academic advisors and in collaboration with industry partners, the projects demonstrate an integrated model of experiential learning and knowledge transfer. By enhancing students' research capacity, promoting interdisciplinary collaboration, and strengthening academia–industry linkages, this initiative highlights YTU's role in advancing quality education, supporting innovation-driven practices, and sustaining impactful partnerships.



YTU AESK achieved significant success at the 2024 Shell Eco-marathon Europe & Africa

YTU AESK achieved significant success at the 2024 Shell Eco-marathon Europe & Africa, held in Nogaro, France. Competing with the team's innovative vehicle Vega in both the Battery-Electric and Autonomous Urban Concept categories, the team successfully passed all technical inspections and qualified for the race. With a performance of 146 km/kWh, YTU AESK secured 5th place in the Battery-Electric concept among teams from across the globe.

Furthermore, as the only Turkish team participating in the Autonomous Urban Concept category, YTU AESK once again successfully completed technical inspections and represented Türkiye with distinction, ranking 4th overall. This outcome not only demonstrates the students' technical competence and design capabilities but also underscores the university's contribution to advancing sustainable energy solutions and smart mobility.



By consistently improving on previous results and reaching higher standings, the team highlighted YTU's role in promoting experiential learning, fostering innovation in clean energy technologies, and enhancing international visibility. The achievement illustrates how student-led engineering initiatives can drive progress in sustainability-focused competitions and inspire future-oriented research and practice.

From hydrogen to wind and electric mobility, YTU drives breakthroughs in renewable technologies that shape a cleaner energy future



Wate to Energy Technologies

YTU conducts innovative research in waste-to-energy technologies through its dedicated research group focused on sustainable waste management, recycling, and resource recovery. The group develops low-cost, eco-friendly bioenergy production systems including biological, chemical, and bio-electrochemical processes that convert waste streams into valuable energy sources.

YTU researchers have participated in multiple national and international projects that explore circular economy models, life-cycle assessments, and sustainable waste-to-energy solutions. Their work contributes to the development of clean and renewable energy technologies and supports the transition toward carbon-neutral, resource-efficient production systems.





YTU AESK achieved first place in the Electromobile category

At the 19th International Efficiency Challenge Electric Vehicle Competition, organized by TÜBİTAK MAM as part of TEKNOFEST 2024, YTU AESK achieved first place in the Electromobile category. This success highlights the team's sustained commitment to sustainable mobility and the development of energy-efficient vehicle designs."

In addition to the overall championship, YTU AESK earned multiple awards for innovation and domestic technology development. With Nova, the team won the first prize in the Domestic Product Incentive category, while Castor secured second place in the same category. These results highlight the team's ability to integrate fully domestic and optional systems into their vehicles, advancing Türkiye's technological capacity in clean transportation.

Through rigorous preparation and teamwork, the students translated months of intensive effort into outstanding results. Their success underscores YTU's strong commitment to experiential learning, applied research, and innovation in renewable energy technologies, contributing to both national technological advancement and international visibility.



Green Hydrogen in the Focus of Energy

The panel "Green Hydrogen in the Focus of Energy," organized by YTU CIGRE Student Club in collaboration with EMO Genç and supported by industry experts, addressed the transformative role of green hydrogen in sustainable energy systems. By fostering dialogue between academia, professional associations, and the private sector, the event promoted knowledge exchange on clean energy technologies and their role in decarbonization.



13th Türkiye Wind Energy Congress



YTU students and faculty members participated in the 13th Türkiye Wind Energy Congress (TÜREK 2024), which brought together leading experts, industry professionals, and academics to discuss the future of wind energy. The congress provided a unique platform for knowledge exchange on the latest sectoral developments, opportunities, and innovative practices in renewable energy. By engaging students directly with industry stakeholders and policy leaders, the event enhanced awareness of sustainable energy solutions and fostered academic–industry collaboration, further strengthening YTU's role as a key contributor to the transition towards a sustainable energy future.



Technical visit was organized to Birikim Pilleri

On 17 December 2024, a technical visit was organized to Birikim Pilleri, a company specializing in advanced battery and energy storage solutions. The program offered students the opportunity to tour the company's production facilities and R&D center, gaining first-hand insights into cutting-edge developments in battery technologies.

Birikim Pilleri develops and manufactures innovative products across multiple technologies, including lithium-ion, nickel-cadmium, and nickel-metal hydride systems, addressing the needs of diverse sectors such as defense, medical devices, consumer electronics, light electric vehicles, and industrial energy storage. The company also operates under two registered brands:

Power-Xtra – focusing on consumer and industrial batteries, charging systems, and power supplies.

BPM – delivering high-tech, custom battery solutions for specialized sectors in compliance with international standards.

This visit enhanced students' understanding of energy storage technologies and fostered stronger links between academia and industry in a field central to sustainability and innovation.



The 2024 edition of REKTalks

The 2024 edition of REKTalks began on 10 February at YTU where the Renewable Energy Club welcomed Cem Faik Güneş, Project Management Instructor at Mindset Institute and one of its founding members, as the opening speaker. Delivered online via Zoom, the talk explored the current state and future trajectory of renewable energy, highlighting opportunities and challenges in energy transition, sustainability, and project management in the sector. The event provided students with valuable sectoral insights and encouraged critical reflection on Turkey's and the world's renewable energy strategies.



Participation in GPECOM 2024 Conference (Hungary) – June 4–7, 2024

YTU was represented at the GPECOM 2024 – IEEE International Conference on Smart Power & Internet Energy Systems, held in Hungary between June 4–7, 2024, by Assoc. Prof. Dr. Ali Rıfat Boynueğri.

The conference brought together leading experts and researchers from around the world to discuss the latest advances in smart grids, renewable energy systems, power electronics, and energy storage technologies. Within this scope, three papers were presented by YTU researchers, reflecting the university's strong contributions to innovation in sustainable energy systems and intelligent power applications:

LLC Laser Driver for Laser Wireless Power Transfer Application

Authors: Hayri Yiğit (Yıldız Technical University), Ali Rıfat Boynueğri (Yıldız Technical University), Burak Tekgün (Abdullah Gül University)

Focus: Development of an LLC-based laser driver for high-efficiency wireless power transmission applications.

Estimation of R and C Parameters for Battery Aging in Energy Storage Systems

Authors: Merve Saray (Yıldız Technical University), Ali Rıfat Boynueğri (Yıldız Technical University)

Focus: Parameter estimation for resistance and capacitance values to model and analyze battery degradation over time in energy storage systems.

Battery Aging Simulation for a Fully Electric RO-RO Passenger and Vehicle Ferry

Authors: Mümin Karaosman, Ali Rıfat Boynueğri, Yavuz Eren (Yıldız Technical University)

Focus: Simulation and analysis of battery aging performance in maritime applications for fully electric roll-on/roll-off passenger and vehicle ferries.

Participation in GPECOM 2024 provided valuable opportunities to exchange knowledge with international experts, fostering academic collaboration and contributing to global discussions on electrification, clean transport, and sustainable energy systems.



Development of a Compatible Energy Storage System in Polar Conditions

YTU faculty member Assoc. Prof. Dr. Hüseyin Ayhan Yavaşoğlu from the Department of Mechatronics Engineering at the Faculty of Mechanical Engineering participated in the 8th National Antarctic Science Expedition with his research project titled “Development of a Compatible Energy Storage System in Polar Conditions.” Conducted under extreme environmental conditions, this project aims to develop sustainable and efficient energy storage technologies suitable for polar climates, contributing to climate research and renewable energy innovation in one of the world’s most fragile ecosystems.

Environmental Approaches from Industry Leaders

YTU hosted the 14th Green Sector Event under the theme “Environmental Approaches from Industry Leaders.” The event brought together major companies in the energy and technology sectors to present their latest eco-friendly and sustainable projects, inspiring students to integrate environmental awareness into their future careers.Through discussions on renewable energy, green production, and sustainable innovation, the event enhanced understanding of how industrial transformation contributes to climate action and environmental protection.





The 13th Green Sector

The 13th Green Sector event, organized by YTU|-ÇEV, featured Latife Nur Demir, Environmental Engineer at Pegasus Airlines, who delivered a talk on the company's "Zero Emission Target." The session explored strategies for achieving net-zero emissions in the aviation sector, focusing on sustainable fuel use, carbon offsetting, and operational efficiency. Participants gained insights into how environmental management and green innovation can transform energy-intensive industries. The event also emphasized the importance of corporate responsibility and the role of young engineers in advancing sustainability goals.

Investigation, Development, Optimization, and Performance Improvement of Hydrogen Vehicle Systems for Various Vehicle Applications

Assoc. Prof. Dr. Nader Javani, Faculty of Mechanical Engineering, Department of Mechanical Engineering, conducts the project titled

"Investigation, Development, Optimization, and Performance Improvement of Hydrogen Vehicle Systems for Various Vehicle Applications"

in collaboration with Ford Otosan under the TÜBİTAK 2244 – Industry PhD Program.
The project focuses on advancing hydrogen-powered electric vehicle technologies, particularly in:

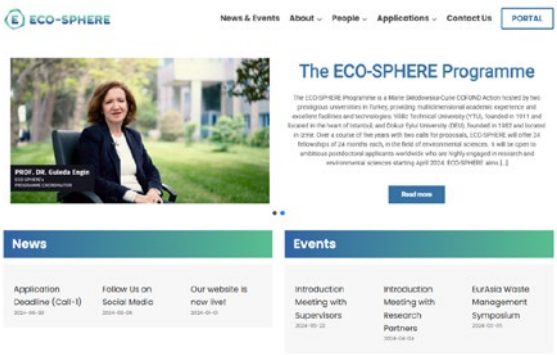
Fuel Cell Module and System Development,

Cooling Technologies for Fuel Cell Systems,

Integrated Fuel Cell and Battery Thermal Management Systems.

These studies aim to enhance the efficiency, sustainability, and commercialization potential of zero-emission transportation systems.





ECO-SPHER

Provision of sustainability-focused scholarships, thesis grants, and funding support for student-led research and capstone projects.

The ECO-SPHERE program, funded by the European Union's Horizon Europe research and innovation program, is now accepting applications for postdoctoral fellowships. This programme aims to advance knowledge and promote environmental sustainability through interdisciplinary research. Supported by the Marie Skłodowska-Curie Actions programme, the ECOSPHERE project will offer postdoctoral fellowships focused on sustainable product design and resource efficiency. Coordinated by Yildiz Technical University and Dokuz Eylul University, the programme covers research areas such as eco-design, energy, water management, and more.

AESK Team became champions

AESK Team (Alternative Energy Systems Club) became champions in the Electromobile category at the 19th International Efficiency Challenge Electric Vehicle Competition held at TÜBİTAK MAM as part of TEKNOFEST 2024.

In addition, AESK Team, which develops all mandatory and optional systems on our vehicles domestically, continued to lead the way by winning the First Place in Domestic Product Incentive with our vehicle Nova and the Second Place in Domestic Product Incentive with our vehicle Castor.





Seminar on Transformers Used in Wind Turbines

YTU organized a seminar focusing on transformers used in wind turbines, exploring their design, operation, and role in renewable energy systems. Participants gained insights into how transformers contribute to the efficient integration of wind power into the grid, supporting the transition to clean energy.

Seminar on New Approaches in Electric Transportation Systems and Electric Power System Integration

YTU hosted a seminar on innovative approaches in electric transportation systems and their integration with electric power networks. The session covered cutting-edge developments in electric mobility, charging infrastructure, and grid integration, highlighting their role in building a sustainable and efficient energy future.





Seminar on Wind Energy Sector Measurements and WindPro Software

YTU hosted a seminar focusing on wind energy sector measurements and the use of WindPro software for planning and optimizing wind energy projects. Participants gained hands-on insights into resource assessment, project feasibility analysis, and modeling tools that support the development of efficient wind farms.



Energy Communities Excellence Hubs: Catalyzing Energy Innovation Ecosystems

Prof. Dr. Ozan Erdinç, a faculty member of the Electrical Engineering Department at Yıldız Technical University, is leading the ECHO project (Energy Communities Excellence Hubs: Catalyzing Energy Innovation Ecosystems), for which YTU serves as the coordinating institution. The project has been awarded funding of €5 million under the HORIZON-WIDERA-2023-ACCESS-07-01 call.

Within the scope of this project, Energy Communities and Centers of Excellence for Innovative Energy Services will be established in Turkey, Greece, and Portugal. These centers will accelerate the energy transition by enhancing innovation ecosystems, building capacity, and empowering local stakeholders.

The ECHO consortium employs the Quadruple Helix model, bringing together academia, industry, government, and civil society in a collaborative framework. By focusing on sustainable, scalable, and inclusive energy communities, ECHO aligns closely with the EU's energy transition goals.

By bridging regional strengths and empowering stakeholders, ECHO will make a significant contribution to building a resilient and equitable energy landscape.

Uniting science, partnerships, and purpose, YTU transforms research into action for affordable and sustainable energy worldwide.

POLICY & OPERATIONS



TU YILDIZ SOLAR BOAT TEAM participated in the Sardinia Innovative Boat competition

YTU YILDIZ SOLAR BOAT TEAM participated in the Sardinia Innovative Boat competition held on the island of Sardinia, Italy, with its solar-powered and hydrofoil-equipped boat. The team successfully completed this challenging process after an intensive preparation period and technical evaluations. Their participation represented a significant example of promoting sustainable energy technologies and innovative engineering solutions.



YILDIZ TECHNICAL UNIVERSITY

2024 SUSTAINABILITY REPORT



8 DECENT WORK AND ECONOMIC GROWTH

PROMOTE SUSTAINED, INCLUSIVE AND SUSTAINABLE ECONOMIC GROWTH, FULL AND PRODUCTIVE EMPLOYMENT, AND DECENT WORK FOR ALL

Scan the QR code for SDG8 events

8 DECENT WORK AND ECONOMIC GROWTH



Yıldız Technical University (YTU) is deeply committed to promoting inclusive and sustainable economic growth by empowering individuals with the skills, creativity, and opportunities needed for productive employment. Guided by Sustainable Development Goal 8, the university integrates academic rigor, practical experience, and entrepreneurial spirit to strengthen both local and global economies. YTU's holistic vision of growth combines innovation with social responsibility – ensuring that economic progress contributes to human well-being, equality, and sustainable development.

This section highlights how YTU nurtures employability and economic empowerment through research, education, and partnerships. The university's programs bridge the gap between academia and industry, fostering innovation-driven learning and real-world problem-solving. Events such as the International Supply Chain Camp, Zirvedekiler Summit, and Focus on Big 4 create direct links between students and business leaders, providing valuable exposure to professional networks and emerging global markets. Meanwhile, initiatives like "Show Yourself" and "Startup Day" cultivate entrepreneurial mindsets, equipping students with the practical and creative skills to generate sustainable business solutions and contribute to technological advancement.

Research and innovation play a central role in advancing decent work at YTU. Collaborative projects under the TÜBİTAK 2244 – Industry PhD Program and AI-based industrial research exemplify how academic expertise translates into industrial growth and digital transformation. At the same time, YTU Startup House continues to serve as a catalyst for entrepreneurship, supporting young innovators in developing scalable, responsible ventures. Together, these efforts reflect YTU's enduring commitment to fostering decent work, fair opportunity, and sustainable economic resilience. Through its dynamic ecosystem of learning, innovation, and collaboration, YTU continues to prepare a generation ready to shape an inclusive and sustainable economic future.

PUBLICATION STATISTICS

SCOPUS (2022-2024)

Name	Scholarly Output	% of 2047	Field-Weighted Citation Impact	Citation Count
SDG 08: Decent Work and Economic Growth	152	5,20%	1,98	2.533

WoS (2022-2024)

Sustainable Development Goals	Number of Publications	% of 2.923
08 Decent Work And Economic Growth	95	3,25%

PROJECTS RELATED TO SDG8

Projects Supported by YTU Scientific Research Projects Unit

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	A Solution Approach to the Problem of Customer Segmentation and Customer Lifetime Value Prediction in the E-Commerce Sector	8	9	
2	A Multidimensional Hybrid Approach in Airport Performance Measurement	8	9	
3	Employment Protection Legislation, Wages, Inequality and Income Distribution Inequality	8	10	

External Grant-Supported Projectsw

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Artificial Intelligence Based Product Development Applications in E-Commerce Sector	8	9	
2	Relationship Between Information and Communication Technologies and Export Performance: An Empirical Analysis at the Firm Level for Turkey	8	9	
3	Investigation of Student-Centered Socio-Cultural Changes in Central Anatolian Cities from the Perspective of City Residents	8	10	

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
4	The Process and Consequences of Temporal and Spatial Displacement of Businesses Developing in the Historical Peninsula Region of Istanbul	8	10	
5	Direklerarası in Late Ottoman Istanbul: Experience and Perception	8	10	
6	Sustainable Damage Detection and Monitoring System for Cultural Heritage with Artificial Intelligence	8	12	13
7	Development of Project Management Office Methodology Integrated with Intellectual Property Rights Management and International Incentive Programs	8	10	
8	Training of Doctoral Personnel in the Field of Technical Sciences Specialization in Collaboration with Yıldız Technical University and Akım Metal	8	9	
9	ECONENGIN: Economic Engineering	8	9	
10	"A Smart Network for Technology Transfer and Commercialisation with Funnel Model"	8	9	17

SUMMARIES OF KEY PROJECTS

Relationship Between Information and Communication Technologies and Export Performance: An Empirical Analysis at the Firm Level for Turkey

This project investigates the impact of Information and Communication Technologies (ICT) on the export performance of firms in Türkiye, distinguishing between extensive and intensive export margins. First, the effect of ICT adoption on firms' probability of entering export markets will be analysed. Second, the project will evaluate how ICT influences the export intensity of existing exporters. The empirical analysis will use a comprehensive panel dataset for 2009–2019, constructed by merging five micro-level data sources from TurkStat: ICT Usage in Enterprises Survey, Foreign Trade Statistics, Sectoral Balance Sheets, Annual Industry and Service Statistics, and Annual Business Registers. A dynamic probit model will estimate the extensive margin, while a fractional probit model will assess the intensive margin, measured by the share of exports in total sales. The dataset's provincial information also enables regional comparison, and classification of exports by technological content allows examination of heterogeneous ICT effects across technology levels. The findings will provide evidence on the role of ICT in enhancing firms' export capabilities in a chronically current-account-deficit economy and inform policy design on regional disparities and technological upgrading in exports.





Sustainable Damage Detection and Monitoring System for Cultural Heritage with Artificial Intelligence

Cultural heritage reflects the architectural, social, and historical identity of societies, yet it is highly vulnerable to natural hazards, climate change, tourism pressures, and human interventions. Sustainable monitoring and early damage detection are therefore critical for preserving such assets for future generations. Cappadocia, inscribed on the UNESCO World Heritage List in 1985, hosts unparalleled natural formations and rock-carved historical structures. However, climate impacts and extensive rock-carving activities generating large volumes of volcanic waste threaten the long-term stability of this heritage landscape. This project aims to develop a low-cost, AI-based system for automated and sustainable damage detection and monitoring of cultural heritage sites in Cappadocia. Using drone and terrestrial imagery, photogrammetric 3D models will be produced; where aerial capture is limited, SLAM-based mobile LiDAR will be employed. A uniquely annotated 2D/3D dataset specific to Cappadocia stone textures and crack patterns will be created. Two novel deep learning models, YTU-CHNet2D and YTU-CHNet3D, adapted from state-of-the-art edge and point cloud architectures, will automatically extract structural contours and cracks. The proposed framework is designed to serve not only Cappadocia but also global heritage conservation efforts.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION 13 CLIMATE ACTION



Employment Protection Legislation, Wages, Inequality and Income Distribution Inequality

This project investigates the effects of employment protection legislation (EPL) on wages, unemployment, and income inequality using a comprehensive dataset covering developed and developing countries from 1975 to 2019. EPL regulates hiring, dismissal, and working conditions, aiming to ensure job security and fair treatment in labour markets. While the existing literature includes numerous studies on EPL, most focus primarily on developed economies, overlooking developing countries. This study analyses the relationship between EPL strictness and key labour market outcomes, examining whether protective labour regulations influence wages, unemployment dynamics, and income distribution. It also explores the linearity of these effects, their interaction with other macroeconomic variables, and differences between country groups. By providing robust econometric evidence, the project seeks to clarify how EPL can balance job security and economic equity, identifying whether such regulations promote fair income distribution without adversely affecting labour market performance. Findings are expected to guide policymakers in designing context-specific labour market strategies that support both social protection and economic efficiency.

10 REDUCED INEQUALITIES



19th International Supply Chain Camp

The 19th International Supply Chain Camp, organized by the Quality and Productivity Club of Yıldız Technical University, was successfully held in Istanbul from February 12 to 16, 2025.

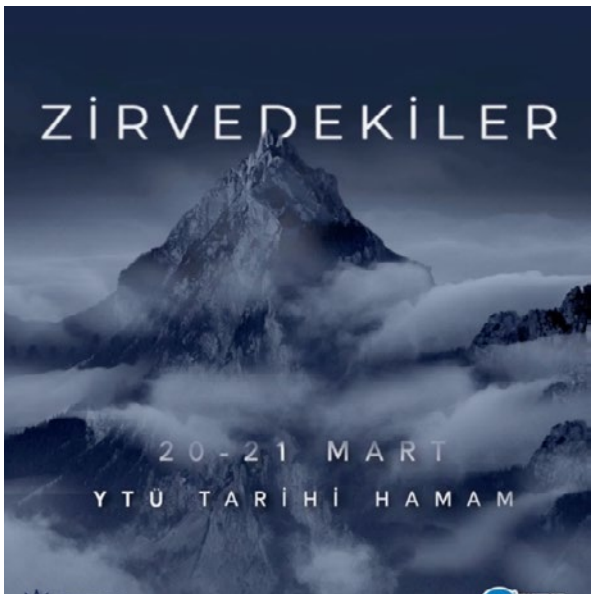
Throughout the week, participants had the opportunity to engage in academic sessions featuring distinguished experts in the field, real-life case study analyses, interactive business simulations and games, technical site visits to leading industrial facilities.

The event provided an immersive experience on topics such as sustainable supply chains, logistics optimization, digital transformation, and global business network management.

Top Executives of the Industry will be at Zirvedekiler on March 20–21!

We are proud to present the 26th edition of our long-standing flagship event, Zirvedekiler, which will bring together C-Level executives with students and young professionals!

Taking place on March 20–21 at the Historical Hamam, Zirvedekiler offers a unique opportunity to connect with major companies through an exclusive career fair, a dynamic networking foyer area, and inspiring talks delivered by top-level business leaders.





Focus on Big 4: Discovering Career Opportunities in Global Audit Firms

On December 26, 2024, the Faculty of Economics and Administrative Sciences (FEAS) successfully hosted the Focus on Big 4 event, welcoming representatives from the world's leading international audit firms—commonly referred to as the Big 4. Recognizing that many students and alumni from economics and administrative sciences disciplines begin or shape their careers within audit firms, this event aimed to clarify the roles and contributions of these global organizations.

The program featured informative presentations and interactive sessions where participants had the opportunity to learn more about audit, consultancy, and financial services, as well as the career paths available within these firms. Attendees gained valuable first-hand insights directly from industry professionals, enabling them to better understand the structure and impact of the Big 4.

By connecting students with global career opportunities, the event contributed to professional development and supported informed career planning.



Show Yourself – Recruitment Simulations

"Show Yourself" was a two-day event designed to simulate real-life recruitment processes for university students. Participants experienced mock job interviews, attended corporate presentations, and engaged in networking opportunities with professionals from various industries. The event aimed to equip students with practical career skills and exposure to the business world.



YTU International Startup Day

"YTU International Startup Day" took place on November 1, 2024, at Yıldız Technical University, Faculty of Electrical and Electronics Engineering (EEF Conference Hall).

