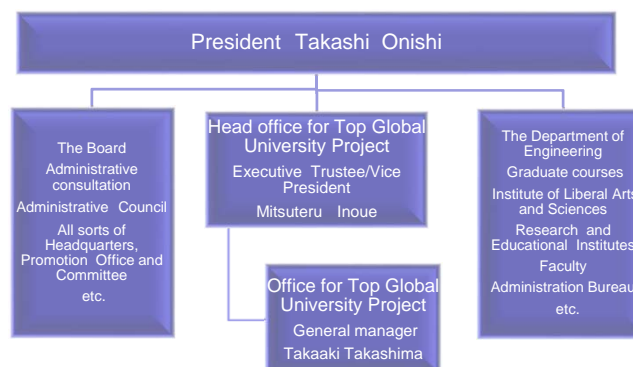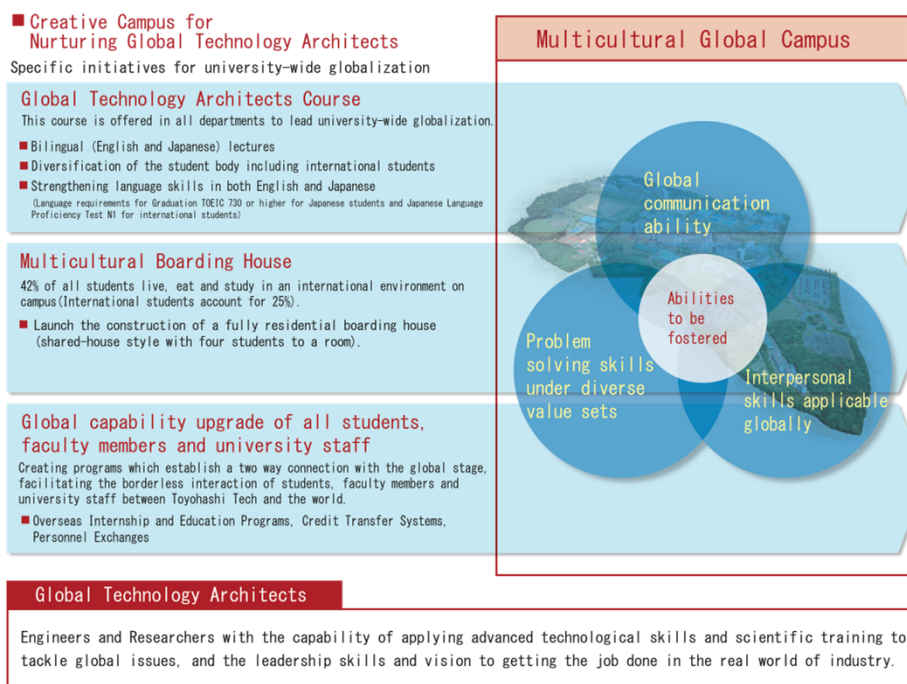# 1. Outline

[Name of project]

  Creative Campus for Nurturing Global Technology Architects

[Future vision of the university planned in the TGU project]

With the progress of globalization in economics and society, Japan needs to strengthen the international competitiveness of its universities and develop human resources who can be globally active in various fields, with a view to continuing such development. Welcoming technical college graduates and many young international students, Toyohashi University of Technology (Toyohashi Tech) strives to provide an engineering education university-wide that goes beyond the barriers of language and culture, and to create a campus that can be recognized internationally as a university of technological science that fosters leading engineers active on the global stage.

[Summary of Project]

Toyohashi Tech endeavors to foster "Global Technology Architects", who are creative leaders in technological science with a solid international grounding and will be needed in future society, through realizing a "multicultural and global campus," where domestic and international students, faculty members and university staff cultivate each other beyond the boundaries of languages and cultures. For that end, the university has worked on initiatives focusing on the following three points: "Global Technology Architects course," "Multicultural Boarding House," and "Global capability upgrade of all students, faculty members and university staff." Toyohashi Tech promotes globalization across the campus with these initiatives as a core of this project and will transform the university to a place that is truly recognized and competitive in the international community and that supports the global competiveness and sustainable economic growth of our nation's industries in a profound way.

