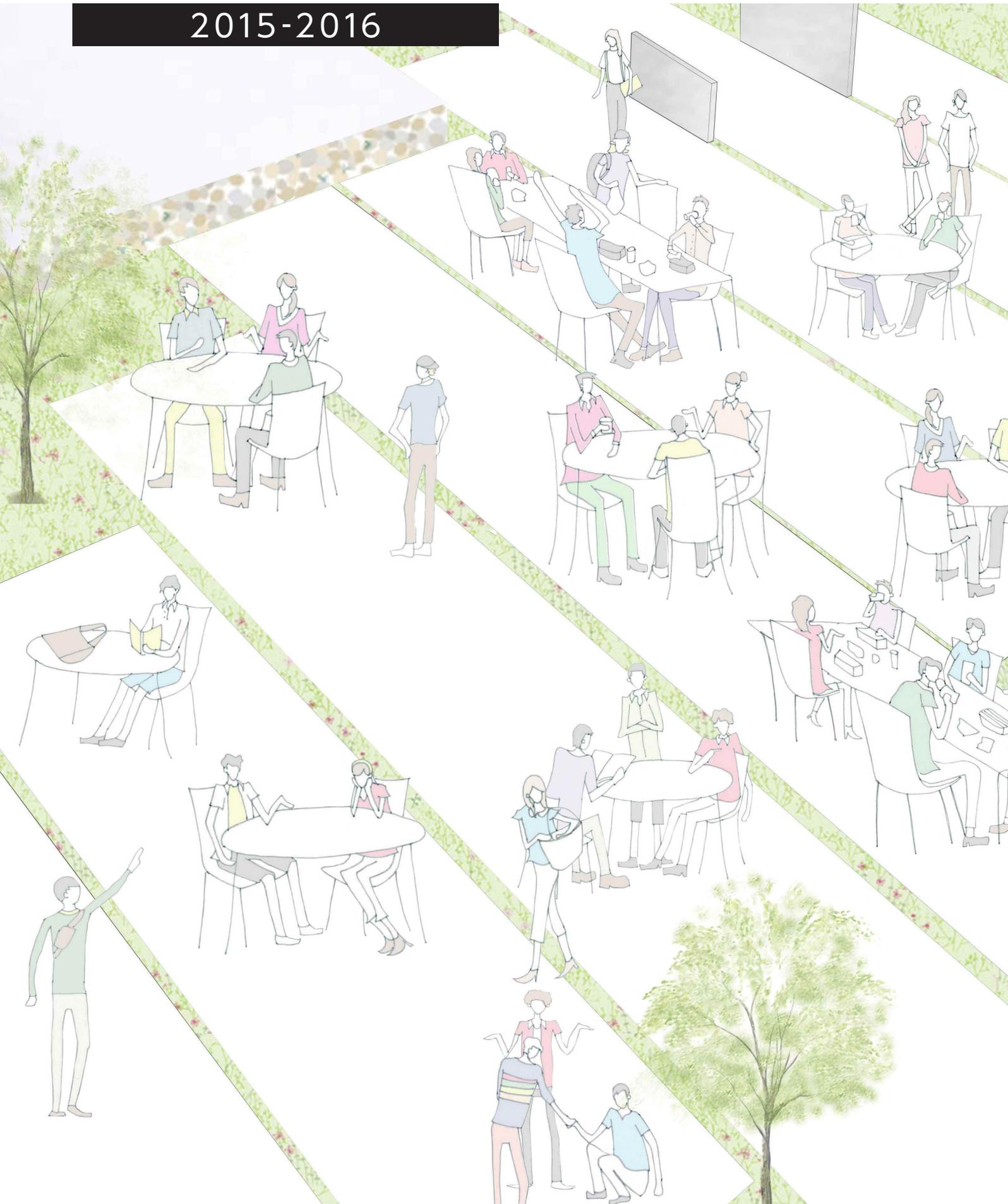


**TOYOHASHI**  
UNIVERSITY OF TECHNOLOGY

2015-2016





## University seal

As part of the 20th anniversary commemoration, the university seal was selected from the works submitted in a publically offered competition. Using our University initials (T.U.T.) as a motif, this seal energetically expresses the originality of our students in the form of waves who study the research and development of practical techniques.

# Master technology, Create technology

## Basic philosophy

The mission of Toyohashi University of Technology (TUT) is to conduct research and education in technological science, developing new technologies through scientific inquiry.

Based on this mission, TUT targets new graduates from technical colleges and high schools for enrollment, and with its graduate school emphasis, TUT conducts research in technological science, fostering practical, creative, and leading engineers and researchers as it forges a path toward a new era.

Moreover, TUT holds social diversity in high esteem and works to enhance collaboration with the local community. Through these efforts, TUT strives to be a top-class engineering university that is open to the world.



## Communication mark

This mark was adopted to widely express the philosophy and mission of our university. It is used in a variety of formats as a core element of visual communications.

The concept of the design of the communication mark is "Education by strong power (personnel) that supports world industry". The shape comprises of two 'Ts', representing the initial letters of Toyohashi and Technology, in red and black colors. The red color means "foundation" and "humanity" and the black color means "expert" and "technical capability". The overlapped Ts forms a large stem, expressing that excellent personnel will be nurtured who will support world industry. The Logo type indicates sincere impression toward education and expresses firm trust.

# Globalization of Technology and Science

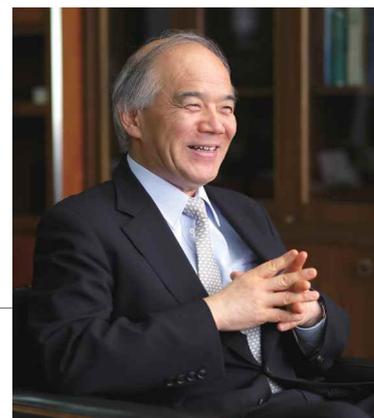
— The challenge for Toyohashi University of Technology —

President

**Takashi Onishi**

Profile

President Onishi completed his doctoral course in Engineering at Tokyo University in 1980 (Doctor of Engineering). He was appointed as President of Toyohashi University of Technology in 2014 and also holds the post of President of the Science Council of Japan.



This year marks my second year as president of Toyohashi University of Technology. I am deeply grateful to all the people, both on and off campus, who have supported me during the past year. Thanks to their efforts, we at the university were able to successfully carry out our educational, research-related, and social activities last year.

In particular, we have taken an even bolder step in our journey towards internationalization thanks to having been selected last year as one of the 37 public and private universities nationwide that will be a part of the Top Global University Project.

The university aims to take advantage of one of our distinctive characteristics, namely the many technical college (“kosen”) graduates who bring their passion for engineering to their study here. Also we want to work with our faculty to make continual innovations and progress towards the following goals which we believe will help establish TUT amongst the ranks of world-class engineering universities.

First, we will take our campus-wide internationalization project to a higher level. By leveraging our educational base in Penang, Malaysia and the Top Global University Project, we will make further progress in our efforts, such as increasing our proportion of international students and creating a bilingual campus. We intend to stand on the front line of the internationalization of Japanese society. We will continue to create a multicultural campus where anyone can freely study to better themselves, regardless of whether they come from different countries, regions, or ethnic groups.

Second, we will endeavor to interact with the local community through the multiple channels of our academic-social collaborations so that we can effectively use the particular resources we have at the university for the sake of social development. Because our region faces concerns about damage from a major Nankai Trough earthquake, we, as a regional base, will contribute to the creation of a safe society that can feel at ease in terms of disaster prevention and mitigation. Furthermore, we will also continue to apply engineering and IT technologies in the fields of agriculture and bioresources.

Third, we will enhance and bolster our dominance as a research university. In particular, the activities at the

Electronics-Inspired Interdisciplinary Research Institute will further raise our research standards in the fields of semiconductors and sensors to internationally respected levels, and will create a body of research through its collaboration with other research and development centers on and off campus by being active in applied semiconductor and sensor research and in other joint industrial-academic research endeavors.

Fourth, in terms of education, we will promote the training of innovative engineers that will be active globally, and develop a system at the Penang campus we launched last year for long-term internships. During these internships interns will have the opportunity to engage in problem solving, which will continually expand our undergraduate and predoctoral curricula. This is all meant to further enhance TUT’s mission to train kosen graduates to be practical, creative, and influential professional engineers and researchers. Furthermore, we will offer lectures from faculty in English to continue the university’s transition towards bilingual education.

Fifth, we will challenge our operations and management staff to make systematic innovations that achieve the seemingly paradoxical challenge of embracing the virtues of both continuity and flexibility of movement among our faculty and staff. Specifically, through our newly introduced tenure track system, which is unique to TUT, we will endeavor to set up a system that provides opportunities to many different researchers by increasing mobility, thus allowing us to securely lay down the foundation of an organization that is devoted to research. Also, we will continue to engage in bottom-up discussions under my leadership, as university president, to develop action plans for our on-campus administration.

In the context of achieving these goals, the most important point is that TUT remains true to its original spirit, as a seat of education and research where open discussion is free and easy and researchers can feel free to develop their research according to their inspiration, so that we all may enjoy the pleasures of education and research. With this purpose in mind, it is essential that we fully embrace an intellectual and healthy campus lifestyle where we help each other in our roles as faculty, staff, undergraduate students, and graduate students. I will also strive to create such a campus together with all of the executives, faculty, staff, and students.

