Inter-University Exchange Project, FY 2015
The University of Tokyo and Tokyo Institute of Technology
Support for the Formation of Collaborative Programs with Latin America and the Caribbean, Turkey

Project Name (adopted FY 2015 in Turkey)

Japan-Turkey Cooperative Education Program on Resilience Engineering for Energy and Urban Systems
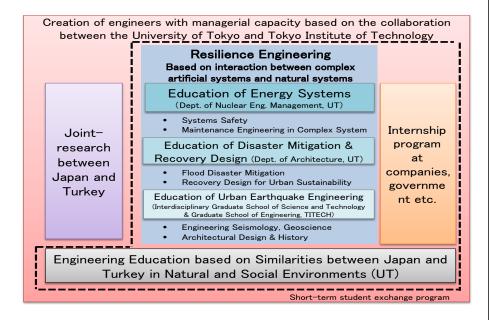
Project Summary

Turkey is in a period of industrial transformation. This transformation was triggered by recent rapid economic growth in the country, which includes urban developments (required due to an increasing population) and the creation of an electricity infrastructure (due to energy demand increases). Cooperation between Japan and Turkey in the field of energy and urban system safety can have a synergistic effect, because the two countries share some key similarities; both countries have large scale cities and are located in some of the most seismically active regions in the world.
In this project, top technical universities in both countries (the University of Tokyo, Tokyo Institute of Technology, Istanbul Technical University, the Middle East Technical University and Bogazici University) work together to create education and research initiatives that will assist in creating engineers with managerial capabilities.

〈Site visit at Avrasya Tunnel in Istanbul 〉

〈JTRE website〉

Creation of engineers with managerial capacity based on the collaboration between the University of Tokyo and Tokyo Institute of Technology

Resilience Engineering
Based on interaction between complex artificial systems and natural systems

Education of Energy Systems
（Dept. of Nuclear Eng. Management, UT)
- Systems Safety
- Maintenance Engineering in Complex System

Education of Disaster Mitigation & Recovery Design (Dept. of Architecture, UT)
- Flood Disaster Mitigation
- Recovery Design for Urban Sustainability

Education of Urban Earthquake Engineering
(Interdisciplinary Graduate School of Science and Technology & Graduate School of Engineering, TITECH)
- Engineering Seismology, Geoscience
- Architectural Design & History

Joint-research between Japan and Turkey

Internship program at companies, government etc.

Engineering Education based on Similarities between Japan and Turkey in Natural and Social Environments (UT)

Short-term student exchange program

Exchange Program Summary

The exchange program creates research and education initiatives for resilience and earthquake engineering as part of a collaborative effort between The University of Tokyo and Tokyo Institute of Technology. It focuses on the performance of energy and urban systems under severe conditions in the natural environment, like earthquakes. The program aims to produce a synergistic effect between participating universities, an effect possible because of the similarities (in natural and social environments) between the two countries.

Global Human Resources for the Project

The project is expected to contribute to deepening the relationship between the two countries. The program provides both Turkish and Japanese students opportunities to better equip themselves to become leaders in the field of engineering. Students completing this program are expected to be engineering managers in public or private sectors, researchers in research organizations, etc.

Project Features

Resilience engineering is the core of this project, which deals with safety of complex systems (such as energy-related systems and urban systems). In the student exchange program, a corpus-based study is introduced as a prior learning program. Internship programs at companies or governmental organizations are also introduced as supplements to classroom lectures.

Exchange Student Participant Numbers

	H27	H28	H29	H30	H31
Outbound	14	17	18	18	18
Inbound	16	19	19	19	19

1．Program Progress, FY 2015

【The University of Tokyo and
Tokyo Institute of Technology】

Project Name (Adopted FY 2015, Turkey)

Japan-Turkey Cooperative Education Program on Resilience Engineering for Energy and Urban Systems

■ Exchange Program Status

〈1st joint workshop in Istanbul Technical University〉

	2015	
	Plan	Results
Outbound	14	13
Inbound	16	17

■ Exchange Program: Student Mobility

○ Outbound
- 12 graduate students and 1 undergraduate student participated in an intensive course on resilience engineering at Istanbul Technical University (ITU) in February.
- All students participated in a poster session and gave a presentation on their research field. Additionally, they had a chance to take part in field trips to companies and AFAD (Prime Ministry, Disaster and Emergency Management Presidency of Turkey).