■ Creative Campus for Nurturing Global Technology Architects
Specific initiatives for university-wide globalization

Global Technology Architects Course
This course is offered in all departments to lead university-wide globalization.
■ Bilingual (English and Japanese) lectures
■ Diversification of the student body including international students
■ Strengthening language skills in both English and Japanese
(Language requirements for Graduation TOEIC 730 or higher for Japanese students and Japanese Language Proficiency Test N1 for international students)

Multicultural Boarding House
42% of all students live, eat and study in an international environment on campus (International students account for 25%).
■ Launch the construction of a fully residential boarding house (shared-house style with four students to a room).

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.
■ Overseas Internship and Education Programs, Credit Transfer Systems, Personnel Exchanges

Multicultural Global Campus
Global communication ability
Problem solving skills under diverse value sets
Interpersonal skills applicable globally
Abilities to be fostered

Global Technology Architects
Engineers and Researchers with the capability of applying advanced technological skills and scientific training to tackle global issues, and the leadership skills and vision to getting the job done in the real world of industry.

President Takashi Onishi

The Board
Administrative consultation
Administrative Council
All sorts of Headquarters, Promotion Office and Committee
etc.

Head office for Top Global University Project
Executive Trustee/Vice President
Mitsuteru Inoue

Office for Top Global University Project
General manager
Takaaki Takashima

The Department of Engineering
Graduate courses
Institute of Liberal Arts and Sciences
Research and Educational Institutes
Faculty
Administration Bureau
etc.

Implementation system

[Summary of the 10-year plan]

1. "Global Technology Architects course"

Aiming at nurturing global human resources in technological science , we design an educational and admission system for the "Global Technology Architects course" in FY 2014-2015, and explain about what the course is like and how to apply for it to technical colleges (KOSEN), etc. in FY 2015. The entrance examination of this course starts in FY 2016. This course will be offered to all the departments as a combined 6-year undergraduate and graduate course, and the students will learn through bilingual (English and Japanese) lectures. The university will begin to accept third year transfers in FY 2017 and first year students in FY 2018.

The feature of this course lies in English-Japanese bilingual lectures. We plan to expand bilingual lectures in the entire. To facilitate bilingual lectures, we provide language learning assistance. With this, Toyohashi Tech will promote university-wide global engineering education beyond the boundary of languages.

2. Global Boarding House

All students enrolled in the "Global Technology Architects course" will in principle live in a fully residential boarding house, and we plan to newly build a Global Boarding House to accommodate them. We start preparation for construction in FY 2014-2015, and the construction begins in FY 2016. We are preparing to construct a multicultural and multilingual education-oriented boarding where the students share diverse values and develop interpersonal skills that are needed for future leading engineers. We are developing a living/education management system for the students living in this boarding house and accept students from FY 2017.

We aim to deepen and promote globalization by realizing the environment where domestic and international students live and learn together at the Global Boarding House and expand this global and multicultural environment to include the entire campus.

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

With the aim of promoting multinational human resources and international compatibility across the campus, we will continuously create and implement programs which establish a global rotation of human resources, facilitating borderless interaction of students, faculty members and university staff between Toyohashi Tech and the world. In FY 2015-2016, we will carry out consultations with key overseas partner universities with the aim of full-fledged implementation of the personnel exchange program in FY 2017. Following that, the university will expand this initiative to other overseas partner schools. The first attempt is to establish a system to dispatch faculty members and university staff to Queens College of the City University of New York to promote English language ability and expand their global insight into research, education and operationd. This starts in FY 2015.

【Featured initiatives (Internationalization, University reform, Education reform)】

(1) Global human resources development through the comprehensive undergraduate/graduate program:

Eighty percent of our students are graduates of KOSEN who transferred straight to third year. We have fostered practical engineers, who are strong in monotsukuri (craftsmanship), through their comprehensive undergraduate/ graduate (Master's degree) program. We reviewed this educational system from a global point of view and further developed it with the concept of "Global Technology Architects" aiming at nurturing global human resources.

We continuously develop the relationship with KOSEN by the personnel exchange program, a global FD program, and KOSEN students' experience program at Toyohashi Tech.