# History

- 1974 ● Establishment of "Graduate School of Science and Technology (tentative name)" in Toyohashi city was decided.
- 1976 ● Opening of Toyohashi University of Technology  
Inauguration of the first president Yoneichiro Sakaki
- 1977 ● Commencement of Undergraduate Courses: Energy Engineering, Electrical and Electronic Engineering, Information and Computer Sciences, Materials Science, Architecture and Civil Engineering
- 1978 ● Establishment of Language Center  
Inaugural entrance ceremony
- 1980 ● Commencement of Master's Course in Graduate School of Engineering
- 1984 ● Inauguration of the second president Namio Honda
- 1986 ● Commencement of Doctoral Course in Materials System Engineering and Systems and Information Engineering within the Graduate School of Engineering
- 1987 ● Commencement of Doctoral Course in Integrated Energy Engineering within the Graduate School of Engineering
- 1988 ● Establishment of Faculty of Information and Computer Sciences at the undergraduate level
- 1990 ● Inauguration of the third president Shinichi Sasaki
- 1991 ● Establishment of Information and Computer Sciences as a Master's Course in Graduate School of Engineering
- 1993 ● Establishment of Faculty of Ecological Engineering
- 1995 ● Reorganized Doctoral Courses in Graduate School of Engineering: Establishment of Mechanical and Structural System Engineering, Functional Materials Engineering, Electronic and Information Engineering, Environmental and Life Engineering
- 1996 ● Inauguration of the fourth president Keishi Goto  
Energy Engineering Course renamed as Mechanical Engineering course
- 1997 ● Establishment of Ecological Engineering Program for Master's Course in Graduate School of Engineering
- 2000 ● Commencement of Master's Course given in English
- 2001 ● Establishment of International Cooperation Center for Engineering Education Development (ICCEED)
- 2002 ● Inauguration of the fifth president Tatau Nishinaga  
Establishment of International Student Center
- 2004 ● Established "National University Corporation" at Toyohashi University of Technology
- 2008 ● Inauguration of the sixth president Yoshiyuki Sakaki
- 2010 ● Reorganized Undergraduate and Master's Courses: Mechanical Engineering, Electric and Electrical Information Engineering, Computer Science and Engineering, Environmental and Life Sciences, Architecture and Civil Engineering  
Merged Language Center and International Student Center into Center for International Relations (CIR)
- 2011 ● 35th Commemoration Anniversary of Toyohashi University of Technology and 10th year commemoration of ICCEED
- 2012 ● Reorganized the Doctoral Courses  
Selected for National University Reform Enhancement Project
- 2013 ● Establishment of Center for International Education (CIE)  
Establishment of TUT-USM Penang  
Selected for Program for Leading Graduate Schools
- 2014 ● Inauguration of the seventh president Takashi Onishi  
Selected for Top Global University Project



Yoneichiro Sakaki



Namio Honda



Shinichi Sasaki



Keishi Goto



Tatau Nishinaga



Yoshiyuki Sakaki



Takashi Onishi

## Board members and executives



**Akira Ohgai**

- **Title**  
Executive Trustee, Vice President (General Affairs)  
Professor
- **Fields of Research**  
Urban and Regional Planning
- **Degree**  
Doctor of Engineering (Kyushu University)



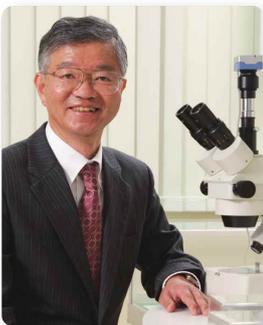
**Mitsuteru Inoue**

- **Title**  
Executive Trustee, Vice President (Educational Affairs)  
Professor  
Head of Organization for Leading Graduate School Program
- **Fields of Research**  
Electronics  
Magnetics
- **Degree**  
Doctor of Engineering (Toyoashi University of Technology)



**Akifumi Suzuki**

- **Title**  
Executive Trustee,  
Director-General for Administration



**Makoto Ishida**

- **Title**  
Vice President (Research Affairs)  
Professor  
Director of Electronics-Inspired Interdisciplinary Research Institute (EIRIS)  
Director of Research Administration Center (RAC)
- **Fields of Research**  
Semiconductor devices, materials and IC  
Smart micro-sensor chips  
New devices with epitaxial Al<sub>2</sub>O<sub>3</sub> on Si
- **Degree**  
Doctor of Engineering (Kyoto University)



**Kazuhiko Terashima**

- **Title**  
Vice President (Mid-term Planning and Evaluation)  
Professor
- **Fields of Research**  
Control Engineering  
Robotics  
Casting Automation and FA
- **Degree**  
Doctor of Engineering (Kyoto University)



**Takanobu Inoue**

- **Title**  
Executive Presidential Advisor (Special Missions)  
Professor
- **Fields of Research**  
Water Environment Engineering  
Sanitary Engineering
- **Degree**  
Doctor of Engineering (Hokkaido University)



**Kunihiro Hara**

- **Title**  
Executive Presidential Advisor (Industry-Academia Collaboration)  
Project Professor  
Research Administrator  
Deputy Director of Research Administration Center (RAC)
- **Fields of Research**  
Semiconductor Materials  
Semiconductor Devices, Anisotropics: Science and Technology of Anisotropy  
Methodologies of Research and Development  
Technology Management
- **Degree**  
Doctor of Engineering (Nagoya University)

Board Members	
President	Takashi Onishi
Executive Trustee, Vice President (General Affairs)	Akira Ohgai
Executive Trustee, Vice President (Educational Affairs)	Mitsuteru Inoue
Executive Trustee (Director-General for Administration)	Akifumi Suzuki
Auditor	Nobuyasu Mizutani
Auditor	Momoyo Ishikawa

Vice Presidents	
Research Affairs	Makoto Ishida
Mid-term Planning and Evaluation	Kazuhiko Terashima

Executive Presidential Advisors	
Special Missions	Takanobu Inoue
Industry-Academia Collaboration	Kunihiko Hara

Presidential Advisors	
Public Relations	Michiteru Kitazaki
Facility, Safety and Health Affairs	Shoji Nakazawa
Promotion of University-Community Partnership Programs	Hiroyuki Shibusawa
Information Affairs	Hitoshi Isahara
International Affairs	Atsunori Matsuda
Strategic Research Planning	Masanobu Izaki
Objectives and Evaluation	Shinichi Itsuno
Technical College Liaison	Kazuaki Sawada
Student Support Services	Kyoji Umemura
Gender Equality	Hiromi Nakano
Strategic Analysis	Seiji Iwasa
Education Strategic Planning	Mitsuo Fukuda
Entrance Examination Strategic Planning	Takayuki Shibata
40th Anniversary Project	Saburo Takana

## Administration Bureau

Director-General	Akifumi Suzuki
Vice Director-General	Motohisa Tanaka
Director, Presidential Strategy Planning Division	Kazuya Yamauchi
Director, General Affairs Division	Hiroshi Hagihira
Director, Finance Division	Hideshi Kobayashi
Director, Research Support Division	Hideya Uematsu
Director, Facilities Division	Shouichi Shibuya
Director, Educational Affairs Division	Yuji Ito
Director, Student Affairs Division	Tetsuo Matsumoto
Director, Entrance Examination Division	Hiroshi Uenishi
Director, International Affairs Division	

## Chairs

Department of Mechanical Engineering	Masahiro Fukumoto
Department of Electrical and Electronic Information Engineering	Akihiro Wakahara
Department of Computer Science and Engineering	Shigeki Nakauchi
Department of Environmental and Life Sciences	Noriyoshi Kakuta
Department of Architecture and Civil Engineering	Kinya Miura
Institute of Liberal Arts and Science	Mitsuteru Inoue

## Chairs of Doctoral Course

Mechanical and Structural System Engineering	Shozo Kawamura
Functional Materials Engineering	Noriyoshi Kakuta
Electronic and Information Engineering	Hirofumi Takikawa
Environment and Life Engineering	Yuzuru Miyata

## Electronics-Inspired Interdisciplinary Research Institute (EIIRIS)

Director, EIIRIS	Makoto Ishida
Director, Venture Business Laboratory	Kazuaki Sawada
Director, Incubation Center for Venture Business	Kazuaki Sawada

## Institute for Global Network Innovation in Technology Education (IGNITE)

Director, IGNITE	Mitsuteru Inoue
Director, International Cooperation Center for Engineering Education Development (ICCEED)	Naohiro Hozumi
Director, Center for International Relations (CIR)	Hiroyuki Daimon
Director, Center for International Education (CIE)	Atsunori Matsuda

## Organization for the Development of Innovative Research and Technology

Director, Organization for the Development of Innovative Research and Technology	Makoto Ishida
Director, Cooperative Research Facility Center	Masanobu Izaki
Director, Research Center for Future Vehicle City	Takashi Ohira
Director, Research Center for Collaborative Area Risk Management (CARM)	Taiki Saito
Director, Research Center for Agrotechnology and Biotechnology	Takanobu Inoue
Director, Center for Human-Robot Symbiosis Research	Kazuhiko Terashima

## Organization for the University Library and Computer Center

Director, Organization for the University Library and Computer Center	Mitsuteru Inoue
Director, University Library	Akira Ohgai
Director, Information and Media Center	Hitoshi Isahara
Director, Health Care Center	Kazuhiko Terashima

## Number of staffs

As of May, 2015

Board Members		
President	1	6
Executive Trustee	3	
Auditor	2	
Faculty Staff		
Professor	80	241
Associate Professor	74	
Lecturer	16	
Assistant Professor	65	
Research Associate	6	
Administrative Staff		
Administrative Staff	115	145
Technical Staff	26	
Nursing Staff	1	
Research Administrator	3	
TOTAL		392

## 1 Fostering advanced engineers and innovative human resources

While students from technical colleges are the university's primary target recruitment pool, Toyohashi University of Technology also accepts freshmen from both regular and industrial high schools. Through a unified undergraduate to graduate education, TUT trains advanced engineers equipped with the outstanding skills in technological development needed to drive industry in Japan, as well as innovative human resources equipped with the broad perspectives, flexible thinking, and wealth of scholarship needed to conduct the research and development that will blaze a trail to the global era.

