

Introduction to
Toyohashi University of Technology
“On-the-Job Training” (OJT) Education
Program



About Toyohashi University of Technology and the “On-the-Job Training” (OJT) Education Program

1. Basic philosophy of Toyohashi University of Technology

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 (“KOSEN” – Japan’s unique, 5-year technology education system) and high schools for enrollment, and with its graduate school emphasis, TUT conducts research in technological science, fostering practical, creative, 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.

2. Significance and objectives of the OJT Education Program at TUT

To meet the social demand for “fostering engineers with practical and creative abilities,” since its opening in 1976, TUT has turned out many students who have acquired advanced and extensive knowledge through its unified undergraduate to graduate education program, a unique feature of TUT.

However, along with rapid technological development, global-scale social problems have begun to surface, and it is necessary to work on solving these complicated problems in the future.

To foster researchers and engineers with practical and creative abilities, TUT has given students the opportunity to experience and become accustomed to the actual sites where researchers and engineers are solving complicated problems in the real world. This is very effective in fostering researchers and engineers who are needed in the 21st century, and in cultivating humanity as working members of society.

As a part of these efforts, TUT has provided the OJT program as a compulsory subject for all 4th-year undergraduate students. This OJT program as a part of the curriculum is clearly distinguished from a traditional internship, which has been a means of job hunting or as a way to support career development, something many universities have started to conduct in recent years. The training in the OJT program is very important in that students can obtain practical business experience and acquire a clear sense of purpose in their education. This is the most important feature of our OJT program.

3. Students targeted

All 4th-year undergraduate students (about 450 students)

4. Time & period of implementation

Two months (7 weeks) from the beginning of January to the end of February in the 4th year of undergraduate school (before advancing to graduate school)

5. Locations

In Japan: Companies, national or municipal institutions, etc.

Overseas: Companies, universities, research institutes, etc.

6. Handling of the OJT program in the curricula

- (1) Compulsory subjects (6 credits)
- (2) At the end of the OJT program, student course results will be evaluated by the supervisor for the student, which will be based on the reports below and reviewed through an accomplishment debriefing session held after returning to TUT:
 - Evaluation sheet for the OJT program (submitted by the accepting institution)
 - Investigation report for the OJT program (submitted by the supervisor)
 - Report on the OJT program (submitted by the student)

7. Annual schedule

Jul.	Inquire about acceptance to preferred institutions (about 700 institutions)
Aug.	1st orientation of the OJT program for students. Receive an acceptance survey answer from institutions
Sep. – Oct.	Student and institute matching
Nov.	Request for student acceptance (sending student curriculum vitae) Finalized acceptance from institution (receive written acceptance)
Dec.	2nd orientation of the OJT program for students Request for assigned instructor in charge of the training (send a letter of appointment)
Jan.	Start of the OJT
Jan. – Feb.	Supervisor reviews the progress by visiting the training institution.
Feb.	End of the OJT
Mar.	Hold a reporting session, evaluation of training performance, and survey of the program

8. Accident insurance

All students are obligated to enroll for the following insurance policies:

- “Personal accident insurance for students pursuing education and research” (enroll at the time of admission), maximum payment: 20,000,000 yen in the case of death
- “On-the-job Training Insurance (accident insurance)” (enroll at the time of starting the training), maximum payment: 100,000,000 yen as personal & property reparations, 6,400,000 yen in the case of death

9. Others

(1) Completing training on campus

Although the OJT should be done outside the university in principle, adult students, students who have difficulty in doing the training outside the university due to job hunting, and students under special circumstances are allowed to complete the OJT on campus.

(2) OJT Committee

To handle the necessary details and university-wide coordination of program implementation, TUT has established the OJT Committee, which is comprised of faculty members.

TUT OJT Training Program

Human resource development education through industry-academia collaboration

●Spiral-up education for practical and creative human resource development

Education based on spirally accumulating basic academic skills and expertise through repeated acquisition

●Unified undergraduate to graduate education

Students obtain practical business experience in the industrial world before advancing to the master's degree program when they are in their fourth year in undergraduate school, and apply their experience to their graduate school education.

