



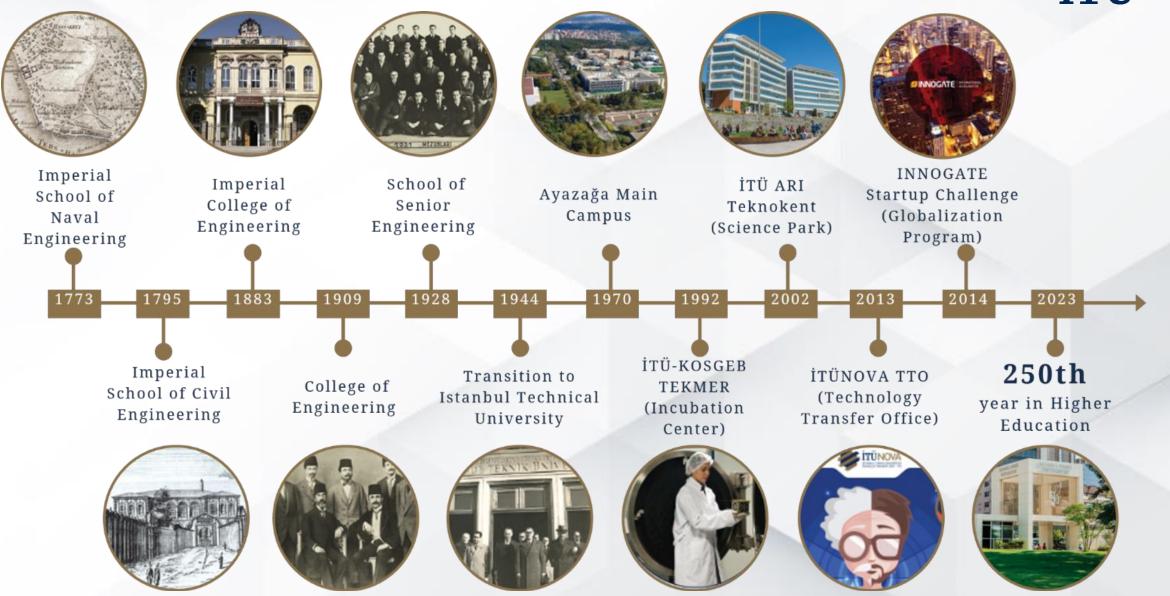


CLIMATE SCIENCE AND METEOROLOGICAL ENGINEERING DEPARTMENT

Prof. Dr. Hüseyin TOROS

Celebrating 252 Years of Excellence: The History of ITU





4th Atmosphere and Climate Competence Center (ACCC) Impact Week, Helsinki, April 22-25.

Celebrating 252 Years of Excellence: The History of ITU







35.240
Total Student
Number

24.380 Undergraduate

Students

54Associate Degree
Student

7.674
Master's Students

PhD Students

3.132

>200.000

Alumni

2.392

Academic Staff (PhD) 1.207

Research Assistants

1.878

Administrative Staff

ITU Campuses



4th Atmosphere and Climate Competence Center (ACCC) Impact Week, Helsinki, April 22-25.

ITU Faculties and Institutes







6 Institutes

- Disaster Management Institute
- Eurasia Institute of Earth Sciences
- Informatics Institute
- Energy Institute
- Aviation Institute
- Graduate School