## 2 Reorganized as a new, future-oriented education and research organization fit to respond to societal and industrial changes in the era of globalization

The Faculty of Engineering and the Graduate School of Engineering were reorganized in academic year 2010 around the two pillars of cutting-edge technology fields that can support key industries and those that can support sustainable social development. Furthermore, TUT established the Institute of Liberal Arts and Science to incorporate liberal arts education so that the university can train engineers who not only are highly specialized, but also have a broad perspective and can flexibly respond to social changes.

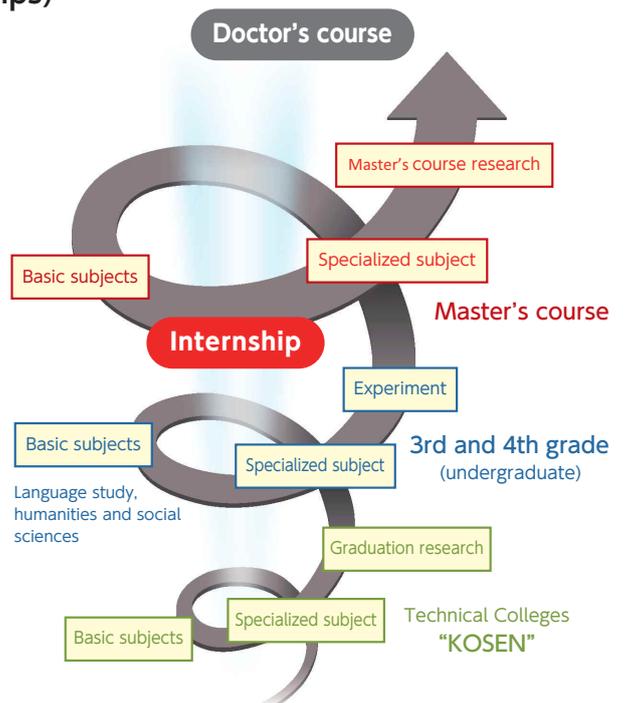


## 3 Distinctive education (Spiral-up curriculum, Mandatory internships)

A major feature of TUT's education is its "spiral-up curriculum". In this curriculum, students who studied under specific technical instruction (basic and specialized) in their first and second years of undergraduate education and technical college will repeat the subjects from their third year with advanced approaches in order to accumulate further competence in their basic and specialized education, creating a spiral-like education.

In their fourth undergraduate year (before advancing to graduate school), students will undertake long-term internships in the business sector, and through their experiences in dealing with problems as a working engineer, they will come to understand the meaning of their education, and how the master's program is meant to create practical, creative, and innovative engineers.

In this way, TUT is able to nurture students who understand science and have a deep interest in technology due to their repetition of basic and specialized education and their practical training in the work place.



## 4

### **An educational system focused on postgraduate education and research**

The business sector is moving towards a focus on hiring engineering students who have completed their master's degrees. Toyohashi University of Technology, with its integrated undergraduate and postgraduate education, has a large capacity for students in its graduate school's master's program, and provides a path of advancement to the master's program for those students who have suitable abilities. Additionally, there is enough faculty to meet the needs of postgraduate education, so the student-faculty ratio is considerably smaller when compared to other universities, which allows TUT to offer small-group instruction that is highly dense and productive.

## 5

### **Research university (Foundational research and research in cutting-edge fields)**

In academic year 2013 Toyohashi University of Technology, was selected to receive special funding by the Program for Promoting the Enhancement of Research Universities in recognition of its status as a university that performs world-class, outstanding research. TUT aims to promote creative fields of advanced interdisciplinary research based on electrical engineering and informatics, practical technological fields such as mechanical and materials engineering to support key industries, and cutting-edge research in fields related to life and the environment. In doing so, TUT aspires to become a hub for the promotion of innovative, boundary-breaking interdisciplinary research that turns traditional problem-solving engineering into value-creating engineering that can produce new social worth.

## 6

### **Collaboration with Kosen colleges**

While promoting educational and research exchanges with technical college instructors, Toyohashi University of Technology conducts experience-based training for their fourth and fifth year students and graduates. TUT also maintains a joint curriculum with technical colleges to provide education for transfer students from their matriculation to their studies, on to graduate school, and until they secure employment and become leading engineers.

## 7

### **Active international relations**

As a globally focused university, Toyohashi University of Technology sends Japanese students abroad, accepts international students, and promotes joint international research and personnel exchanges through collaborations with its overseas education base established in Penang State, Malaysia and other affiliated exchange schools. These activities are mainly centered on the area of Southeast Asia, where we have a flourishing record of exchange projects.



## 8

### **Varied industry-academia-government collaboration and cooperation with the local community**

One of the missions of Toyohashi University of Technology since its opening is to form a base for industry-academia collaboration through joint research with corporations. TUT's successful cooperation with the Japanese government and the local business sector can be seen in the high ratio of patent applications to academic staff as well as the income derived from patent rights. TUT promotes projects to tackle problems faced by Aichi Prefecture and the surrounding region using the collective intellect of the entire university, as well as projects where working people return to school to take advantage of the successes of programs such as the "Integrated Circuit (LSI) Technology Lectures" and the "Advanced Plant Factory Management Training Program".

## Education

### Top Global University Project FY2014-FY2023

## Creative campus for nurturing global technology architects

### A need for leading engineers active on the global stage

As the world economy becomes increasingly globalized, it is essential that Japan makes its universities more competitive internationally, and develops human resources who can make an impact in various fields on the global stage with a view to continuing such development. Toyohashi University of Technology accepts technical college students and many young people from around the world, and fosters leading engineers who will be active on the international stage. The university aims to develop a university-wide curriculum for engineers that goes beyond the barriers of language and culture in order to create a campus that plugs seamlessly into the global academic community.

### Top Global University Project

Toyohashi University of Technology has been selected as one of 37 “top global universities” by the Japanese government, which aims to promote the internationalization of Japanese universities.

Having identified “global technology architects” as the type of human resource required by the society of the future, TUT aims to foster such talent through realizing a “multicultural and global campus”, where domestic and international students, faculty members, and university staff improve themselves by overcoming language and cultural barriers.

As a step towards that goal, the university has established the “Global Technology Architect Course”, and is recruiting young people from all over the world who wish to become leading engineers on the wider global stage. The course will begin by accepting third-year transfer students in April 2017, and first-year students the following year.

<http://sgu.tut.ac.jp/eng/>

### ■ Creative campus for nurturing global technology architects

#### A. Global technology architects course

3 initiatives to transform Toyohashi Tech

- English-Japanese bilingual lectures
- Developing language skills in both English and Japanese
- Diversification of the student body

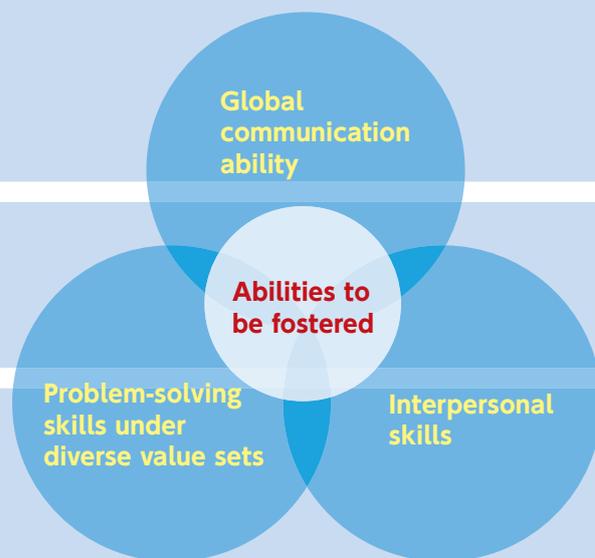
#### B. Multicultural boarding house

42% of all students live, eat, and study in an international environment on campus

#### C. Global capability upgrade of all students, faculty members and university staff

Creating programs which establish a two-way connection with the global stage, facilitating the borderless interaction of students, faculty members and university staff between Toyohashi Tech and the world

### Multicultural global campus



### Global technology architects

Leading engineers with advanced scientific knowledge and technological skills that enable them to identify globally important problems, grasp their overall nature, and find effective solutions for them.