Organized by the International Students Club in collaboration with YTU Startup House, the event brought together students and entrepreneurs to exchange ideas on innovation, entrepreneurship, and global business development. Successful startup founders from Türkiye shared their experiences and insights into scaling businesses internationally, inspiring participants to pursue their own entrepreneurial goals.

The event promoted innovation-driven education, cross-cultural collaboration, and the development of entrepreneurial skills among young people.





Show Yourself – Recruitment Simulations

Prof. Dr. Alev Taşkın, Faculty of Mechanical Engineering, Department of Industrial Engineering, collaborates with Hepsiburada under the TÜBİTAK 2244 – Industry PhD Program on the project titled:

"AI-Based Product Development Applications in the E-Commerce Sector."

The project focuses on developing artificial intelligence (AI) and natural language processing (NLP)-based solutions for key industrial challenges such as:

- Extracting commands from text using AI and NLP,
- Profiling via text and image processing,
- Detecting anomalies in financial data.



POLICY & OPERATIONS



SLB is Hiring

YTU organized an industry seminar titled "SLB is Hiring" on December 10, 2024, as part of the Faculty of Mechanical Engineering's career development activities. SLB, a leading global technology company in the aset sector, introduced career pathways and recruitment opportunities for YTU students in Mechanical Engineering and Mechatronics Engineering. The session supported students' preparation for global engineering careers and strengthened university–industry cooperation. It also provided insights into advanced aset technologies and innovation practices, contributing to workforce readiness and engagement with high-tech industrial ecosystems

KOOP Days

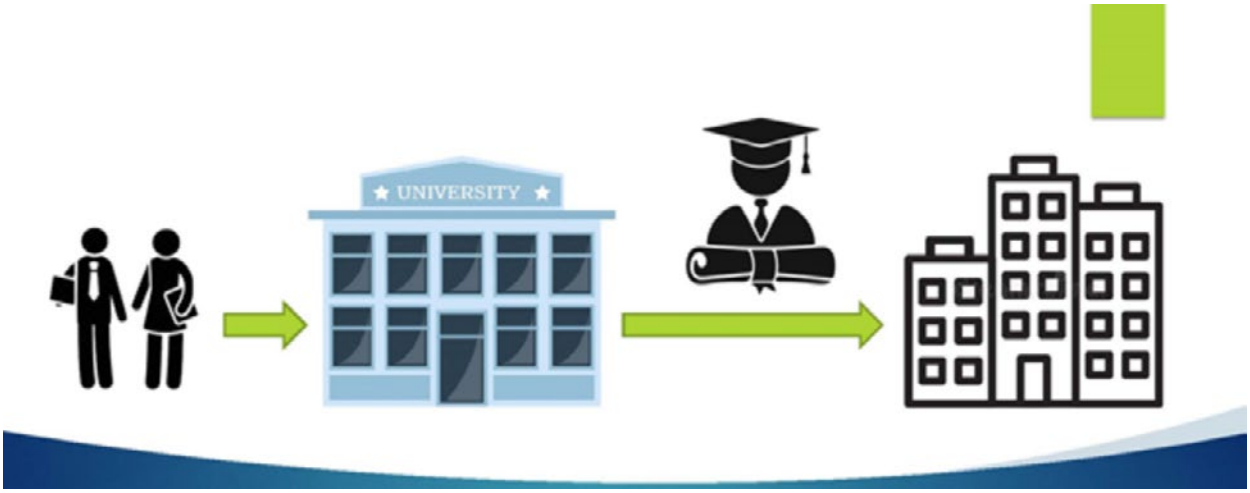
On 22–23 October 2024, the Faculty of Mechanical Engineering at Yıldız Technical University organized the first edition of the Mechanical Engineering Cooperative Days (KOOP Days) at the Beşiktaş Campus Auditorium. The event opened with remarks from Dean Prof. Dr. Zehra Yumurtacı and brought together leading companies from the automotive, manufacturing, defense, aset, textile, and technology sectors, including Anadolu Isuzu, BEKO, EDAG, STM, LC Waikiki, Tümosan, Systemair, Putzmeister, and others.

Throughout the two-day program, participating companies delivered presentations and hosted information stands, introducing internship and cooperative education opportunities to YTU students. The event enabled direct engagement with industry leaders, provided insights into engineering career pathways, and strengthened university–industry collaboration for applied learning and workforce development.

This initiative enhanced students' employability, supported experiential learning, and reinforced YTU's cooperative education model, contributing to a stronger bridge between academic education and industry-based professional practice.



YTU fosters innovation, skills, and opportunities to drive sustainable economic growth and empower a future-ready workforce.



University–Industry Cooperation through the COOP Program

Yıldız Technical University actively supports work-integrated learning through its COOP (Cooperative Education) Program, which strengthens the connection between academic learning and professional experience.

As of 2024, the university has signed a total of 293 cooperation agreements with companies, including 23 new agreements established during the year. A total of 133 students were placed in partner organizations for hands-on professional training under the KOOP framework.

20 students have been confirmed as havin transitioned into full-time positions following their cooperative education.

YTU students successfully complete their internships and on-site training in leading national and international organizations, including:

National scale: Halkbank, Arçelik, Penti, TurkNet, LC Waikiki, TÜİK, TÜBİTAK BİLGEM, EHSİM, and TOFAŞ.

International scale: Rolls-Royce, Siemens, Ford, Huawei, and ISUZU.

4 QUALITY EDUCATION

17 PARTNERSHIPS FOR THE GOALS

YILDIZ TECHNICAL UNIVERSITY

2024 SUSTAINABILITY REPORT

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



BUILD RESILIENT INFRASTRUCTURE, PROMOTE INCLUSIVE AND SUSTAINABLE INDUSTRIALIZATION, AND FOSTER INNOVATION

Scan the QR code for SDG9 events

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



Yıldız Technical University (YTU) places innovation, technology, and infrastructure development at the center of its vision for sustainable progress. Guided by SDG 9, the university aims to strengthen the relationship between research, industry, and society by creating a dynamic ecosystem that drives industrial growth, technological innovation, and environmental responsibility. YTU views infrastructure not merely as a physical framework, but as an intellectual and collaborative foundation that enables sustainable industrial transformation, inclusive economic growth, and social well-being.

This section highlights how YTU integrates education, scientific research, and industrial collaboration to accelerate innovation and strengthen infrastructure. Supported by national and international programs such as TÜBİTAK and Horizon Europe, YTU carries out projects that advance artificial intelligence, robotics, materials engineering, and circular economy solutions. Initiatives like SMARTNET, OPTIFY, and TWIN illustrate how the university's expertise in data science and manufacturing contributes to digital transformation, smart production, and knowledge-based industry. Through research centers, innovation hubs, and technology transfer offices, YTU nurtures a culture of invention that translates academic knowledge into market-ready technologies, patents, and entrepreneurial ventures.

Equally, YTU's infrastructure and innovation culture extend beyond laboratories into education, entrepreneurship, and student engagement. Student-led projects such as YTU Racing, Sigma Aeronautics, and green entrepreneurship programs exemplify the university's emphasis on applied learning and creative problem-solving. Seminars, industrial visits, and hackathons build strong bridges between academia and industry, ensuring students gain practical experience while addressing real-world challenges. Through its active patent ecosystem, international collaborations, and startup acceleration platforms, YTU contributes to a global movement toward sustainable, inclusive, and innovation-driven growth. A unity of science, creativity, and collaboration, continues to shape the resilient industries and intelligent infrastructures of tomorrow.

PUBLICATION STATISTICS

SCOPUS (2022-2024)

Name	Scholarly Output	% of 2047	Field-Weighted Citation Impact	Citation Count
SDG 09: Industry, Innovation and Infrastructure	463	15,84%	1,39	4.899

WoS (2022-2024)

Sustainable Development Goals	Number of Publications	% of 2.923
09 Industry Innovation And Infrastructure	231	7,90%

PROJECTS RELATED TO SDG9

Projects Supported by YTU Scientific Research Projects Unit

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Investigation of Gas Sensing and Electro-Optical Properties of Some Nanostructures	9	3	12
2	Fuzzy State Markov Chains for Improving Traffic Delay Predictions	9	11	
3	Development Of Bim-Based Disruption Claim Management Tool For Megaprojects	9	8	
4	Investigation of Mechanical and Durability Properties of White Cementitious Hybrid Composites Containing Different Fiber Types with Ceramic Powder Additive	9	12	
5	Investigation of Performance Effect in Chemically Admixtured Deep Mixing Method through Model Tests	9	11	
6	Investigation of the Effect of Tubercle and Wing Particle Angle in Humpback Whale Flippers on Aerodynamic Performance via Experimental Cavitation Tunnel Tests and Numerical CFD Analyses	9	14	
7	Production and Characterization of Nickel Nanocrystals Using Fatty Acids with One-Pot Injection/Non-Injection Synthesis Method	9	12	
8	Production and Characterization of Boron Carbide Reinforced Zirconium Carbide Ceramic Composites	9	12	

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
9	Production of AA7075 Aluminum Alloy by Hot Pressing Method and Determination of the Effect of Production Parameters on Aging Behavior and Corrosion Properties	9	12	
10	Design and Development of a Cryptometer for Determining Aseismic Slip Movement Occurring Along Fault Zones	9	11	
11	Effect Of Profile Modification On The Strength Of Spiral Bevel Gears	9	8	
12	Investigation of Structural Behavior of Electrically Cured Geopolymer Composites	9	12	13
13	Investigation of the Self-Healing Potential of Ceramic Powder-Based Geopolymer Composites with Marine Bacteria	9	14	
14	Orientation Estimation of Moving Targets with Real-Life Environmental Measurements	9	11	
15	Numerical and Experimental Investigation and Optimization of Flow Distribution in an Indoor Space Ventilation System	9	11	
16	Investigation of Optical Soliton Solutions Containing Different Types of Phase Modulation Forms of High-Order Nonlinear Schrödinger Equations	9	4	
17	Microprocessor Controlled Data Acquisition System For X-Ray Fluorescence Spectrometer	9	4	
18	Development and Investigation of Properties of Anti-Corrosion Silica Nanoparticle-Doped Polymer Nanocomposite Coatings	9	12	
19	Immobilization Of Pullulanase By Copper Hybrid Nanoflower Method	9	12	
20	Design of Mobility-Independent OTFS-Based Transmitter Architecture and MAC Improvement for 5G Communication Systems	9	4	
21	Design and Application of Permanent Magnet Assisted Synchronous Reluctance Motor for Electric Vehicles	9	7	
22	Investigation of the Z Decay Mass Value in High Energy Proton Collisions by Developing Original Artificial Intelligence Applications	9	4	
23	Development and Implementation of Periodic Learning-Based Nonlinear Control Method for Variable Speed Control of Permanent Magnet Motors	9	7	
24	Development of Deep Reinforcement Learning-Based Hybrid Missile Guidance Systems	9	16	
25	Data Visualization Based Policy Analysis and Policy Regime Transitions: Comparative Analysis of Turkey, Cyprus and Greece	9	17	

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
26	Examination of Durability Properties of Nano Cellulose Fiber Added Mortars	9	12	
27	Rheological and Mechanical Properties of Fiber-Reinforced Lime-Based Injection Materials	9	12	
28	Optimization Of Laser Powder Bed Fusion Manufacturing Parameters In The Production Of H13 Tool Steel Parts	9	12	
29	Investigation Of The Effect Of Injector Geometry On Hydrogen Spray Characteristics By Simulation Method	9	7	
30	Analysis Of Alternative Hybrid Powertrain Systems For Commercial Vehicles	9	7	13
31	Design Optimization of Microwave Frequency Selective Surfaces with Artificial Intelligence Algorithms	9	4	
32	Ultrasonic Burnishing Polishing and Surface Integrity Analysis on Al 6061 Alloy	9	12	
33	Bi□phenyl Based Fluoro Substituted New Chiral Liquid Crystal	9	4	
34	Synthesis and Characterization of Ethylene Oxide Crystals	9	12	
35	Application Of Topsis And Ahp Multi-Criteria Decision Making Methods To The Highway Pavement Type Selection Process	9	11	
36	Investigation of silk fibroin beta crystal and amorphous regions with atomistic simulation methods	9	12	
37	Investigation of Radiation Shielding Properties of Cement-Based Heavy Composite Materials Doped with Alumino-Thermite Welding Slag	9	3	
38	Effects of Nanocellulose Fiber Addition on the Rheology and Mechanical Properties of Cement-Based Systems	9	12	
39	Investigation of the Strengths of Geopolymer Mortars Under High Temperature Effect	9	13	
40	Development Of Alkali-Activated Repair Mortar With High Early Strength	9	11	
41	Electronic Properties Of Monolayer And Bulk $\Text{Mos}_2$ Structures	9	4	
42	NZS Design for the Backend Part of CERN CMS HGCAL	9	4	
43	Investigation of the Effects of Structural Properties of Coating Materials Used in Bass Guitar Strings on Timbre	9	4	
44	Development of Metallic Damper with Different Shapes and Steel Braces	9	11	
45	Use of Waste Metal Salts as Foaming Agent in the Production of Lightweight Geopolymer Composite	9	12	

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
46	Development of AlSi10Mg Metal Matrix Composites for Laser Powder Bed Fusion Additive Manufacturing Applications	9	12	
47	Use of Quantum Dots in Inorganic Thin Film Based Gas Sensors	9	12	
48	Application of Protein Engineering Methods to Increase the pH Stability of Beta-1,4-Endoglucanase	9	2	12
49	Identification of Industrial Enzyme Producing Cold Bacteria with Molecular Methods	9	15	
50	Analytical Investigation of Thin Plate Static Stability of Circular FSI Cylinder Under Axial Compression Using Legendre Series	9	4	
51	Performance Improvements In Spatial Data Access	9	4	
52	Investigation of the Performance of Orthogonal Time-Frequency Space Modulation with Deep Learning and Tunable Active Reflecting Surface Support	9	4	
53	Prediction of Theoretical Properties of Composite Materials with Artificial Intelligence	9	4	
54	Beta-Galactosidase Immobilization And Characterization In Polyvinyl Alcohol-Chitosan Hydrogels	9	3	12
55	Production of Hastelloy X Superalloy by Selective Laser Melting Method and Investigation of the Effects of Additive Manufacturing Parameters on Laser Scanning Speed	9	8	
56	Autonomous Vehicle and Artificial Intelligence Supported Functional Smart Warehouse Management System	9	8	
57	Investigation Of The Effect Of Using Nanoparticle-Doped Fuel Substances On Engine Performance And Emissions In Internal Combustion Engines	9	13	

Research University Support Projects

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Characterization of the Anisotropic Behavior of Polyamide Material Produced by FDM Method	9	12	
2	Control of Artificial Intelligence-Based Autonomous Vehicles in Challenging Road Conditions	9	11	13
3	Synthesis and Optoelectronic Properties of Novel Multifunctional Molecules Based on Fluorene	9	7	12
4	SismoSense: Real-Time Monitoring and Control for Safe Structures	9	11	13
5	VERIS: Superconducting CORC Coil Application for Efficient Industrial Induction Systems	9	7	13
6	YTÜ Damper Test Center - Development of Virtual Twin Software	9	11	17
7	Development of Biomedical Antenna for Artificial Intelligence-Assisted 3D Printing	9	3	4
8	Development of Smart Autonomous Passive Rail Maglev Transportation System	9	11	13
9	Sustainable Geopolymer Mortars with 3D Printing Properties Optimized by Machine Learning	9	12	13
10	Design and Optimization of Next-Generation Frequency Selective Surfaces with Artificial Intelligence	9	4	17
11	Development of Creep-Resistant Steel Parts by Wire Arc Additive Manufacturing	9	12	8

External Grant-Supported Projects

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Sismokaos: Analysis of Chaotic Behavior of Seismic Activities in Different Fault Zones in Turkey Before and After Major Earthquakes, Investigation of Energy and Stress Transfer, and Risk Prediction with Artificial Intelligence Models	9	11	13
2	MIMO-Assisted Intelligent Reflecting Surface Enabled Multiple Access for 6G Using Artificial Intelligence	9	11	
3	Microbial Melanin Production with Pharmaceutical and Industrial Use Potential from New Actinobacteria Species	9	12	15
4	Development of Artificial Intelligence Supported Microstructure Analysis System	9	12	
5	Low-Power and Robust Neuromorphic Wireless Readout Circuit for Multi-Parameter Sensors	9		

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
6	Real-Time Estimation of Cutting Tool Wear, Surface Roughness, and Carbon Emission Dependent on Power Consumption with a Hybrid Deep Learning Based Model in Machining	9	12	13
7	A Sustainable Model Proposal for the Disposal and Recovery of E-Waste	9	11	12
8	3D Mapping and Digital Twin Extraction with Camera and Lidar Fusion	9	11	13
9	Investigation of the Performance of a Cost-Effective Device to be Used for Measuring High-Frequency Vibrations with Low Sampling Rate through Vibration Experiments	9	12	
10	Analysis of Nonlinear Post-Buckling and Snap-Through Buckling Behaviors of Functionally Graded Nano-Scale Shallow Arches within the Framework of Stress Gradient Nonlocal Model	9	11	
11	Metal Catalyst-Free Synthesis of New Furopyridine Derivatives	9	12	
12	Production, Characterization, and Heterologous Expression of Cold-Active Lipase Enzyme from New Bacterial Species Isolated from Horseshoe Island	9	12	15
13	Development of Drinkable Probiotic Food Supplement from Bee Products	9	8	12
14	Design and Control of a Multi-Degree-of-Freedom Micro-Gravity Platform Based on Electrodynamic Levitation for Ground-Based Emulations	9		
15	Development of Hinge Test System Suitable for Life Determination with Force Control Predictive Maintenance	9	12	
16	Investigation of Load Carrying Capacities of Light Gauge Steel Studs with Different Cross-Sections and Different Panels Formed from These Studs	9	11	
17	Design of Index Modulation and Reconfigurable Intelligent Surface Assisted Orthogonal Time-Frequency Space Modulation for Next Generation Wireless Communication	9	11	
18	Synthesis, Characterization of Nano-Hybrid $\text{SmB}_4\ text{-BW}$ Powders and Their Use in the Production of Structural Layered Composites that can Simultaneously Attenuate Different Types of Radiation	9	12	
19	Effects of Microencapsulated Phase Change Material on the Microstructure of Silty Soil Exposed to Freeze-Thaw Cycles	9	11	13
20	Micro-Scale Investigation of Sand-Geomaterial Interface Behavior Using Discrete Element Method	9	11	
21	Improving Inter-Sensor Calibrations in Autonomous Vehicles	9	11	13

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
22	Monitoring Tectonic Movements with Low-Cost GNSS Measurement Systems	9	11	13
23	Modeling the Relationship Between Radon Gas Concentrations and Seismic Activities in the Anatolian and Eurasian Plates in the İstanbul-Adalar Segment of the North Anatolian Fault Zone with Artificial Intelligence	9	11	13
24	Qualitative and Quantitative Analysis with Artificial Intelligence in X-ray Fluorescence Spectroscopy	9		
25	Development of a Biosensor by Green Synthesis to be Used for the Determination of Invisible Fingerprints Obtained from the Crime Scene	9	16	
26	Investigation of Electrical Curing Potential of Slag-Fly Ash Based Geopolymer Composites Activated with TEOS Containing Ferritic Fibers	9	11	12
27	Development of Machine Learning Integrated Model and Solution Methods for Separately Addressed Container Loading and Routing Problems in Logistics Operations	9	11	12
28	A New $\mathbb{Z}_3$-Graded Quantum Space and Its Geometry	9		
29	Development of Controller Algorithms with Active Fin System for Ship Motion Damping and Experimental Verification	9	13	14
30	Investigation of the Manufacturability of Low-Lead Copper Alloys with Low-Pressure Die Casting Method	9	12	
31	Design of a Cluster-Based Collaborative Massive MIMO Featured Hybrid MAC Protocol for Reliable and Efficient UAV Communication in 5G and Beyond via Artificial Intelligence	9	11	
32	Design and Fabrication of a Novel Microfluidic Platform for the Isolation of Microalgae from Samples with Mixed Microorganism Populations Obtained from Polar Regions	9	12	15
33	Production and Performance Evaluation of Lime-Based Injection Materials Containing Cellulose Nano-Crystals and Fibers Obtained from Domestic Agricultural Waste	9	12	13
34	Optimal Replacement Problem of Partially Observable Task-Based Systems	9		
35	Investigation of Mechanical and Durability Behaviors of Metazeolite Based Geopolymer Composites with Recycled Aggregate	9	11	12
36	Investigation, Modeling, and Optimization of Sustainable Machining of Ti-6Al-7Nb Alloy Used in Biomedical Industry Using Ultrasonic Vibration-Assisted Nanofluid with Nano Graphene Additive	9	12	13

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
37	A Model Proposal Measuring Mobile Application Interface Design Effectiveness	9	11	
38	Advanced Electromagnetic Airborne Underground (EMAR) Monitoring Tool	9	13	
39	Enhanced Electronic Systems for BioHybrid Soft Robots (ECHOR)	9	12	
40	From Scene Change to Report Generation: Change Summary Generation from Remote Sensing Image Pairs	9	11	13
41	Development of Recycling Technologies for Advanced Thermoplastic Composite Material Production Wastes in Aviation and Automotive Industries	9	12	13
42	Multivariate Robust Regression Model for High-Dimensional Data Sets	9	12	13
43	Development of a New Measurement-Based Computational Method for Determining Vehicle-Induced Dynamic Loads on Rail Systems	9	11	13
44	A Mobile Application Generating Alternative Tourism Routes Based on Artificial Intelligence Routing Algorithms: Amasya Example	9	11	
45	New Aggregation Induced Emission Active Chiral Liquid Crystal Materials: Synthesis, Mesomorphic, Photophysical, and Electro-Optical Properties Investigation	9	12	
46	Development of Nonlinear Mathematical Model Verified by Shake Table Tests for Elevator Rail-Counterweight Systems Exposed to Earthquake	9	13	
47	Sol-Gel Synthesis of B_4C Powders Decorated with H-BN Nano Sheets on the Surface and Production and Characterization of Composites Plates Reinforced and Unreinforced with Nano-Micro B_4C Fibers by Spark Plasma Sintering Method	9		
48	Production and Application of Sustainable Hybrid Composite with SNK/SNF Additive in PP/PLA Matrix Suitable for Desiccant Pre-Bed Characteristics	9	12	
49	Investigation of the Inner Core Structure of Neutron Stars Using Gravitational Waves	9	13	
50	Artificial Intelligence Supported Virtual Sports Coach in Tennis	9	11	
51	Investigation of the Effects of Nature-Inspired Biological Materials on the Stability of Perovskite Solar Cells for Biophotovoltaics	9	12	

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
52	High Efficiency and Long-Distance Wireless Power Transfer Using Laser	9	12	
53	Development of Luminescent Solar Concentrators Based on Dual Quantum Dot Doped Glass Nanocomposites	9	12	
54	Effects of Plant Extracts (Extracts) on the Performance and Stability of Perovskite Solar Cells	9	12	
55	Growth and Characterization of Ultra-Wide Bandgap Rutile-$\ text{GeO}_2$ Single Crystal Structures by Low-Pressure Chemical Vapor Deposition Method	9	12	
56	Titanium Medical Implant Research And Production Center With Layered Manufacturing	9	12	
57	Artificial Intelligence Based Frequency-Stepped Multistatic Wideband Radar Approach for Post-Earthquake Collapse Victim Detection	9	12	13
58	Design, Modeling, Control, and Vertical Positioning on Metal-Surfaced Walls of Climbing Robots under External Effects	9	12	13
59	Design and Development of an Integrated On-Chip Cardiovascular System Platform	9	12	
60	Production of Personalized Eardrum Patch Containing Microneedle with Digital Light Processing Method (Tympatch)	9	12	
61	Production, Characterization and Applications of Boron Carbide (B_4C) Nano-Fibers by Non-Catalytic Sol-Gel Method	9	12	
62	Development of next generation reinforced functional thin glass and glass ceramics	9	12	
63	Development of new generation glasses with luminescence properties for solid-state lighting systems	9	12	
64	Existence, Uniqueness and Regularity of Problems in Degenerate Elliptic Differential Equations	9	4	
65	Ice-Link: integration of Advanced Experiments, Computation and Data for Innovation in Freeze Casting and Advanced Porous Structures.	9	12	13
66	C-ISS-TDS: Characterizations of Input-to-State Stability Related Properties for Time-Delay Systems	9	4	17
67	New 4-Cyanoresorcinol Based Bent-Core Molecules with Chiral End Groups	9	12	7
68	SUSTAIN-Smart Building to Sentiment Analysis	9	11	16
69	Optimization Of Passive-Side Reinforced Quay Walls By Applying Smart Solutions	9	11	13

SUMMARIES OF KEY PROJECTS

Real-Time Estimation of Cutting Tool Wear, Surface Roughness, and Carbon Emission Dependent on Power Consumption with a Hybrid Deep Learning Based Model in Machining

The growing demand for polymer-based components manufactured via injection moulding across nearly all industrial sectors has increased the need for enhanced efficiency and sustainability in the machining of DIN 1.2738 steel, the most preferred mold material in this field. In line with the European Green Deal and the forthcoming Carbon Border Adjustment Mechanism—planned for full enforcement by 2030—products with high carbon footprints will face increased import taxation based on CO_2 emissions during manufacturing. Therefore, improving machining process efficiency and sustainability has become essential not only for industrial development and economic growth but also for maintaining export competitiveness and ensuring compliance with green trade regulations. In the context of Industry 4.0, real-time monitoring and predictive insights into machining indicators such as tool wear, surface roughness, and carbon emissions play a critical role in achieving data-driven, scalable, and environmentally compliant production systems.