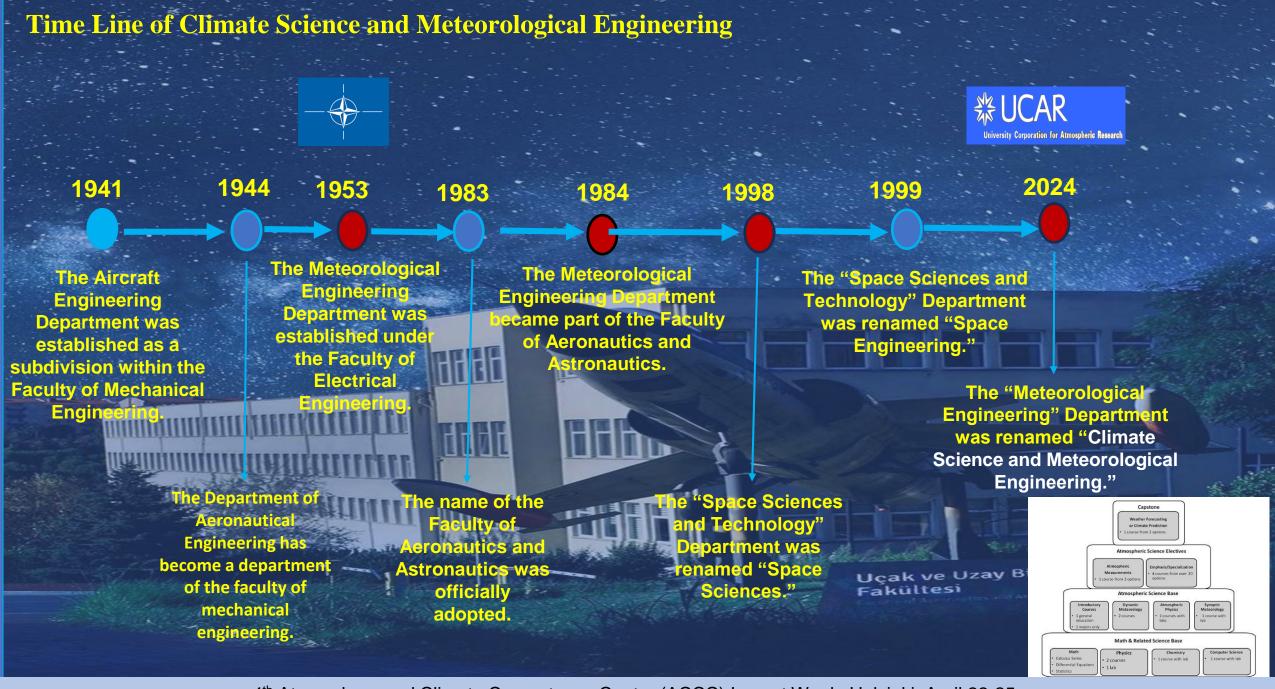
2 Vocational School

- Cyber-Security Operator Program
- ITU Vocational and Technical Anatolian High School, https://itumtal.itu.edu.tr/en/about-

13 Faculties

- Faculty of Aeronautics and Astronautics
- Faculty of Chemical and Metallurgical Engineering
- Faculty of Civil Engineering
- · Faculty of Computer and Informatics Engineering
- Faculty of Electrical and Electronics Engineering
- Faculty of Mines
- Faculty of Science and Letters

- Faculty of Naval Architecture and Ocean Engineering
- Faculty of Architecture
- Faculty of Mechanical Engineering
- Faculty of Textile Technologies & Design
- Faculty of Management
- Faculty of Maritime
- Turkish Music Conservatory
- School of Foreign Languages



4th Atmosphere and Climate Competence Center (ACCC) Impact Week, Helsinki, April 22-25.