○ Inbound
- 14 graduate students from ITU, 2 graduate students from the Middle East Technical University, and 1 graduate student from Bogazici University participated in an intensive course on resilience engineering.
- Turkish students visited UTokyo and took part in an intensive lecture and internship at a company. Other students visited Tokyo Tech and participated in research work in their host professor's lab.
- All students attended a Japanese language and culture lecture at UTokyo.

■ Forming a University Network with Quality Assurance
- Our education programs are rated not only by student score, but also by class evaluation and student satisfaction.
- Since conditions for credit transfers for short-term programs depend on regulations at each university, appropriate guidelines will be provided for student evaluation.

■ Promotion of Student Mobility & Challenges
- Turkish students will be provided student status in each host university. The status helps them to achieve a deeper level of research work in Japan.
- Limited experience regarding credit transfers for long-term programs; small scale trials will be conducted to learn methods of addressing this issue.
- Difficult to increase the number of students permitted for long-term exchange through sole use of this grant; efforts to get financial support from the following organizations will continue: MEXT, Embassy of Japan in Ankara, membership companies of the Japan- Turkey Economic and Cultural Exchange Promotion Conference.

■ Internationalization of the University, Information Disclosure, and Publication of Outcome
Internationalization of Universities
- UTokyo introduced the GPA system in the 2014 academic year in some courses to increase the number of international students.
- Tokyo Tech began distance learning programs with foreign universities; a program will be established at the Middle East Technical University in the 2016 academic year.
- Our project aims to further strengthen relationships with Turkish institutions by developing skilled engineers who can apply for the Japan-Turkey Science University, strongly supported by the Japanese and Turkish governments.
Information Disclosure and Publication of Outcome
- All project programs can be found on JTRE website. http://jtre.t.u-tokyo.ac.jp/

■ Additional Notes
- With regard to the state of affairs in Turkey last year: safety of students is a priority. In an effort to ensure this, a faculty/staff member accompanies students, and use of local communication services confirmed to ensure contact is possible, if necessary.
- Following the second year of the program, we aim to receive feedback regarding program objectives; to achieve this, a third party evaluation committee is planned for establishment.
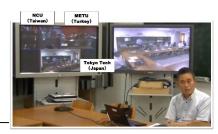
Japan-Turkey Cooperative Education Program on Resilience Engineering for Energy and Urban Systems
(Adopted FY 2015, Turkey)

■ Exchange Programs

2nd Workshop in Vienna

D-learning lecture
between 3 universities

■ Student Mobility

○ Outbound

- Due to unrest in Turkey, we ceased outbound student exchange in Istanbul and Ankara. In place of this exchange, we held a collaborative workshop in Vienna where students could participate in an international exchange experience. 5 UTokyo students and 9 Tokyo Tech students visited the UN Building and historical architecture in Vienna. During the latter half of the program, they participated in lectures by specialists from IAEA and CTBTO.

Number of Exchange Students	2016	
	Planned	Actual
Outbound	17	14
Inbound	19	21
WS participants from Turkey	0	16

○ Inbound

- 15 students from ITU, 5 students from METU and 1 student from BU participated in an exchange program course on resilience engineering.
- Turkish students visited UTokyo and took part in intensive lectures and internships at companies. 3 students extended their stay to participate in research with their host professors. Other students visited their host professors' laboratories at Tokyo Tech. At Tokyo Tech, participants took part in academic exchange through research work and technical tours, such as a visit to Kumamoto (an earthquake stricken area), and by participating in discussions at companies and institutes.