After the completion of the master's degree program, students will be fostered as practical and creative engineering leaders for the real world.



Diagram of TUT's unique spiral up education

OJT at Overseas Institutions

As the world economy becomes increasingly globalized, it is essential to develop professionals who can make an impact in a variety of fields on the global stage. To meet that demand, OJT at overseas institutions has been instituted and the number of students undergoing the training abroad is increasing.

Main destinations for dispatching students:

- North America: U.S.A, Canada
- Europe: Germany, Spain, France, Finland
- Asia: Malaysia, Indonesia, Thailand, Vietnam, Laos

In order to further increase OJT overseas, TUT will focus on negotiating more agreements with host institutes around the world.

Global Human Resource Development Program (OJT in Penang, Malaysia)

To accelerate the development of globally engaged engineers and researchers, TUT established an overseas education base in Penang, Malaysia (TUT-USM Technology Collaboration Center) in 2013. And a program to dispatch students for OJT to companies in Penang has been implemented.



(1) Objectives of the program

- Deepen the knowledge acquired in school in each specific engineering field by putting it in practice at industries, and gain insight as to what subjects students should study in graduate school
- Through real-world practice, students will realize their own occupational aptitude.
- OJT gives an opportunity for students to start thinking about career choices.
- By conducting OJT abroad, students will gain wisdom in an international setting, improve cross-cultural understanding and English communication ability necessary for engineers.

(2) Number of students

From a pool of students bound for TUT graduate school wishing to take this program, around 20 students will be chosen based on English ability and interview results.

(3) Training themes

Companies will define the training topics and assign roles to students. The companies can interview candidate students by telephone or Internet video/audio conferencing.

“Project-based Long-term Internship” Program

In order to enable students to engage in OJT at a more advanced level and for a longer period, TUT launched a new program in 2014.

This program extends the OJT program through the first quarter of graduate school. The program aims to have students explore practical problem solving in a specialized field from the planning stage to developing solutions at companies or research institutions.