At the beginning of the 6th semester

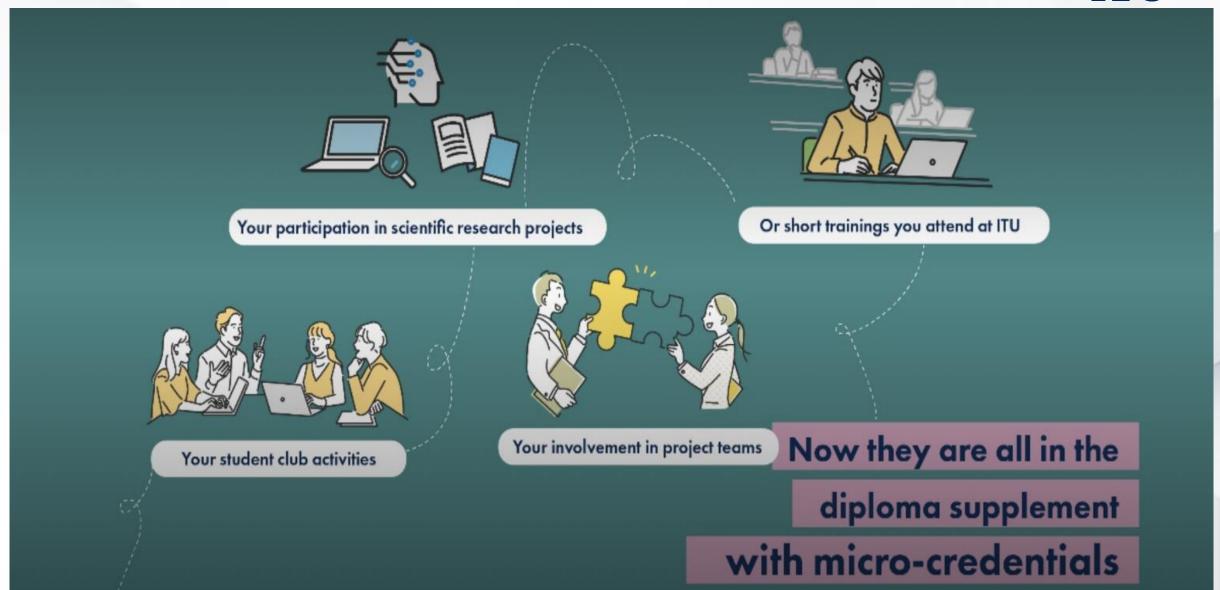


Take courses at a graduate level and do internship.



Micro-Credentials





Global Engagements of ITU





Global Engagements of ITU





Advanced Technology Higher Education Network / SOCRATES

- •An international Mobility Network
- •Established with 16 Universities from Europe
- •ITU is the only member from TÜRKİYE

European Engineering Learning Innovation & Science Alliance

- •10 technical universities from 8 European Countries
- •ITU is the only member from TÜRKİYE
- •EELISA aims to:
 - -Re-invent the "European Engineer"
 - -Evolve interdisciplinary engineering learning
 - -Foster inclusiveness & Diversity
 - -Encourage knowledge, skills & technology transfer







ITU Laboratories





ITU Research Centers

iTÜ

- Disaster Management Center
- Women's Studies Center in Science, Engineering and Technology (WSC in SET)
- Environment and Urban Planning Practice and Research Center
- Marine Equipment Test Application and Research Center
- Dr. Orhan Öcalgiray Molecular Bio.-Biotech.& Genetics Research Center (MOBGAM)
- EMCOL Research Center
- Center for Entrepreneurship and Innovation (İTÜ-GİNOVA)
- Climate Change Application and Research Center
- Istanbul Regulation Application and Research Center
- İTÜ Center for Excellence in Education
- İTÜ Electronic Design and Metrology Application and Research Center
- İTÜ Aviation and Space Technologies Application and Research Center
- İTÜ Polar Research Center

- İTÜ Center for Social Innovation
- İTÜ Turkish Straits Maritime Application and Research Center
- Center for Housing Research and Training Center
- Critical and Functional Material Technologies Application and Research Center
- MEMTEK National Research Center on Membrane Technologies
- Prof. Dr. Adnan Tekin Materials Sci. and Mfg. Tech. App. and Research Center (ATUM)
- Water and Marine Science Technology Application and Research Center
- Agricultural and Environmental Informatics Application and Research Center (TARBIL)
- Medical Devices Application and Research Center
- National Geographic Information Technologies Innovation App. and Research Center
- National High Performance Computing Center
- · Satellite Communications and Remote Sensing Center
- Artificial Intelligence and Data Science Application and Research Center

Shaping the Future: Research on Innovative Digital Technologies

TTU INNE IN THE STREET IN THE

- Artificial Intelligence and Machine Learning
- Big Data and Analytics
- Internet of Things
- Digital Twins
- Blockchain
- Augmented Reality (AR) and Virtual Reality (VR)
- Cloud Computing
- Cybersecurity