(2) English-Japanese bilingual lectures:

We offer bilingual lectures to the students on the Global Technology Architects course, so that they can learn through dual language channels to facilitate globally innovative research. We expand bilingual lectures to the entire university.

The Global Technology Architects course accepts international students from the first year of the undergraduate program. We also expand joint-degree/double-degree programs with our overseas partner universities. These initiatives will help to facilitate borderless interaction of students and promote globalization and diversification of students.

(3) Strategic utilization of Toyohashi Tech's overseas educational base in Malaysia:

We strategically utilize our educational base in Penang, Malaysia, to foster Global Technology Architects through conducting practical training, recruit international students from ASEAN countries, implement the entrance examination, and collaborate with local universities and communities. We promote the development of human resources who will contribute to the growth of the technology industry in ASEAN countries which enjoy recent remarkable economic growth. We will further expand this to Europe and America.

(4) Creation of a multicultural and global campus through the education-oriented global boarding house:

The students of the Global Technology Architect course will, in principle, live in the boarding house. We will newly build a share-house style boarding house to create an environment where the students and faculty members from various countries with a diverse sense of values live together. Together with the existing student apartments, the dormitories will accommodate over 40% of the entire student population, 25% of which will be international students. This is expected to serve as the core to spur university-wide globalization.

# 2. FY2014 Progress

■ Common indicators and targets

Internationalization

○ Commenced the preparation to establish "Global Technology Architects course"

We have formulated an overview of this course (acceptance of third year students to be started in FY 2017 and first year students in FY 2018). This course is expected to be attractive to capable international students. To recruit such students, the university visited their major partner universities in ASEAN and other. We explained about the project, and launched the measures to establish a system for support and cooperation. We also held an overseas alumni reunion and organized a foreign alumni association to actively utilize the alumni network of international students.

○ Formulated bilingual (English and Japanese) lectures and the curriculum to strengthen language skills

We set up a number of working groups to discuss the framework of the bilingual (English and Japanese) lectures, and partly launched the pilot project this fiscal year. We have established the policy for language curriculum reform to enhance language ability and started to work on the details this fiscal year.
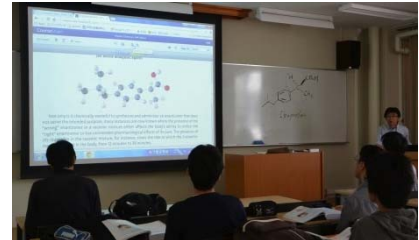
(Bilingual lecture on a trail basis)

○ Preparation to construct global boarding house

We have conducted studies on the methods to procure and collect funds and the basic requirements/management policy to construct the share-house style boarding house where Japanese and international students live together. The outsourcing company for advisory has already been decided, and the selection of other companies and a detailed design were launched this fiscal year in preparation for the start of construction next fiscal year.

○ Support system to enhance global communication abilities

We have improved and reinforced e-learning materials for English study with the aim of enhancing global communication ability targeting all students, faculty members and university staff. An English learning support system has also been established: the advisors for English study are stationed on all weekdays; an individual consultation service has started; English seminars are regularly organized. Moreover, a special seminar entitled "How teach effectively in English" was held for faculty members to promote bilingual lectures.

Governance reform

○ Establishment of Project Promotion Headquarters and Promotion Office

The "Head office for Top Global University Project " was established under the direct control of the President, and the Executive Trustee/Vice President of the University, who is responsible for this project, was appointed as the head of this headquarters. Additionally, a "Office for Top Global University Project " was established under this headquarters. We have started the activities under the leadership of the President.

(From left: Mr. Takashima, the Head of Office; Mr. Onishi, the President; Mr. Inoue, the Head of Headquarters)

○ Development of the University Charter, Onishi Plan and International Strategies

We established the Charter of Toyohashi University of Technology, which serves as a guide for reform to a truly internationally recognized engineering university with global competiveness. We also declared five specific challenges to aim for a university of Technology with global compatibility (Onishi Plan), and international strategies to realize a multicultural and global compass.

○ Training system toward international recognition

Prior to the full-fledged implementation of the personnel exchange program for the faculty members and university staff with partner schools overseas, the university launched an English training program for 1 to 1.5 months and a FD/SD program for research/administrative work exchange, and dispatched one administrative official and four faculty members in FY 2015 to Queens College of the City University of New York.