## National University Reform Enhancement Promotion Project FY2012-FY2017

Tri-institutional collaborative/cooperative educational reform project  
 ~ Fostering globally-engaged, practical and innovative engineers ~

### The establishment of an overseas education base in Penang, Malaysia

As a part of the project for fostering globally engaged engineers, Toyohashi University of Technology has established an overseas education base (TUT-USM Technology Collaboration Centre) in Penang, Malaysia, at the heart of the booming ASEAN region. The overseas education base hosts global education programs as well as international meetings in order to advance the university's global human resource development in engineering. Outstanding examples of such programs include the overseas internship training program and short-term exchange programs for our students in cooperation with the industries and university in Penang which have been newly developed and implemented as effective global programs. In addition, Toyohashi University of Technology has entered into a partnership with Queens College, the City University of New York (QC) to facilitate such activities as the global FD (Faculty Development) project. This project, recognizing that faculty members are the key to fostering future global engineers, aims to improve the professional skills and knowledge of the faculty of the three institutions\* in instruction in English.

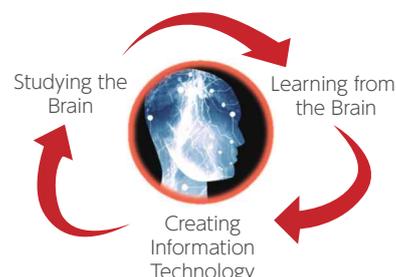


\*Three Institutions: Toyohashi University of Technology, Nagaoka University of Technology, and National Institute of Technology (KOSEN)

## Program for Leading Graduate Schools (Multidisciplinary (Information)) FY2013-FY2019

### Fostering "Brain information architects"

Toyohashi University of Technology has implemented a doctoral program for developing "Brain Information Architects". The brain information architect is an indispensable global leader and expert who explores and understands information about the brain to an extremely advanced level. They should create new information and sensing technology for the advancement of brain science, and extend brain sciences by full use of developed information technology, then use this study to create brain-inspired innovative information technologies. By repeating this training cycle, it is expected that brain information architects will be able to develop information technology into a new scientific field.

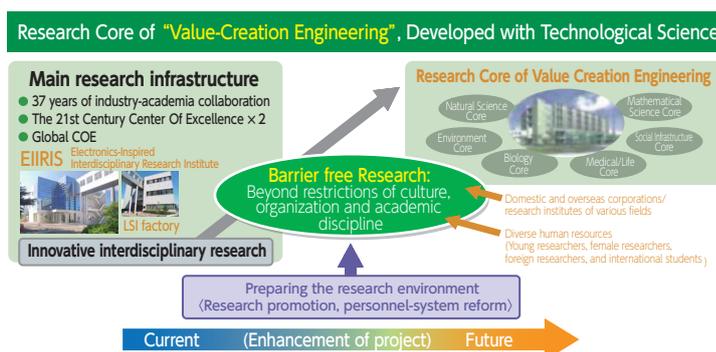


## Research

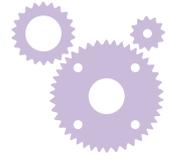
## The Program for Promoting the Enhancement of Research Universities FY2013-FY2022

### Striving for further development as a research university that produces value and outstanding world-class research

Toyohashi University of Technology aims to create an innovative and future thinking foundation from which it can promote the implementation of innovative research and its impact in society by evolving from the traditional "problem-solving model of engineering" to a "value-producing model of engineering". That view is based on a resolute belief that engineers can create new values by combining disparate fields. The university's Research Administration Center (RAC), which was created as a result of this project, plays a central role in maintaining a support system and providing an environment that accelerates this goal by helping to break down the barriers between fields and organizations, deepen connections with international and domestic corporations and research institutions, invite international top-class people from a variety of backgrounds, institute a new human resources system, coordinate multinational research, approach intellectual property strategically, hold international symposiums, and maintain regular communication with TUT's partners abroad.



# Department of Mechanical Engineering

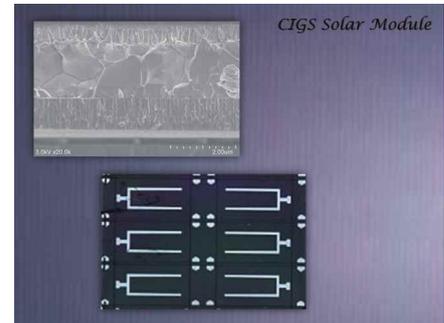


## Introduction

The Department of Mechanical Engineering is aware of the important role of mechanical engineering needs to play in areas such as energy and environmental systems, materials, transportation, robotics, manufacturing, information technology, biomechanics, and health care - many of which are national priorities.

The Departments of Mechanical Engineering and Production Systems Engineering have recently merged to better respond to the needs of society. The integration produced a rich portfolio of research and academic activities in areas ranging from nano-scale processing to health-care robotics up to supply chain management. As such, the new department offers a diverse range of academic programs in 4 basic areas of specialization: Mechanical Systems Design, Materials and Manufacturing, Systems Control and Robotics, and Energy and Environment.

The mission of the Department of Mechanical Engineering at TUT is to prepare students with the knowledge and ability to improve, evaluate, design and control safe, sustainable, and cost-effective technologies in order to make innovative and useful contributions to humanity. With this in mind, we seek to enhance both research and education and inspire new generations to create breakthrough solutions to serve all people.



## Courses

### Mechanical Systems Design Course

The Mechanical Systems Design Course comprises Material and Structural Mechanics Laboratory, Machine Dynamics Laboratory, Frontier Forming System Laboratory, and MEMS/NEMS Processing Laboratory, and deals with solid mechanics, machine dynamics, machine design, manufacturing processes, micro/nanomachining, biomechanics, etc.

### Materials and Manufacturing Course

The Materials and Manufacturing Course comprises Materials Function Control Laboratory, Development and Evaluation of High Strength Materials, Thin Film Laboratory, and Interface and Surface Fabrication Laboratory, and deals with metallic materials, non-metallic materials, evaluation and failure prevention of materials, joining processes, etc.

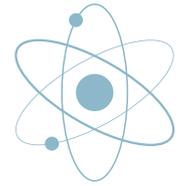
### System Control and Robotics Course

The System Control and Robotics Course comprises Robotics and Mechatronics Laboratory, Instrumentation System Laboratory, System and Control Engineering Laboratory, and Systems Engineering Laboratory, and deals with control engineering, measurement and instrumentation engineering, production systems engineering, mechatronics engineering, robotics engineering, etc.

### Environment and Energy Course

The Environment and Energy Course comprises Energy Conversion Engineering Laboratory, Thermo-Fluid Engineering Laboratory, Natural Energy Conversion Science Laboratory, and Energy Conservation Engineering Laboratory, and deals with thermodynamics, fluid mechanics, heat transfer, fluid power systems, multi-phase flow, combustion engineering, etc.

# Department of Electrical and Electronic Information Engineering



## Introduction

The Department of Electrical and Electronic Information Engineering is comprised of four courses: Electronic materials, Electrical systems, Integrated electronics, and Information and communication systems. The aim of the graduate and under graduate courses of the Electrical and Electronic Information Engineering is to educate and train students to yield engineers and researchers of the next generation for advanced core fields of electronic materials, electrical engineering, integrated electronics, and information communication technology.



## Courses

### Electronic Materials Course

This Electronic Materials Course trains and develops students by providing broad fundamental knowledge and technologies of substances, materials, processing, and instrumentation, which are the foundations of electrical and electronic information engineering. Certificated students can perform active and important roles as practically-minded and creative research-based engineers in the various industrial areas including the electrical and electronic industries, chemical and material industries, the information network area, home information appliances, vehicles, robotics, and medical welfare.



### Electrical Systems Course

Students learn fundamental knowledge and technologies of generation, transportation, control, storages, measurements, and applications of electrical energy, based on understanding the importance of electrical energy for a sustainable evolving society. Students trained in this course will perform important roles as engineers and researchers in the various industrial fields including environment and energy, electrical and electronics, traffic and communications, materials and nanotechnology, machine and mechatronics, biology, medical care, primary, and tertiary industries.

### Integrated Electronics Course

The campus, 'LSI factory', which provides a great opportunity to fabricate in-house integrated-circuit based devices, helps students acquire fundamental knowledge and techniques on semiconductor devices, CMOS, MEMS, analog circuits, optoelectronics, micro-and nano-scale sensors, and their interdisciplinary applications. Through the course program, our students become highly-skilled engineers and researchers who are acknowledged for their contributions to a wide range of fields including the semiconductor industry, information technology, robot, bio, and medical research.

### Information and Communication System Course

The Information and Communication Technologies (ICT) is the backbone of industries that supports our 21st-century society and is continuing to play more significant roles. In this course, students learn broad and profound science and technologies, from hardware layers such as functional integrated circuits, sensors, and smart antennas, up to communication system, networks, and applications. Students are expected to contribute to industries of a variety of fields such as communications, broadcasting, electric devices, system development, medical welfare, transportation, ecology, energy, cargo, finance, insurance, or other related businesses after graduation.

# Department of Computer Science and Engineering



## Introduction

The Department of Computer Science and Engineering educates and conducts research covering wide areas of information science, from fundamental technologies such as software design, object oriented programming, computer architecture, database system, discrete mathematics, and Internet technologies, which support infrastructures of the highly information-oriented society, to applied and advanced technologies including multimedia, robotics, computer vision, data mining, human-machine interface design, bioinformatics, computational science, life science, distributed computing, and theoretical computer science.