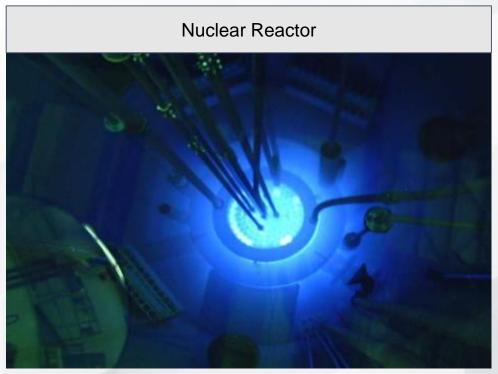


Shaping the Future: National HPC Center and Nuclear Reactor





- Funded by the Presidency of Strategy and Budget
- Provides supercomputing and data storage
- Available to academic and industrial users since 2006.



- TRIGA MARK-II Nuclear Reactor at Energy Institute since 1979
- Used for education and research purposes

ITU Weather Observation Park





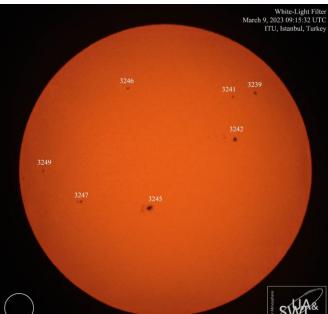
4th Atmosphere and Climate Competence Center (ACCC) Impact Week, Helsinki, April 22-25.

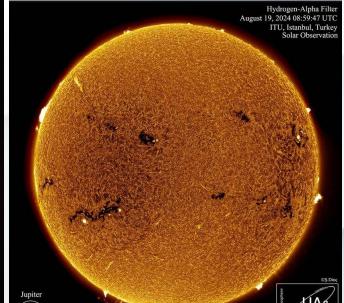
ITU Upper Atmosphere and Space Weather Lab. Solar Observation Event at ITU White-Light Filter March 9, 2023 09:15:32 UTC ITU, Istanbul, Turkey