■ Assuring Quality throughout the University Network

- To assure quality throughout the university network, we gave achievement questionnaires by means to all participants (from both Japan and Turkey). The information gathered was discussed at the program coordination committee meeting and a feedback system for administration was established.
- Students who participated in the program were able to make use of the exchange relationship between Japan and Turkey for their ongoing academic careers. Professors in UTokyo and Tokyo Tech promote a number of collaborative research and education projects between the 2 countries, such as SATREPS, JSPS Bilateral Programs and Turkey Japan Science University (planned for establishment in 2017).

■ Promotion of Environment with Student Mobility

○ For Students in Japan

- Covered program costs for overseas student emergency services such as OSSMA (UTokyo) and JCSOS (Tokyo Tech). Additionally, travel insurance fees are also covered by each university to ensure student safety during the program.
- Students had a lot of opportunities to interact with international students and researchers in English through the program. In such an environment, they were exposed to a multi-cultural way of thinking.

○ For Students in Turkey

- We provided international student status at each campus. This meant students were able to use facilities and services such as the library, the gymnasium, the network LAN and IMAS（Inbound Medical Assistance Service）.
- We applied to the JASSO scholarship program and provided financial support for students with good GPAs.
- All participants were able to attend a 1-day intensive course in Japanese Language and Culture.

■ Internationalization of the University/Information Disclosure and Publication of Outcome

- UTokyo and Tokyo Tech have introduced a quarterly system to the academic calendar so that students can easily study abroad, look for jobs, and write a thesis.
- The International Division has been integrated with the Student Division to ensure all students are able to receive support from all faculty and staff.
- All project programs can be found on the JTRE website in Japanese, Turkish, and English. http://jtre.t.u-tokyo.ac.jp/

■ Additional Notes

- As of this year, we are offering a distance lecture titled "Earthquake and Tsunami Disaster Reduction" between Tokyo Tech, METU, and NCU (Taiwan National Central University). 6 Tokyo Tech students earned credits.
- Cancellation of outbound exchange turned into fruitful collaboration in Vienna in the framework of student exchange.

3. FY2017 Progress 【The University of Tokyo and Tokyo Institute of Technology】

Japan-Turkey Cooperative Education Program on Resilience Engineering for Energy and Urban Systems
(Adopted FY 2015, Turkey)

■ Exchange Programs

3rd Workshop in METU

D-learning lecture between 4 universities

■ Student Mobility

○ Outbound

- 6 UTokyo students participated to short term exchange program. During the program, they took part in the 3rd WS held in METU followed series of technical visit to ITU, AFAD and Ankara University.
- 10 Tokyo Tech students visited several university in Turkey and performed collaborative research with students and professors in each university. They also participated to the WS and worked on group presentation with UTokyo and Turkish students.

Number of Exchange Students	2017	
	Planned	Actual
Outbound	18	16
Inbound	19	20
WS participants from Istanbul	0	4

○ Inbound

- 14 students from ITU, 5 students from METU and 1 student from BU participated in an exchange program course on resilience engineering.
- Turkish students visited UTokyo and took part in intensive lectures and internships at companies. 1 student extended her stay to participate in research with her host professor. Other students visited their host professors' laboratories at Tokyo Tech. At Tokyo Tech, participants took part in academic exchange through research work and technical tours, such as a visit to Awaji (an earthquake stricken area), and by participating in discussions at companies and institutes.

■ Assuring Quality throughout the University Network

- To assure quality throughout the university network, we gave achievement questionnaires by means to all participants (from both Japan and Turkey). The information gathered was discussed at the program coordination committee meeting and a feedback system for administration was established.
- Students who participated in the program were able to make use of the exchange relationship between Japan and Turkey for their ongoing academic careers. Professors in UTokyo and Tokyo Tech promote a number of collaborative research and education projects between the 2 countries, such as SATREPS, JSPS Bilateral Programs.