To achieve our mission, we provide attractive educational programs for students to learn from the basics to advanced technologies related to computer science and engineering. Through our educational programs students are expected to become leading engineers and researchers who are highly motivated and have practical, creative, and management skills to drive an advanced next-generation information society in all industrial fields.



## Courses

### Computer and Information Science Course

The Computer and Information Science Course is for students who wish to attain a solid understanding of traditional and fundamental knowledge that conforms to world-wide computer science education. Therefore, mandatory classes include computer architecture, operating systems, compiler technology, embedded systems, and distributed systems. Students of this course are expected to become leading engineers and researchers who will play central roles in the development of next generation computer technologies in software, hardware, Internet, and human-machine interfaces, having excellent state-of-the-art knowledge, creativity, and management skills.

### Information and Systems Science Course

The Information and Systems Science Course is for students who wish to excel in applied computer technologies to aid intelligent human life. Therefore, mandatory classes include human information processing, complex systems, intelligent informatics, brain and cognitive science, bioinformatics, and simulation technologies. The students of this course are expected to become leading engineers and researchers in a wide variety of industries ranging from the natural sciences, social sciences, environmental science, bio-engineering, medical science, as well as information and communication technologies, having excellent state-of-the-art knowledge, creativity, and management skills.

# Department of Environmental and Life Sciences



## Introduction

The Department of Environmental and Life Sciences offers rich educational curricula on environmental science, life science, and applied chemistry to nurture students with outstanding scientific ability and research skills to be recognized as leading scientists and engineers. Such include the capability of playing an active role in developing pioneering technology that is necessary in building a sustainable society and also conducting pioneering research in the field of environmental science, life science, and applied chemistry. Furthermore, our department aims to nurture students to attain global competence so that they can play important roles as global leaders.



## Courses

### Sustainable Development Course

The Sustainable Development Course comprises two research groups: Advanced Environmental Technology and Ecological Engineering. In this course, students have the opportunity to learn electronics, material engineering, chemical engineering, ecological engineering, and civil engineering. Graduates trained in this course are expected to become worldwide leading engineers and scientists who can contribute to the sustainable development of human activities.

### Life and Materials Science Course

The Life and Materials Science Course is comprised of two research groups: The Bioscience and the Biotechnology group and Applied Chemistry group. In this course, students have the opportunity to learn life science, biotechnology, chemistry, polymer science, and material engineering. Graduates trained in this course are expected to become worldwide leading engineers and scientists who can play active roles in fields from chemistry to life science.

# Department of Architecture and Civil Engineering



## Introduction

The department of Architecture and Civil Engineering is committed to educating students so that they develop professional skills to plan, design, and manage buildings and infrastructures in cities and rural areas in order to maintain safe, comfortable, and high-quality living environments.

The undergraduate program prepares students to pursue both basic and professional knowledge as well as application ability that designers and engineers require. The program offers practical education based on architecture and civil engineering. In the freshman and sophomore years, students in small sized classes are expected to acquire not only a basic knowledge of liberal arts, architecture, and civil engineering, but also professional skills through the subjects of Introduction to Engineering, Practice of Architectural Design, and Project Study, and so on. In the junior and senior years, students will be required to take a compulsory course either from the Architecture and Building Science course or the Civil and Environmental Engineering course that are made up of specialized subjects, respectively.



The graduate program gives students an education that will enable them to determine the research issues, find their possible solutions, and realize good results in their research work.

Besides, with collaborating Research Center for Collaborative Area Risk Management (CARM), all students are provided valuable experiences for promoting researches that contribute to a reduction in the risk area not only natural disasters but also a large risk including every-day life and environmental perspective.

## Courses

### Architecture and Building Science Course

The Architecture and Building Science Course aims to educate students to become practical engineers by enabling them to acquire the skills of primary professional fields associated with architecture, including architectural design and planning, urban and regional planning, architectural history, building services, building environment, and architectural structure, including basic knowledge and skills related to the field of civil and environmental engineering. The Architecture and Building Science Course is mainly made up of six specialties.

### Civil and Environmental Engineering Course

The Civil and Environmental Engineering Course aims to educate students to become practical engineers by enabling them to acquire the skills of primary professional fields associated with civil and environmental engineering, including structural engineering, hydraulics, geotechnical engineering, urban and traffic planning, and environmental system including basic knowledge and skills related to the fields of architecture. The Civil and Environmental Engineering Course is mainly made up of four specialties.

# Institute of Liberal Arts and Sciences



## Introduction

Science and technology are important aspects of culture in that they have helped enrich our lives and have played an important role in the formation and development of modern society. Nevertheless, today's increasingly complex world poses fresh challenges to us such as environmental issues. To address these challenges and to ensure the continued prosperity of human society, further scientific and technological development is warranted.

Against this backdrop, there is a demand for leading engineers who are well versed in the environment, society, and human needs, who can understand science and technology in relation to human activity, and who can formulate their opinions in conjunction with these complex issues.

The Institute of Liberal Arts and Sciences is designed to develop such engineers by offering a wide range of general undergraduate classes in the humanities, social sciences, and science and technology, including physical education and foreign languages. These classes are aimed at offering a broad range of knowledge as well as instilling an international perspective in our students. The master's program offers courses in humanities and social sciences, both of which are designed for students to form a broad academic foundation for further studies. Our faculty members teach in both the doctoral program and master's program.

Finally, Japanese language and culture programs that are made available for international students in cooperation with the Center for International Relations constitute another major feature of the programs offered at the Institute of Liberal Arts and Sciences.

## Fields of Study

### Humanities

Together with the Center for International Relations, this field focuses on educating students in humanities, communications, linguistics, and foreign languages. In order to train engineers with socially broad perspectives, the institute utilizes research in fields that include science, philosophy, literature, history, art, languages and cultural studies of Japan, Asia and the world.

### Natural Science and Basic Engineering

Together with the Health Care Center, this field focuses on educating students in natural sciences mainly in mathematics, physics and chemistry, and in health and sports sciences. In addition, by collaborating with the Faculty of Engineering, studies relating to robotics, material science, and life sciences are also carried out. Thus, seamless and in-depth studies of natural sciences are provided.

### Planning / Management Science

The focus of this field is social infrastructure planning, which is based on economic analysis (theoretical and quantitative), financial theory, environmental economics and leading technologies. Specifically, the subjects that are studied include economics (micro/macro, urban/regional, environmental and computational) and financial engineering.

### Communication

To ensure the education of advanced engineers with the required communication skills, this field features study in four foreign languages (English, German, French and Chinese) as well as Japanese studies for international students. There are also courses on communication, providing opportunities to learn the mechanisms and functions of linguistics.

## EIIRIS

### ■ Electronics-Inspired Interdisciplinary Research Institute

Electronics-Inspired Interdisciplinary Research Institute (EIIRIS) is TUT's flagship research complex with the aim of producing world-class innovative research such as brain/neuro-electronics as well as tackling some of the major challenges facing mankind including climate change and aging societies.

<http://www.eiiris.tut.ac.jp/>



### ■ Affiliated Facility Venture Business Laboratory (VBL)

The purpose of VBL is to conduct original creative research and development that utilizes the graduate school's intellectual vigor, promotes the development of creative human resources capable of thriving in professional work, and facilitates venture businesses.

Further, we are critically-acclaimed for our semiconductor device and process education utilizing a LSI factory.

<http://www.vbl.tut.ac.jp/>

## Research and Education Centers

### ■ Cooperative Research Facility Center

The Cooperative Research Facility Center (CRFC) aims to support the promotion and development of education and research related to science and technology by centrally preparing, managing, maintaining and providing a range of shared equipment, such as advanced large-scale analysis and measurement equipment and machines.

<http://www.crfc.tut.ac.jp>

### ■ Research Center for Future Vehicle city

The mission of the Research Center for Future Vehicle City is to explore the possibilities of a new type of traffic system for a sustainable society. We envision a modal shift from expressways and the whole concept of future vehicles in provincial cities to seek a new transportation system suited to our aging society. We posit the idea of switching from the driver's standpoint to that of the pedestrian's standpoint in order to create a comfortable vehicle city for vulnerable road users.

<http://www.rcfvc.tut.ac.jp>

### ■ Research Center for Collaborative Area Risk Management

The Research Center for Collaborative Area Risk Management conducts research and technical development aimed at mitigating a wide range of risks linked not only to natural disasters but also taking environment and lifestyle into account. In this way we hope to help build a local community where people can live with peace of mind in safety. Also, through collaborating and cooperating with local government, industry, civic groups and so forth, it aims to enhance local disaster prevention capacity and achieve a local community that can withstand wide area disasters.

<http://ccr.ace.tut.ac.jp/carm>

## ■ Research Center for Agrotechnology and Biotechnology

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Utilizing elemental technologies and human resources in combined technology fields, the Research Center for Agrotechnology and Biotechnology works on the research and development of next-generation cutting-edge agricultural technologies that will contribute to sustainable food production and supply, as well as on the development of sophisticated technologies in the related fields of food and agriculture, biotechnology, environment and plant factories. In addition, with the goal of promoting local agriculture, the Center trains IT food and agriculture leaders, Higashi Mikawa district sixth sector industrialization (diversification of primary producers into processing and distribution) promotion workers, and cutting-edge plant factory managers with the ability to contribute to the collaboration between agriculture, commerce, industry, tourism and the promotion of sixth sector industrialization.

