

5 CLEAN WATER AND SANITATION



6. CLEAN WATER & SANITATION



NUMBER OF
PUBLICATIONS & THESES

3



NUMBER OF
PROJECTS

9



NUMBER OF
EVENTS

1



NUMBER OF
COURSES OFFERED

5



NUMBER OF
COLLABORATION

0



NUMBER OF
AWARDS

1

SDG 6 CLEAN WATER AND SANITATION

Ensure access to water and sanitation for all

Targets and Indicators

6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all

6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate

6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

6.A By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies

6.B Support and strengthen the participation of local communities in improving water and sanitation management

Courses, Theses, Publications

There are courses offered at TEDU at both undergraduate and graduate levels that are aligned with the targets of SDG 6. The



undergraduate courses offered by the Department of Civil Engineering include CE 331 Hydromechanics and CE 332 Water Resources Engineering. The aim of the former is to teach the basic concepts of flows in pipes and open channels, and to apply continuity, momentum and energy principles for the solution of various pipeline and open channel problems, thereby seeking to find concrete solutions to issues concerning water flow. Likewise, the latter seeks to introduce to the students the existence and time-space distribution of water on the earth and to the problems for humankind in relation to water. In this course, collection and analysis of hydrologic data is covered and an introduction to design of hydraulic structures in accordance with Turkish Codes and Practices is given.

At the graduate level, the Department of Electrical and Electronics Engineering offers EE 512 Optimization for Communication Networks, which aligns itself with SDG 6. The course focuses on designing, managing, and optimizing networks. Through theory and practical exercises, the course provides students with the opportunity to enhance their skills to improve network performance, resource utilization, and efficiency.

Other graduate-level courses in alignment with SDG 6 are offered by the Department of English Language and Literature. ELL 507 The Anthropocene and Climate Change Fiction, for instance, focuses directly on how human impact on the earth's ecosystem puts a strain on the planetary resources, including water. This course, with its telling name, involves awareness-raising reading material with a wide variety, ranging from the scholarly texts of the environmental humanities to philosophical, scientific, and literary texts that deal with the current, human-induced environmental crisis, which also includes climate change fictions that problematize water shortage, floods, or drought. On similar grounds, ELL 525 The Romantic Era in Literature and Culture includes poetry and fiction from that specific period which thematize water, with the aim of increasing awareness.

The MSc thesis titled "Conventional and future prediction methods for turbine design parameters in drinking water and irrigation pipelines", completed in 2023 by Aslı Beril Genç under the supervision of Selin Aradağ Çelebioğlu from the Mechanical Engineering Master's Program, is another contribution to

SDG 6. The thesis aims to pioneer the utilization of untapped energy in water supply and irrigation canal lines by installing hydroelectric power plants (HEPP) with pressure reducing valves. The study presents work conducted on HEPP installation using inline pipe turbine systems on the P11 Pumping Water Conveyance Line in the Izmir region and the Akbaş HES Irrigation Canal in the Denizli region. The efforts include feasibility studies based on existing datasets and future time predictions to determine turbine characteristic values.

As for publications, Aslı Numanoğlu Genç from the Department of Civil Engineering co-authored and published two articles in 2020. The first paper, "Modeling transport of microplastics in enclosed coastal waters: A case study in the Fethiye Inner Bay", published in *Marine Pollution Bulletin*, numerically models transport and possible accumulation of microplastic marine litter in enclosed coastal waters. The model is applied to the Fethiye Inner Bay, located in Fethiye-Göcek Specially Protected Area. The second paper, "Transitional Waters Typology in Turkey: Melen Estuary Case Study", published in the *Journal of Coastal Research*, models the coastal processes of Melen Estuary, which supplies more than 50% of the drinking water to the city of Istanbul.

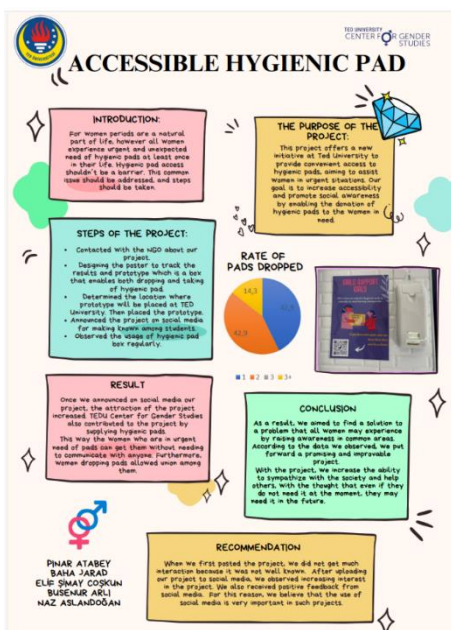
Events – Activities

TEDU Science & Tech Society, which is one of the many student clubs at the university, visited Ankara University's Kreiken Observatory in October 2024, which provided valuable insights into the visitors about water use, thereby increasing awareness on SDG 6.



Collaboration, Projects, Awards

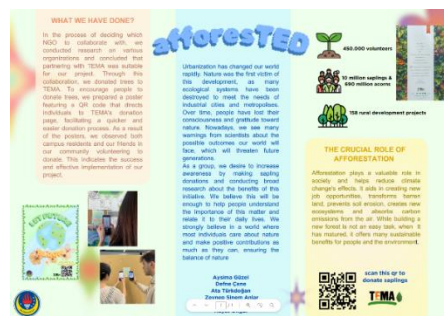
9 projects in line with SDG targets have been completed. In the course ARCH 401 Architectural Design V, senior students learn about multi-dimensional architectural and urban design problem/s, integrative analysis of context, program, and building technologies, and they develop an architectural program as a group work or an individual study. Within the scope of this course, projects titled “City Rebounded” and “Urban Processing Zones” were done. Other projects include Center of Teaching and Learning projects under the generic title of TEDU 102. “Accessible hygienic pads” project, for example, offers a new initiative at TED University to provide convenient access to hygienic pads, aiming to assist women in urgent situations.