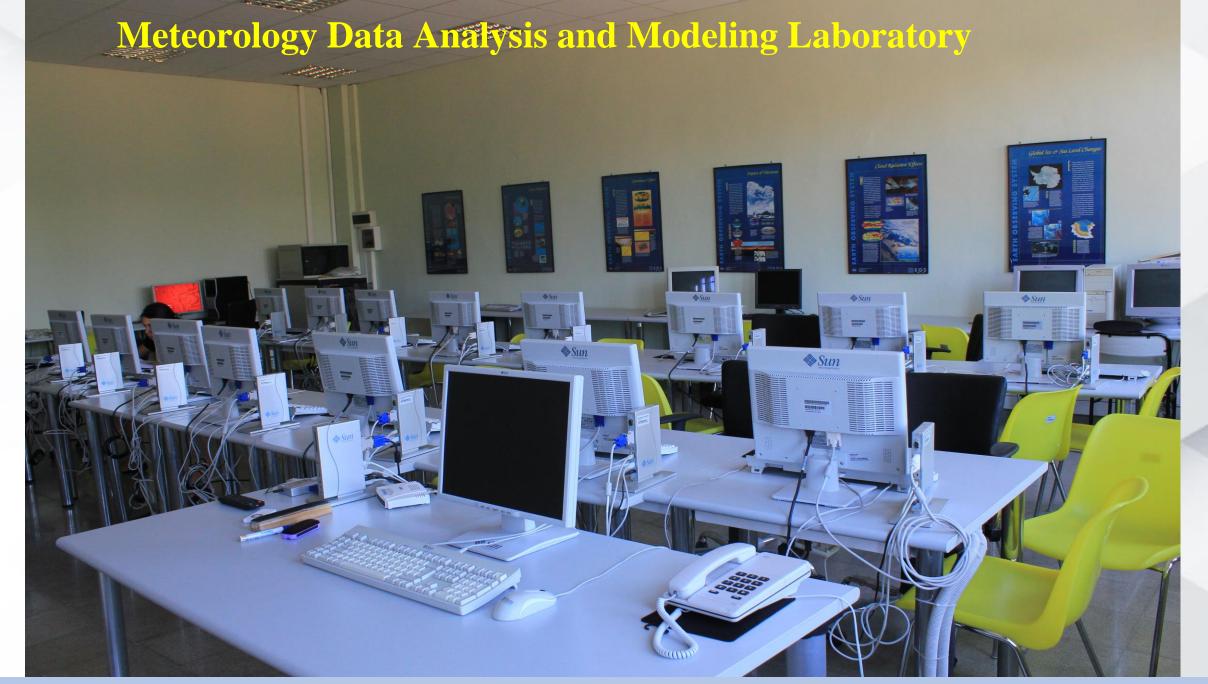








4th Atmosphere and Climate Competence Center (ACCC) Impact Week, Helsinki, April 22-25.



4th Atmosphere and Climate Competence Center (ACCC) Impact Week, Helsinki, April 22-25.

ITU Weather Brifing Lab





4th Atmosphere and Climate Competence Center (ACCC) Impact Week, Helsinki, April 22-25.

High-Tech Platforms and Research Programs at ITU





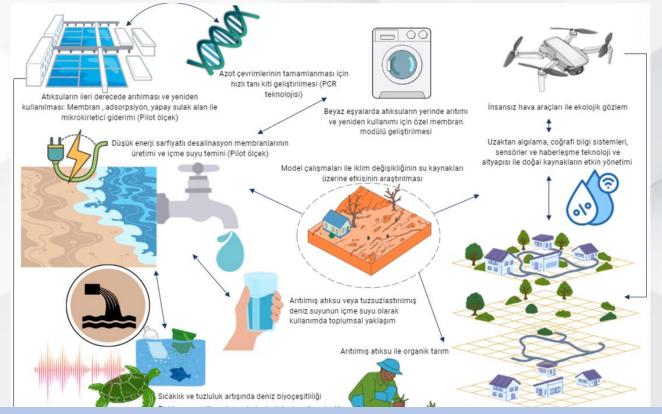
Research Program Manager Organization: İstanbul Teknik Üniversitesi

TRL: 3-9

Selected Green Transformation Area: "Climate Change, Environment and Biodiversity", "Clean and Circular Economy", "Green and Sustainable Agriculture"

Research Goals:





Enhancing Adaptation Action in Türkiye Project





- Public institutions,
- Local governments and
- · Regional and provincial directorates,
- Regional development agencies,

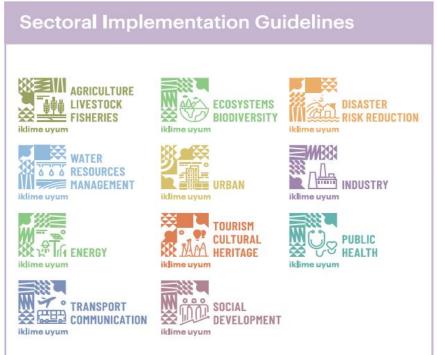


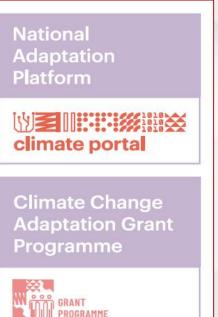
- · Chambers, unions, professional and business organisations,
- Research institutes.
- · Civil society organisations.













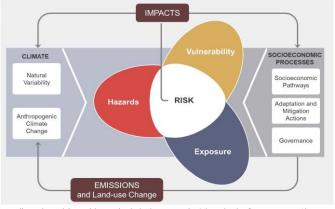
Vulnerability and Risk Assessments

National Climate Change Adaptation Strategy and Action Plan

https://iklimeuvum.org/documents/Climate_Change_Adaptation_Works_In_Turkey.pdf

Table 8 Matrix for assessing the sensitivity of the city of Ankara to hazards and climatic factors