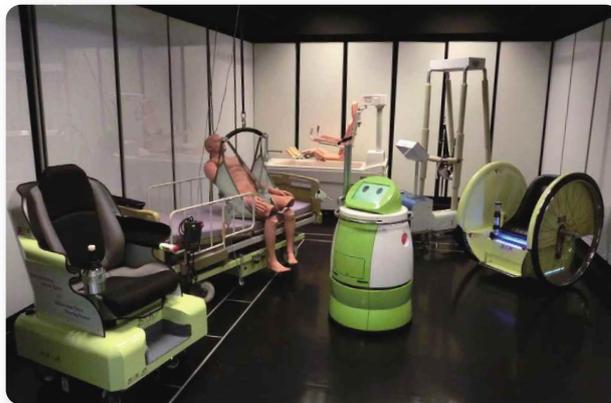
<http://www.recab.tut.ac.jp>

## ■ Center for Human-robot Symbiosis Research

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The Center for Human-Robot Symbiosis Research (CHRSR) is an organization composed of multiple research units that aim at the practical application of cutting edge advances in robot technologies in cooperation with medical institutions and business enterprises in local communities.

<http://robot.tut.ac.jp>



## ■ Information and Media Center

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The Information and Media Center (IMC) provides the computing and network foundation of the educational and research activities of the university. Its key components are the educational computer system, the high performance computing system, the user database system, and the campus network.

For educational activities such as writing reports, all students of the university can freely use computers and laser printers of the educational computer system, which are located in the computer rooms of IMC and the reading room of the university library. Two large format printers to print posters are also available in IMC.

The high performance computing system is the cluster system consisting of many x86 architecture computing nodes networked with high speed interconnection. Its software stack covers parallel compilers, parallel processing libraries, message passing libraries, and several simulation applications.

IMC also maintains the user database system, which keeps the account information of all students and staff of the university. It manages user IDs and passwords for use with the above systems as well as the library system and electronic journals.

<http://www.imc.tut.ac.jp/>

## ■ Health Care Center

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The Health Care Center conducts education and research on the health sciences. Also, through implementing various health checkups and medical and health counseling, it strives to maintain the physical and mental health of students and faculty members.

<http://www.health.tut.ac.jp/>

## IGNITE Institute for Global Network Innovation in Technology Education

In recent years, the globalization of universities has received a lot of public attention.

While there are many aspects to globalization, when it comes to research, the objective would seem to be to conduct joint research projects with overseas universities and institutes so as to make our research more competitive on the international level.

On the other hand, when considering higher education at universities, what is needed is to accept more international students from around the world so as to cultivate a better understating of Japan while at the same time exposing Japanese students to other cultures.

IGNITE was established in October 2013 to lead these efforts within Toyohashi University of Technology and to further strengthen internationalization.

IGNITE consists of three centers: the International Cooperation Center for Engineering Education Development, the Center for International Relations and the Center for International Education. We also have an Overseas Education Base in Penang, Malaysia.

<http://ignite.tut.ac.jp/>

### ICCEED

International Cooperation Center for Engineering Education Development <http://ignite.tut.ac.jp/icceed/>

ICCEED has been working on planning and operating international cooperative projects, as well as facilitating enhancement and collaboration with excellent international academic institutions.

ICCEED's role includes concluding inter-university exchange agreements and participating in the projects cooperated with overseas organizations. ICCEED promotes the comprehensive globalization of TUT as well as formulating and advancing international strategy.

### CIR

Center for International Relations <http://ignite.tut.ac.jp/cir/>

The mission of CIR is on the one hand to facilitate a greater intake of overseas students such as by providing support for learning the Japanese language, while at the same time promoting opportunities for Japanese students to work and study abroad.

The CIR will contribute to the internationalization of the campus by providing a meeting place for students of various backgrounds.

### CIE

Center for International Education <http://ignite.tut.ac.jp/cie/>

CIE administers the global education of Japanese students and the local education of foreign students from ASEAN countries through the planning and operation of education and research at the university's overseas education facilities. Moreover, through planning and implementing programs such as those geared to strengthening the global capacity of faculty members, the Center functions as an overseas hub of the university that is open to the rest of the world.

### TUT-USM Penang

Overseas education base in Penang, Malaysia <http://ignite.tut.ac.jp/cie/penang/>

The TUT-USM Technology Collaboration Center in Penang was established as an educational base thanks to a collaborative venture between Toyohashi University of Technology (TUT) and Universiti Sains Malaysia (USM). By working in co-operation with local universities and companies in Malaysia, The TUT-USM Technology Collaboration Center provides the infrastructure to help foster engineers with a global outlook.

### Overseas offices

Our university has set up overseas offices in China and Indonesia to promote activities such as student and faculty exchange and joint research.

#### TUT Indonesia Office in Institut Teknologi Bandung



Rumah F, Jl. Ganesha 15, Bandung  
40132, INDONESIA  
Phone : +62-22-250-4282  
Email : [iro@itb.ac.id](mailto:iro@itb.ac.id)

#### TUT Shenyang Office in Northeastern University



3-11 Wenhua Road, Heping District, Shenyang,  
Liaoning Province 110004, CHINA  
Phone : +86-24-8367-8101  
F a x : +86-24-8368-3825

## University library

[http://www.lib.tut.ac.jp/index\\_e.html](http://www.lib.tut.ac.jp/index_e.html)

The university library holds approximately 180,000 books, journals, papers and reference documents, etc. and has seating for 185 persons. Anybody can freely gain access to materials, and the library is open 24 hours a day to students and faculty members who hold an ID card. Services are also available for members of the public. The library is equipped with audio-visual equipment, personal computers and LAN environment, making it possible to utilize numerous electronic journals, electronic books and databases. Furthermore, the electronic academic resources in stock can be used from off-campus to support learning and research activities.



## Athletic facilities



- Gymnasium
- Athletic field
- Baseball ground
- Tennis courts
- Swimming pool
- Training gym

## Cafeteria & Shops



- Student canteen
- Commissary store
- Book store
- Cafeteria
- Hibari lounge

## Student commons



## Satellite office in front of Toyohashi station "Technos-U"



2-10 Matsuba-cho, Toyohashi, Aichi, 440-0897

## International house



- Single room ..... 40
- Couple room ..... 6
- Family room ..... 8

## Student dormitory



- Dormitory A-F
- Single room ..... 595

## Guest house "Hibari-so"



## Researcher's accommodation "Village Tempaku"



- Short stay accommodation
- Single room ..... 14

**Number of students**

As of May, 2015

**Undergraduate Program**

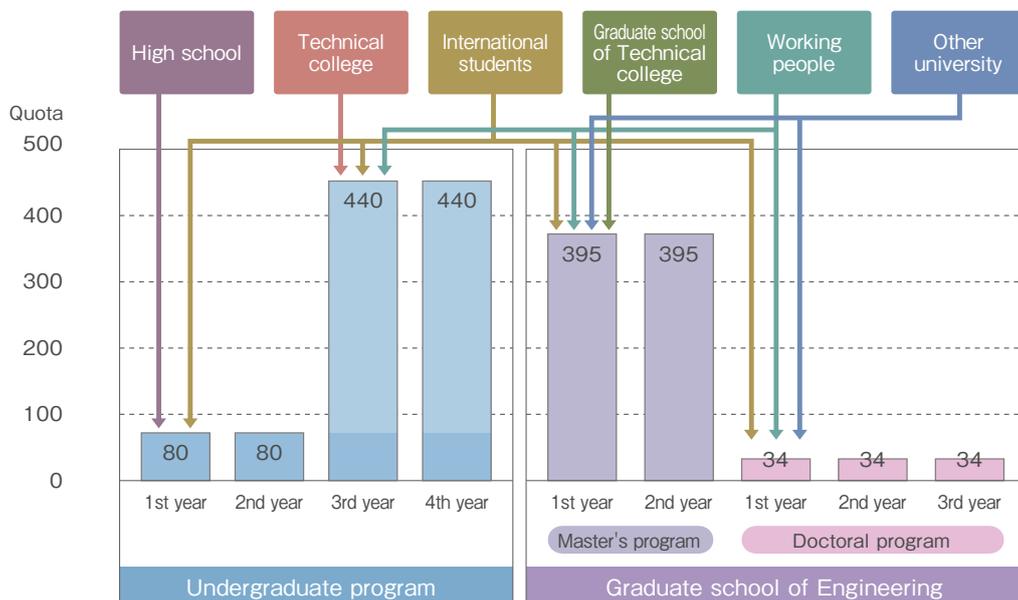
Programs	Quota					Present number of students				
	1st year	2nd year	3rd year	4th year	Total	1st year	2nd year	3rd year	4th year	Total
Mechanical Engineering	20	20	115	115	270	6	34	152	151	343
Electrical and Electronic Information Engineering	15	15	95	95	220	5	17	106	119	247
Computer Science and Engineering	15	15	95	95	220	5	16	111	101	233
Environmental and Life Sciences	20	20	75	75	190	7	17	66	82	172
Architecture and Civil Engineering	10	10	60	60	140	3	13	63	73	152
Unallocated	-	-	-	-	-	67	-	-	-	67
Electrical and Electronic Engineering	-	-	-	-	-	-	-	-	1	1
<b>Total</b>	<b>80</b>	<b>80</b>	<b>440</b>	<b>440</b>	<b>1040</b>	<b>93</b>	<b>97</b>	<b>498</b>	<b>527</b>	<b>1215</b>