The originality of this project lies in the integration of variational auto-encoders (VAE) with vision transformers (ViT) to develop a novel hybrid deep learning architecture capable of predicting cutting tool wear, surface roughness, and carbon emissions solely from real-time power consumption data with high accuracy and computational efficiency. Over a 36-month project period, machining experiments will be conducted to collect real-time power signals, tool-wear images, surface profiles, roughness values, and emission data; subsequently, the hybrid deep learning framework will be developed, trained, and validated, followed by industrial-scale testing. The proposed model will enable instant estimation and monitoring of machining performance and environmental impact, supporting carbon-neutral manufacturing practices and contributing to compliance with EU carbon regulations and Türkiye's 12th Development Plan objectives for green and digital industrial transformation.



Design and Control of a Multi-Degree-of-Freedom Micro-Gravity Platform Based on Electrodynamic Levitation for Ground-Based Emulations

Reliable evaluation of space systems under micro-gravity is critical, as space access is costly and limited. Conventional reduced-gravity methods (parabolic flights, drop towers, air/magnetic platforms) are expensive and operationally constrained, motivating compact laboratory-scale solutions. This project develops an electrodynamic levitation platform simulating planar micro-gravity motion. The ≤50×50×20 cm prototype will employ high-speed Halbach-array magnet rotors to achieve >1 m/s planar movement. Lightweight composite structures and optimized mechanical design will be used. Because electrodynamic levitation is intrinsically unstable, both conventional and nonlinear robust control, including sliding-mode algorithms, will be implemented. The platform will feature a large 2–3 cm levitation gap, electrical-only operation, high disturbance

tolerance, payload safety, and cost-effective fabrication, offering an accessible micro-gravity testbed for space technology validation.

Production and Performance Evaluation of Lime-Based Injection Materials Containing Cellulose Nano-Crystals and Fibers Obtained from Domestic Agricultural Waste

Cellulose is the most abundant natural polymer on Earth, with approximately 1.5×10^{12} tons of annual biomass production and can be obtained from both natural sources and agricultural waste. Türkiye, the sixth-largest global cotton producer, generates significant cotton linter waste, which represents an underutilized cellulose resource. While cellulose-based materials have been shown to improve the mechanical properties of cementitious systems, their use in lime-based injection grouts for historic masonry has not been studied. Traditional historic mortars often contained natural fibres, yet macroscopic fibres negatively affect injectability in consolidation applications. This project aims to produce nanocellulose (nanocrystalline and nanofibers) from agricultural cotton linter waste and incorporate it into lime-based injection grouts to enhance flowability, mechanical strength, and compatibility with historic materials. Surface-modified nanocellulose will be used to reduce water uptake and improve rheological performance. The study includes nanocellulose production, grout development, performance testing, and AI-based predictive modelling, followed by pilot application on a masonry wall. The project supports green transition goals by valorising agricultural waste and developing a high-value, sustainable, and locally sourced construction material aligned with restoration demands and national innovation priorities.

Investigation, Modeling, and Optimization of Sustainable Machining of Ti-6al-7nb Alloy Used in Biomedical Industry Using Ultrasonic Vibration-Assisted Nanofluid with Nano Graphene Additive

Advances in biomedical engineering have increased the demand for implant materials with superior mechanical strength, biocompatibility, bioactivity, and wear resistance. Ti-6Al-7Nb alloy has emerged as a promising alternative to conventional implant alloys due to its low cytotoxicity, high corrosion and wear resistance, and excellent fatigue and mechanical properties. However, its machining remains challenging, exhibiting high tool wear and cutting forces, and requiring precise surface and dimensional tolerances. Conventional cooling and lubrication methods present environmental and economic drawbacks. This project proposes the comprehensive investigation of ultrasonic-assisted machining of Ti-6Al-7Nb using nano-fluid-based Minimum Quantity Lubrication (MQL) to achieve sustainable manufacturing performance. The study will evaluate cutting forces, temperature, chip morphology, and microstructural changes, including surface roughness, grain deformation, microhardness, residual stress, and phase transformation. Energy consumption, carbon emissions, and machining cost will be analysed to develop a multi-objective optimization framework aligned with the European Green Deal and national sustainability goals. Additionally, finite element modelling will predict machining behaviour under untested conditions. The outcomes are expected to improve implant reliability, enhance machining sustainability, and support next-generation eco-efficient biomedical manufacturing.



Design, Modeling, Control, and Vertical Positioning on Metal-Surfaced Walls of Climbing Robots under External Effects

Climbing robots are increasingly used for non-destructive inspection of industrial structures such as tanks, boilers, pipes, and steel surfaces, enabling detection of cracks, corrosion, surface pits, and thickness loss without damaging the material. This project proposes the design and implementation of a novel mechanical architecture and control strategy for a magnetic wheel climbing robot driven by DC motors. The system must ensure reliable adhesion to vertical metallic surfaces while overcoming strong magnetic forces, gravity, Coulomb friction, and dynamic uncertainties, making precise motion control challenging. A model-based control framework will be developed, complemented by adaptive control, observer-based positioning, and disturbance-rejection techniques. PID controllers will also be evaluated for comparison. Two prototypes will be produced: an experimental platform for motion control validation and a fully equipped robot capable of autonomous and manual navigation, equipped with redundant sensing, visual inspection capability, and an integrated IoT-enabled control and monitoring interface. Both simulation and real-time experiments will guide controller design and validate performance in realistic inspection scenarios. The proposed system aims to improve safety, reliability, and automation in industrial inspection applications.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

Ice-Link: Integration of Advanced Experiments, Computation and Data for Innovation in Freeze Casting and Advanced Porous Structures

The proposed project aims to collaboratively research on ice-templating of advanced porous materials through modern data system/sharing, experiments and numerical/physical modelling. The project will establish systematic data of ice-templated porous materials and predictive modelling supported by machining learning for establishing detailed structures-properties relationship. The project will investigate the cooling process through experimental, Phased field modelling and molecular simulation for ice/emulsion structure growth/evolution process. The data and advanced modelling approach established will be used to develop porous systems with tunable porosities for advanced applications. One key area is to control porosity and distribution to achieve uniform porosities or gradient/hierarchical structures in functional ceramics (carbon, piezoceramics, BCZY-GDC ceramics for fuel cells, membrane for hydrogen separation, etc.); Another area is to develop tunable pore size/shape and porosity in monoliths, beads, and fibres of plastics (e.g. for PLA scaffolding, etc.). The resulted advanced data system, intelligent modelling program, new materials and improved scientific understanding will contribute to the research and innovation capacity in Europe and the world on ice-templating, porous materials and associated systems with a long term economic and social impact. The network will serve as a pivoting platform for future data sharing, research and innovation, speeding up material or product development cycle through interdisciplinary research. It will enhance the R&I capacity of academic and industrial partners, sustain the effort in collectively challenging issue in this most active research area and jointly develop-

ing major break-through technologies. It will also equip researchers with modern research facilities, innovation skills and critical thinking capacity through integrated data system, facilities, dynamic collaboration with everlasting impact.

C-ISS-TDS: Characterizations of Input-to-State Stability Related Properties for Time-Delay Systems

This joint Turkish–French research project aims to advance the theoretical foundations of input-to-state stability with integral input effects (iISS) and strong iISS for time-delay systems (TDS). While iISS has been well-characterized in finite-dimensional delay-free systems, its extension to TDS remains largely unexplored despite its importance for engineering applications. The project focuses on establishing solution-based characterizations of iISS for TDS and deriving Lyapunov–Krasovskii-type conditions for strong iISS. Key objectives include adapting input-to-output-to-state stability (IOSS) tools to the time-delay context and extending existing finite-dimensional results—such as asymptotic stability and zero-output dissipative-based characterizations—to time-delay systems. The research will also address the open problem of guaranteeing the existence of a point-wise-dissipative iISS Lyapunov–Krasovsky functional and proving an inverse theorem for strong iISS in TDS. The 18-month project includes reciprocal research visits, a workshop, and a graduate school to support young researchers, as well as undergraduate outreach activities. The outcomes are expected to strengthen nonlinear control theory for delayed systems and foster long-term international collaboration.

SUSTAIN- Smart Building to Sentiment Analysis

This project aims to develop advanced solutions for smart homes and smart cities, with a primary focus on monitoring individuals' daily activities via mobile applications and delivering personalized support both at home and in office environments. By analysing users' behavioural patterns, the system will provide context-aware services that enhance comfort, efficiency, and safety in everyday life. Within this framework, the Yıldız Technical University (YTU) team will contribute by developing a behavioural-based biometric identification module to ensure secure and reliable user authentication. In addition, YTU will design a secure communication circuit protocol to guarantee robust and privacy-preserving data transmission between devices and cloud services. The project ultimately aims to improve the security, adaptability, and user-centric intelligence of smart living and smart city infrastructures, while advancing interdisciplinary research at the intersection of IoT, artificial intelligence, cyber-physical systems, and behavioural analytics.

OPTIMIZATION OF PASSIVE-SIDE REINFORCED QUAY WALLS BY APPLYING SMART SOLUTIONS

Global maritime trade continues to expand, requiring larger vessels and driving demand for resilient and sustainable port infrastructure. Quay walls supporting deep-draft vessels face increased bending stresses and geotechnical challenges due to soft marine sediments, limited passive earth resistance, and scouring risks. Current smart quay wall systems predominantly monitor structural performance, overlooking soil behaviour—creating a critical knowledge gap in integrated soil-structure health assessment. This project proposes an innovative, sustainable quay wall design that enhanc-

es passive resistance through soil improvement at the wall base and integrates advanced sensing technologies. Laboratory model tests will evaluate passive reinforcement efficiency under service, failure, and dynamic loading. Novel piezoresistive composite sensor slabs, adapted from self-sensing pavement technologies, will be developed to monitor earth pressure and soil–structure interaction in real time. The outcomes will validate a cost-efficient, low-emission quay wall concept, provide engineering design guidelines, and strengthen climate-resilient infrastructure practices. This multidisciplinary effort bridges marine, geotechnical, structural, and materials engineering and leverages industrial expertise from MAG Engineering Services (Türkiye) and Mwani Qatar.

Smart Infrastructure

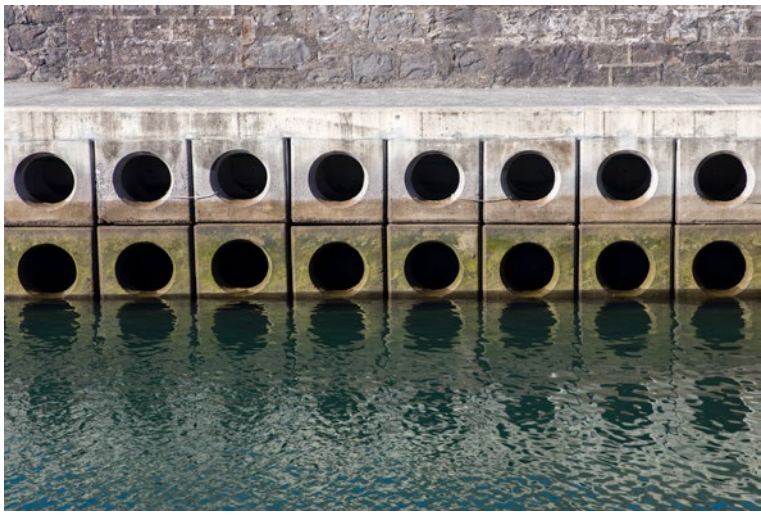
The university is actively involved in the development of smart infrastructure systems that integrate information and communication technologies (ICT) to improve the efficiency and sustainability of urban environments. Projects in this area include smart grids, intelligent transportation systems, and urban planning solutions that enhance the quality of life for citizens.

International Research

Collaborations enable the university to participate in large-scale research projects and access advanced research facilities around the world. Examples of successful international partnerships include joint research programs with leading universities and research institutions across the world.

Research Funding and Grants

Securing funding is essential for advancing research and development activities. Yıldız Technical Univer¬sity actively seeks funding from various sources to support its research projects.



Innovative Research

Yildiz Technical University is at the forefront of research in industry, innovation, and infrastructure. The university undertakes a wide range of research projects aimed at developing advanced technologies and sustain¬able industrial practices.

Advanced Manufacturing

Research at Yıldız Technical University focuses on developing advanced man¬ufacturing techniques that enhance production efficiency and sustainabil¬ity. These techniques include additive manufacturing (3D printing), precision engineering, and automation.

Collaborative Research

Collaboration is a key component of Yıldız Technical University's research strategy. The university partners with academic institutions, industry lead¬ers, and government agencies to conduct cutting-edge research and develop innovative solutions.

Research Output

The research conducted at YTU has a significant impact on industry, innova¬tion, and infrastructure. The research output contribute to scientific knowl¬edge, technological advancements, and sustainable development.



Tech Talk Event: "Artificial Intelligence in the Cloud: The Power Shaping the Future"

Organized in collaboration with GEIKSTEM+A and Huawei Developer Groups (HDG) Türkiye, this exclusive Tech Talk event will take place at Huawei's AI & Cloud Office in Ümraniye on March 15, 2024 (Friday).

Participants will have the opportunity to engage directly with Huawei's AI & Cloud Team, explore cutting-edge advancements in artificial intelligence and cloud technologies, and gain valuable insights into how these innovations are shaping the future of digital transformation.

Due to limited capacity, advance registration is required. Participants must also submit at least one relevant question through the registration form. Selection will be based on the quality and relevance of the submitted questions.

Visit Şişecam's Kırklareli Glassware Factory

YTU students had the opportunity to visit Şişecam's Kırklareli Glassware Factory as part of an exclusive industrial tour designed to broaden their perspectives on the manufacturing sector. During the visit, students observed the full production process on-site and explored how quality and efficiency are maintained at each stage of glass production.

Guided by Şişecam's expert team, participants also learned about innovative technologies used in the industry and engaged in meaningful discussions about career opportunities in manufacturing.





YTU Startup House Bootcamp Hackathon

The YTU Startup House Bootcamp Hackathon was held on 16–18 May 2024, bringing together over 20 student teams for 48 hours of intensive training, mentoring, and project development. With a prize pool of 60,000 TL and pre-incubation opportunities, the event encouraged creativity, entrepreneurship, and collaboration among university students.

Technical visit to the Northern Marmara Motorway Operations

A technical visit was organized to the Northern Marmara Motorway Operations on 1 December 2024. The program provided students with direct exposure to large-scale infrastructure management, offering practical insights into transportation systems, field experience, and opportunities to engage with sector professionals.





Amateur Radio Training

The training session “Amateur Radio Training” was organized on 28 March 2024 at Yıldız Technical University in collaboration with the Turkish Amateur Radio Association (TRAC). The program included both theoretical and practical modules, and participants who successfully completed the session received certificates of participation. This activity demonstrates YTU’s commitment to disaster preparedness, reliable communication during emergencies, and community resilience.



Future Engineers

As part of the "Future Engineers" program, a technical visit was organized on 8 March 2024 to Masdaf's factory in Tuzla, İstanbul. During the visit, students had the opportunity to closely examine modern pump technologies, gain insights into production processes, and learn about innovative practices in the industry.

This activity demonstrates YTU's strong effeorts to bridging academia and industry, enhancing students' practical knowledge, and fostering sustainable engineering solutions through collaboration with leading sectoral partners.

YTU students submitted a total of 41 project applications

In the 2024 First Term Call of the TÜBİTAK 2209 Program, YTU students submitted a total of 41 project applications (27 under 2209-A and 14 under 2209-B). This demonstrates the strong engagement of YTU students in scientific research and innovation, fostering a culture of inquiry, creativity, and problem-solving. It reflects the university's contribution to advancing national research capacity and developing the next generation of scientists and engineers.



YTU drives sustainable industrial transformation through research, innovation, and partnerships connecting academia, industry, and society.



YTU Sigma Aeronautics Qualifies for AIAA DBF!

The YTU Sigma Aeronautics Team successfully secured participation in the Design/Build/Fly (DBF) competition organized by the American Institute of Aeronautics and Astronautics (AIAA) in Arizona, USA. Out of 159 applied student teams worldwide, YTU Sigma Aeronautics advanced through the elimination process and proudly became the only team from Türkiye to qualify. This achievement highlights YTU students' excellence in engineering design, innovation capacity, and determination to represent both the university and the country at an international level.

4 QUALITY EDUCATION 17 PARTNERSHIPS FOR THE GOALS

Technical visit to Teknorot's headquarters

A technical visit to Teknorot's headquarters and production facilities was organized with the YTU Formula Student Team. Students had the opportunity to gain insights into advanced manufacturing technologies, including steering and suspension parts, while also engaging in discussions on product development and distribution strategies. The visit created a two-way exchange of knowledge, as the company valued the students' fresh perspectives to inform its market strategy.

4 QUALITY EDUCATION 17 PARTNERSHIPS FOR THE GOALS







An episode featuring the YTU Racing Team was broadcast on TRT Belgesel

An episode featuring the YTU Racing Team was broadcast on TRT Belgesel, Türkiye's national documentary channel. The program highlighted how student teams contribute to applied STEM education, innovation, and sustainable mobility. It demonstrated the role of Yıldız Technical University in fostering youth engagement, advancing technological development, and promoting institutional collaboration. By reaching a wide national audience, the episode enhanced the visibility of student-led innovation and raised public awareness about engineering education and sustainable technologies.

"Design and Control of a Multi-Degree-of-Freedom Electrodynamic Levitation-Based Microgravity Platform for Ground-Based Emulations

Assoc. Prof. Dr. Kadir Erkan, faculty member at the Department of Control and Automation Engineering, Faculty of Electrical and Electronics Engineering, Yıldız Technical University, has received support under the TÜBİTAK 1001 – Scientific and Technological Research Projects Support Program for his project titled "Design and Control of a Multi-Degree-of-Freedom Electrodynamic Levitation-Based Microgravity Platform for Ground-Based Emulations."

The project aims to design and control an innovative electrodynamic levitation platform that enables multi-degree-of-freedom motion for ground-based microgravity simulations. This research contributes to the advancement of automation, control systems, and aerospace simulation technologies, providing a foundation for precision experimentation and engineering innovation.





TOFAŞ Academy

YTU's Racing Team collaborated with TOFAŞ, one of Türkiye's leading automotive companies, to organize the TOFAŞ Academy program during the 2023–2024 season. Over a 14-week period, students received specialized training from expert engineers and faculty members in key areas such as power systems, control, calibration, and electrification.

This collaboration provided valuable industry knowledge and hands-on experience, significantly enhancing the technical capacity and career readiness of participating students. It also strengthened university–industry ties, fostering an environment where academic learning is complemented by professional expertise.

The Italian SpaceWay conference

The Italian SpaceWay conference, organized in collaboration with Türkiye and Italy, highlighted YTU's research and student-led projects in satellite and space technologies. The event fostered scientific knowledge exchange, supported technology transfer, and strengthened international partnerships.





TeaTalk

As part of the TeaTalk series, the YTU KIMTEK hosted a session with Henkel, a global leader in adhesive technologies and consumer brands. Founded in 1876 and headquartered in Germany, Henkel is renowned for its strong portfolio of brands such as Persil, Schwarzkopf, and Loctite, and for its long-standing commitment to innovation, sustainability, and responsibility.

The event featured Ata Anıl Çalargün, Flexible Lamination & Coatings Application Engineer at Henkel, who shared insights into the company's global operations and professional practices.



Technical visit to Polisan Kansai

On 27 March 2024, the YTU Chemical Technologies Club organized a technical visit to Polisan Kansai, one of the leading companies in the paint and chemical industry. During the visit, students were introduced to innovative production processes in decorative and industrial paints, with a particular focus on the company's environmentally friendly water-based coatings that prioritize human health and sustainability. The program provided participants with the opportunity to observe large-scale industrial practices, explore sustainable manufacturing solutions, and engage directly with professionals in the sector.

Production, Characterization, and Heterologous Expression of Cold-Active Lipase Enzyme from Newly Isolated Bacterial Species of Horseshoe Island.

Assoc. Prof. Dr. Hilal Ay, faculty member at the Department of Molecular Biology and Genetics, Faculty of Arts and Sciences at Yıldız Technical University, has received support under the TÜBİTAK KUTUP-1001 Program for her project titled "Production, Characterization, and Heterologous Expression of Cold-Active Lipase Enzyme from Newly Isolated Bacterial Species of Horseshoe Island."

The project aims to identify and utilize psychrophilic and psychrotolerant microorganisms capable of producing cold-active lipase enzymes, which possess significant commercial potential in diverse sectors including detergents, food, agriculture, pharmaceuticals, and environmental biotechnology. By advancing the development of



industrially applicable cold-active enzymes, this research contributes to sustainable biotechnological innovation and supports environmentally friendly production Technologies.



Technical visit to L'Oréal's

A technical visit to L'Oréal's Istanbul production facilities was organized at YTU under the coordination of the KIMTEK. The program introduced students to the company's innovative production processes, research priorities, and sustainability practices, while highlighting how global brands integrate safety, responsibility, and inclusivity into their operations.

Through this visit, participants gained first-hand exposure to the intersection of chemistry, industry, and consumer products, enhancing their understanding of real-world applications and career opportunities in a leading international company.

Modification of Microalgae Proteins as a Sustainable Source: Using Smart PBR Cultivation Methods and Simulated Doha Sea Water Conditions

Assoc. Prof. Dr. Ömer Said Toker, from the Department of Food Engineering, Faculty of Chemical and Metallurgical Engineering at Yildiz Technical University (YTU), leads a research project titled "Modification of Microalgae Proteins as a Sustainable Source: Using Smart PBR Cultivation Methods and Simulated Doha Sea Water Conditions."