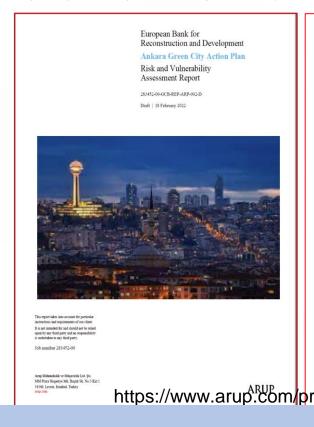




	Core systems (EBRD traditional sectors)																Hazards								_								sp. de
			Meteorological Climatological									н	ydrologi	cal	Geophysical Technological									to has									
No.		Extreme het weather	Extreme cold weather	Heat wave	Celd wave	Rainstorm	Air Quality	Severe wind	Forest fire	Land fire	Urban fire	Drought	Flash flood	River flood	Coastal flood	Landslide	Costal erosion	Transport accident	System accident	System breakdown	Building collapse	Water scarcity and contamination	Fire	Explosion		Tourism	Epidemic/pandemic	Migration	Unemployment	Business discontinuity	Low Environment awareness	Ageing population	General sensitivity and their derivatives dusatible
1	Public health and sanitation	1	0	1	1	1	1	1	1	1	1	2	2	1	2	1	1	1	1	1	1	1	1	1		1	3	1	1	1	1	2	1,13
2	Social welfare	0	0	1	2	0	1	0	1	0	1	0	1	0	1	1	1	0	0	0	1	0	1	1		0	3	3	3	- 1	0	3	0,87
3	Public safety and security	1	1	1	1	1	2	2	1	0	1	0	2	2	3	1	0	2	1	1	3	0	2	2		0	1	3	2	0	2	2	1,33
4	Education	1	1	1	3	1	2	1	0	0	1	0	1	1	2	1	1	3	0	1	2	0	3	2		0	2	2	0	1	3	2	1,27
5	Transport and mobility	1	1	2	2	1	1	1	1	0	1	0	2	1	3	2	1	2	I	1	2	0	1	2		1	2	0	1	2	3	2	1,33
6	Energy	1	2	2	2	0	0	1	1	0	1	1	1	1	1	2	1	0	1	1	2	1	0	1		0	1	0	1	2	3	0	1,00
7	Water supply	2	1	3	1	2	0	0	1	3	1	3	2	2	2	1	1	0	1	1	0	2	0	1		1	1	0	0	2	3	1	1,27
8	Solid waste management	1	1	2	2	1	0	0	0	3	1	2	2	1	2	1	0	1	2	2	1	2	0	1	İ	0	1	0	0	2	3	0	1,13
9	Wastewater treatment	1	1	1	1	2	0	0	0	2	1	1	3	1	3	1	1	0	0	0	1	1	1	0		0	0	1	0	1	3	0	0,90
10	Buildings	1	1	2	2	1	1	1	1	1	2	0	2	1	2	2	0	0	. 0	0	2	1	3	2		1	0	1	1	0	- 1	0	1,07
11	Food supply	1	1	2	2	1	0	1	0	0	0	2	1	1	1	0	2	2	1	1	1	1	0	0		1	1	0	1	1	-1	0	0,87
12	Biodiversity	3	1	3	1	3	1	1	2	0	0	2	2	3	0	1	2	0	0	0	1	0	0	0		0	1	1	0	0	2	0	1,00
13	Historical heritage zone	0	1	1	1	1	2	1	2	1	2	1	2	1	2	1	0	0	0	0	1	0	2	0		1	0	0	0	1	1	0	0,83
14	Land-use	2	1	2	1	3	2	0	1	3	0.	1	1	1	2	1	3	0	0	0	0	0	1	0		1	2	2	0	0	1	1	1,07
15	Finance	2	1	2	2	1	1	0	1	1	2	1	2	1	3	1	-1	1	1	2	3	1	1	1		1	3	2	1	2	2	2	1,50
16	ICT	1	1	1	1	1	0	1	1	0	2	0	1	0	3	1	0	2	3	3	2	0	1	1		1	1	1	1	2	2	0	1,13

