

**For the Establishment of a Multicultural Global Campus**

# **Toyohashi University of Technology Global Strategy 2019**

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## **Introduction**

Based on supporting technological progress through scientific inquiry, Toyohashi University of Technology's mission is the promotion of education and research in both academic and technological fields of science that lead to the creation of new technology. We have and continue to foster engineers and resourceful individuals, active at an international level, who are well rounded, practical, creative, capable of leadership, have an international outlook and value co-existence with the environment. We also continue to conduct research into pioneering technology that will forge a path for the next generation.

However, as the globalization of the economy and society spreads rapidly, our spirit of establishing and fostering practical and creative leading engineers needs to be reviewed in accordance with the changing times. At the same time, we need to actively contribute towards the Sustainable Development Goals (SDGs) which the entire international community is working towards.

Therefore, education and research at our institution is not only required to provide pioneering research and development capabilities but is also imperative to take the lead in research fields that bring about innovation in industries and society, as well as foster internationally-minded engineers who can be active at the global level.

While it is essential to realize a 'Multicultural Global Campus' open to everyone regardless of nationality or gender, it is also important to appreciate the importance of organizational efforts as a university rather than relying solely on individuals. To make that possible, we have developed the following global strategy.

Two years have passed since the Toyohashi University of Technology Global Strategy 2017 was formulated, and during that period, globalization at TUT has accelerated, leading to this revision.

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## **Current Situation**

With the rapid pace of competing technological development, fostering individuals who can flourish among people with different needs, cultures, and values, as well as people who have a high level of technical prowess, is strongly required of universities.

As the horizontal connections between technology and industry increase, modern research and development, designing and production, are performed by transnational teams. Each person—subordinates, superiors, colleagues, and clients—are required to have a comprehensive point of view and design ability so that they are able to recognize, analyze and resolve global issues in a multicultural environment. Japanese technology itself may find itself unable to sustain its international competitiveness unless high-level engineers and researchers with an advanced technological and scientific background who can provide practical manufacturing leadership are fostered.

While developed countries are facing a wide range of problems, stalling their growth, with stagnation becoming a serious issue, developing countries have been emerging and strengthening their political and economic power. This means that the international relationship between the two is no longer unilateral. Based on a mutually beneficial relationship as partners, it is not only necessary to educate foreign students as people who can contribute to their countries' development, but also as competent foreign citizens of Japan who can take an active role in the development of our industries and the internationalization of our society.

Concerning the research activities that form another part of a university's mission, our objectives must be exceptional in terms of integrating research built around creating new value and contributing to the SDGs. Therefore, it is necessary to assemble a wide range of ideas by promoting diversity and a multinational team of high-level engineers and researchers.

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## **Toyohashi University of Technology, Basic Principles for Globalization (Mission)**

Based on scientific inquiry supporting technological progress, the mission of Toyohashi University of Technology is to conduct education and research in technological sciences for the development of new technology. In accordance with this mission, we aim for the establishment of a top-level, globalized engineering university that conducts research in pioneering technology, forging a path for the next generation; in addition, we aim to nurture engineers who are well rounded, practical, creative, capable of leadership, have an

international outlook and value co-existence with the environment. Therefore, placing an emphasis on graduate school, we will continue conducting research and developing education that nurtures students who are insightful, perceptive, compassionate, have pluralistic thinking skills and a global vision; students who are aiming to advance the development of the technological sciences. Cooperating with the local community, we also aim to be a hub of technological sciences that is accessible to both Japan and the rest of the world.

Based on the above mission, Toyohashi University of Technology's basic principles for globalization are as follows:

- Fostering leading engineers who can succeed on the global stage.
- Developing the world's technological sciences through exemplary research.
- Cultivating engineers to develop research-based solutions to global problems to achieve the SDGs.

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## **BASIC VISIONS**

Based on the above principles, the following are the concrete steps to be taken to realize our goals.

### **1. Education**

We will nurture high-level engineers who can pioneer practical manufacturing techniques by employing their advanced technological and scientific backgrounds. Following the acquisition of such skills, they will have a comprehensive outlook and design ability that will enable them to recognize, analyze and resolve global issues.

- Global communication skills.
- Skills to recognize and solve problems from multiple points of view.
- A profound appreciation for humanity.

### **2. Research**

We will increase our global influence by further strengthening our research system, enhancing diversity and the multinational makeup of researchers, thus increasing the array of promising ideas. Therefore, globally-centered, top-level research will be carried out in the following research fields:

- *Innovation of advanced interdisciplinary research areas* within the field of Electrical and Electronic Engineering and Information Science.
- *Practical technology fields* that support key industries such as Mechanical

Engineering and Materials Engineering.

- *Pioneering research fields* such as Chemistry and Life Science, Architecture and Civil Engineering and Environmental Science.

### 3. International Contribution

We will continue to increase our international cooperation by utilizing our internationalized, world-class research and education system, along with our accomplished graduates, toward solving the problems faced by the international community in order to realize a peaceful and enriched society.

- We will increase the global utilization of our research results with an eye to the SDGs, focusing on the development of high school education in engineering, and encouraging university-industry cooperation and finding solutions to global issues.
- We aim to strengthen our relations and mutual understanding with the various governments, relevant institutions—such as universities—and the civil societies of related countries by increasing the visibility of this university.