The project, supported under the TÜBİTAK – Qatar Research Development and Innovation Council (QRDI) Bilateral Cooperation Programme, focuses on developing sustainable food sources from marine microalgae while ensuring environmental preservation. By cultivating algae under controlled seawater conditions and employing smart photobioreactor (PBR) systems, the research contributes to:

- The sustainable utilization of aquatic ecosystems,
- Reducing pressure on conventional marine resources, and
- Enhancing biodiversity-friendly food production methods.

This initiative represents YTU's active engagement in international research collaborations to promote sustainable blue biotechnology, combining marine science, food technology, and climate adaptation goals.



Dr. Bilge Coşkuner Filiz Receives TÜBA-GEBİP Award

Assoc. Prof. Dr. Bilge Coşkuner Filiz from the Department of Metallurgical and Materials Engineering at Yıldız Technical University received the TÜBA-GEBİP (Outstanding Young Scientist Award) granted by the Turkish Academy of Sciences (TÜBA) in recognition of her outstanding contributions to materials science research.

This prestigious national award highlights YTU's strong research culture and commitment to supporting young and promising scientists who contribute to scientific innovation and industrial advancement.

Assoc. Prof. Dr. Filiz's achievement also underscores the university's dedication to empowering women in science, promoting gender equality, and enhancing Türkiye's scientific excellence on a global scale.





Data Science Panel

Yıldız Technical University's Faculty of Economics and Administrative Sciences (FEAS) organized a Data Science Panel in collaboration with the Turkish Statistical Institute (TÜİK) on December 16, 2024.

The event featured TÜİK Deputy President Assoc. Prof. Dr. İbrahim Demir, TÜİK Istanbul Regional Director Ali İhsan Yücedağ, and YTU FEAS Dean Prof. Dr. Yasin Şehitoğlu as panelists.

The panel aimed to promote data-driven research and policy development, introduce TÜİK's institutional structure, and announce the establishment of the TÜİK-EVAM Data Laboratory within YTU.

This initiative strengthens academic–public cooperation, enhances data literacy and analytical capacity among students and researchers, and contributes to evidence-based decision-making in line with the principles of sustainable innovation and good governance.





Ag4Tech achieved first place at the international AAKRUTI Global 2024 Competition

A team of Yıldız Technical University students, Ag4Tech, achieved first place at the international AAKRUTI Global 2024 Competition, which included participants from countries such as Turkey, Spain, Malaysia, South Africa, Egypt, and India.

Their innovative project – a bionic arm prototype controlled by muscle signals – aims to improve the quality of life for amputees by combining technological innovation with social impact. The project, developed entirely with local and national resources, demonstrates YTU's commitment to innovation-driven education, sustainable engineering, and inclusive technology development.

World Intellectual Property Day

On May 24, 2024, Yıldız Technical University hosted the World Intellectual Property Day event at Davutpaşa Campus Historical Bath, in partnership with Boğaziçi University, Istanbul Technical University, Istanbul University, and Sabancı University.

The event highlighted the key role of intellectual property (IP) in promoting innovation, entrepreneurship, and sustainable development, aligning with the UN 2030 Agenda for Sustainable Development.

Panels and discussions emphasized the transformative power of IP for economic growth, technology transfer, and environmental sustainability, as well as university collaboration in establishing a joint patent ecosystem.





Green Startups '24 event

We were delighted to host green entrepreneurs and esteemed companies once again at our third annual Green Startups '24 event.

This gathering brought together innovative startups focused on sustainability, clean technology, and eco-friendly business models. Throughout the event, participants shared inspiring ideas, groundbreaking solutions, and success stories that highlight the vital role of green innovation in combating climate change and promoting a circular economy.

Workshops, panel discussions, and networking sessions created a dynamic platform for collaboration, knowledge exchange, and investment opportunities in the green startup ecosystem.

By empowering innovation and entrepreneurship, YTU turns ideas into sustainable technologies that advance global development.



Increasing the Performance of Gel Type Lead Acid Batteries with Conductive Polymers-Graphite Composites

Assoc. Prof. Dr. Metin Gençten, a faculty member at Yıldız Technical University, Faculty of Chemical and Metallurgical Engineering, aims to enhance the performance of gel-type lead-acid batteries through his project titled "Increasing the Performance of Gel Type Lead Acid Batteries with Conductive Polymers-Graphite Composites", supported by the TÜBİTAK-2515 European Cooperation in Science and Technology (COST) Program. This significant project marks a first in the literature by using composite structures made of conductive polymers and graphite as additives to the gel component.

Ice-Link project

Prof. Dr. Ahmet Selim Dalkılıç, a faculty member of the Department of Mechanical Engineering at Yıldız Technical University, has joined the Ice-Link project (Integration of Advanced Experiments, Computation and Data for Innovation in Freeze Casting and Advanced Porous Structures) as a partner with a budget contribution of €32,000 under the HORIZON-MSCA-2022-SE-01 call.

The project is coordinated by Liverpool John Moores University in the United Kingdom, with five additional institutions from Italy, Romania, Bulgaria, Thailand, and Malaysia forming the consortium.

Ice-Link aims to collaboratively investigate freeze casting techniques for advanced porous materials by integrating modern data sharing, experimental studies, and computational modeling. By focusing on cooling processes, the project will develop predictive models supported by systematic data and machine learning to create porous systems with customizable porosity levels.



Through dynamic collaborations and cutting-edge modeling techniques, Ice-Link will pioneer advanced technologies and redefine the frontiers of materials science.



Green Startups '24 event

We were delighted to host green entrepreneurs and esteemed companies once again at our third annual Green Startups '24 event.

This gathering brought together innovative startups focused on sustainability, clean technology, and eco-friendly business models. Throughout the event, participants shared inspiring ideas, groundbreaking solutions, and success stories that highlight the vital role of green innovation in combating climate change and promoting a circular economy.

Workshops, panel discussions, and networking sessions created a dynamic platform for collaboration, knowledge exchange, and investment opportunities in the green startup ecosystem.

TWIN project

The TWIN project, in which YTU Yıldız Teknopark participates as a partner, is an Erasmus+ Small-Scale Cooperation Project within the framework of the European Green Deal. The project aims to offer innovative tools and training to help SMEs overcome the complex challenges of digital transformation.

TWIN focuses on increasing the digital readiness and resilience of SMEs while integrating sustainable practices. Through a comprehensive approach, the project supports businesses in exploring new growth opportunities by adopting Industry 4.0 technologies, implementing advanced cybersecurity solutions, enhancing customer satisfaction, and developing personalized strategies for change management..



OPTIFY project

Prof. Dr. Ahmet Kızılay, a faculty member of the Department of Electronics and Communication Engineering at Yıldız Technical University, is the coordinator of the OPTIFY project (Enhancing Monitoring and Management Capacities of HEIs on Optical Networks and Optical Communication in Georgia, Azerbaijan, Kazakhstan), which has been awarded funding under the Erasmus+ Capacity Building in Higher Education call. Yıldız Technical University is participating in the project as a partner institution.

Inspired by the "Digital Silk Road" initiative, OPTIFY aims to enhance the monitoring and management capacities of higher education institutions in Georgia, Azerbaijan, and Kazakhstan in the fields of optical networks and optical communication.

The project will develop new curricula and learning modules, aiming to strengthen the capabilities of educators while also ensuring that industry representatives gain access to the most current industrial knowledge.



This new curriculum will adopt a problem-based learning approach, allowing students to work on real-world industry challenges. In addition, OPTIFY seeks to build new bridges between academia and industry, making a significant contribution to digital transformation goals across the region.

Through projects in AI, smart manufacturing, and circular economy, YTU builds resilient and future-oriented infrastructures.



SMARTNET Project

"A Smart Network for Technology Transfer and Commercialisation with Funnel Model" (SMARTNET) Project is carried out by Yıldız Technical University (YTÜ) in partnership with Hasan Kalyoncu University (HKU), Istanbul Technical University (ITU) and Gebze Technical University (GTU), with the co-financing of the European Union and the Ministry of Industry and Technology. The total budget of the project is 2.498.000 Euros.

SMARTNET Project aims to improve the cooperation between artificial intelligence-based smart network and Technology Transfer Agencies.

The project is designed to increase Türkiye's intellectual property rights, technology products, service capacity, commercialisation and export potential by providing effective business and product development services that will accelerate the commercialisation of technology-oriented business ideas with high performance and synergy by strengthening the network between Technology Transfer Intermediary Institutions

The target audience of the project is Incubation Centres, Technology Transfer Offices, Technology Development Zones, innovative SMEs, start-ups, and entrepreneurs. Within the scope of the project, cooperation is also made with Technology Transfer Centres, companies in the innovation ecosystem and other universities. Project;

- Internationalisation of start-ups by expanding into Europe
- Supporting entrepreneurs with national/international patents
- Mentor capacity-building activities

It carries out activities to increase communication between technology transfer interfaces.



4 QUALITY EDUCATION | 8 DECENT WORK AND ECONOMIC GROWTH | 17 PARTNERSHIPS FOR THE GOALS



Production Method of Ready-to-Inject Material Containing Nano Hydraulic Lime

Our faculty members Prof. Dr. Nabi Yüzer and Asst. Prof. Dr. Didem Oktay, along with their research team, have had their invention titled "Production Method of Ready-to-Inject Material Containing Nano Hydraulic Lime" officially patented by the United States Patent and Trademark Office (USPTO).

11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Seminar on Renewable Energy Power Plants

YTU organized a seminar focused on renewable energy power plants, covering the principles, technologies, and operational considerations of solar, wind, and other clean energy systems. Participants learned about the role of renewable energy in transitioning to a sustainable power sector and reducing greenhouse gas emissions.

4 QUALITY EDUCATION
7 AFFORDABLE AND CLEAN ENERGY
13 CLIMATE ACTION





Civil İstanbul'24" Conference- Green Future, Sustainable Tomorrows

YTU participated in the "Civil İstanbul'24" Conference under the theme "Green Future, Sustainable Tomorrows." The conference brought together experts, researchers, and students to discuss innovative solutions for sustainable construction, infrastructure resilience, and environmentally responsible urban development.

4 QUALITY EDUCATION
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
17 PARTNERSHIPS FOR THE GOALS

POLICY & OPERATIONS



YTÜ Mobil, was recognized as the 3rd Best Mobile Application in Türkiye

In 2024, Yıldız Technical University's mobile application, YTÜ Mobil, was recognized as the 3rd Best Mobile Application in Türkiye in its category at the prestigious Altın Örümcek Awards. The platform enhances student experience by providing seamless access to campus services, academic tools, sustainability initiatives, international programs, and real-time campus information.

Designed to improve university life through digital transformation, YTÜ Mobil supports academic engagement, efficient student services, sustainable campus navigation, and inclusive access to institutional resources. The award highlights YTU's commitment to technological innovation, user-focused digital services, and continuous improvement of campus life through smart university solutions.



Academic Awards Ceremony 2024

In March 2024, Yıldız Technical University held its Academic Awards Ceremony at the Davutpaşa Congress and Cultural Center to honour researchers whose work in 2023 made outstanding contributions to research and innovation through high-quality publications, competitive projects, patents and entrepreneurship activities.

The awards were based on scores generated from real-time data drawn from the university's digital evaluation system. These scores were calculated across the categories of Research Capacity, Research Quality, and Engagement & Collaboration, using indicators aligned with international assessment frameworks, including citations, publications, research projects, patents, university–industry collaboration, and the supervision of doctoral candidates.

YILDIZ TECHNICAL UNIVERSITY

2024 SUSTAINABILITY REPORT

10 REDUCED INEQUALITIES



REDUCE INEQUALITY WITHIN AND AMONG COUNTRIES

Scan the QR code for SDG10 events



Yıldız Technical University (YTU) is deeply committed to creating an inclusive, accessible, and equitable environment where every individual can participate fully in education, research, and community life. Guided by Sustainable Development Goal 10, the university works to eliminate barriers that limit opportunity and ensures that diversity is recognized as a source of strength. YTU's comprehensive approach to reducing inequalities emphasizes both empowerment and participation – bridging gaps across social, economic, and cultural lines.

This section showcases YTU's broad initiatives that promote accessibility, diversity, and equality through research, education, and social action. The university supports numerous projects and programs designed to empower individuals with disabilities, enhance digital accessibility, and expand opportunities for underrepresented groups. Research-based efforts such as SenseCode-AI and InclusiVET demonstrate how technology can be leveraged to improve inclusion in education and employment. Likewise, awareness events – including autism campaigns, sign language courses, and guide-dog workshops – cultivate empathy and understanding among the university community. These initiatives reflect YTU's belief that inclusion must be both systemic and cultural, supported through academic innovation and civic engagement.

YTU also extends its mission beyond campus borders through international collaborations that foster intercultural dialogue and global citizenship. Projects like DICOMI and participation in European networks such as EUPopLink and ENIS exemplify how the university transforms research into action for social justice. By empowering students, educators, and researchers to advocate for equity and accessibility, YTU actively contributes to reducing inequalities within and beyond the education system. Through empathy, innovation, and collaboration, the university continues to shape a more inclusive, fair, and cohesive society for future generations.

PUBLICATION STATISTICS

SCOPUS (2022-2024)

Name	Scholarly Output	% of 2047	Field-Weighted Citation Impact	Citation Count
SDG 10: Reduced Inequality	44	1,51%	1,07	235

WoS (2022-2024)

Sustainable Development Goals	Number of Publications	% of 2.923
10 Reduced Inequality	28	0,96%

PROJECTS RELATED TO SDG9

Projects Supported by YTU Scientific Research Projects Unit

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Investigation of Citizenship Perceptions of Turkish Society and Syrians Who Transferred/Accepted from Temporary Protection Status to Turkish Citizenship within the Context of Effects on Ontological Security/Insecurity and Social Acceptance	10	16	
2	A Model Proposal Including Rental Housing Provision and New Stakeholder Relationships in Social Housing Policies	10	11	

YTU advances equality and accessibility through innovation, research, and collaboration, ensuring full participation for all individuals.



Turkish Sign Language (TSL) training program

Within the scope of its activities promoting social inclusion and accessibility, the YTU Children and Education Club successfully organized a Turkish Sign Language (TSL) training program during the 2024 Fall semester.

The program aimed to raise awareness about hearing impairments and to equip participants with basic sign language communication skills.

Awareness Event

In recognition of World Autism Awareness Day, the YTU Children and Education Club organized an awareness event in collaboration with the Tohum Autism Foundation. The program began with a symbolic gathering in the campus courtyard, where students dressed in red and decorated trees with red ribbons to visually represent support for individuals with autism.

Following the symbolic activity, a seminar titled “How Much Do We Know? Autism Spectrum Disorder” was held at the YTU Historical Bath. The session covered fundamental topics such as “What is Autism?”, “Characteristics of Individuals with Autism,” and “Effective Communication with Autistic Individuals.” The seminar aimed to enhance awareness and understanding of autism spectrum disorders among university students and participants.





YTU Sigma Aeronautics Qualifies for AIAA DBF!

Yıldız Technical University Construction Society organized the Autism Spring Festival on 3 April 2024 at Basamak Special Education and Rehabilitation Center to mark World Autism Awareness Day. The event aimed to raise awareness of autism, promote inclusion, and provide an engaging and educational environment through interactive activities with autistic children. By fostering social responsibility and encouraging inclusive community participation, the initiative contributed to sustainable development goals.

Paws Beyond Barriers

The seminar "Paws Beyond Barriers" was organized on 6 January 2024 at YTU. The event aimed to raise awareness about the vital role of guide dogs in supporting individuals with visual impairments. Participants had the opportunity to explore how guide dogs contribute to independence, mobility, and social inclusion, while also fostering empathy and understanding among the broader community.

This activity reflects YTU's dedication to promoting inclusivity, accessibility, and equal opportunities for all, while strengthening social responsibility awareness among students.



From inclusive education to social awareness, YTU promotes empathy, diversity, and fairness across its campuses and communities.



World Cultures Festival

"World Cultures Festival" was held on May 10, 2024, at Yıldız Technical University Davutpaşa Campus – Ortabahçe.

This vibrant event celebrated international diversity, bringing together students and representatives from over 20 countries. Through cultural exhibitions, traditional foods, music, and interactive activities, participants had the opportunity to share their heritage and learn about others in an inclusive and festive atmosphere.







YTU Welcomes Children with Special Needs to Explore Science and Innovation

YTU hosted a group of children with special needs at YTU Yıldız Technopark, together with the General Manager Assoc. Prof. Dr. Muhammet Garip. The visit aimed to inspire young minds by introducing them to the world of science, technology, and innovation in an inclusive environment.

This event not only created joyful and memorable experiences for the children but also reflected YTU's commitment to social inclusion, equal access to educational opportunities, and community engagement. By enabling special-needs children to explore scientific spaces and interact with role models, the university promotes early STEM education and reduces social inequalities.

Improving Artificial Intelligence (AI) Skill of Visually Impaired Students: SenseCode-AI

Prof. Dr. Serhat Bahadır Kert, a faculty member at Yıldız Technical University Faculty of Education, aims to enhance the IT expertise of visually impaired students through his project titled "Improving Artificial Intelligence (AI) Skill of Visually Impaired Students: SenseCode-AI", supported by the British Council Program. The project focuses on equipping visually impaired students with skills in the field of artificial intelligence and developing a specialized instructional design tailored to their needs. In collaboration with the Computer Science Education Research Group at Yıldız Technical University and experts from the University of Central Lancashire, tools will be developed to teach artificial intelligence to visually impaired children.









InclusiVET: Bridging Skills and Accessibility in Vocational Training for the Hearing-Impaired

Assoc. Prof. Dr. Nihan Kahraman, a faculty member at Yıldız Technical University, Faculty of Electrical and Electronics Engineering, Department of Electronics and Communication Engineering, aims to create an inclusive online vocational training platform through her project titled "InclusiVET: Bridging Skills and Accessibility in Vocational Training for the Hearing-Impaired", supported by the Erasmus+ Vocational Education Cooperation Partnerships Program. The project seeks to provide a rich and interactive learning environment for individuals with hearing impairments by integrating AR and VR technologies.

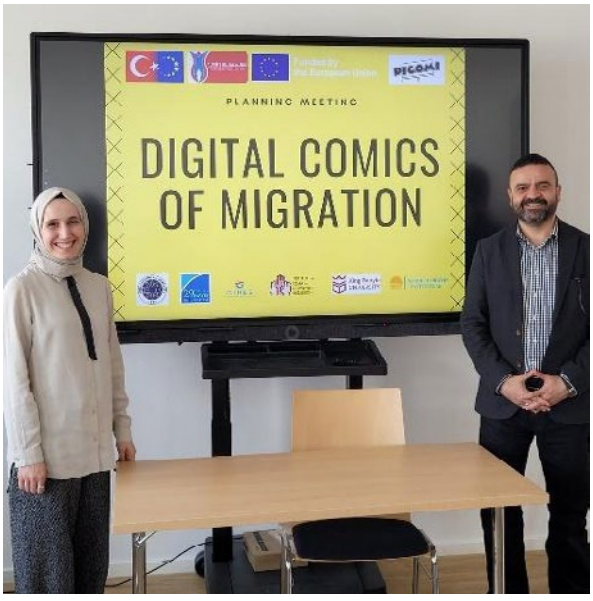
Paws Beyond Barriers

Yıldız Technical University Lecturer Gülseven Bektaş has been accepted into two prestigious COST Action working groups supported by the European Union, marking an important achievement.

The first project Bektaş will contribute to is the EUPopLink (Links Between Populism and Euroscepticism) Working Group. Within this project, Bektaş aims to analyze the relationship between populism and Euroscepticism in depth, understand their societal impacts during multiple crisis periods, and develop effective policy recommendations to mitigate these effects. The project provides an interdisciplinary platform aimed at shedding light on social transformation processes across Europe.

The second project, ENIS (European Network on International Student Mobility: Bridging Research and Practice) Working Group, focuses on developing innovative approaches to international student mobility and translating scientific data into actionable recommendations. This project will offer a crucial roadmap for creating fairer and more inclusive international education policies.





DICOMI PROJECT

The project focuses on developing cross-curricular digital comics based on migrant family stories, providing students with engaging narratives that promote awareness and empathy.

By leveraging digital tools and international cooperation, we aim to enrich educational experiences across Europe while fostering key competencies such as digital skills, respect, and social cohesion.

POLICY & OPERATIONS

2024 Orange Flag Award for Physical Accessibility

YTU Faculty of Civil Engineering received the "Orange Flag Award" from the Council of Higher Education of Türkiye (YÖK) in recognition of its excellence in physical accessibility within higher education facilities, achieved through the implementation of barrier-free campus infrastructure and universal design practices that enhance accessibility for students, staff, and visitors with disabilities.



By uniting technology and compassion, YTU drives meaningful change toward a more inclusive and equitable world.

YILDIZ TECHNICAL UNIVERSITY

2024 SUSTAINABILITY REPORT



11 SUSTAINABLE CITIES AND COMMUNITIES

MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT, AND SUSTAINABLE

Scan the QR code for SDG11 events

11 SUSTAINABLE CITIES AND COMMUNITIES



Yıldız Technical University (YTU) envisions cities as living ecosystems where technology, culture, and nature coexist in balance. Guided by SDG 11, the university strives to make urban environments more resilient, inclusive, and sustainable through education, research, and civic engagement. YTU's approach to sustainable urbanization extends beyond the development of infrastructure – it encompasses cultural heritage, environmental protection, and social equity to build communities that are both innovative and humane. By uniting scientific expertise with cultural awareness, YTU fosters cities that reflect creativity, collaboration, and collective responsibility.

This section presents YTU's multifaceted contributions to building sustainable, disaster-resilient, and culturally rich cities. Through international conferences, research projects, and public awareness campaigns, the university promotes innovation in urban design, architecture, and environmental management. Initiatives such as the Disaster Awareness Summit, earthquake simulation workshops, and the Esenlik Symposium demonstrate YTU's leadership in urban resilience and climate adaptation. Equally, exhibitions such as "From Tradition to the Future," the "Hungarian Designs in Turkey" series, and the establishment of the YTU Museum highlight the university's dedication to cultural continuity – bridging historical legacy with future-oriented urban planning and design.

YTU also strengthens sustainability through education, art, and community collaboration. Tree-planting campaigns, zero-waste training sessions, and the "Sustainable Cities and Living Spaces" national competition empower youth to participate actively in shaping the cities of tomorrow. Academic research and social initiatives work together to improve waste management, promote green building practices, and expand environmental literacy. Through this comprehensive perspective, YTU proves that sustainable cities emerge when science, culture, and social consciousness converge. Its ongoing commitment ensures that future generations continue to design urban spaces that embody harmony, resilience, and sustainability.