Education reform

○ Established the admission and education systems for "Global Technology Architects course"

A large university-wide reform plan was established, including changes to student quotas, application qualifications and admission methods. Preparing for the acceptance of third year students from FY 2017, changes to the admission system were made. We have set a policy of bilingual lectures; established an outline for the educational system; and begun to design academic affairs this fiscal year.

○ Enhancement of international recognition of the educational program and of international mobility of students

We have started negotiations to expand the range of departments subject to double degree programs with Stuttgart University (Germany). In addition, we have begun concrete consultation on the creation of educational programs in collaboration with Universiti Sains Malaysia (USM) and other local educational institutions, with our campus in Malaysia as the base for coordination.

(Consultation on educational collaboration with the President and the Dean of USM)

■ University's own indicators and targets

1) Ratio of students living in school dormitories (indicator for campus globalization)
2) Ratio of students who have participated in overseas internship programs
3) Ratio of administrative staff who have experienced overseas training
4) Ratio of joint authorship of articles with researchers overseas

The university has worked on the following initiatives to enhance these indicators.

○ Launched the construction of global boarding house for students

Toyohashi Tech launched the construction of a new global boarding house. In addition, the university carried out a design competition for a new global boarding house with the aim of incorporating the excellent ideas of the university students, faculty members and university staff into the construction plan. This helped to raise a sense of participation and to spread the idea of campus globalization throughout the entire university.

(Design competition for Global Boarding House)

○ Completed the system design for the problem-solving-based/long-term global internship program

Students on the Global Technology Architects course will be required to participate in an internship program for about six months from the second semester of the fourth year of the undergraduate course to the first semester of the fist year of the master program at companies in non-native speaking countries. We developed a detailed program for the long-term problem-solving-based internship system. Further, we established the system that allows fourth-year students to take graduate school programs in advance so that they can acquire the credits for their classes to be held during their internship period.

○ Launched training at Queens College

We have newly established a training system for the faculty members and university staff at their partner university, Queens College (QC) of the City University of New York. In this program, participants stay at QC intensively for 1 to 1.5 months to undertake English language training and research/administrative training. Faculty members take the English training at QC to acquire methods to teach in English, as well as creating opportunities for joint research, etc. through exchange with research units in relevant fields in order to promote education/research activities in a global

(Training at QC, City University of New York)

setting. Administrative staff enhance global compatibility of their duties and the ability to perform international business through training by working at QC's administrative department, in addition to improving their command of English. This system was launched in FY 2015 and dispatched one administrative official and four faculty members. The university is planning to increase the number of participants in this program.

■ Featured initiatives based on the characteristics of the university

○ Creation of a multicultural campus with the Multicultural Boarding House

Majority of Toyohashi Tech students are technical college graduates and live in school dormitories. Taking advantage of this feature, the university is planning to newly build a Global Boarding House and to create a global campus with this boarding house. the university has established a working group within the office for Top Global University Project Promotion Office to study the management system, program design and support system so that this boarding house will function as an education-oriented dormitory.

○ Reinforcement of partnership with ASEAN countries

Over half of the international students at Toyohashi Tech are from ASEAN countries. This project aims at increasing the number of excellent international students leveraging the network that has been developed so far.

In FY 2014, We explained our Top Global University Project in nine countries (fifteen universities) to recruit international students. Additionally, we made it possible to do interviews for international applicants using a web-based system.

(Information session at Chung Ling High School in Malaysia)

Furthermore, for instance in Vietnam, we strengthened partnership with the Ho Chi Minh City University of Technology and Ho Chi Minh City University of Natural Resources and Environment, and established in FY 2015 the system to dispatch students from Toyohashi Tech there for an internship. In addition, we made inquiries and obtained agreement to accept students for overseas internships at five Vietnam-based companies. With these initiatives, the university has commenced preparation for the Global Technology Architect course.

■ Summary of the Initiatives Taken in FY 2014

This project aims at realizing a "Multicultural and Global Campus" with a high-level international compatibility based on the following three initiatives as pillars.