The goal is to increase accessibility and promote social awareness by enabling the donation of hygienic pads to the women in need, which is directly in alignment with sanitation. Along similar lines, Betül Kuru from the Department of Industrial Design completed a project titled “Developing Sharing and Collaboration Driven Design Strategies for Positive Menstrual Experience”, thereby increasing awareness on hygiene and sanitation.

Other projects include aims related to environmental protection, sustainability, and the global ecological crisis, which go hand in hand

with all SDG values, including SDG 6. The “afforesTED” project, for instance, donated tree saplings to TEMA, which is an NGO dedicated to the planned reforestation in Türkiye. The project helped the contributors to correlate the links between water and reforestation. Similarly, “For a cleaner campus” project aligns itself with sanitation, where they hold a competition for students to collect cigarette litter around the campus. Likewise, “Artful Solution for Pollution” project draws attention to the environmental crisis and sustainability issues that the planet is experiencing.



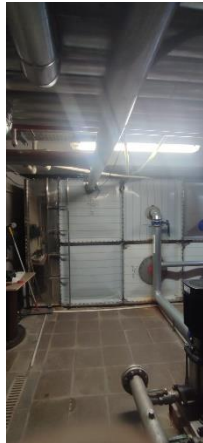
“PET: Hidden Health Threat” project seeks to increase awareness in the use of bottled water. As the project contributors note, PET bottles are the most preferred water packaging today, but due to the microplastics consumed while using such bottles, more awareness is needed. The project advocated for better informed consumer choices by sharing study findings and advocating for sustainable alternatives through their website in the light of SDGs.



Campus

Water obtained from groundwater is used to irrigate the landscape areas on our campus.





*Water samples taken from four different points from the purified water dispensers positioned on our campus are sent to the Ankara Public Health Laboratory for examination in 12 parameters and reported. The examination report is shared with all our members. In addition, the filters of all water dispensers are changed every month for a period of 6 months.

Mains water is used in wet areas in all physical areas except the landscape areas on our campus. Since no need for wastewater treatment has been identified, we do not have any policies for this process. The installations that carry clean and dirty water in our campus are different. There are 44 purified water fountains on our campus, positioned at points that are easily accessible to campus users.



In wet areas of our university, 70% of the time, sensor taps are used. (150/214).

All of our sensor taps are equipped with aerators that reduce your water consumption and save water, thus supporting the protection of nature.

Thanks to these purified water fountains, all our users benefit from free drinking water. In this way, free clean drinking water service is provided to our members (staff, students) and guests visiting our campus, while plastic waste production is minimized. In addition, this service has reduced water costs by 45%.



In our campus, drought-resistant plants are preferred in landscape areas to store water, especially in the summer months.



In addition, the sprinklers in the garden irrigation system have a timer feature and rain sensors, thus minimizing water consumption and protecting water resources, and ensuring efficient use of water. In the landscape areas within the campus, plants that do not need much water and are durable for a long time are preferred instead of seasonal plants.

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On March 23, World Water Day, WWF Turkey Freshwater and Wetlands Program Manager Eren Atak tried to raise awareness with his speech on "Peace and Water: Pressures on Freshwater Resources".

On March 23, World Water Day, a Water Awareness event is being organized under the name of "Water Awareness" in cooperation with TED University SDSN International Student Union and TED University Sustainable Environment Community. Within the scope of the event, Mr. Can HAKYEMEZ, the Director of Turkish Industrial and Development Bank, made a presentation on water awareness.

Water is extracted from underground water resources passing through the campus by drilling and used for various purposes.

The following activities are carried out in our university in order to use water resources effectively and efficiently and to create awareness in this context.

As a starting activity within the scope of sustainability in our university, a zero waste application has been implemented in order to collect waste on-site and by separating it. The necessary training has been provided to the personnel responsible for collecting waste, and the equipment needed for collecting waste has been positioned throughout the campus. Online training has been organized for campus users about the content of the application.

In order to create awareness among our users about these applications, the following poster has been prepared and published on information screens within the campus and hung as posters on boards.

*The student societies/clubs at our university continue the following activities.

a. Sustainable Environment Society

TEDU Sustainable Environment Society is a student society that aims to show the necessary interest and care for concepts such as environment, nature, and living beings and to instill this awareness. With this awareness, adopting the sustainable environment concept and making it a part of our lifestyle and thus taking an active role in solving many current environmental problems first on an individual level and then on a mass level are among the achievements targeted by the society. Being able to turn the destructive and exhausting effect of humankind on the environment into a constructive and restorative effect with the awareness that humans are not superior to nature but on the contrary, they are a part of nature offers us the opportunity to add another very vital and meaningful purpose to our living purposes. TEDU Sustainable Environment Society also aims to offer this opportunity to the individuals around it as much as it can.

b. Sustainable Development Solutions Network (SDSN)

SDSN is a solution development network formed by universities, research centers, think tanks, civil society organizations and the business world from various countries of the world. It is a United Nations initiative. The main purpose of this network is to mobilize stakeholders to collaboratively develop problem solutions for sustainable development.

Achievements

The number of water distillation units has been increased