**Master's Program**

Programs	Undergraduate			Present number of students		
	1st year	2nd year	Total	1st year	2nd year	Total
Mechanical Engineering	105	105	210	128	135	263
Electrical and Electronic Information Engineering	85	85	170	99	107	206
Computer Science and Engineering	85	85	170	111	101	212
Environmental and Life Sciences	65	65	130	60	70	130
Architecture and Civil Engineering	55	55	110	51	54	105
<b>Total</b>	<b>395</b>	<b>395</b>	<b>790</b>	<b>449</b>	<b>467</b>	<b>916</b>

**Doctoral Program**

Programs	Undergraduate				Present number of students			
	1st year	2nd year	3rd year	Total	1st year	2nd year	3rd year	Total
Mechanical Engineering	8	8	8	24	11	10	14	35
Electrical and Electronic Information Engineering	7	7	7	21	7	6	10	23
Computer Science and Engineering	8	8	8	24	3	4	12	19
Environmental and Life Sciences	6	6	6	18	4	2	5	11
Architecture and Civil Engineering	5	5	5	15	3	6	5	14
Mechanical and Structural Systems Engineering	-	-	-	-	-	-	1	1
Functional Materials Engineering	-	-	-	-	-	-	1	1
Electronic and Information Engineering	-	-	-	-	-	-	1	1
Environmental and Life Sciences Engineering	-	-	-	-	-	-	1	1
<b>Total</b>	<b>34</b>	<b>34</b>	<b>34</b>	<b>102</b>	<b>28</b>	<b>28</b>	<b>50</b>	<b>106</b>



## Number of International students

As of May, 2015

Countries	Undergraduate students	Graduate school students		Research students	Short-term students, etc	Total
		Master's course	Doctoral course			
<b>Asia</b>						
Malaysia	36	22	9			67
Indonesia	2	6	18			26
Vietnam	10	9	3			22
China	3	4	1			8
Mongol	4	1				5
Laos	3	2				5
Bangladesh	1	1	2			4
South Korea		1	2			3
India		2				2
Sri Lanka		2				2
Pakistan		1				1
Nepal		1				1
Thailand			1			1
Cambodia			1			1
<b>Middle East</b>						
Afghanistan		2				2
Turkey		1				1
<b>Africa</b>						
Egypt			2			2
Tunisia		1	1			2
Tanzania		1	1			2
Uganda	1	1				2
Ghana			1			1
<b>Central and South America</b>						
Peru			1			1
<b>Europe</b>						
Netherlands					2	2
Germany		1			1	2
Bulgaria				1		1
Uzbekistan			1			1
<b>Total</b>	<b>60</b>	<b>59</b>	<b>44</b>	<b>1</b>	<b>3</b>	<b>167</b>

## Career path of International students

	Graduate schools	Work in Japan	Work abroad	Returning home/ Undecided	Repeat / leave
Fourth-year Undergraduate Program	58%	6%	8%	19%	9%
Second-year Master's Program	15%	36%	9%	31%	9%
Third-year Doctoral Program	2%	20%	32%	17%	29%

(Data for Academic year 2012-2014)

**Recent examples : Employment of international graduates**

Enterprises
CANON OPTO(M)SDN.BHD
Daihatsu Motor Co., Ltd.
Fujitsu Limited
GM Uzbekistan
Hitachi, Ltd.
KDDI Thailand
Konica Minolta, Inc.
LG Electronics Incorporated
NEC Corporation
Nissan Motor Corporation
Panasonic Corporation
PANASONIC ELECTRONICS SDN BHD
Renesas Electronics Corporation
SAMSUNG ELECTRONIC COMPANY
Suzuki Motor Corporation
Toshiba Corporation
Toshiba Electronics Malaysia SDN BHD
Toyota Motor Corporation

Education / Research institutions
Bandung Institute of Technology
Bangladesh University of Engineering and Technology
Hanoi University of Science and Technology
Ho Chi Minh City University of Technology
Institute of Scientific and Technical Information of China
Kanagawa University
Kyoto University
Lampung University
Marshall University
Mongolian University of Science and Technology
Nanyang Technological University
National University of Laos
The Institute of Metal Research, Chinese Academy of Sciences
The University of Tokyo
Tohoku University
Toyohashi University of Technology
University of Chittagong
University of Science Malaysia
University of Technology Malaysia
University of the Philippines
University of Waterloo



**Academic exchange agreement**

As of May, 2015

No.	Overseas Institutions	Country / Region	Since
1	University of Delhi	India	1998
2	Indian Institute of Technology Delhi	India	2012
3	University of Chittagong	Bangladesh	2013
4	Sirindhorn International Institute of Technology, Thammasat University	Thailand	2000
5	Faculty of Engineering, Chulalongkorn University	Thailand	2007
6	Pathumwan Institute of Technology	Thailand	2013
7	Thammasat University	Thailand	2014
8	Thai-Nichi Institute of Technology	Thailand	2014
9	Ubon Ratchathani University	Thailand	2014
10	National Science and Technology Development Agency	Thailand	2014
11	Universiti Teknologi Malaysia	Malaysia	2000
12	Universiti Sains Malaysia	Malaysia	2006
13	Universiti Tun Hussein Onn Malaysia	Malaysia	2013
14	Wawasan Open University and DISTED College	Malaysia	2014
15	Institut Teknologi Bandung	Indonesia	1995
16	Universitas Gadjah Mada	Indonesia	1996
17	Syiah Kuala University	Indonesia	1997
18	Institut Teknologi Sepuluh Nopember	Indonesia	2000
19	Hasanuddin University	Indonesia	2001
20	Andalas University	Indonesia	2003
21	The University of Lampung	Indonesia	2006
22	University of Palangka Raya	Indonesia	2007
23	Tadulako University	Indonesia	2011
24	University of Brawijaya	Indonesia	2012
25	Padang Institute of Technology	Indonesia	2012
26	Electronic Engineering Polytechnic Institute of Surabaya	Indonesia	2013
27	Kyungpook National University	South Korea	1994
28	Seoul National University of Science and Technology	South Korea	1997
29	Yeungnam University	South Korea	1997
30	Korea University of Technology and Education	South Korea	1997
31	Andong National University	South Korea	2003
32	Vietnam National University -Ho Chi Minh City University of Technology	Vietnam	2004
33	University of Engineering and Technology, Vietnam National University, Hanoi	Vietnam	2010
34	The University of Danang, Danang University of Technology	Vietnam	2012
35	Ho Chi Minh City University for Natural Resources and Environment	Vietnam	2014
36	Tianjin University, School of Liberal Arts and Law	China	1995
37	Institute of Metal Research, Academia Sinica	China	1996
38	Northeastern University	China	1996
39	Tsinghua University	China	1996
40	National Chiao Tung University	Taiwan	2006
41	National Taiwan Normal University	Taiwan	2008
42	Tanta University	Egypt	1999
43	Assiut University	Egypt	2007
44	The Faculty of Engineering of the University of Auckland	New Zealand	2012
45	The University of California, Berkeley	USA	1981
46	University of Wisconsin-Madison	USA	1985
47	Queens College of the City University of New York	USA	2013
48	Instituto Politecnico Nacional	Mexico	1995
49	National University of Tucumán	Argentina	2012
50	University of Eastern Finland	Finland	2002
51	KTH, Royal Institute of Technology	Sweden	2011
52	Eindhoven University of Technology, School of Innovation Sciences	Netherlands	2012
53	Ruhr-Universitaet Bochum	Germany	2001
54	Technische Universitaet Muenchen	Germany	2003
55	Universitaet Stuttgart	Germany	2008
56	University of Franche-Comte	France	2011
57	Pierre et Marie Curie University	France	2012
58	Chimie ParisTech/ École Nationale Supérieure de Chemie de Paris	France	2014
59	M.V. Lomonosov Moscow State University, Faculty of Physics	Russia	2002
60	University of Zilina	Slovakia	1999
61	Institute of Bioorganic Chemistry and Petrochemistry of National Academy of Science of Ukraine	Ukraine	2012
62	Institute for Molecular Biology and Genetics of National Academy of Sciences of Ukraine	Ukraine	2012
63	Institute for Food Biotechnology and Genetics of National Academy of Sciences of Ukraine	Ukraine	2012
64	Institute for Applied System Analysis and the World Data Center for Geoinformatics and Sustainable Development of National Technical University of Ukraine "Kyiv Polytechnic Institute"	Ukraine	2012



Toyohashi City is located in the southeastern corner of Aichi Prefecture, and is both the cultural and industrial center of the East-Mikawa area. Toyohashi has a population of around 380,000.

Toyohashi holds the “number one in Japan” ranking for two important categories, which are the biggest port for automobile imports, and the leading agricultural supplier. Thus Toyohashi is a leading city for both Japanese industry and agriculture.