■ Promotion of Environment with Student Mobility

○ For Students in Japan

- Covered program costs for overseas student emergency services such as OSSMA (UTokyo) and Japan IR&C (Tokyo Tech). Additionally, travel insurance fees are also covered by each university to ensure student safety during the program.
- We applied to the JASSO scholarship program and provided financial support for students with good GPAs.

○ For Students in Turkey

- We provided international student status at each campus. This meant students were able to use facilities and services such as the library, the gymnasium, the network LAN and IMAS（Inbound Medical Assistance Service）.
- We applied to the JASSO scholarship program and provided financial support for students with good GPAs as well as student in Japan.
- All participants were able to attend a 1-day intensive course in Japanese Language and Culture.

■ Internationalization of the University/Information Disclosure and Publication of Outcome

- UTokyo and Tokyo Tech have introduced a quarterly system to the academic calendar so that students can easily study abroad, look for jobs, and write a thesis.
- All project programs can be found on the JTRE website in Japanese, Turkish, and English. http://jtre.t.u-tokyo.ac.jp/

■ Additional Notes

- As of last year, we are offering a distance lecture titled "Earthquake and Tsunami Disaster Reduction" between Tokyo Tech, METU, and NCU (Taiwan National Central University). From this year ITU also takes part in this course and ITU professors gave lectures. 8 Tokyo Tech students earned credits.
- Last year we cancelled outbound exchange because of safety concerns in Turkey. This year we focused on collecting information about the situation after coup attempt, our effort came down to fruitful student exchange program in Turkey without any safety trouble.

4. FY2018 Progress 【The University of Tokyo and Tokyo Institute of Technology】

Japan-Turkey Cooperative Education Program on Resilience Engineering for Energy and Urban Systems
(Adopted FY 2015, Turkey)

■ Exchange Programs

4th Workshop in METU

Technical tour to Sinop
Nuclear Central planned site

■ Student Mobility

○ Outbound

- 4 UTokyo students participated in a short term exchange program. During the program, they took part in the 4th WS held in METU, later made a technical visit to Sinop Nuclear Central planned site.
- 10 Tokyo Tech students visited several universities in Turkey and performed collaborative research with students and professors in each university. They also participated in the WS and worked on a group presentation with UTokyo and Turkish students.

Number of Exchange Students	2018	
	Planned	Actual
Outbound	18	14
Inbound	19	21

○ Inbound

- 15 students from ITU, 5 students from METU and 1 student from BU participated in an exchange program course on resilience engineering.
- Turkish students visited UTokyo and took part in intensive lectures and internships at companies. At Tokyo Tech, participants took part in academic exchange through research work and technical tours, such as a visit to Awaji (an earthquake stricken area), and by participating in discussions at companies and institutes.

■ Assuring Quality throughout the University Network

- To assure quality throughout the university network, we gave achievement questionnaires to all participants (from both Japan and Turkey). The information gathered was discussed at the program coordination committee meeting and a feedback system for administration was established.
- Students who participated in the program were able to make use of the exchange relationship between Japan and Turkey for their ongoing academic careers. Professors in UTokyo and Tokyo Tech promote a number of collaborative research and education projects between the 2 countries, such as SATREPS, JSPS Bilateral Programs.

■ Promotion of Environment with Student Mobility

○ For Students in Japan

- Covered program costs for overseas student emergency services such as OSSMA (UTokyo) and Japan IR&C (Tokyo Tech). Additionally, travel insurance fees were also covered by each university to ensure student safety during the program.
- We applied to the JASSO scholarship program and provided financial support for students with good GPAs.

○ For Students in Turkey

- We provided international student status at each campus. This meant students were able to use facilities and services such as the library, the gymnasium, the network LAN and IMAS（Inbound Medical Assistance Service）.
- We applied to the JASSO scholarship program and provided financial support for students with good GPAs as well as students in Japan.
- All participants were able to attend a 1-day intensive course in Japanese Language and Culture.