1.Creation of Global Technology Architects course
2.Construction of a Multicultural Boarding House, where students, faculty members and university staff with diverse values live together
3.Global capability upgrade of all human resources - Increasing and normalizing global rotation of all students, faculty members and university staff between Toyohashi Tech and the world

Each of the initiatives has progressed as planned. The university has already started the pilot project for bilingual lectures and the system to dispatch administrative and teaching staff to foreign countries.

3. FY2015 Progress

■ Common indicators and targets

Internationalization

○ Preparation for "Global Technology Architects Course"

We have developed a large part of the admission and education systems of this course to start accepting new third-year students in FY 2017 and new first-year students in FY 2018 for this course. To recruit capable Japanese and international students, we visited Japanese technical colleges and major partner universities mainly in ASEAN countries to explain about this course. We have started accepting applications for this course from technical college students this year and have held the entrance examinations as planned.

○ Bilingual (English and Japanese) lectures and curriculum development for improving language ability

We have prepared to set up bilingual lectures by defining the overall policy at the Educational Affairs committee and making implementation plans. We piloted bilingual lectures in more than 30 courses in FY 2015. All instructors will give bilingual lectures in at least one course, and 153 courses (13% of all courses) will be bilingualized in FY 2016. We have established the policy for language curriculum reform to improve language ability and have proceeded with the preparation for bilingual lectures starting in FY 2017.

(Example scene of bilingual lecture)

○ Preparation to construct the residential shared Global Boarding House

We accepted applications for a contractor for the Global Boarding House, and arrived at an agreement with a company which would effectively meet the specifications for the construction and realize the design concept created by the winner of an on-campus competition. As a first stage, we will design and construct 60 rooms by March FY 2016. We also have started discussing education programs and exchange programs to actively promote human resource development.

○ Support system to enhance global communication ability

We have reinforced an English learning support system for all members of this university. More specifically, the English learning counselors are available on campus between Mondays and Fridays, and English learning seminars are held regularly. Moreover, tablets have been provided to administrative staff for their English training through e-learning. TOEIC tests were administered to check their progress.

Governance reform

○ Establishing the Office for the promotion of the Top Global University Project

The TGU Project Promotion Office was launched to manage the overall project and facilitate on-campus communication, with mid-carrier academic staff being office members. Specific issues are discussed and concluded in each of the existing university committees, but this office is mainly responsible for identifying and discussing issues that do not fall into any of the existing committees or that require a cross-sectional approach. We have started discussing the realignment of university organizations and centers dealing with international affairs due to the termination of the TGU subsidy to come.

(Onishi Plan)

○ Development of the University Charter, Onishi Plan and International Strategies

Based on the University Charter, Onishi Plan, International Strategies, and our TGU project plan, which were established in FY 2015, we made the third-phase of the mid-term plan and have started to carry it out. We are trying to clarify the responsibility for this project and check its progress by incorporating the outcome indicators and goals into the mid-term plan.

○ Training system toward international recognition

We have started participating in FD/SD program for four to six weeks that aims at university staff's improvement of their English skills and have research/administrative work exchanges at Queens College of the City University of New York. Four faculty members and one administrative official were dispatched in FY 2015, and six faculty members and two administrative officials will be dispatched in FY 2016. We will also prepare for mid- to long-term personnel exchanges with overseas partner universities/schools.

Education reform

○ Admission and education system reform

A large university-wide reform plan was established, including changes to student quotas, application qualifications and admission methods. As preparation for the acceptance of third-year students from FY 2017, changes to the admission system were publicly announced. Related committees have agreed that bilingual lectures will be given university-wide earlier than was originally scheduled.

○ Enhancement of international recognition of the educational program and of international mobility of students

We have made a change to the educational system to correspond to the GPA and Course Numbering System, based on the plans made in the educational affairs committee. For new educational programs with overseas partner universities, we have concluded agreements with Northeastern University (China) and Mongolian University of Science and Technology (Mongolia). We are also looking for ways in which we develop collaborative education programs in collaboration with other overseas universities including Disted College and Universiti Sains Malaysia (USM).