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## Where Toyohashi University of Technology will be in 2023

We aim to have established a Multicultural Global Campus with the following features:

- A university that puts emphasis on the graduate school education, fostering high-level engineers who contribute to the global community and whose skills in the technological sciences forge a path for the next generation, while accepting both young Japanese students, such as those from technical colleges (*Kosen*), and young students from around the world.
- An internationally recognized university that develops its engineering education and pioneering research regardless of language and culture, and in which all students and staff support globalization.
- An internationally known university in which the world's top-level educational programs and research are conducted.
- A university that leads Japan in globalization (as numerical targets: the percentage of foreign students, 24%; the percentage of graduate students who have studied abroad, 9%; the percentage of international faculty, 23%; the percentage of non-academic staff who have worked abroad, 38%; the percentage of graduate students who have a TOEIC score of over 600, 61%; the percentage of staff who have a TOEIC score of over 600, 28%; the percentage of faculty members who have a TOEIC score of over 730, 50%).

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## Core Strategies

### 1. Education

The following measures will be taken to foster ‘Global Technology Architects’ so that they can be active on the global stage in the future to promote globalization of campus entirely.

- We will take the firm measure of creating a new ‘Global Technology Architects Course,’ through which we will foster leading engineers who can be role models to all engineers around the world. In this course, we aim to promote the globalization of this university and be internationally recognized.
  - Bilingual lectures (English/Japanese) of all regular classes in all faculties.
  - Promoting diversification and the multinationalization of university students.
  - Improving English skills of Japanese students; improving Japanese communication skills of foreign students.
  - Develop educational programs focusing on developing skills in problem discovering and problem solving, regardless of language or culture, such as international internships and summer school programs.
- By establishing the TUT Global House as a core part of our Multicultural Global Campus, we aim to comprehensively expand our students’ perspectives.
- Attract outstanding students and expand global education by utilizing strategically-placed collaboration centers, such as the TUT USM Technology Collaboration Centre in Penang (TUT-USM Penang).
- We will enhance the systems of credit transfer, joint degree, and double degree with partner universities; in addition, we will globalize our academic affairs system, for instance, through the translation of lecture syllabi in English, course numbering and grade point averages (GPA). We also aim to increase the international transferability of students and professors.
- Formulate strategies for each country to expand the range of international students we accept and formulate a hosting plan with each area within TUT.
- Attract excellent students with diverse backgrounds from home and abroad by reforming our entrance examinations.
- Attract more foreign students by expanding and reinforcing the support system for foreign students (from personal advice to career counseling) with scholarships, Japanese language education, interaction with Japanese students, academics and participation in research projects.
- Develop graduate students’ career paths and widening their global appeal by

introducing the quarter system and the early graduation system.

- Strengthen cooperation with technical colleges (*Kosen*) and promote the globalization of the seamless education of TUT linked with Kosen education.
- Improve the English communication skills of faculty and staff as well as teaching internationally standard engineering both in Japanese and English.
- Produce significant results by pursuing the globalization of TUT: deepening exchange and enhancing communication among overseas alumni associations, attracting excellent students, implementing superior education and career support for graduates.

## 2. Research

We will take the following measures to maintain and develop global, top-level research in the technological sciences:

- To strengthen our research capabilities, we will continue conduct ongoing surveys on universities and research organizations (including companies) in the world where top-level research happens, utilizing database systems such as the ‘Web of Science.’
- We will continue our active, cooperative research and interaction among researchers with universities and research organizations in the Asian region as well as increase our approach to such top-level facilities in Western countries. Our aim is to sign more inter-university exchange agreements.
- Send researchers, especially young researchers, to top-level universities and research organizations around the world.
- Promote the internationalization of research personnel by hiring foreign researchers or accepting them for the long or short term.
- Aim to author more international, joint papers by stimulating international cooperative research.
- Hold more international meetings to create more opportunities for international cooperative research with the world’s best universities and research organizations as well as opportunities for interaction among researchers.
- Present our results so that they can be evaluated internationally, such as carrying out initiatives to achieve the SDGs and contributing to solving issues shared with the world.

## 3. International Contribution

We will take the following measures to contribute to the solving of problems encountered by the global community:

- Participate in the formation and commercialization of various projects intended as solutions to the problems faced by the global community.
- Develop our network of government-affiliated organizations, industries, and universities that have been formed through our contribution to international activities and seek feedback to our research and educational activities.

#### 4. Other Goals

- We aim to bolster the global network of this university's faculty and students, including the administrative staff, and create a new university environment by improving international acceptance and increasing its multinational character.
- We will refine and improve our existing education and research facilities, as well as our welfare facilities, to support globalization.
- By strengthening the dissemination of information regarding our education, research and international contributions, and achieving multilingualism, we aim to create mutually beneficial synergy in education and research by being internationally recognized.
- We will continue to take firm action for deepening the mutual understanding among peoples of all cultures and improving the infrastructure necessary for achieving a 'Multicultural Global Campus.'
- We will enhance our crisis-management systems regarding the global activities of students and professors.
- We will carry out organization-based international partnership activities to promote measures based on our Global Strategy.
- To promote our Global Strategy, we will actively promote the use of international entities such as the Japan Society for the Promotion of Science, the Japan Science and Technology Agency, and the Japan International Cooperation Agency.
- As people and technology become increasingly intermingled and fluid, our education and research will be carried out with full awareness of export controls.

Formulated: March 23, 2015

Revised: March 17, 2017

May 28, 2019

The Toyohashi University of Technology Global Strategy is revised as needed every two years in principle.