	33		Hazards Heteorological Climatological Hydrological Geophysical Technological Social economic and human induced																5 "														
	P C C	Meteorological							(Climatological				drolog	ical	Geor	hysical	Technological								Social economic and human induced							
No.	Ans sektötler (AIKHnin sekt sektötleri)	Extreme hot	Extreme cold	Heat wave	Cold wave	Rainstorm	Air Quality	Severe wind	Forest fire	Land fire	Urban fire	Drought	Flash flood	River flood	Coastal flood	Landslide	Costal erosion	Transport	System	System	Building	Water scarcity and contamination	Fire	Explosion	Tourstern	Infrastructure	Epidemic/pand emic	Migration	Unemployment	Business	Low Environment	Ageing population	General sensitivity to hazards and their derivatives
1	Public health and sanitation	1	0	1	1	0	2	1	1	1	1	1	1	1	2	1	0	1	1	1	1	2	1	2		0	3	2	1	1	2	3	1,2
2	Social welfare	0	0	1	2	1	1	- 1	1	0	-1	10	1	1	2	1	0	0	0	0		0		3		0				2	0	2	1,2
3	Public safety and security	0	0	1	1	1	0	1	1	0	1	0	1	1	2	1	0	1	0	1	1	2	1	3		0	1	3	2	1	0	1	0,93
4	Education	0	0	1	1	0	1	0	0	0	2	0	1	0	1	0	0	1	-1	0	1	1	2	2		0	3	2	1	1	0	2	0,8
5	Transport and mobility	1	0	2	2	0	0	1	1	0	1	0	1	0	2		0	3	1	1	2	0	0	2		1	2	0	1	0	1	1	0,87
6	Energy	3				0	1	1	1	1	0	2	1	0	2	1	0	0	1	1	0	0	0	1		1	0	1	0	1	2	1	1,03
7	Water supply	1	1	2	2	1	1	0	0	0	0		1	2	0	0	1	0	1	1	0	3	0	2		1	1	1	0	-1	2	0	0,93
8	Solid waste management	0	0	1	1	1	0	1	0	0	1	0	1	2	3	1	0	1	0	0	2	0	1	2		1	1	1	0	1	2	0	0,8
9	Wastewater treatment	1	1	1	1	2	0	0	0	0	0	2	1	0	2	0	0	0	0	0	0	1	0	0		0	0	0	0	0	1	0	0,43
10	Buildings	1	0	0	0	1	2	1	1	0	3	0	2	0	3.	1	0	0	0	0	3	0	3	3		0	0	3	1	0	0	0	0,93
11	Food supply	3				2	-1	1	0	0	0		2	1	0	0	1.	1	1	0	0	3	0	0		0		0	0	- 1	0	1	1,1
12	Biodiversity	2	1	3	2	1	2	1	3	0	0		1	2	0	1		0	0	0	3	0	0	0		1	0	1	0	0	2	0	1,07
13	Historical heritage zone	1	0	1	-1	1	3	1	0	0	3	0	1	0	3	1	0	0	0	0	2	0	2	3		1	0	0	0	0	1	0	0,83
14	Land-use	0	0	1	0	1	0	0	1	1	0	1.	2	2		0	0	0	0	0	1	1	1	0		2	0	1	1	0	-1	1	0,7
15	Finance	1	1	2	2	0	0	1	0	0	1	2	1	0	2	1	0	1	0	2	1	2	2	1		1 .		2		1	2	1	1,2
16	ICT	1	1	2	2	0	0	1	0	0	1	0	0	0	1	0	0	0	1	2	0	0	0	1		0	0	0	1	2	0	0	0,53

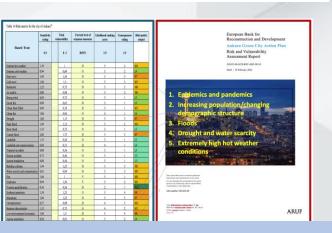
https://www.ipcc.ch/srocc/chapter/technical-summary/ts-0-introduction/ipcc-srocc-ts 4/















OUR ACHIEVEMENTS



Clubs and Project Teams





Within the Department of Cultural Services:

- 71 Culture, Art, and Thought Clubs
- 65 Expertise Clubs

Within the Department of Sports Services:

• 34 Sports Clubs

In total, 170 student clubs are active.