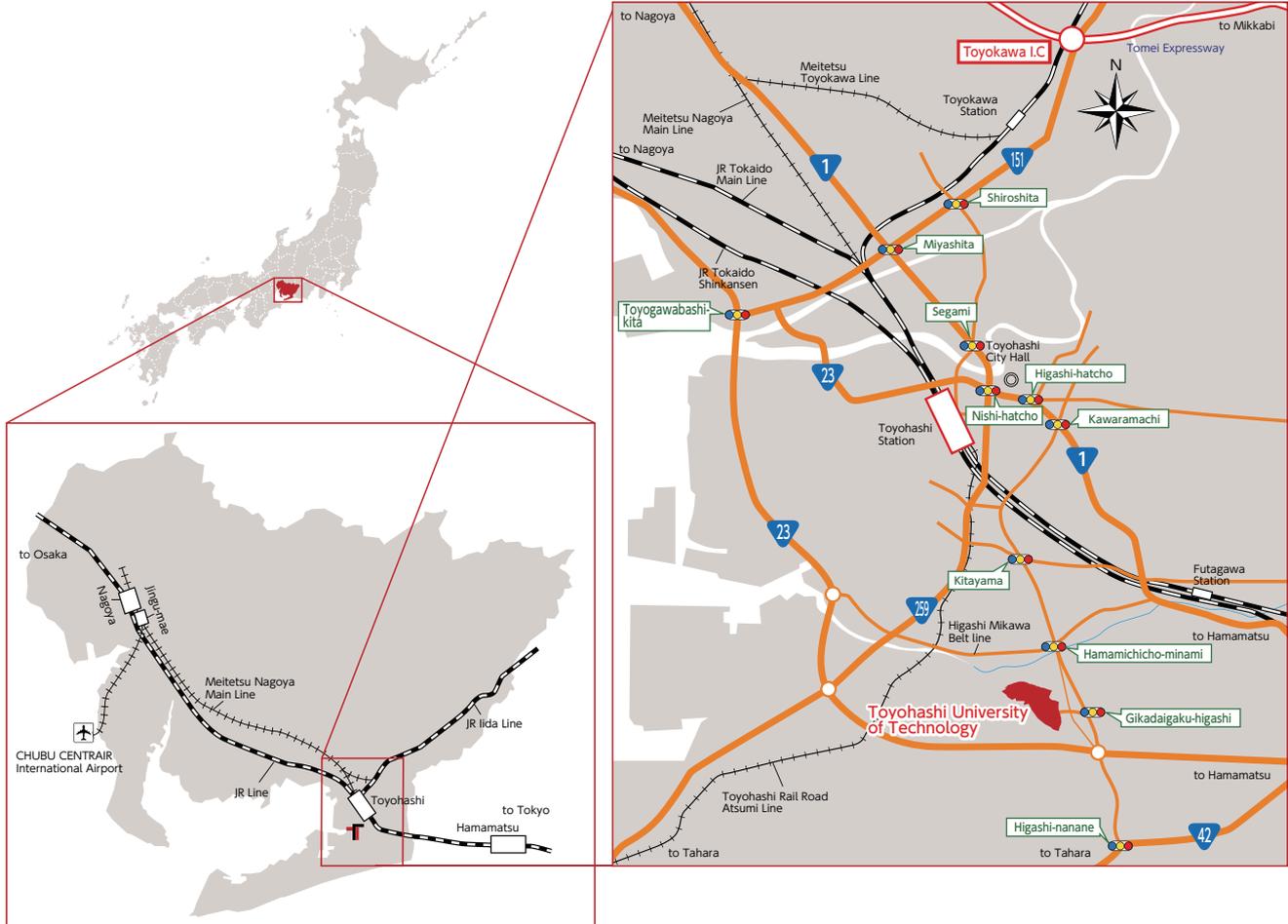
As one of Japan’s ‘core cities’, Toyohashi has everything you’d expect to find in a city, as well as the friendliness and love of Japanese tradition that the big cities often forget.

Toyohashi has a mild climate, a low cost of living and is within easy reach of Nagoya, Tokyo, Osaka, Kyoto and Kobe by Shinkansen bullet train.

Toyohashi also has a wonderful natural environment, surrounded by the sea and mountains. This natural bounty means that there are many interesting places to visit.

The Pacific Ocean is only a short bicycle ride away from the campus of Toyohashi University of Technology. To the south are the vast expanses of the Pacific Ocean with beautiful beaches. Omote-hama beach is a famous place where turtles lay eggs. The north of the city is bordered by Mt. Ishimaki, and the hills to the east are home to the Toyohashi Nature Walk and Imo Bog. The powerful Toyogawa River flows through the city, blending with the surrounding greenery to create a beautiful landscape.





**From Chubu International Airport to Toyohashi**

Take any Meitetsu trains from the airport, and change trains at "Jingu-mae" to Toyohashi. About 20-30 minutes from Airport to Jingu-mae, and 50 minutes from Jingu-mae to Toyohashi.

**By train to Toyohashi station**

**From Nagoya:** Meitetsu train, JR train or Shinkansen are available.

It takes about 50 minutes from Nagoya to Toyohashi by Meitetsu or JR train, and 25 minutes by Shinkansen.

**From Tokyo:** Shinkansen Hikari super express runs every two hours, takes 1h30 to Toyohashi station. Shinkansen Kodama runs every 30 minutes, and it takes about 2h15.

Coaches are also available from Tokyo (Shinjuku) to Toyohashi.

**From Osaka:** Take Nozomi super express to Nagoya, then change to Kodama or Hikari, or local trains. It takes about 80-120 minutes total.

**From Toyohashi station to the campus**

Toyotetsu bus runs from Toyohashi station to the campus every 10-20 minutes from 7am to 8pm.

Take the bus destination "Gikadai-mae," "Rispa Toyohashi," or "Fukushi-mura" from the bus stop No. 2 at Toyohashi station, east exit.

**By road to the campus**

**Tomei Express Way:** Exit at Toyokawa IC toward Toyohashi city center (Route 151 and Route 1). From Toyohashi city center, take the route 259 and 405. It takes approximately 20 minutes.

**Route 23 (Toyohashi Bypass) from Nagoya:** Exit at Nanane IC, and turn left (take the route 405). Toyohashi Tech campus is just by the route.

# Contact address

**Toyohashi University of Technology (TUT)**  
 International Affairs Division  
 1-1 Hibarigaoka, Tempaku, Toyohashi, Aichi, 441-8580, JAPAN  
 E-mail: ryugaku@office.tut.ac.jp  
 Phone: +81-532-44-6577 Fax: +81-532-44-6557

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The cover illustration is by : Koichi Iwami, 2nd-year master's student and Yoshitaka Kitamura and Kazuya Tada, alumni of the master's program

# Campus map



- |                                 |  |  |
|---------------------------------|--|--|
| <b>1</b> A Building             | <b>23</b> F Building   | <b>43</b> Cafeteria and shops                          |
| <b>2</b> A1                     | <b>24</b> F1   | <b>44</b> Extracurricular Activity House               |
| <b>3</b> A2                     | <b>25</b> F2   | <b>45</b> Extracurricular Activity Meeting Building    |
| <b>4</b> B Building             | <b>26</b> G Building   | <b>46</b> Training Gym                                 |
| <b>5</b> B1                     | <b>27</b> G1   | <b>47</b> Health Care Center                           |
| <b>6</b> B2                     | <b>28</b> Electronics-Inspired Interdisciplinary Research Institute (EIIRIS)                         | <b>48</b> Gymnasium                                    |
| <b>7</b> B3                     | <b>29</b> Venture Business Laboratory  | <b>49</b> Student Dormitory (Common House)             |
| <b>8</b> C Building             | <b>30</b> Electron Device Research Center  | <b>50</b> Student Dormitory A                          |
| <b>9</b> C1                     | <b>31</b> Civil and Environmental Engineering Laboratory   | <b>51</b> Student Dormitory B                          |
| <b>10</b> C2                    | <b>32</b> Incubation Center for Venture Business   | <b>52</b> Student Dormitory C                          |
| <b>11</b> C3                    | <b>33</b> Natural Energy Research Laboratory   | <b>53</b> Student Dormitory D                          |
| <b>12</b> D Building            | <b>34</b> Cooperative Research Center  | <b>54</b> Student Dormitory E                          |
| <b>13</b> D1                    | <b>35</b> Radiation Laboratory   | <b>55</b> Student Dormitory F                          |
| <b>14</b> D2                    | <b>36</b> Cryogenic Research Laboratory  | <b>56</b> Researcher's accommodation "Village Tempaku" |
| <b>15</b> D3                    | <b>37</b> Information and Communication Engineering Laboratory                                       | <b>57</b> Guest House "Hibari-so"                      |
| <b>16</b> D4                    | <b>38</b> Manufacturing Technology Shop  | <b>58</b> International House                          |
| <b>17</b> E Experiment Building | <b>39</b> Administration Bureau  | <b>59</b> University's Security                        |
| <b>18</b> E1                    | <b>40</b> Institute for Global Network Innovation in Technology Education (IGNITE: ICCEED, CIR, CIE) |  |
| <b>19</b> E2                    | <b>41</b> University Library   |  |
| <b>20</b> E3                    | <b>42</b> Information and Media Center   |  |
| <b>21</b> E4                    |  |  |
| <b>22</b> E5                    |  |  |

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