PUBLICATION STATISTICS

SCOPUS (2022-2024)

Name	Scholarly Output	% of 2047	Field-Weighted Citation Impact	Citation Count
SDG 11: Sustainable Cities and Communities	313	10,71%	1,23	2.744

WoS (2022-2024)

Sustainable Development Goals	Number of Publications	% of 2.923
11 Sustainable Cities And Communities	521	17,82%

PROJECTS RELATED TO SDG9

Projects Supported by YTU Scientific Research Projects Unit

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Development of a Community-Oriented and Resilient Contractor Selection Model in Post-Disaster Reconstruction Projects	11	16	
2	Site Selection Evaluation of Municipal Mobile Solid Waste Bins within the Framework of Sustainability: A Case Study	11	12	
3	A Study On The Color Rendering Index Of Ultramarine Blue Used In Oil Paintings On Canvas	11	4	
4	Presentation of National Palaces and Artworks Representing Istanbul with Original Paintings Through Digital Transformation	11	4	
5	Damaged Building Detection from Post-Earthquake Images Taken by Unmanned Aerial Vehicles with Deep Learning-Based Methods	11	9	1
6	Experimental and Analytical Investigation of Seismic Performance of Measurement-Based Active Reinforced Concrete Frame Systems	11	9	
7	Determination of Design and Material Properties of Yıldız Palace Has Ahırlar Artificial Rocks, Investigation of Degradation Status	11	4	
8	Development of an integrated artificial intelligence damage prediction model with Kahramanmaraş earthquake data	11	9	1
9	Emergency communication systems in natural disasters via Autonomous Vehicles with 5G and IoT	11	9	
10	A Study on the Historical Change Process of Modeling and Model Making Techniques in Turkey	11	4	

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
11	Seismic Performance Assessment Of Reinforced Concrete Hospital Buildings	11	9	
12	Public Space and Public Life	11	16	
13	Effect of 2D Finite Element Modeling of Soil on Earthquake Behavior of Tunnel Formwork System Buildings	11	9	
14	Strengthening Of Reinforced Concrete Structures According To Turkish Earthquake Code	11	9	

Research University Support Projects

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Development of Wooden Modular Systems for Temporary Post-Disaster Structures Using Digital Design and Digital Manufacturing Methods	11	9	13

External Grant-Supported Projects

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Investigation of Carbon Dioxide (CO_2) Capture Mechanisms of Layered Material Synthesized from Food Waste Functionalized with Polymers	11	13	
2	Spatial and Relational Analysis of Organic Agriculture as a Component of the Sustainable Food System	11		
3	Determination of Post-Seismic Effects of the January 24, 2020 Sivrice, Elazığ Earthquake and Kinematics of the Pütürge Segment with Multi-Disciplinary Methods and Investigation of Its Effect on Surrounding Faults	11	13	
4	Detection, Tracking and Mapping of Algal Blooms in Antarctica Using Remote Sensing Data, Simultaneous In-Situ Measurement of Nitrate and Phosphate Amounts in the Determined Regions Using Specially Designed Sensors, and Determination of Dominant Species in Polar Algal Blooms	11	13	
5	Modelling the Progression of Tsunami Wave in Rivers	11	13	
6	Sound Source Localization and Speech Translation for Earthquake Victims	11	13	
7	A Study on Protection Problems and Protection Methods of Wall Paintings in Monumental and Civil Architectural Examples in Albania and Turkey During the Ottoman Period	11	4	17
8	Developing A Novel Climate-Change Risk Assessment Framework For Cultural Heritage in Turkey	11	13	15

SUMMARIES OF KEY PROJECTS



Spatial and Relational Analysis of Organic Agriculture as a Component of the Sustainable Food System

Rapid urbanization in the second half of the twentieth century transformed food production and distribution, leading to mass production, global food logistics, and standardized processed products. While conventional agriculture has enabled large-scale, globally accessible food supply chains, it has also generated concerns regarding food safety, environmental degradation, and equitable farmer income. In response, sustainable agricultural models—particularly organic farming—have gained strategic importance. Supported by evolving regulatory frameworks and increasing international and local adoption, organic agriculture has become a multidisciplinary research field. This project examines organic farming within the regional planning discipline using a relational approach, focusing on spatial patterns and agri-food system linkages. Using Bursa as a metropolitan case study, the research will map current organic farming activities, identify factors facilitating or constraining transition to organic agriculture, and analyse expansion potential. The project aims to inform place-based policy tools to foster organic agriculture, evaluate the economic implications of sustainable food systems, and contribute to sustainable regional development strategies grounded in food security and environmental stewardship.



Development of an integrated artificial intelligence damage prediction model with Kahramanmaraş earthquake data

This project aims to develop an advanced machine-learning–based predictive framework to assess whether buildings in the regions affected by the February 6, 2023, Kahramanmaraş earthquakes (Mw 7.6 and 7.7) would experience collapse or remain standing in future seismic events. Various structural and geotechnical parameters of both collapsed and surviving buildings—such as construction year, number of floors, presence of architectural support systems, foundation type according to soil investigation reports, distance to fault lines, design spectral acceleration coefficient, reinforcement type (plain/ribbed bars), ratio of structural element area to total surface area, and balcony cantilever dimensions—will be analysed. Relevant parameters will be filtered and grouped based on significance to construct a robust prediction model. The primary objective is to generate probabilistic collapse predictions to support rapid building screening and disaster-preparedness planning. The requested project support focuses on facilitating official access to building data via field visits to municipalities, public prosecutors' offices, and private laboratories performing core-strength tests in the earthquake-affected areas. The outcomes will contribute to data-driven seismic resilience and early risk assessment strategies.

Development of Wooden Modular Systems for Temporary Post-Disaster Structures Using Digital Design and Digital Manufacturing Methods

This project proposes an innovative, sustainable model for removable and transportable non-residential structures to be used after earthquakes, addressing the need for rapid, flexible, and environmentally friendly post-disaster solutions. Focusing on natural materials—particularly wood—and low-carbon construction systems, the initiative develops modular, reusable prototypes that respond to social, cultural, and functional needs in disaster-affected areas. Supported by the EU Erasmus+ program, the project brings together 30 young participants from Turkey, Serbia, Romania, Ireland, and Austria for online training and an in-person workshop in Turkey. Participants will learn ecological design principles, collaborate across disciplines, and work with the Wikihouse system to propose quickly assembled structures with minimal environmental impact. Over six months, teams will develop and present design concepts, with the most feasible solution selected for full-scale fabrication and on-site assembly. Beyond producing tangible prototypes, the project aims to build international youth capacity in sustainable construction, foster ecological awareness, inform policy development, and promote resilient, climate-conscious urban planning practices.



YTU unites science, culture, and innovation to build resilient, inclusive, and sustainable cities for future generations.

YTU Faculty of Art and Design hosted a classical arts exhibition

From January 4 to 9, 2024, the YTU Faculty of Art and Design hosted a classical arts exhibition titled “From Tradition to the Future”, curated by Behlül Berk Sağlam. Held at the university’s Historical Water Cistern, the exhibition brought together seven artists: Gülizar Çevik, Merve Özen, Seçil Özyıldırım, Şaduman Gemici, Yeşim Karamık Jandar, and Zuhal Tepeyurt.

The exhibition aimed to explore the interplay between tradition and contemporary expression in the field of classical arts. Visitors had the opportunity to engage with works that reflect deep-rooted artistic heritage.

The exhibition served as a cultural and educational platform, contributing to the appreciation of classical art forms within a modern academic setting.





Wood Painting Workshop

On April 1, 2024, a hands-on Wood Painting Workshop was held by GESK at Yıldız Technical University’s Faculty of Education. The workshop offered students a creative break from their academic routines by encouraging artistic expression and handcraft skills through the decoration of wooden items. Participants engaged in painting and design activities that not only fostered creativity but also supported mental well-being and community bonding. The session was open to all students.

YTU Faculty of Art and Design hosted a classical arts exhibition

On May 9, 2024, the YTU Traditional Arts Club (GESK) organized an open-air Ebru (Turkish marbling) workshop titled “Ebru Time” in the Central Garden of Yıldız Technical University’s Davutpaşa Campus. Participants from various departments came together to experience and practice this centuries-old art form in a relaxed and creative outdoor setting.

The event aimed to enhance cultural appreciation and offer a space for mindful artistic expression. Students had the opportunity to create their own marbling patterns, learn about traditional techniques, and take personalized art pieces as mementos.

The workshop not only introduced participants to the cultural heritage of Turkish marbling but also contributed to well-being and campus engagement through art and nature.





Disaster Awareness Summit

Summit was held on 25 April 2024 at the Faculty of Electrical and Electronics Conference Hall, aiming to raise public awareness on disaster preparedness and resilience. The summit created a platform for dialogue on risk reduction, safety, and community responsibility, helping students and participants better understand disaster management and preparedness strategies.

Construct-in Talks

Yıldız Technical University hosted the Construct-in Talks on 5 April 2024 with civil engineers Sinan Türkkan, Chair of Artyol Engineering and President of the Earthquake Strengthening Association, and Serhat Tunç, who has contributed innovative solutions to numerous projects in the sector. The event focused on structural strengthening and earthquake engineering, offering students the opportunity to learn from leading experts and discuss resilience in construction. The initiative contributed to quality education, supported innovation in civil engineering, and raised awareness on disaster preparedness and resilient infrastructure.









Living with Disasters: Management of Emergencies

Yıldız Technical University hosted a training session titled “Living with Disasters: Management of Emergencies” as part of its Disaster and Emergency Community’s educational series. The event provided students and participants with knowledge and practical insights into emergency preparedness, disaster risk reduction, and effective response mechanisms. Delivered by GEA Search and Rescue Coordinator Umut Dinçşahin, the training emphasized community resilience, coordination during emergencies, and the importance of preparedness in reducing the impact of disasters.

This activity demonstrates YTU’s strong commitment to raising awareness and building capacity in disaster risk management, contributing to sustainable communities and societal resilience.

Disaster Awareness Summit '24 – Rebirth After February 6

As part of the "Disaster Awareness Summit '24 – Rebirth After February 6", a practical workshop on search and rescue operations was conducted on 25 April 2024 in collaboration with Esenler Municipality Search and Rescue Team (ESKAT). The workshop provided participants with first-hand experience in urban search and rescue techniques, including field operations, use of specialized equipment, and coordination in post-disaster scenarios.





Earthquake Simulation Workshop

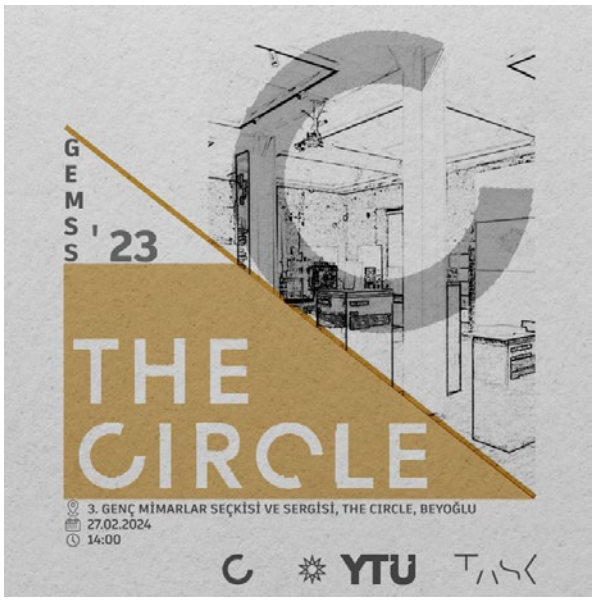
As part of the "Disaster Awareness Summit '24 – Rebirth After February 6", an "Earthquake Simulation Workshop" was organized on 25 April 2024 in collaboration with AFAD. The training utilized AFAD's earthquake simulation vehicle, allowing participants to experience realistic earthquake scenarios and practice essential safety techniques such as "Drop, Cover, and Hold On." The workshop provided an interactive and practical environment to increase disaster preparedness and awareness among students and participants.

This activity underscores YTU's commitment to advancing earthquake awareness, strengthening practical disaster preparedness skills, and collaborating with national institutions to enhance community resilience.

The Circle – 3rd Young Architects Exhibition and Selection

"The Circle – 3rd Young Architects Exhibition and Selection" was held on February 27, 2024, at The Circle, Beyoğlu, Istanbul. Organized in collaboration with Yıldız Technical University and TAK (Tasarım Atölyesi Kadıköy), the exhibition brought together innovative projects by emerging architects as part of the GEMS'23 initiative.

Participants had the opportunity to explore creative architectural works through a guided tour, engaging in discussions on design thinking, sustainability, and the future of urban spaces. The event served as a space for inspiration, collaboration, and exchange between students and professionals in the field of architecture.





Hüzzam Faslı Concert

"Hüzzam Faslı Concert" was organized by the Yıldız Technical University Turkish Music Club on January 3, 2024, at the Faculty of Art and Design, Farabi Hall (B-2028).

The event celebrated the richness of traditional Turkish classical music, bringing together students and music enthusiasts to experience the timeless melodies of the Hüzzam mode. Through live performances, the concert aimed to preserve and promote Türkiye's cultural and musical heritage, fostering appreciation for traditional art forms among younger generations.

Urban Sketches Workshop

"Urban Sketches Workshop" was held on March 26, 2024, at Yıldız Technical University, Faculty of Architecture, D-402. Conducted in collaboration with TAK (Tasarım Atölyesi Kadıköy), the workshop was led by architect and watercolor artist Özlem Öğüt (@paperozy).

The event combined watercolor techniques with architectural sketching, allowing participants to explore the artistic and structural features of the Yıldız Campus. In addition to learning about various watercolor styles such as food, flora, and fashion illustration, attendees had the opportunity to interpret their surroundings through creative expression.

This workshop encouraged artistic creativity, environmental awareness, and appreciation for cultural and architectural heritage, aligning with the principles of sustainable and inclusive urban design.





Hungarian Designs in Turkey

As part of the 2024 Hungarian–Turkish Year of Culture, the exhibition titled "Hungarian Designs in Turkey" was jointly organized by the YTU Faculty of Architecture Dean's Office, YTU Student Dean's Office, and the Istanbul Hungarian Cultural Center.

Hosted at YTU Beşiktaş Campus, Faculty of Architecture, Dean's Corridor, the exhibition was open to visitors from April 26 to May 3, 2024, starting with its opening ceremony at 13:30 on April 26.

The exhibition presented a unique selection of architectural projects by Hungarian architects in Turkey, spanning from the late Ottoman period to the early years of the Republic. It shed light on both realized and unbuilt works, emphasizing the mutual cultural and architectural exchange between the two nations.



YTU Museum has officially opened

The YTU Museum has officially opened its doors, serving as a living archive that bridges Yıldız Technical University's 113-year history with its forward-looking vision.

The opening ceremony celebrated the university's deep-rooted heritage, academic milestones, and transformative innovations, highlighting how YTU's legacy continues to inspire future generations. The museum reflects the collective contributions of distinguished alumni, faculty members, and students who have shaped the institution's journey from past to present.

More than a traditional exhibition space, the YTU Museum embodies a fusion of science, technology, and culture, offering visitors a chance to experience the evolution of education, innovation, and creativity through the lens of YTU's enduring values.

From cultural heritage to disaster resilience, YTU transforms research and creativity into sustainable urban solutions.

Kahramanmaraş Earthquake Remembrance Program

YTU participated in the Kahramanmaraş Earthquake Remembrance Program, organized in collaboration with the GEA Search and Rescue Team, Üsküdar Municipality, and AFAD. Moderated by meteorologist Bünyamin Sürmeli, the event featured expert speakers including Prof. Dr. Şükrü Ersoy and Prof. Dr. Zeynep Gül Ünal from YTU, alongside GEA Coordinator Umut Dinçşahin. The program focused on disaster preparedness, urban resilience, and sustainable reconstruction strategies, while honoring the lives lost during the 2023 earthquakes. This event exemplifies YTU's active role in promoting community awareness, strengthening partnerships, and contributing to sustainable, disaster-resilient urban development.





Urban Solutions Against Climate Change in the Mediterranean

YTU students received the Honorable Mention Award in the international competition "Urban Solutions Against Climate Change in the Mediterranean," organized by the Union for the Mediterranean (UFM) in 2023. The competition brought together participants from 12 countries and 80 projects, focusing on innovative architectural and urban design strategies to mitigate the impacts of climate change in Mediterranean cities. Representing YTU's Faculty of Architecture and Department of City and Regional Planning, the students' project proposed sustainable and resilient design approaches to enhance climate adaptation in urban contexts.



YTU Museum has officially opened

YTU actively contributed to the TÜBA Workshop on Urban Transformation and Sustainable Cities, organized by the Turkish Academy of Sciences (TÜBA) and hosted by Sinop University in 2024.

YTU Rector Prof. Dr. Eyüp Debik and Prof. Dr. Güleda Engin, a faculty member of the Department of Environmental Engineering, participated in the workshop alongside TÜBA members. The event focused on key topics including urban transformation, sustainable city planning, energy policies, environmental management, and biodiversity conservation.

The workshop addressed critical issues such as the protection of natural habitats, restoration of degraded ecosystems, integration of green infrastructure into urban areas, and the incorporation of ecosystem services into planning and policy-making processes. Bringing together representatives from public institutions, local governments, universities, and researchers, the event served as a national platform for developing strategies and policy recommendations for sustainable urban transformation.

This participation highlights Yıldız Technical University's active role in sustainable urban development, climate-resilient planning, protection of natural ecosystems, and national-level policy collaboration.





Cognitive Mapping of Urban Spaces Through Play-Based Route for Children

Assoc. Prof. Dr. Selin Yıldız, Faculty of Architecture, Department of Architecture, leads the TÜBİTAK 1001 – Republic's 100th Year Special Call project titled "Experiencing the Urban Space Through Cognitive Mapping: A Play-Based Exploration Route for Children."

The project aims to foster children's environmental and spatial awareness through an interactive, game-based mobile application that encourages them to explore and learn about urban environments such as Beşiktaş, Istanbul.

By integrating Geographic Information Systems (GIS) with cognitive mapping, the study develops flexible exploration routes that enhance children's independent decision-making, environmental sensitivity, and peer learning skills.

Community-based learning and participatory action research in collaboration with local governments, industries, and NGOs to solve real-world environmental issues

The "Goodness in the City" themed Esenlik Symposium, organized in collaboration with Esenler Municipality and Yildiz Technical University, focused on innovative and ethical solutions to the social, environmental, and technological challenges faced by cities. YTU Rector Prof. Dr. Eyüp Debik emphasized that major metropolises like Istanbul struggle with traffic congestion, environmental pollution, and infrastructure deficiencies, and highlighted the importance of preserving ethical values while utilizing modern technologies such as artificial intelligence and innovation. Key environmental sustainability proposals at the symposium included promoting circular economy models in waste management, developing AI-based traffic management systems, and integrating smart city approaches into urban transformation projects. Viewing Istanbul as a "living laboratory" presents a unique opportunity for



collaboration between universities, local governments, and communities to generate scientific solutions addressing urban environmental issues and advancing sustainable city futures.



Sustainable Cities and Living Spaces" 4th National Student Cartoon Competition

Yildiz Technical University (YTU) organizes the "Sustainable Cities and Living Spaces" 4th National Student Cartoon Competition, aimed at actively engaging students across the country in sustainability issues. The competition encourages students to creatively express their perspectives on the environmental, social, and technological challenges facing urban areas and living environments. By using cartoons as a powerful medium, the event not only raises awareness about the importance of sustainable urban development but also inspires young minds to think critically and innovatively about solutions for greener, healthier, and more resilient cities. Through this initiative, YTU seeks to cultivate a culture of sustainability among future generations and empower students to become proactive contributors to a sustainable future.





EurAsia Waste Management Symposium

EurAsia Waste Management Symposium is being organized bi-annually by Environmental Engineering Department of Yildiz Technical University, with collaboration of Istanbul Environmental Management Industry and Trade Inc. (ISTAC). Scheduled to take place from October 21 to 23, 2024, the symposium aims to foster collaboration, exchange innovative ideas, and address the pressing challenges our planet faces in waste management.



Kahramanmaraş Earthquake Remembrance Program

YTÜ|ÇEV at Zero Waste Workshop with Children - On August 9, we were at the Zero Waste workshop as YTÜ|ÇEV. We explained recycling, sustainability, and actions for zero waste to children aged 6-12 and reinforced the concepts with games.



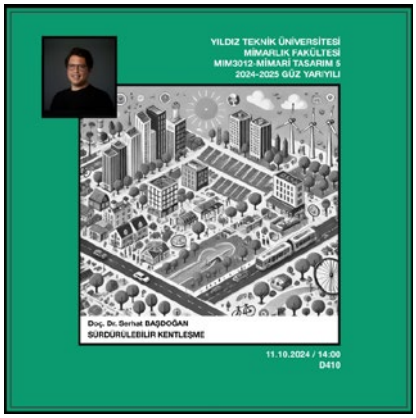


Seminar on Protecting the Historic Built Environment from Damage Due to Underground Construction Induced Ground Movements

YTU organized a seminar addressing the critical topic of protecting the historic built environment from potential damage caused by underground construction and ground movements. The session highlighted engineering approaches, monitoring techniques, and risk mitigation strategies to preserve cultural heritage while enabling modern infrastructure development.

Sustainable Urbanization Seminar

YTU hosted a seminar on sustainable urbanization, exploring strategies for designing resilient, inclusive, and environmentally friendly cities. The session highlighted integrated planning approaches, green infrastructure solutions, and community engagement practices that contribute to building sustainable urban environments.





Green Buildings and Sustainable Architecture

On Saturday, November 9, 2024, at 11:00 AM, we hosted an insightful online training session with Aslı Arda, Sustainability Consultant at ERKE Design.

During the session titled "Green Buildings and Sustainable Architecture," participants learned about innovative design principles that minimize environmental impact, improve energy efficiency, and promote the health and wellbeing of building occupants. The training covered key topics such as sustainable materials, energy-saving technologies, and the integration of natural elements in architectural design.

Attendees gained a deeper understanding of how green building practices contribute to reducing carbon footprints and advancing global sustainability goals. The interactive format allowed for valuable discussions and practical examples from real-world projects shared by Ms. Arda.





We Proudly Planted 113 New Trees Across Our Campus

In celebration of National Afforestation Day on November 11, and in honor of our university's 113th anniversary, we proudly planted 113 new trees across our campus. Led by our Rector, Prof. Dr. Eyüp Debik, the tree-planting event brought together faculty members, administrative staff, and students—uniting the YTU community in a shared commitment to sustainability and environmental stewardship. These newly planted trees are not just part of our landscape—they are part of our legacy. They will contribute to cleaner air, increased biodiversity, and a more vibrant campus ecosystem. Our campus, already recognized both nationally and globally as one of the few areas rich in biodiversity, is one step closer to becoming a living nature museum—where science, education, and nature grow side by side. Rooted in the soil, these trees will also take root in the future of knowledge, serving as lasting symbols of our dedication to a greener, healthier world.

POLICY & OPERATIONS

Joint Research Center for Cultural Heritage Conservation

A cooperation agreement between Yıldız Technical University (YTU) and the University of West Attica (Greece) was formally signed by Rectors Prof. Dr. Tamer Yılmaz and Prof. Dr. Panagiotis Kaldis to establish a Joint Research Center for Cultural Heritage Conservation.

The center will focus on protecting tangible and intangible cultural assets, conducting interdisciplinary research, and supporting advanced training programs in heritage science, restoration, and conservation technologies.

This strategic initiative strengthens cross-border academic collaboration, advances scientific innovation in cultural preservation, and contributes to international knowledge sharing and capacity-building in heritage management.



17 PARTNERSHIPS FOR THE GOALS

By integrating education, art, and environmental awareness, YTU fosters livable, equitable, and future-ready communities.



Sustainable Transportation Practices at YTU

Yıldız Technical University has implemented comprehensive and sustainable transportation strategies to reduce private vehicle dependency and promote eco-friendly mobility within and around its campuses.

The M1A subway line, together with two major bus routes (41AT and 85C), provides reliable and efficient access to the university. Additionally, university-operated shuttle services facilitate the daily transportation of students and personnel between the main Metrobus line and campus facilities, significantly improving accessibility.

To enhance sustainability, electric vehicles are currently in use across several campus units for administrative and operational purposes. Furthermore, pilot trials of electric buses have been conducted as part of YTU's efforts to integrate zero-emission vehicles into campus transportation. These initiatives reflect the university's long-term vision to expand the use of electric and hybrid vehicles in both student and personnel shuttle services.

In 2024, the university launched a new campus transportation program designed to reduce private car use. This was achieved by increasing shuttle service frequency, introducing higher parking fees for private vehicles, and updating the campus traffic regulations and fine system, which are publicly available through the official "Campus Traffic Regulations and Fines Pocket Guide." These measures collectively promote a cleaner, safer, and more sustainable transportation environment across the campus.