Additionally, 59 project teams are run by our university's students.







Project Team
59

Achievements of Student Project Teams

Gökbörü Aerospace Team ranked 1st at TEKNOFEST.

> ITU Rover Team ranked 2nd in the world

İTÜ HyperBee Team ranked 2nd place at TEKNOFEST and won awards in "Propulsion," "Levitation," and "Sensor & Control" at European Hyperloop Week 2024.

ITU Racing Team completed all stages successfully at the Formula SAE Italy competition.



ITUNOM UAV Team ranked 2nd in the world. and 3rd in TEKNOFEST.

> ITU ROV Team ranked 2nd in the world.



Category at Spaceport America Cup 2024.











ITU RAKE Team ranked 2nd in the world



ITU ZES Solar Car Team wins the 'National Champion' trophy

> The ITU Seismic Team placed 3rd in the National Competition.

İTÜ AUV Team ranked 1st place in the "Technical Presentation" at







- Meteorological Research Club (METAR)
- METEO Coding Team
- METEO Remote Sensing Team
- ❖ METEO Modeling Team
- METEO Prediction Team
- Balloon Team
- Reporting Team
- ITU Aqua











ITU's Global Reputation and Rankings





ITU Ranks in Türkiye the Shanghai Ranking Academic Subjects (GF	Global Rankin	g of
SUBJECTS	NATIONAL	INTERNATIONAL
● Marine/Ocean Engineering	1 st	33 rd
• Civil Engineering	1 st	151-200
• Oceanography	1 st	151-200
• Earth Sciences	1 st	301-400
• Chemistry	1 st	401-500
• Food Science and Technology	2 nd	151-200
Textile Science and Engineering	g 2 nd	36 th
SHANGHAI RANKING	Claim Parking of Advanced Subjects TOP 50 Secret Claim For Comments 2004	İTÜ 🗐

1st _....

Ranked 1st in Türkiye in five subjects.

ITU's Global Reputation and Rankings





Ranked 326th Among World Universities

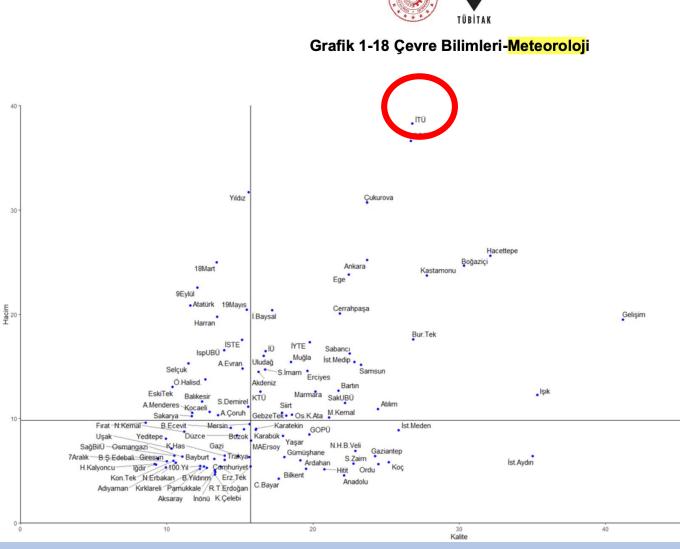


Ranked 79th in the World in the Field of 'Engineering and Technology'

ITU's Global Reputation and Rankings









4th Atmosphere and Climate Competence Center (ACCC) Impact Week, Helsinki, April 22-25.

We take immense pride in our graduates and celebrate their remarkable achievements!





Melike Çelebi Ayşegül Ceren Moral, Emel Ünal, Tuğba Şafak, Irem Altaca, Caner Özel, Gözde Kırlı, Ceren Ballı, Ahmet Çaycı, Emre Alaz, Emircan Ozdem ve Aylin Yıldırım Elbay ile birlikte Albüm: Aylın Yıldırım Elbay'ın Fotoğrafları Albüm: tatlı mezunlar:)

Pavlasılanlar: 14 Arkadaslar





https://www.itu.edu.tr/en

toros@itu.edu.tr