■ Internationalization of the University/Information Disclosure and Publication of Outcome

- UTokyo and Tokyo Tech have introduced a quarterly system to the academic calendar so that students can easily study abroad, look for jobs, and write a thesis.
- All project programs can be found on the JTRE website in Japanese, Turkish, and English. http://jtre.t.u-tokyo.ac.jp/

■ Additional Notes

- As of last year, we are offering a distance lecture entitled "Earthquake and Tsunami Disaster Reduction" between Tokyo Tech, METU, NCU (Taiwan National Central University) and ITU. This year, 6 Tokyo Tech students earned credits.
- One of Tokyo Tech student applied to the Earthquake Engineering Program (EEP) with his global experience in Turkey. His research work was rated highly and he earned credits for the course.

5. FY2019 Progress 【The University of Tokyo and Tokyo Institute of Technology】

【Japan-Turkey Cooperative Education Program on Resilience Engineering for Energy and Urban Systems】
（Adopted year: FY2015 Country （Turkey））

■ Exchange Programs

(5th Workshop at ITU)

(Technical tour to AKOM)

Student-Mobility

○ **Outbound**
- UTokyo students participated in a short term exchange program. During the program, they took part in the 5th WS held at ITU, and later made a technical visit to AKOM (Metropolitan Municipality Disaster Coordination Centre).
- Tokyo Tech students visited several universities in Turkey and performed collaborative research with students and professors in each university. They also participated in the WS and had academic exchange with UTokyo and Turkish students.

	2019	
	Plan	Results
Outbound	18	14
Inbound	19	21

○ **Inbound**
- 15 students from ITU, 5 students from METU and 1 student from BU participated in an exchange program course on resilience engineering.
- Turkish students visited UTokyo and took part in intensive lectures and internships at companies. At Tokyo Tech, participants took part in academic exchange through research work and technical tours, such as a visit to Awaji (an earthquake-stricken area), and by participating in discussions at companies and institutes.
- The students from Turkey also participated in the Joint Symposium for the Japan-Turkey Inter-University Exchange Project.

■ Forming the University Network with Quality Assurance
- To assure quality throughout the university network, we gave achievement questionnaires to all. The information gathered was discussed at the program coordination committee meeting and a feedback system for administration was established.
- Students who participated in the program were able to make use of the exchange relationship between Japan and Turkey for their ongoing academic careers since professors at UTokyo and Tokyo Tech promote a number of collaborative research and education projects between the two countries.

■ Promotion of Student-Mobility Environment

○ **For Students in Japan**
- Covered program costs for overseas student emergency services. Also, travel insurance fees were covered by each university to ensure student safety during the program.
- We applied to the JASSO scholarship program and provided financial support for students with good GPAs.

○ **For Students in Turkey**
- We provided international student status at each campus. This meant students were able to use facilities and services such as the library, the gymnasium, the network LAN and IMAS (Inbound Medical Assistance Service).
- We applied to the JASSO scholarship program and provided financial support for students with good GPAs as well as students in Japan.
- All participants were able to attend a 1-day intensive course in Japanese Language and Culture.

■ Internationalization of the university, Information disclosure and Publication of outcome
- UTokyo and Tokyo Tech have introduced a quarterly system to the academic calendar so that students can easily study abroad, look for jobs, and write a thesis.
- All project programs can be found on the JTRE website in Japanese, Turkish, and English. http://jtre.t.u-tokyo.ac.jp/

■ Notices
- We are offering a distance lecture entitled "Earthquake and Tsunami Disaster Reduction" between Tokyo Tech, METU, NCU (Taiwan National Central University) and ITU. This year, 8 Tokyo Tech students earned such credits.
- In this final year of the project, we successfully co-organized a special collaborated symposium with UTokyo, Tokyo Tech, Niigata Uni., Fukushima Uni., Tokyo University of the Arts and all counterpart organizations in Turkey.