13 CLIMATE ACTION
17 PARTNERSHIPS FOR THE GOALS





YILDIZ TECHNICAL UNIVERSITY

2024 SUSTAINABILITY REPORT



12 RESPONSIBLE CONSUMPTION AND PRODUCTION

ENSURE SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS

Scan the QR code for SDG12 events



Yıldız Technical University (YTU) embraces a holistic approach to sustainability that emphasizes mindful production, responsible consumption, and the efficient use of resources. Guided by Sustainable Development Goal 12, the university integrates environmental consciousness into education, research, and daily operations, ensuring that sustainability becomes a shared culture rather than a singular goal. By promoting circular economy practices and resource efficiency, YTU encourages innovation that minimizes waste while maximizing value creation for both society and the environment.

This section highlights how YTU's diverse initiatives transform sustainability principles into tangible action. Through research in green chemistry, environmental engineering, and sustainable materials, the university develops new models for waste reduction, pollution prevention, and eco-friendly production. Events such as the Environmental Festival, Clean Action, and the Sustainability and Climate Change Summit mobilize students, academics, and industry partners around the idea of responsible living. Workshops on tote-bag design, natural dyeing, denim upcycling, and candle making from waste materials help participants link creativity with environmental stewardship, while campaigns like "Collect Caps, Overcome Barriers" demonstrate how recycling can directly improve social well-being.

Beyond campus boundaries, YTU's scientific projects—such as studies on pollutant monitoring in the Antarctic—illustrate its contribution to global environmental protection. Student competitions, industry collaborations, and awareness campaigns strengthen environmental literacy and create opportunities for sustainable innovation. By combining research, creativity, and community engagement, YTU fosters a culture where responsibility and innovation coexist, leading to long-term transformation in consumption and production habits. Through this unified vision, the university empowers its community to act consciously, produce sustainably, and inspire a more resilient planet.

PUBLICATION STATISTICS

SCOPUS (2022-2024)

Name	Scholarly Output	% of 2047	Field-Weighted Citation Impact	Citation Count
SDG 12: Responsible Consumption and Production	264	9,03%	1,74	3.747

WoS (2022-2024)

Sustainable Development Goals	Number of Publications	% of 2.923
12 Responsible Consumption And Production	311	10,64%

PROJECTS RELATED TO SDG 12

Projects Supported by YTU Scientific Research Projects Unit

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Investigation of Physicochemical Properties and Transport Separation Power of Hemeprotein	12	9	
2	Production, Characterization, And Application Of Propolis-Loaded Edible Emulsified Chitosan Film In Extending Strawberry Shelf Life	12	2	13
3	Development of Alternative Leather Production Methods from Different Fruit Wastes	12	8	
4	Development of a Biodegradable Hydrophobic Coating Containing Chitosan Nanoparticle and Lemongrass Essential Oil to Reduce Bacterial Adhesion on Food and Beverage Contact Surfaces	12	13	2
5	A Sustainable Approach for Waste Management: In-Depth Analysis and Process Optimization of Biochar Production from Waste Prickly Pears	12	13	
6	Production and Characterization of Silica-Doped Environmentally Friendly PVA-SA-GEL Biocomposite Films	12	13	
7	Development Of Recycling Process For Nicr Alloy Wastes Used In Biomedical Applications For Sustainable Additive Manufacturing	12	13	9
8	Investigation of the Environmentally Friendly Recovery of Active Cathode Material from Used Lithium Nickel Manganese Cobalt Oxide Based NMC Type Li-Ion Batteries in Electric Vehicles and Their Use in the Production of New Li-Ion Batteries	12	7	

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
9	Investigation of the Printability of Self-Healing Nano-Doped Geopolymer Materials with 3D Printing Method Using Bacteria Obtained from Mussel Shells	12	9	14
10	Obtaining Valuable Components from Various Citrus Product Wastes with Different Extraction Methods	12	2	
11	Synthesis of Chitosan from Mussel Shell	12	14	
12	Techno-Economic Analysis Of Pet Bottles Used As Packaging In Foods	12	8	
13	Production, Characterization, and Biodegradability of Polymer-Based Biodegradable Composites to be Obtained Using New Actinobacteria Isolated from Horseshoe Island, Antarctica	12	9	15
14	Effect of Artificial Aggregates Obtained Using MgO Cement on Concrete Properties	12	9	13
15	Investigation of nanocellulose and polylactic acid (PLA) containing biocomposites obtained from natural resources for the automotive sector	12	9	
16	Use of Biodegradable Polymers as Controlled Release Fertilizer in Agricultural Applications	12	2	9
17	Enzymatic and Microbial Reactions of Organic Compounds Catalyzed by Microbial Cells	12	3	
18	Heterologous Expression And Biochemical Characterization Of A Novel Recombinant Fungal Chitinase	12	3	
19	Production of Collagen Doped Polymeric Material from Fish Scale	12	3	9

Research University Support Projects

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Fabrication of High-Value Biological Raw Materials from Animal Waste and In Vitro Analysis of In Vivo Paralysis Cases	12	3	9
2	Use of Boron Wastes as Artificial Aggregate in Concrete Production	12	9	11
3	Production of Plant-Based Proteins and Peptides from Food Industry Wastes and the Use of Isolated Proteins as a Protein Source in the Production of Various Foods	12	9	2

External Grant-Supported Projects

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Application of Engine Integrated Hydrogen Production System on Ships within the Scope of Zero Carbon	12	13	
2	Investigation of the Use of Boron-Hydrogen Compounds in the Conversion of Industrial Flue Gas Adapted Gas Mixtures into Valuable Chemicals by Hydrogenation	12	13	
3	Production of Chemical Additive from Waste Blood for Lime-Based Injection Material and Mortar	12	13	
4	Gene Acquisition Test and Research Center (GETAM)	12	13	
5	Optimization Study of Combustion Kinetic Mechanism for Ammonia Fueled Power Systems	12	13	
6	Desalination of Salt Water and Energy Storage: Redox Flow Desalination Battery	12	13	
7	Treatment And Recovery Of Metal Plating Wastewaters With Membrane Processes	12	13	
8	Central Research Laboratory Additional Infrastructure	12	13	
9	Circular Economy for the Sustainable Earth Spheres-Geosphere, Biosphere, Hydrosphere & Atmosphere (ECO-SPHERE)	12	9	13

SUMMARIES OF KEY PROJECTS

Optimization Study of Combustion Kinetic Mechanism for Ammonia Fueled Power Systems

This project aims to contribute to sustainable energy research by thoroughly investigating the combustion characteristics of carbon-free, ammonia-based fuels. The laminar flame speeds of binary fuel blends consisting of ammonia with hydrogen and methane were experimentally measured using different pre-chamber geometries. A constant-volume spherical and cylindrical combustion chamber setup was employed, and combustion behaviour was evaluated at various equivalence ratios. Pressure-rise measurements and schlieren imaging were conducted to analyse flame propagation, ignition stability, jet dynamics, and heat-release characteristics. A custom image-processing algorithm was used to accurately track the flame-front radius over time, enabling precise determination of flame-propagation rates. Experimental results were compared with laminar flame velocities predicted by constant-volume combustion models in the literature. The findings demonstrate the feasibility of ammonia-based fuel blends in pre-chamber ignition systems and reveal the stabilizing effects of hydrogen and methane additives on combustion performance. Overall, the study provides valuable insight for next-generation carbon-neutral engine technologies and supports the development of future power systems aligned with global decarbonization goals.



Fabrication of High-Value Biological Raw Materials from Animal Waste and In Vitro Analysis of In Vivo Paralysis Cases

This project aims to develop the first integrated Cerebrovascular Disease-on-a-Chip platform, enabling physiologically relevant modelling and early prediction of cerebrovascular diseases without animal or human testing. Cerebrovascular disorders are the second leading cause of death globally, yet drug development remains limited due to poor translation from animal models to humans. The platform will combine two novel systems — Cerebral Cortex-on-a-Chip and Cerebral Artery-on-a-Chip — each designed with anatomically accurate architecture. By integrating these components, the system will simulate major pathologies, including cerebral infarction, stenosis, transient stenosis, and hemorrhage. Advanced microfabrication, photolithography, cell culture, and genetic profiling will be used to model disease mechanisms and identify pre-symptomatic gene expression signatures, aiming to make currently unpredictable cerebrovascular events foreseeable. Five structured work packages will develop and test the platform, supported by experts in chip fabrication and molecular biology, alongside two funded PhD researchers. Expected outcomes include at least three Q1 publications, commercial potential, and patentable technologies, positioning this project at the frontier of biomedical engineering and precision medicine.



Production of Plant-Based Proteins and Peptides from Food Industry Wastes and the Use of Isolated Proteins as a Protein Source in the Production of Various Foods

This project aims to develop sustainable alternative protein sources by valorising food industry by-products, addressing the environmental burden associated with animal-based proteins and supporting circular economy practices. Protein isolates will be obtained from non-biodegraded oil industry residues (sunflower and hazelnut meals), undersized domestic lentils and chickpeas, and mushroom-processing waste using the deep eutectic solvent PEG-200. The amino acid profiles of isolated proteins will be characterized, and complementary blends will be formulated to enhance amino acid diversity. Subsequently, mixed isolates will be fermented with Lactiplantibacillus plantarum, probiotic Bacillus subtilis, Saccharomyces cerevisiae var. boulardii, and non-toxic Aspergillus oryzae to improve digestibility through microbial hydrolysis and to enhance techno-functional and bioactive properties. The most promising isolates will undergo sequential enzymatic hydrolysis (papain, savinase, alcalase) and be incorporated into model protein bars and meat analogues. This research will convert food waste into high-value, bioactive protein ingredients, contributing to sustainable food systems, reduced carbon emissions, and the development of nutritionally rich plant-based products.

Tote Bag Painting Workshop

On April 26, 2024, the Turkish Green Crescent Society Youth Club (Genç Yeşilay) at Yıldız Technical University organized a Tote Bag Painting Workshop to promote creative self-expression and environmental consciousness. Held at Kulüpler Vadisi, the event offered participants a hands-on activity to design and personalize reusable fabric bags.

The workshop aimed to raise awareness about sustainable consumption and the reduction of single-use plastics by encouraging the use of eco-friendly alternatives.



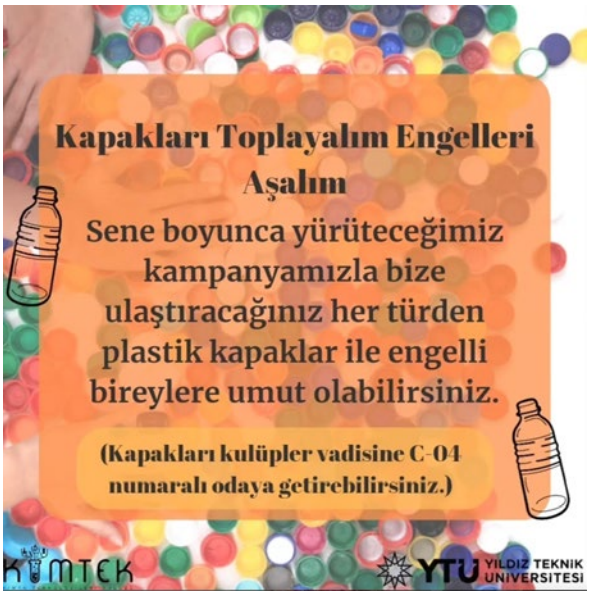


Exitcom Recycling

YTU's Racing Team delivered 1,150 kg of accumulated recyclable waste from their garage to Exitcom Recycling, a trusted partner in waste management. This initiative not only reduced environmental impact but also contributed to the circular economy by ensuring valuable materials are returned to production cycles.

The collaboration emphasized the importance of responsible waste management, protection of natural resources, and student-led environmental action. Through such practices, the university community actively fosters awareness of sustainability and promotes eco-friendly behaviors among students and stakeholders.

This activity demonstrates YTU's contribution to SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), and SDG 17 (Partnerships for the Goals) by supporting sustainable resource use, reducing waste, and engaging with industry partners for environmental responsibility.



Collect Caps, Overcome Barriers

YTU Chemistry Technologies Club (KİMTEK) launched a year-long social responsibility campaign entitled "Collect Caps, Overcome Barriers", which combined environmental sustainability with social impact.Throughout the year, students collected plastic bottle caps across campus and delivered them to the Turkish Spinal Cord Paralytics Association. The income generated from recycling these caps was used to provide manual wheelchairs for individuals with disabilities, with approximately 450 kilograms of plastic caps equating to one wheelchair.

This initiative not only reduced plastic waste and promoted responsible consumption and recycling practices, but also advanced social inclusion and equality by directly improving the quality of life for people with disabilities. Moreover, by enabling greater mobility and independence for beneficiaries, the campaign contributed to well-being and health outcomes.





Organic Printing (Anthotype) Workshop with İlhan Sadıkoğlu

"Organic Printing (Anthotype) Workshop with İlhan Sadıkoğlu" took place on April 22, 2024, at the Faculty of Art and Design, Yıldız Technical University, as part of the Fkare Photography Festival. The workshop introduced participants to the anthotype technique — a sustainable and chemical-free photographic printing process that uses light-sensitive plant extracts and sunlight.

Throughout the session, participants explored the artistic and ecological aspects of organic printing, gaining hands-on experience in environmentally conscious art practices. The workshop highlighted the fusion of creativity, sustainability, and scientific curiosity, emphasizing how art can contribute to ecological awareness and responsible production.





Clean Action

Clean Action (Temiz Hareket) event was held on May 6, 2024, at YTU Ortabahçe under the theme "Leave a Clean Trace for the Future!"

The event brought together brands, companies, and individuals recognized for their inspiring contributions to sustainability, environmental awareness, and circular economy practices. It featured talks, workshops, sapling planting activities, music, and entertainment, all aimed at promoting environmental consciousness and social responsibility among students.

Distinguished speakers included:

Hüseyin Kanbur, CEO of SüperKablo

Hasan Alparslan Gökçek, Senior Environmental Engineer at Eti

Işıl Ergincan, Climate Activist

Muhammed Mulbay, Upcycling Denim Artist

Melisa Akkuş, Change Leader

Through its multidisciplinary approach, Temiz Hareket highlighted how individuals and organizations can integrate sustainability into innovation and everyday life, inspiring the YTU community to take collective action for a greener future.

Prof. Dr. Sezgin Bakırdere has been awarded support under the TÜBİTAK KUTUP-1001 Program

Prof. Dr. Sezgin Bakırdere, faculty member at the Department of Chemistry, Faculty of Arts and Sciences, Yıldız Technical University, has been awarded support under the TÜBİTAK KUTUP-1001 Program for his project titled "Accurate and Sensitive Determination of Inorganic and Organic Pollutants at Trace Levels in Penguin/Seal Excrement and Ocean Water Samples from the Antarctic Region."

Within the scope of the 9th National Antarctic Scientific Expedition, the project aims to develop eco-friendly, low-cost, and easily applicable analytical methods for the detection of targeted inorganic and organic pollutants in lake/ocean water and penguin/seal excrement samples collected from the Antarctic region.

The study will enable the high-precision identification and quantification of persistent organic and inorganic pollutants, offering valuable insights into the current state of environmental pollution in one of the most sensitive ecosystems on Earth. The outcomes of this research will contribute to global efforts to monitor and mitigate the impacts of anthropogenic pollution on polar regions.





Workshop of the Environmental Festival: Advanced Denim Upcycling with Reppatch!

As part of the Environmental Festival, YTU partnered with Reppatch to organize an Advanced Denim Upcycling Workshop. Participants learned creative techniques to repurpose old denim into new, functional products, promoting circular fashion and extending the lifecycle of textile materials.

Workshop of the Environmental Festival: Natural Dyeing and Shibori T-Shirt Coloring with Be Natural!

During the Environmental Festival, YTU collaborated with Be Naturel to host a Natural Dyeing and Shibori T-Shirt Coloring Workshop. Participants learned eco-friendly textile dyeing techniques, explored the art of Shibori, and experienced how sustainable practices can be integrated into creative expression and fashion.





Workshop of the Environmental Festival: Candle Making from Waste Bottles with Studio Le

As part of the Environmental Festival, YTU partnered with Reppatch to organize an Advanced Denim Upcycling Workshop. Participants learned creative techniques to repurpose old denim into new, functional products, promoting circular fashion and extending the lifecycle of textile materials.



YTU AESK achieved great success in the 2024 Shell Eco-marathon Europe & Africa competition!

As YTU AESK, we achieved great success in the 2024 Shell Eco-marathon Europe & Africa competition! We participated in the Shell Eco-marathon held in Nogaro, France, with our vehicle Vega in both the Battery-Electric and Autonomous Urban Concept categories. After successfully passing the technical inspections, we qualified for the race. Among teams from all around the world, we placed 5th in Europe in the Battery-Electric concept with a performance of 146 km/kWh.With our innovative vehicle designed for future energy solutions, we were the only Turkish team competing in the Autonomous Urban Concept category. After successfully passing the technical inspections, we qualified for the race and proudly represented our country by finishing in 4th place.





Sustainability and Climate Change Summit on the Future of the Food Sector

Organized by the Food Club of Yıldız Technical University (YTU), the third edition of the Sustainability and Climate Change Summit provided a dynamic platform for addressing the future of the food industry through the lens of environmental responsibility. The event convened professionals from the food ecosystem, academic experts, and students to engage in discussions on critical topics including sustainability, zero-waste strategies, and the impacts of climate change on food systems. Throughout the summit, representatives from leading industry brands and university scholars shared insights on emerging food trends, aiming to foster a culture of sustainable innovation. The program culminated in an awards ceremony recognizing outstanding contributions to sustainable practices in the food sector.



POLICY & OPERATIONS

National Policy Framework on Sustainable Resource Management (Türkiye – May 2024)

In May 2024, Türkiye introduced a comprehensive national savings and resource-efficiency regulation through the Presidential Circular published in the Official Gazette (17.05.2024 – Aset: 2024/5). This policy establishes strict measures across public institutions to ensure responsible aset management, reduce unnecessary consumption, and promote long-term sustainability in public spending.

This national framework reflects Türkiye's commitment to sustainable public administration and aligns with SDG 12 goals on responsible consumption, waste reduction, and institutional efficiency.

Key policy components include:

- Restrictions on non-essential public expenditures
- Optimization and increased oversight of procurement processes
- Suspension of new vehicle purchases, new building rentals, and non-priority investments
- Digitalization requirements to reduce paper use and administrative waste
- Waste-prevention and efficient-resource-management practices
- Monitoring and accountability mechanisms to ensure compliance



Yıldız Technical University Implementation & Alignment with SDG 12

In line with the national circular and global sustainability goals, YTU has adopted institution-wide practices to enhance resource efficiency, reduce operational footprint, and strengthen aset sustainability.

Key actions implemented at YTU include:

Transport optimization: Reduced the number of shuttle buses and adjusted ring schedules to real demand, lowering fuel use, emissions, and operating costs.

Transition to essential-use vehicle policy: Discontinued rental vehicles and adopted a lean mobility model focused on operational necessity.

Responsible procurement practices: Limited non-essential computer and equipment purchases, promoting resource prioritization and extended aset life cycles.

Digital transformation: Expanded digital workflows and information systems to reduce paper consumption and administrative waste.

Shared infrastructure utilization: Encouraged cooperative use of digital platforms and technical equipment across units to prevent duplication and optimize institutional resources.



YILDIZ TECHNICAL UNIVERSITY

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13 CLIMATE ACTION



TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS

Scan the QR code for SDG13 events

13 CLIMATE ACTION



Yıldız Technical University (YTU) recognizes climate action as an essential pillar of sustainable development and a shared responsibility toward future generations. Guided by Sustainable Development Goal 13, the university leads with science-based solutions, education, and community engagement to address the multifaceted challenges of climate change. YTU's commitment extends across research, innovation, and public awareness, reflecting its vision of a world where knowledge drives resilience, adaptation, and environmental stewardship.

This section highlights YTU's multidimensional approach to combating climate change through education, research, and collaboration. The university's landmark projects – such as the Polar Star Project and Water Literacy Center – illustrate its dedication to advancing scientific understanding of global environmental systems. These initiatives bring together academics, students, and experts to explore sustainable water management, polar ecosystems, and the impacts of global warming. Similarly, seminars and workshops on topics such as greenhouse gas verification, emission reduction strategies, and green hydrogen provide practical frameworks for achieving carbon neutrality and sustainable energy transitions.

YTU also translates climate awareness into action through community-driven programs, including forest firefighting volunteer training, large-scale afforestation events, and the annual Sustainability Summit. These initiatives strengthen disaster resilience, promote reforestation, and encourage public engagement in environmental protection. By integrating research, policy dialogue, and hands-on learning, YTU not only mitigates climate risks but also cultivates a culture of responsibility that connects individuals to the global sustainability agenda. Through its integrated strategy, YTU continues to serve as a catalyst for transformative change – mobilizing science, innovation, and collaboration for a climate-resilient future.

PUBLICATION STATISTICS

SCOPUS (2022-2024)

Name	Scholarly Output	% of 2047	Field-Weighted Citation Impact	Citation Count
SDG 13: Climate Action	272	9,31%	1,95	4.707

WoS (2022-2024)

Sustainable Development Goals	Number of Publications	% of 2.923
13 Climate Action	411	14,06%

PROJECTS RELATED TO SDG 13

Projects Supported by YTU Scientific Research Projects Unit

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Investigation of the Effect of Kaolin Type and Pretreatment Parameters on Gas Adsorption of Kaolin	13	12	
2	Resilient Breakwaters in Global Climate Change: Tandem Breakwaters	13	9	14
3	Drought Assessment And Trend Analysis In Antalya Basin	13	6	
4	Holistic drought analysis: Integrating temporal and spatial dimensions of drought characteristics	13	6	
5	High-quality drought mapping: City-based drought evaluation using ERA5 Land and IMERG NASA precipitation	13	6	

Projects Supported by YTU Scientific Research Projects Unit

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Treatment of Selected Toxic and Hazardous Gas-Phase Organic Pollutants via Nano-Catalytic Ozonation	13	9	11
2	Investigation of Sea Level and Coastal Changes in Delta Regions Using Multiple Remote Sensing Techniques and Development of Climate-Resilient Sustainability Policies-DELTAİK	13	14	11

External Grant-Supported Projects

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Highly Accurate and Sensitive Trace Determination of Inorganic and Organic Pollutants in Penguin/Seal Feces and Ocean Water Samples from the Antarctic Region	13	14	15
2	Automatic Detection of Coastline and Glacier Classes Based on Deep Learning: The Example of Antarctica - Marguerite Bay	13	14	15
3	Investigation of Climate Change Induced Changes and Spatial, Temporal, and Seasonal Characteristics in Wind and Wave Energy Potential of the Black Sea and the Mediterranean Sea According to CMIP6 Climate Projections	13	15	
4	Establishing the Relationship Between Life Sciences and Atmospheric Sciences within the Scope of Global Warming and Climate Change in the Antarctic Context: Analysis and Modeling of the Relationship Between Atmospheric Conditions in the Horseshoe Island Region and Environmentally Sensitive Microorganisms Such as Algae	13	15	
5	Investigation of Supernova Chemical Element Synthesis Traces in Elliptical Galaxies	13		
6	FOCA-Carbon-Free Architecture Interactive System to Support the Construction Sector in Reaching Climate Neutrality	13	11	9

SUMMARIES OF KEY PROJECTS

Investigation of Sea Level and Coastal Changes in Delta Regions Using Multiple Remote Sensing Techniques and Development of Climate-Resilient Sustainability Policies-DELTAİK

This project investigates coastal environmental changes through a multidisciplinary remote sensing approach. Optical and radar satellite data, supported by UAV imagery, will be used to analyse coastline dynamics, revealing the influence of natural processes (waves, currents, sea level fluctuations) and human activities (infrastructure and land-use changes). The study will examine geomorphological processes such as coastal erosion and accretion, and model sea level rise scenarios to assess future risks. Soil salinity mapping will be conducted in agricultural lands by integrating multi-source sensor data to produce high-accuracy salinity distribution maps. Additionally, InSAR technology will monitor surface deformation to detect tectonic movements and human-induced ground changes, such as those caused by groundwater extraction. The results will support sustainable land management, coastal ecosystem protection, and informed decision-making for local authorities. Overall, the project will advance remote sensing-based coastal research and provide practical tools for mitigating environmental risks in coastal regions.