(Visit by Disted College)

■ Specific indicators and targets

1) Ratio of students living in school dormitories (indicator for campus globalization).
2) Ratio of students who have participated in overseas internship programs.
3) Ratio of administrative staff who have experienced overseas training.
4) Ratio of joint authorship of academic articles with researchers overseas.

We have worked on the following initiatives to improve these indicators.

○ Construction of the Global Boarding House

We have determined the basic design of the residential shared Global Boarding House where students with multiple cultural backgrounds live together. The outsourced contractor will start constructing the boarding house in FY 2017. Adjacent to the existing student apartments which can accommodate 600 students, six accommodation buildings (each with capacity of 30 students, and 180 in total) and one common building will be constructed. Each unit has 5 bedrooms, 1 living & dining room, 1 kitchen and 1 bathroom, and will be shared by a mixture of 5 international and domestic students. With the commencement of Global Technology Architects Course in April FY 2017, students will start moving into the boarding house. The construction will be completed in FY 2018.

(Image of Global Boarding House)

○ Promotion of Global Internship Program

Because a six-month internship program will be offered to students of the Global Technology Architects Course, we discussed the implementation plan for this program at the related committees. In terms of practicality, we have agreed to develop the existing internship program to provide an internship opportunity for the final two months of their undergraduate course and their initial four months of the post-graduate course. Because we expect that we need many other internship places than the ones in Penang (Malaysia) and universities/research institutions, we are looking for new candidates from companies in Silicon Valley (the U.S.A). We have concentrated the responsibility for pioneering new internship programs on the internship committee to facilitate further development of the overseas internship.

○ Promotion of overseas training of university staff members

To promote the globalization of administrative staff, we have planned overseas SD programs to provide a greater number of staff with the opportunities to work overseas. This includes their intensive English learning and administrative exchanges with Queens College of the City University of New York, their involvement in administering the programs in Toyohashi University of Technology-Universiti Sains Malaysia Technology Collaboration Centre in Penang (Malaysia), and their administrative assistance to university overseas events including school advertisement and study-abroad seminars for prospective international students.

(Training at QC of the City University)

○ Establishment of Organization for the Development of Innovative Research and Technology

In addition to research support for increasing global academic performance, offered by Research Administration Center, Organization for the Development of Innovative Research and Technology was established in April 2016 with the aim of strategically promoting university research activities.

■ Featured initiatives based on the characteristics of the university
○ Creation of a multi-cultural campus with the Global Boarding House

The Global Boarding House offers a place for Japanese and international students to live together in a multi-cultural environment. We are discussing specific learning programs and their management at the TGU Project Promotion Office and the related committees so that all the students will benefit from these programs. This will lead to the realization of "Multi-cultural and Global Campus" stated in Onishi Plan.

○ Reinforcement of partnership with ASEAN countries

Over half of the international students of this university come from ASEAN countries. We hope that we welcome a large number of excellent students to our university utilizing the network that we have developed so far, including alumni associations of foreign students. We visited universities and high schools of twelve countries in FY 2015, to provide briefings about our university; for example, our work on globalization, the Global Technology Architect Course, and our new admission system. Ten students and four teachers of four high schools from three countries were invited to this university through Japan-Asia Youth Exchange Program in Science. Twenty-five students and nine teachers of nine high schools from five countries will be invited in FY 2016.

(Participants of Japan-Asia Youth Exchange of Science)

■ Summary of the Initiatives Completed in FY 2015

The present project aims to realize a "Multi-cultural and Global Campus" with a highly advanced global compatibility based on the following three initiatives as pillars.

1. Creation of the Global Technology Architects course
2. Construction of a Multi-cultural Boarding House, where students, faculty members and university staff with diverse values live together
3. Global capability upgrade of all human resources - Increasing and normalizing global rotation of all students, faculty members and university staff between Toyohashi Tech and the world

The original plan has been carried out with success, considering the following achievements: establishment of the new course, recruitment of students, implementation of admissions, and construction of the Global Boarding House. Bilingual lectures will be given university-wide ahead of the original plan. Future important tasks include developing specific programs for the Global Technology Architects course and planning specific programs at the Global Boarding House. We also acknowledge the importance of checking the overall outcome indicators and goals of this project and making administrative systems more effective and efficient to realize the true reform of the university.