Treatment of Selected Toxic and Hazardous Gas-Phase Organic Pollutants via Nano-Catalytic Ozonation

This project aims to remove volatile organic compounds (VOCs) from waste gases through catalytic ozonation. A laboratory-scale reactor will be designed where VOCs are oxidized using photocatalytic ozone on a TiO_2 surface. Target pollutants include BTEX compounds, PAHs, PCBs, and other persistent organic pollutants listed in Türkiye's industrial air pollution regulations. In addition to ozone-only oxidation, conventional and nano-catalytic ozonation will be evaluated. Titanium dioxide will be prepared as a next-generation nanostructured powder and applied via electrophoretic coating to enhance catalytic activity. The effects of ozone dosage, reaction time, temperature, and humidity will be systematically investigated. Real-time monitoring of TOC and CO_2, supported by measurements of CO, O_2, O_3, and NO, will enable detailed performance assessment. The study aims to determine optimum operational conditions and maximize VOC removal efficiency, providing an advanced and environmentally friendly approach for industrial emission control.

Resilient Breakwaters in Global Climate Change: Tandem Breakwaters

Global climate change, particularly the increasing intensity of storm waves and rising sea levels in coastal zones, necessitates the development of new solutions for both existing coastal structures and future constructions that must be economical, environmentally compatible, and sustainable. Breakwaters are strategic marine structures requiring complex and costly investments. Enhancing their resilience significantly increases costs and may also disrupt ecological balance. Therefore, implementing a lower-crest offshore breakwater in tandem with a primary structure represents a more sustainable design approach. However, current literature provides limited knowledge regarding the performance and design of such configurations. This study aims to address this gap by conducting two- and three-dimensional physical model experiments to investigate fundamental design principles. The findings will contribute essential insights for practicing coastal engineers and researchers by offering improved understanding and practical guidance for the design and optimization of tandem breakwater systems under future climate conditions.

High-quality drought mapping: City-based drought valuation using ERA5 Land and IMERG NASA precipitation data

Drought is a complex natural hazard with severe impacts on water resources, agriculture, and ecosystems, particularly in regions experiencing water scarcity. Reliable drought monitoring requires long-term, accurate precipitation data; however, many developing regions lack well-distributed observation networks that meet the WMO-recommended 20–30-year record length. This limitation hinders accurate drought assessment using traditional indices such as the Standardized Precipitation Index (SPI). To address this gap, this study evaluates the use of satellite- and reanalysis-based precipitation products, including ERA5-Land and IMERG NASA, for SPI estimation at multiple timescales (1, 3, 6, and 12 months). The research aims to validate the WMO time requirement, identify an acceptable shorter duration, assess the effectiveness of satellite datasets for drought analysis, and generate high-quality drought severity and duration maps. The methodology incorporates statistical performance indicators and the Innovative Drought Classification Matrix (IDCM). Kocaeli Province, Türkiye, serves as the case study due to its limited in-situ data. Outcomes will support more reliable drought monitoring frameworks and contribute to effective water resource management in data-scarce regions.



The Kutup Yıldızı (Polar Star) project

The Kutup Yıldızı (Polar Star) project team actively participated in the 7th National Polar Science Symposium and the 3rd Polar Festival, organized by the Polar Research Institute of the TÜBİTAK Marmara Research Center (TÜBİTAK MAM KARE) at Yıldız Technical University.

The symposium featured presentations of awarded research projects under the moderation of the project's principal investigator, Asst. Prof. Dr. Feride Gök Çolak. The team contributed to the academic program by presenting the paper titled:

"Needs Analysis for the Development of the Polar Star Educational Program (1): The Case of Pre-service Teachers."

In addition, the team held a productive meeting with Prof. Dr. Burcu Özsoy, Director of TÜBİTAK MAM KARE, and her team to share insights about the ongoing research activities and the project's goals. The event concluded with a commemorative photo with Prof. Özsoy and the project members.



Forest Firefighting Volunteers Training

Yıldız Technical University hosted the first level of the "Forest Firefighting Volunteers Training," delivered in collaboration with the General Directorate of Forestry. The training aimed to strengthen volunteer capacity in preventing and managing forest fires, enhance awareness of disaster preparedness, and build resilience against climate-related hazards. Participants who successfully completed the first stage became eligible for certification and progression to the second level of training.

This activity demonstrates YTU's strong commitment to disaster preparedness, environmental sustainability, and the promotion of resilient communities.



Tree Planting

On 11 November 2024, YTU collaborated with the General Directorate of Forestry (OGM) to celebrate National Afforestation Day through a large-scale tree planting initiative in Uskumruköy, Sarıyer, Istanbul. The event engaged students, faculty, and volunteers in planting saplings, thereby contributing to reforestation efforts and raising awareness about the importance of protecting natural ecosystems. This initiative strengthened environmental responsibility among participants while supporting climate change mitigation and the promotion of sustainable land use practices.

Polar 101 Seminars

YTU Polar Research Club organized the second session of the "Polar 101 Seminars" series, featuring Onur Limon as the guest speaker. The seminar directly contributed to Climate Action by raising awareness on the impacts of climate change in polar regions, while also supporting Life on Land through highlighting the importance of protecting polar ecosystems.





YTU Sustainability Summit

The Sustainability Summit, organized by Yildiz Technical University, is a prestigious event aimed at raising awareness and generating solutions in the field of sustainability. The summit addresses current topics such as the climate crisis, green transformation, circular economy, and energy efficiency. Industry leaders and expert speakers share their experiences and engage in discussions about sustainable solutions for the future. The summit provides a platform that not only highlights challenges but also offers practical and innovative approaches to address them.



Water Literacy Center: Promoting Sustainable Water Awareness and Education

Yildiz Technical University (YTU) has pioneered the establishment of Turkey's first Water Literacy Center, a significant step towards addressing the escalating global water crisis through comprehensive academic research and community engagement. This initiative comes at a critical time, as global water challenges intensify; the World Meteorological Organization's 2023 State of Global Water Resources report reveals that approximately 3.6 billion people experience inadequate access to water for at least one month each year, a figure projected to exceed 5 billion by 2050.

The YTU Water Literacy Center is dedicated to advancing innovative projects focused on water conservation, combating water pollution, and promoting the recovery and reuse of wastewater. By adopting a scientific and interdisciplinary approach, the center tackles vital issues including the role of water within the circular economy and the impacts of climate change on water resources. Its mission extends beyond academia, aiming to elevate water awareness and literacy among a broad audience ranging from children and students to private sector entities and public institutions.

Through targeted educational programs, workshops, and national campaigns, the center seeks to foster responsible water use habits and mobilize collective action against water wastage and pollution. Additionally, it will serve as a hub for interdisciplinary research exploring topics such as climate adaptation, integration of water resources with renewable energy, and sustainable water management strategies aligned with circular economy principles.

YTU's Water Literacy Center aspires to become a national reference point for water education and sustainability, guiding policy development and societal transformation. By increasing public understanding and engagement, the center aims to catalyze systemic change, ensuring the protection and sustainable management of Turkey's water resources in the face of ongoing environmental challenges.



Focus on Energy: GREEN HYDROGEN

The "Focus on Energy: GREEN HYDROGEN" seminar was jointly organized by the EMO Istanbul Branch EMO Young Commission and Yıldız Technical University CIGRE Student Club. The event took place on Thursday, May 23, 2024, at the YTU Davutpaşa Campus IEE Conference Hall. The seminar featured presentations by Burak Daşdemir, Board Member of EMO Istanbul Branch, and Alp Albostan from Tiryaki Agro, focusing on the role of green hydrogen in the future of sustainable energy systems.

ISO 14064-1 Corporate Carbon Footprint Calculation and Strategic Carbon Management

On March 22 from 16:00 to 18:30, we hosted Samet Can Topkaya from Carbon Gate in our online training. During the training titled "ISO 14064-1 Corporate Carbon Footprint Calculation and Strategic Carbon Management," our guest Topkaya helped broaden our horizons and added new experiences to our learning journey.





Workshop of the Environmental Festival: E-Waste Inspection and Dismantling with Pulsec Cycle Co.!

During the Environmental Festival, YTU collaborated with Pulsec Cycle Co. to host an E-Waste Inspection and Dismantling Workshop. Participants explored the internal components of electronic devices, learned about safe dismantling practices, and gained awareness of proper e-waste management and recycling processes.



Seminar on Emission Reduction Strategies: CDP Example

YTU hosted a seminar focusing on Emission Reduction Strategies using the CDP (Carbon Disclosure Project) framework as a case study. The seminar explored corporate approaches to measuring, reporting, and reducing greenhouse gas emissions, offering participants practical insights into climate accountability and sustainability reporting.

Seminar on Greenhouse Gas Emissions and Their Verification

YTU organized a seminar focusing on the science of greenhouse gas emissions and the processes used for their verification. Participants learned about emission sources, measurement methodologies, and verification standards that ensure transparency and credibility in climate reporting.





Seminar on Achieving Zero Emission Targets

YTU hosted a seminar dedicated to strategies for achieving zero emission targets. The session addressed policy frameworks, technological solutions, and best practices that support organizations and communities in transitioning toward net-zero carbon emissions.



Seminar on Revolutionizing Climate Solutions

YTU hosted a seminar titled "Revolutionizing Climate Solutions" that explored innovative, science-based approaches to tackling the climate crisis. The session covered breakthrough technologies, policy strategies, and collaborative models designed to accelerate climate action and promote sustainability transitions.

Seminar on Sustainability: Strategies for a Greener Future

YTU hosted a seminar titled "Sustainability: Strategies for a Greener Future," focusing on actionable approaches to integrate sustainability into education, business, and community practices. The session explored practical frameworks for reducing environmental impact, fostering social responsibility, and advancing the global sustainability agenda.





Seminar on Physical risks in the context of climate change

YTU organized a seminar addressing physical risks associated with climate change, such as extreme weather events, sea-level rise, and temperature-related infrastructure stress. The session provided participants with insights into risk assessment, adaptation strategies, and resilience planning to mitigate the impacts of climate-related hazards.

POLICY & OPERATIONS

In 2024, Yıldız Technical University continued its strong progress in global sustainability performance, rising to 59th place worldwide in the UI GreenMetric World University Rankings, up four positions from the previous year. The ranking evaluated 1,477 universities across 95 countries, recognizing institutions with demonstrated commitment to environmental sustainability, resource efficiency, and green campus development.

YTU's advancement reflects strategic investments in renewable aset production, water efficiency, waste management and recycling systems, sustainable transportation initiatives, and low-carbon campus infrastructure. The university continues to implement climate-conscious programs and policies that promote environmental stewardship, campus decarbonization, and responsible resource management.



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14 LIFE BELOW WATER

CONSERVE AND SUSTAINABLY USE THE OCEANS, SEAS AND MARINE RESOURCES FOR SUSTAINABLE DEVELOPMENT

Scan the QR code for SDG14 events



Yıldız Technical University (YTU) is deeply committed to protecting aquatic ecosystems through education, research, and innovation that promote sustainable use of marine and freshwater resources. Guided by Sustainable Development Goal 14, the university integrates ocean literacy, technological innovation, and international collaboration to strengthen awareness of the critical role water ecosystems play in sustaining life on Earth. YTU views marine conservation as both an environmental and educational imperative, ensuring that scientific discovery supports social responsibility and ecological balance.

This section showcases YTU's multifaceted engagement in advancing marine sustainability. The university coordinates the Horizon Europe SHORE Project, which empowers schools across Europe to implement a "Blue Curriculum" that integrates intercultural ocean literacy and sustainability education. By fostering curiosity and responsibility among young learners, this initiative cultivates a new generation of environmentally conscious citizens. YTU also hosted the Wave of Change Conference, a major platform bringing together academics, NGOs, and industry leaders to exchange knowledge and develop strategies for sustainable marine resource management and blue economy growth.

Beyond education and policy dialogue, YTU's research and entrepreneurship contribute directly to marine innovation. The Lenta Marine start-up, supported by YTU Technopark, develops underwater robotics and imaging systems for environmental monitoring and biodiversity protection. Similarly, the university's eco-innovative fishing vessel design aligns with global sustainability standards, reducing carbon emissions and improving fish welfare in maritime industries. Through these projects, YTU bridges research, innovation, and environmental stewardship, reaffirming its mission to protect life below water. By combining scientific expertise with education and collaboration, YTU strengthens the foundations of a sustainable blue future.

PUBLICATION STATISTICS

SCOPUS (2022-2024)

Name	Scholarly Output	% of 2047	Field-Weighted Citation Impact	Citation Count
SDG 14: Life Below Water	39	1,33%	1,01	288

WoS (2022-2024)

Sustainable Development Goals	Number of Publications	% of 2.923
14 Life Below Water	114	3,90%

PROJECTS RELATED TO SDG 14

Projects Supported by YTU Scientific Research Projects Unit

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Investigation of Corrosion Behaviors of Ship Paints in Different Sea Conditions	14	9	

Research University Support Projects

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Treatment of Selected Toxic and Hazardous Gas-Phase Organic Pollutants via Nano-Catalytic Ozonation	13	9	11
2	Investigation of Sea Level and Coastal Changes in Delta Regions Using Multiple Remote Sensing Techniques and Development of Climate-Resilient Sustainability Policies-DELTAİK	13	14	11

External Grant-Supported Projects

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Effect of Mathematical and Special Location Results on Microplastic Pollution in the Antarctic Marine Ecosystem: The Example of Horseshoe Island, Which Will Host the Turkish Science Base Between 2019 and 2022	14		
2	Development of Autonomous Network System with Special and Integrated Multi-Sensor Technology for Dynamic Monitoring of Marine Pollution	14	13	9

SUMMARIES OF KEY PROJECTS

Investigation of Corrosion Behaviors of Ship Paints in Different Sea Conditions

This study aims to investigate the corrosion behaviour of steel materials commonly used in shipbuilding under marine conditions. Determining the corrosion resistance of shipbuilding steels is essential for ensuring the long service life and structural safety of marine vessels. In this research, ship plate steels of different quality grades will be subjected to corrosion testing in various seawater environments using the Tafel extrapolation method, an effective technique for evaluating corrosion resistance. Experimental planning and analysis will be conducted using the Taguchi approach, which enhances experimental efficiency and enables robust results with fewer trials. The findings will provide insight into the corrosion behaviour of steel under different marine conditions and support the development of strategies to improve resistance. The results will offer valuable guidance for material selection, protective applications, and maintenance planning in ship construction, ultimately contributing to safer, more durable marine structures and enhanced long-term performance of shipbuilding materials.



Development of a Web-Based Digital Atlas for Turkish Seas

This project aims to develop a web-based, GIS-based digital atlas infrastructure that presents wind climate, wave climate, bathymetry, hydrodynamic structure, water quality, and microplastic pollution data for the seas surrounding Türkiye—namely the Mediterranean Sea, the Black Sea, and the inland Marmara Sea. Although there are existing regional or global-scale digital atlases providing such data at low spatial resolution and over varying temporal periods, there is a strong need for a national system. Such a system would reduce dependency on international sources, increase the global visibility of nationally generated datasets, and facilitate wider access to scientific data for decision-makers and managers who rely on accurate environmental information. This project proposal aims to fill that gap. The planned activities are organized into three work packages. The first work package focuses on collecting, quality-checking, and converting data files that will form the foundation for analyses provided through the digital atlas. The second work package involves the development of a hydrodynamic model specifically for the Marmara Sea to support the digital atlas analyses. Finally, the third work package includes the creation and testing of a web-based platform grounded in geographic information systems (GIS). The project output is expected to lead to scientific publications in reputable peer-reviewed journals and presentations at high-impact conferences. Additionally, the project will contribute to the training of researchers at the level of master's degree.

Removal of Microplastics from Various Aquatic Environments Using Green and Sustainable Capture Technologies: Synthesis of Innovative Hemp-Based Magnetic Materials and Application of Magnetic Extraction

This project aims to remove microplastics (MPs) from water and wastewater using magnetic separation, a sustainable method that avoids secondary pollution. Hemp-based magnetic materials—biochar and polyurethane biofoam—will be synthesized from hemp stem and bark fibre waste. These high-surface-area materials will be tested in synthetic seawater and wastewater containing reference MPs (PE and PMMA). Key parameters, including material dosage, MP concentration, contact time, pH, and temperature, will be optimized to achieve maximum removal efficiency. Isotherm, kinetic, and thermodynamic models will be applied to characterize the process. In the next phase, the performance of the developed materials will be evaluated using real environmental samples from selected coastal waters, streams, and advanced wastewater treatment plants in Istanbul and Kocaeli. Finally, a fixed-magnet high-gradient filter system will be designed to enable rapid and scalable MP separation. The results will provide an environmentally friendly and innovative solution for microplastic pollution control in aquatic environments.



YTU advances marine sustainability through ocean literacy, innovation, and research for the protection of aquatic ecosystems.



Blue Curriculum

Under the EU-funded Horizon Europe Project "SHORE", coordinated by Yildiz Technical University, 100 primary and secondary schools are being awarded €10,000 grants to develop an innovative "Blue Curriculum" that promotes intercultural ocean literacy and sustainability education.

This initiative empowers young learners to understand, value, and protect marine and freshwater ecosystems — fostering responsible citizenship and advancing the UN Sustainable Development Goals.

Wave of Change Conference

YTU hosted the Wave of Change Conference on 14 May 2024 in Istanbul, Türkiye. The event brought together key stakeholders in the blue economy and ocean literacy sectors, including representatives from academia, NGOs, and industry. Through multi-panel discussions and interactive sessions, participants explored strategies for sustainable marine resource management, ocean literacy, and community engagement in conservation.



From underwater robotics to eco-friendly vessel design, YTU transforms technology into action for life below water.



Sustainable Marine Innovation at YTU

YTU collaborates with industry partners to develop innovative technologies that contribute to the protection and sustainable use of marine ecosystems. One prominent example is Lenta Marine, a start-up operating within YTU Technopark and supported by the YTU Innovation Hub.

Lenta Marine specializes in underwater robotics, engineering systems, and marine equipment designed to enhance environmental monitoring, underwater imaging, and pipeline inspection in aquatic environments such as dams, hydroelectric plants, and coastal zones. These technologies play a crucial role in maintaining underwater biodiversity, preventing ecological degradation, and improving resource efficiency in marine and freshwater systems.

Through this collaboration, YTU demonstrates its institutional commitment to fostering sustainable marine innovation, strengthening the link between research, entrepreneurship, and ecosystem preservation.t



Eco-Innovative Fishing Vessel Design by YTU Enhances Turkey's Maritime Exports and Supports Sustainable Marine Practices

YTÜ's Innovative Projects Boost Turkey's "Fishing Vessel" Export with Sustainable Designs- Designed in line with Norway's eco-friendly fishing policies, the design significantly reduces carbon emissions, making it environmentally friendly, while also implementing an innovative and fish-friendly fishing system

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15 LIFE ON LAND



PROTECT, RESTORE AND PROMOTE SUSTAINABLE USE OF TERRESTRIAL ECOSYSTEMS, SUSTAINABLY MANAGE FORESTS, COMBAT DESERTIFICATION, HALT AND REVERSE LAND DEGRADATION, AND HALT BIODIVERSITY LOSS

Scan the QR code for SDG15 events



Yıldız Technical University (YTU) places the protection of terrestrial ecosystems and biodiversity at the core of its sustainability strategy. Guided by Sustainable Development Goal 15, the university actively promotes environmental stewardship through education, research, and community engagement. YTU views land not only as a physical resource but as a shared living system that sustains life, culture, and resilience. Its efforts aim to preserve ecosystems, prevent land degradation, and foster an ecological consciousness that unites science, creativity, and responsibility.

This section presents YTU's diverse initiatives that contribute to the conservation and restoration of life on land. Through field studies in biodiversity-rich areas such as the Kaz Mountains, students and researchers gain direct experience in ecological observation, species monitoring, and sustainable land use practices. The Yuva || Konak exhibition transforms scientific data on campus bird populations into artistic expression, raising awareness of coexistence between humans and wildlife. Similarly, training sessions on soil and erosion control, tree-planting activities in Çatalca, and the expansion of Green Open Spaces enhance the university's commitment to reforestation and urban biodiversity. These programs combine environmental science with civic participation, ensuring long-term ecological resilience on campus and beyond.

Collaboration lies at the heart of YTU's sustainability model. In partnership with civil society and universities such as Özyeğin and Yeditepe, YTU organizes joint SDG education programs and nature walks that deepen public understanding of climate change and biodiversity conservation. By combining research, education, and art, YTU cultivates a culture of respect for nature and responsibility for its preservation. Through these initiatives, the university continues to strengthen its role as a leader in protecting life on land and nurturing a greener, more sustainable future.

PUBLICATION STATISTICS

SCOPUS (2022-2024)

Name	Scholarly Output	% of 2047	Field-Weighted Citation Impact	Citation Count
SDG 15: Life on Land	36	1,23%	2,65	611

WoS (2022-2024)

Sustainable Development Goals	Number of Publications	% of 2.923
15 Life On Land	82	2,81%

PROJECTS RELATED TO SDG 15

External Grant-Supported Projects

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	Smart Management and Sustainable Use of Forests	15	13	12

SUMMARIES OF KEY PROJECTS

Smart Management and Sustainable Use of Forests

SILVA NYMPHA proposes a novel approach for sustainable and multifunctional use and management of forests to maximise their contribution to increasing the quality of forest ecosystem services by analysing the whole forest value chain models as well as resilience and impact indicators, capacity building of local/public authorities on preparedness strategies (e.g., early diagnosis of forest threats to avoid soil habitat, microbiological optimisation) for biodiversity prevention in the EU and pro-EU level by analysing current strategies, technologies, and governance systems, assessment of future impacts of strategies. SILVA NYMPHA aims to fill the gap in the forest management process, which is needed for broader analytics strategy development and to infuse into planning, decision, and learning processes. Our proposal aligns actions with management objectives, enhances transparency and accountability, improves decision support, creates learning opportunities, and ultimately improves the quality of forest ecosystem services. Considering that more than half of global GDP is dependent on nature and the services it provides; in line with the EU objectives and vision, SILVA NYMPHA has aimed to develop strategies, new methods, and techniques that consider the future effects of climate change and its effects on the forest ecosystem and biodiversity.



A field camp was organized in the Kaz Mountains

A field camp was organized in the Kaz Mountains focusing on biodiversity and endemic species observation. The program provided participants with hands-on experience in ecological monitoring, raising awareness of environmental conservation and the importance of protecting unique ecosystems.

RECODE'24

As part of RECODE'24, Yıldız Technical University Construction Society carried out the symbolic planting of saplings in Çatalca, representing the trees donated to the earthquake-affected region on behalf of the participants. The event promoted environmental sustainability, contributed to reforestation efforts, and fostered a culture of social responsibility among students.





Seminar on Achieving Zero Emission Targets

On 4 May 2024, YTU Genç TEMA organized a nature walk and painting workshop at Florya Atatürk Forest, engaging participants in environmental learning and creative expression.Participants explored the forest ecosystem, engaged in hands-on art activities, and visited the historic Atatürk Sea Pavilion. This initiative promoted environmental awareness, creativity, and community engagement, while also demonstrating effective partnerships with civil society and private sector stakeholders.



YTU Genç TEMA: Acting for Nature

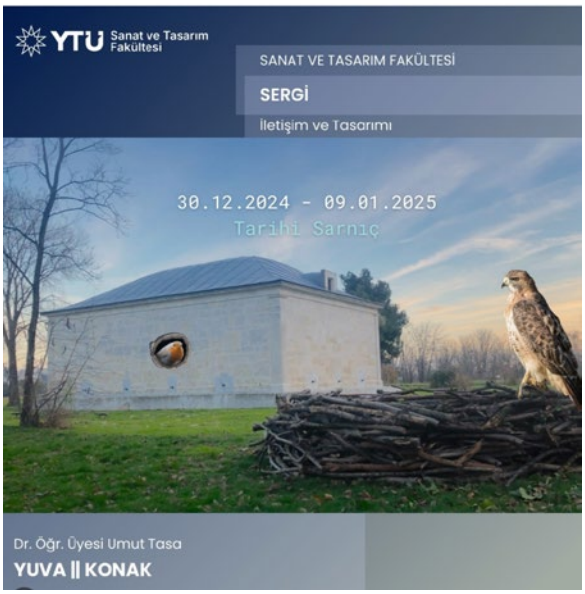
As YTU Genç TEMA, students engaged in a forest clean-up initiative, collecting waste and promoting environmental responsibility. The activity fostered hands-on learning, raised awareness on ecosystem preservation, and encouraged collective action for sustainable natural resource management.

Soil and Erosion Control

YTU's Young TEMA organized a comprehensive training on 'Soil and Erosion Control,' aimed at fostering environmental awareness and sustainable land use practices. Through interactive sessions, students and participants gained insights into the causes and impacts of erosion as well as preventive strategies, thereby strengthening their role as active stewards of natural resources. The activity contributed to promoting responsible environmental citizenship and highlighted the importance of education in advancing sustainable ecosystems.







The exhibition "Yuva || Konak" (Nest || Shelter)

The exhibition "Yuva || Konak" (Nest || Shelter) presented a decade-long artistic exploration (2012–2024) by Dr. Umut Tasa, based on the observation and documentation of 40 different bird species residing on Yıldız Technical University's Davutpaşa Campus. Combining visual, auditory, spatial, and site-specific installations with a digital cataloguing approach, the exhibition transformed scientific observation into an artistic narrative on biodiversity and coexistence. It aimed to increase awareness about environmental sustainability, species protection, and the role of urban campuses as shared habitats for both humans and wildlife.





The exhibition "Yuva || Konak" (Nest || Shelter)

The Sustainable Walking event, held on 1 December 2024 at Polonezköy Nature Park, was part of a multi-module Sustainable Development Goals (SDG) Education Program jointly organized by Özyeğin University, Yıldız Technical University (YTU), and Yeditepe University.

The activity aimed to promote ecological awareness, biodiversity conservation, and climate action through direct engagement with nature. Guided by Kozalak Foundation experts, participants explored forest ecosystems, local flora and fauna, and discussed climate change impacts and sustainability strategies during the walk.

The event emphasized the interconnection between biodiversity protection, sustainable land management, and climate resilience.

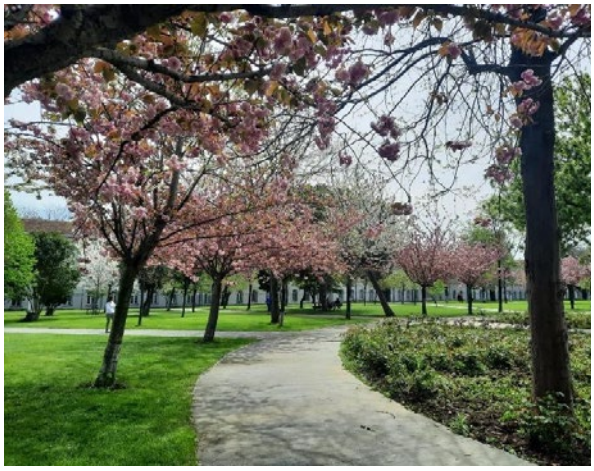




Expansion of green open spaces (GOS) to improve air quality and support local biodiversity

Yıldız Technical University is actively expanding its Green Open Spaces (GOS) to promote a healthier campus environment and support local biodiversity. This initiative involves a combination of tree planting activities to increase canopy cover and enhance carbon absorption, the expansion of green areas across the campus to mitigate the urban heat island effect and strengthen ecological balance, as well as the continuous maintenance and protection of existing green spaces to preserve their environmental function. These efforts play a vital role in improving air quality, fostering urban biodiversity, and creating a more resilient, sustainable, and livable campus for students, staff, and the surrounding community.





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16 PEACE, JUSTICE AND STRONG INSTITUTIONS



PROMOTE PEACEFUL AND INCLUSIVE SOCIETIES FOR SUSTAINABLE DEVELOPMENT, PROVIDE ACCESS TO JUSTICE FOR ALL, AND BUILD EFFECTIVE, ACCOUNTABLE AND INCLUSIVE INSTITUTIONS AT ALL LEVELS

Scan the QR code for SDG16 events

16 PEACE, JUSTICE AND STRONG INSTITUTIONS



Yıldız Technical University (YTU) upholds peace, justice, and strong institutions as fundamental pillars of sustainable development. Guided by Sustainable Development Goal 16, the university cultivates an environment of integrity, accountability, and civic participation through education, research, and community action. YTU recognizes that lasting peace and effective governance are rooted in informed citizenship and inclusive dialogue, where knowledge becomes a tool for empathy and collective responsibility.

This section highlights YTU's diverse efforts to promote peace and institutional strength across academic, cultural, and social domains. Through initiatives such as the "Art for Palestine" event, the university mobilizes creativity to inspire awareness of humanitarian issues and global solidarity. The Forensic Sciences Conference exemplifies how scientific inquiry contributes to justice by advancing ethical practices and strengthening professional expertise. Similarly, seminars such as "The Reality of the Caucasus in the Context of Globalization" create platforms for critical reflection on international relations, human rights, and global cooperation. Each of these efforts reflects YTU's commitment to promoting justice through education, dialogue, and respect for human dignity.

YTU also empowers students to become articulate, critical, and socially responsible citizens. The Debate 101 Training and Yıldız Novices' Debate Tournament foster constructive discussion and respect for diverse perspectives – skills essential for democratic participation and institutional resilience. Together, these activities reflect a holistic vision where universities serve as laboratories of democracy and peacebuilding. By merging creativity, science, and civic engagement, YTU continues to advance the principles of justice, transparency, and collaboration, ensuring that education remains a force for peace and institutional strength both locally and globally.

PUBLICATION STATISTICS

SCOPUS (2022-2024)

Name	Scholarly Output	% of 2047	Field-Weighted Citation Impact	Citation Count
SDG 16: Peace, Justice and Strong Institutions	34	1,16%	1,44	197

WoS (2022-2024)

Sustainable Development Goals	Number of Publications	% of 2.923
16 Peace And Justice Strong Institutions	26	0,89%

PROJECTS RELATED TO SDG 16

External Grant-Supported Projects

No	Project Tittle	Primary SDG	Secondary SDG	Tertiary SDG
1	The Struggle for Influence Focusing on Syria and Iraq from the National Struggle to the Present and the Validity of the National Pact Foreseeing Turkey's Security	16		
2	A Cliometric Analysis of the 1874 Istanbul Real Estate Census	16		

YTU promotes peace and justice through education, dialogue, and creativity, strengthening democratic values and civic responsibility.

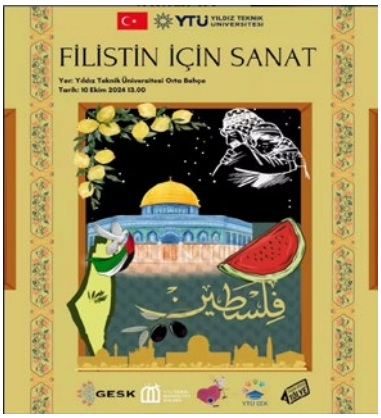
SUMMARIES OF KEY PROJECTS

A Cliometric Analysis of the 1874 Istanbul Real Estate Census

In 1874, the Ottoman Empire conducted a comprehensive property survey in Istanbul to determine real estate taxes based on official valuations. This project aims to identify and analyse the factors influencing officials' valuation decisions, thereby contributing to the understanding of wealth taxation practices in the late Ottoman period. The study's originality lies in performing, for the first time, a hedonic price analysis using cliometric techniques on Ottoman Istanbul's real estate market. Unlike existing studies for cities such as Amsterdam, Stockholm, and Beijing, this project utilizes archival cadastral records covering all properties—including public assets—rather than relying on limited samples such as sales or inheritance records. With over 20,000 observations, this dataset offers an unprecedented historical scope. The research involves transcribing Ottoman archival records, constructing a structured database, and applying econometric analyses alongside GIS-based spatial modelling to produce thematic maps. The resulting dataset and findings will support multidisciplinary research spanning economic history, real estate economics, historical geography, and spatial information science, opening avenues for comparative international studies on nineteenth-century property valuation and taxation.



Through research and cultural engagement, YTU empowers students to contribute to fairness, inclusion, and institutional integrity.



Art for Palestine

On October 10, 2024, Yıldız Technical University students came together to organize “Art for Palestine”, a large-scale artistic solidarity event aimed at raising awareness about the ongoing humanitarian crisis in Palestine. Held at the Central Garden of the Davutpaşa Campus, the initiative featured 10 different creative workshops and a photography exhibition, open to all members of the university community. All proceeds from workshop participation were donated to humanitarian aid efforts for Palestine. The event not only served as a platform for artistic expression but also as a meaningful collective act of conscience, calling for peace and justice through culture, creativity, and civic awareness.

7th Forensic Sciences Conference

The 7th Forensic Sciences Conference was organized on 2–3 May 2024 at the Faculty of Electrical and Electronics Conference Hall. The program brought together distinguished academics and experts in the field, providing participants with insights into forensic science applications and methodologies.





The Reality of the Caucasus in the Context of Globalization

The event “The Reality of the Caucasus in the Context of Globalization” organized at Yıldız Technical University enhanced students’ and academics’ awareness on global issues, peace, and international cooperation. The activity contributed to Peace, Justice and Strong Institutions and Partnerships for the Goals, while also supporting Quality Education by providing an academic learning opportunity.



The Debate 101 Training

The Debate 101 Training, organized by the YTU Debate and Negotiation Club, was held on November 4, 2024, at the Faculty of Electrical and Electronics Engineering, C-151.

The session provided an introduction to the fundamentals of debating, including argument structure, critical reasoning, and persuasive communication. It aimed to equip new members with essential skills to participate effectively in academic and social discussions while fostering a culture of dialogue and respect for diverse opinions

Yıldız Novices'24 Debate Tournament

The Yıldız Novices'24 Debate Tournament, organized by the YTU Debate and Negotiation Club, took place on November 30 – December 1, 2024, at the Faculty of Economics and Administrative Sciences, Davutpaşa Campus.

The tournament provided a dynamic platform for new debaters to enhance their critical thinking and public speaking abilities in a structured and supportive environment.



YILDIZ TECHNICAL UNIVERSITY

2024 SUSTAINABILITY REPORT

17 PARTNERSHIPS FOR THE GOALS



STRENGTHEN THE MEANS OF IMPLEMENTATION AND REVITALIZE THE GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT

Scan the QR code for SDG17 events

17 PARTNERSHIPS FOR THE GOALS



Yıldız Technical University (YTU) embraces cooperation and partnership as essential drivers of sustainable development. Guided by Sustainable Development Goal 17, the university builds bridges across disciplines, institutions, and nations to amplify the global impact of education, research, and innovation. YTU recognizes that achieving sustainability requires collaboration among diverse actors—universities, industries, governments, and communities—working together toward shared objectives rooted in equity, creativity, and knowledge exchange.

This section reflects YTU's strong commitment to international collaboration and capacity building through strategic alliances and joint research projects. As an associate member of the KreativEU Alliance, which unites ten universities from ten European countries, YTU contributes to a vibrant network that promotes creativity, knowledge economy, and intercultural understanding. The alliance underscores a collective vision of Europe built on cultural diversity, artistic innovation, and scientific cooperation—values that align with YTU's mission to connect education with social progress and global citizenship. Through joint workshops, bilateral agreements, and academic exchanges, the university expands its capacity for multidisciplinary research and inclusive learning environments that transcend borders.

YTU's approach to partnership extends beyond Europe, encompassing collaborations that support multiple Sustainable Development Goals—from quality education and gender equality to sustainable cities and peacebuilding. These initiatives foster shared learning, mutual growth, and a global culture of innovation. By integrating education, science, and creativity, YTU exemplifies how partnerships transform local expertise into international impact. In doing so, the university reinforces its role as a connector—linking institutions, communities, and ideas in pursuit of a more sustainable, equitable, and peaceful world.

ADEP (Research Universities Support Program): An exemplary structure for SDG 17 Partnership for the Goals

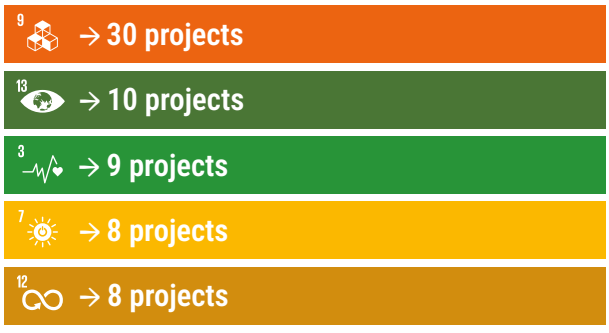
Yıldız Technical University (YTU) has established a strong interdisciplinary collaboration ecosystem through the projects conducted under the Research Universities Support Program (ADEP). This structure integrates engineering, natural sciences, health sciences, environmental technologies, and social sciences, thereby enhancing scientific productivity, fostering innovation, and cultivating a research culture aligned with sustainable development goals.

Through its ADEP projects, YTU develops research and development models integrated with industry partnerships, positioning the university strategically within the framework of Sustainable Development Goal 17: Partnerships for the Goals. These projects accelerate knowledge transfer, strengthen the patent, spin-off, and start-up ecosystem, and institutionalize a sustainable model of industry-academia collaboration.

YTU's activities within the scope of ADEP are clustered around themes such as energy transition, environmental sustainability, health technologies, advanced materials science, and digital transformation. By establishing multi-stakeholder and multidisciplinary collaborations in these areas, the university translates scientific impact into societal benefit. In doing so, YTU effectively embodies SDG 17's aim of "strengthening partnerships through science, technology, and innovation" at an institutional level.

In conclusion, ADEP projects support YTU's vision of scientific excellence, industrial transformation, and societal benefit through a comprehensive and integrated approach. The distinguishing feature of this structure is its interdisciplinary cooperation environment, where diverse engineering fields intersect with health, environmental, energy, and digital technologies.

Thus, YTU serves as a model university exemplifying SDG 17's objective of "enhancing scientific capacity, supporting technology transfer, and deepening national and international partnerships." ADEP not only reinforces academic achievements but also institutionalizes a sustainable culture of collaboration among public institutions, the private sector, and academia.



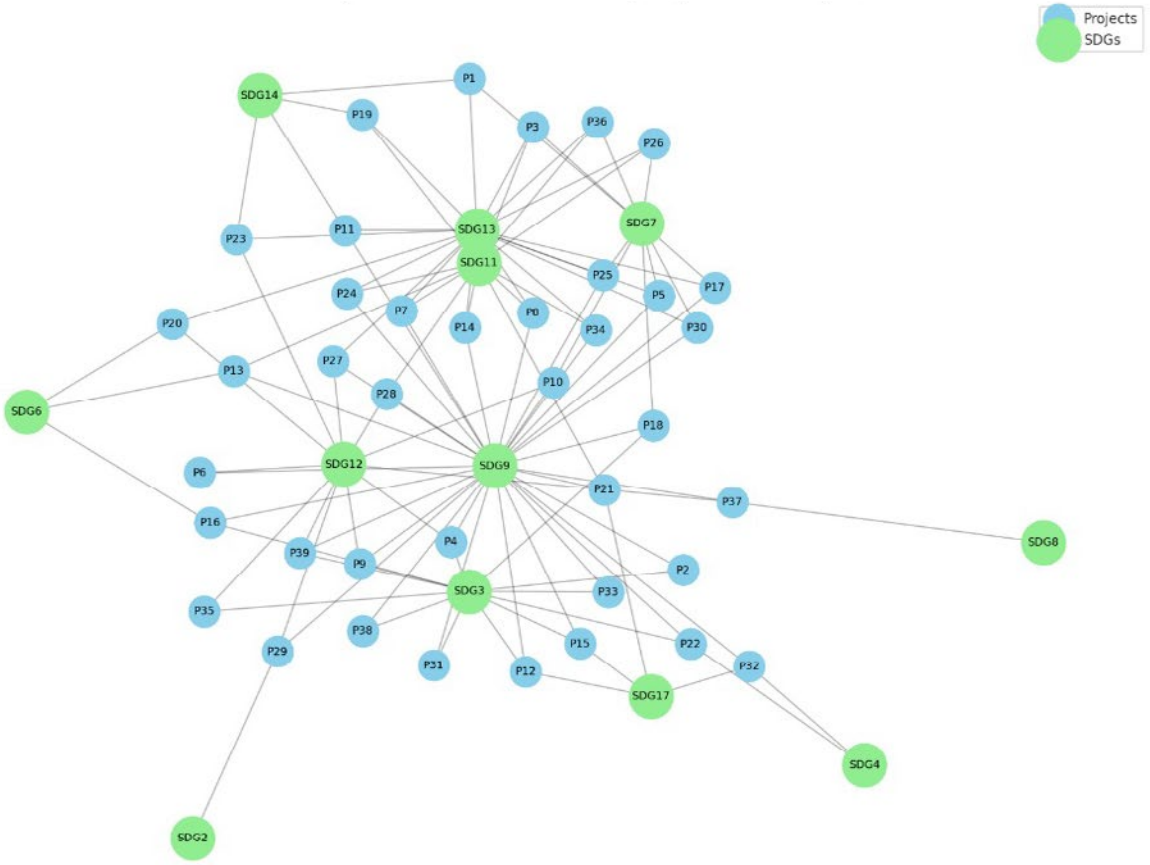


Image: 39 ADEP Project's Relationship Network in Terms of SDGs

YTU strengthens global cooperation through education, research, and creativity, advancing collective progress toward sustainable development.



YTU is now an associate member of the KreativEU Alliance, which includes 10 universities from 10 EU countries!

We have hosted a productive workshop, discussing research projects, bilateral agreements, university-sector cooperations.

The KreativEU (Knowledge & Creativity European University) entails a bottom-up and unique alliance of universities across Europe, linking and connecting local and national heritage, traditions, crafts and folklore to a common European value, strengthening the European identity, cohesion, knowledge economy, employment, creativity, culture and welfare.



This alliance is built on a shared vision on the importance of European cultural and artistic diversity as a driver of cohesion, equality, peace, sustainability and educational, economic, political, social, and scientific innovation and development, contributing to the establishment of a European University unique in its kind, capable of offering a competitive and an attractive European education and research system, with students, researchers, academics and society, at large, cooperating within different cultures and across borders and academic disciplines.

POLICY & OPERATIONS



Yıldız Technical University welcomed a delegation from the Asia Pacific University of Technology and Innovation (APU), Malaysia

On 2 February 2024, Yıldız Technical University welcomed a delegation from the Asia Pacific University of Technology and Innovation (APU), Malaysia — the first institution in Malaysia to receive the QS 5-Stars Plus rating. The meeting, held at the YTU Aset Relations Office, focused on strengthening academic cooperation through potential student and staff mobility, joint research and publications, guest lectures, collaborative conferences, and shared institutional ranking initiatives.

This strategic engagement reinforces YTU's commitment to global academic partnerships and international knowledge exchange, supporting long-term collaboration opportunities between Türkiye and Malaysia.



Yıldız Technical University welcomed Prof. Andrzej Trochimczuk

In March 2024, Yıldız Technical University welcomed Prof. Andrzej Trochimczuk, Head of the Chemistry Department at Wroclaw University of Science and Technology (Poland), one of our Erasmus partner universities. Prof. Trochimczuk, a leading expert in the synthesis and functional modification of specialty polymers, visited the Aset Relations Office to explore new academic cooperation opportunities.

During the visit, discussions focused on strengthening student and staff mobility, initiating joint research projects, and expanding scientific collaboration in advanced polymer technologies. This engagement further enhances YTU's internationalization strategy and supports knowledge exchange in high-impact scientific fields.



Yıldız Technical University welcomed academic staff from its Erasmus partner institution, Saint Louis College of Music (Italy)

Yıldız Technical University welcomed academic staff from its Erasmus partner institution, Saint Louis College of Music (Italy), as part of Erasmus+ staff mobility activities. The delegation included Marzia Bagli, Aset Relations Coordinator, and faculty members Manuele La Puca, Gabriele Petrillo, Giovanni Candia, and Stefano Vestrini.

During their visit, the team conducted a comprehensive two-day music and creativity workshop for YTU students, focusing on performance, composition, and interdisciplinary artistic practices. The program supported intercultural learning, knowledge sharing, and creative skill development among participants. This collaboration strengthens YTU's international academic network, promotes student and staff mobility, and supports the exchange of expertise across institutions.



Yıldız Technical University welcomed Ángela Sáenz Herrero from Universidad Politécnica de Madrid (Spain)

On April 30, 2024, Yıldız Technical University welcomed Ángela Sáenz Herrero from Universidad Politécnica de Madrid (Spain) as part of the Erasmus+ teaching mobility program. During her visit, she engaged in academic activities and delivered instruction to YTU students, contributing to high-quality learning experiences and international knowledge exchange.

YTU has established over 125 Memorandum of Understanding (MoUs)

YTU has established over 125 Memorandum of Understanding (MoUs) with some of the world's most renowned institutions. These international partnerships connect universities across five continents. In Latin America, they include the University of Campinas (Brazil), Pontificia Universidad Javeriana (Colombia), Universidad Nacional de La Plata, and the University of Santiago (Chile). In North America, partners include Duke University and the University of Kentucky (USA). Other partners extend across Africa, Asia, and Europe, including University of Tunis El Manar (Tunisia), Azerbaijan Technical University, China University of Petroleum, University of Banja Luka (Bosnia-Herzegovina), and Bordeaux INP (France).

In 2024, YTU expanded its international collaboration network with newly signed MoUs, including:

University "Ukshin Hoti" Prizren (Kosovo)
– January 2024

Bukhara State Pedagogical Institute (Uzbekistan)
– February 2024

University of West Attica (Greece)
– June 2024

AAB College (Kosovo)
– November 2024

These collaborations continue to strengthen the university's global presence and promote international academic exchange.



List of partners

APPENDIX

Mapping of UN Global Compact Principles, Sustainable Development Goals, and YTU Practices

UN Global Compact Principle Area	Relevant UNGC Principles	Related SDGs	Practices and Activities Reported in the YTU 2024 Sustainability Report
Human Rights	Principles 1–2		Inclusive and equal access education policies; scholarship and student support mechanisms; health, nutrition, and wellbeing focused research; community engagement and social responsibility projects
Labour Standards	Principles 3–6		Academic freedom and meritbased employment practices; safe and healthy working environment; equality and nondiscrimination policies; human capital development activities
Environment	Principles 7–9		KABEV Energy Efficiency Project; renewable energy and solar power investments; zero waste and green campus practices; research on water, marine ecosystems, and biodiversity
Anti-Corruption	Principle 10		Ethical principles and institutional governance framework; transparent decisionmaking processes; R&D and innovation governance; partnerships with industry, public institutions, and international stakeholders

Yıldız Technical University's 2024 Sustainability Report covers contributions to all 17 United Nations Sustainable Development Goals (SDGs). The table above provides an illustrative mapping between the UN Global Compact principles and the SDGs, highlighting key areas of practice and activities emphasized in the report.




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