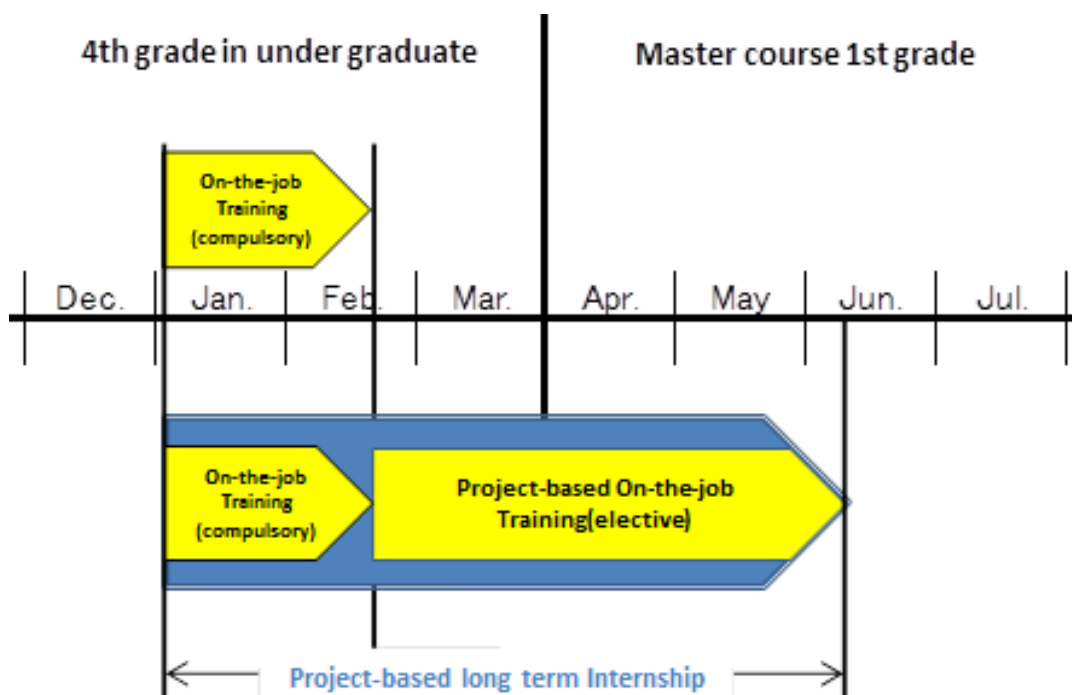
1. Students targeted

4th-year undergraduate students who meet the following requirements:

- Meet all graduate requirements upon completion of the OJT compulsory subject
- Qualified and approved for admission to the TUT graduate school
- Willing to go on to a doctoral program (not mandatory but desirable)

2. Time and period of implementation

“Project-based Long-term Internship” is a program that combines two months of the OJT (compulsory subject) and three months of Project-based OJT (elective subject). It is implemented as a single program throughout the entire period at a company or institution.



3. Locations

In Japan: Companies, national or municipal institutions, etc.

Overseas: Companies, universities, research institutes, etc.

4. Handling of the “Project-based Long-term Internship” Program in curricula

- (1) OJT (January to February): 6 credits as a compulsory subject.
Project-based OJT (March to June): 2 credits as an elective subject.
- (2) At the end of the “Project-based Long-term Internship program,” student course results will be evaluated by the supervisor for the student, which will be based on the reports below and reviewed through an accomplishment debriefing session held after returning to TUT:
 - Evaluation sheet for the OJT program (submitted by the accepting institution)
 - Investigation report for the OJT program (submitted by the supervisor)
 - Report on the OJT program (submitted by the student)

5. Details of the Training

This program is not designed simply as a means to gain short-term experience or training but as a practical internship for the student to be engaged in practical problem solving for a specified longer period of time and by having a specific project theme and plan to be implemented.

In order to meet this program objective and maximize the educational achievements, the student supervisor will stay in close contact with prospective companies or institutions for the purpose of matching the student and developing the internship theme. Throughout this process, the highest consideration will be given to the education and research background of the student and his or her research plans in graduate school.

TUT Academic Departments

1. Department of Mechanical Engineering

- Mechanical Systems Design Course
 - Materials and Manufacturing Course
 - System Control and Robotics Course
 - Environment and Energy Course
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The Department of Mechanical Engineering is aware of the important role that 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 and 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 Environment and Energy.

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.

2. Department of Electrical and Electronic Information Engineering

- Electronic Materials Course
 - Electrical Systems Course
 - Integrated Electronics Course
 - Information and Communication Systems Course
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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 in Electrical and Electronic Information Engineering is to educate and train students to yield next-generation engineers and researchers prepared for the advanced, core fields of electronic materials, electrical engineering, integrated electronics, and information communication technology.

3. Department of Computer Science and Engineering

- Computer and Information Science Course
 - Information and Systems Science Course
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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 systems, discrete mathematics, and Internet technologies, which support the infrastructures of an advanced, information-oriented society, to

applied and advanced technologies, including multimedia, robotics, computer vision, data mining, human-machine interface design, bioinformatics, computational science, life sciences, distributed computing, and theoretical computer science.

To achieve our mission, we provide attractive educational programs for students to start from the basics and work up 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-based society in all industrial fields.

4. Department of Environmental and Life Sciences

- Sustainable Development Course
 - Life and Materials Science Course
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The Department of Environmental and Life Sciences offers a rich educational curriculum, encompassing environmental science, life sciences and applied chemistry, to nurture students in developing outstanding scientific ability and research skills to be recognized as leading scientists and engineers. Such abilities include the capability of playing an active role in developing pioneering technology that is necessary in building a sustainable society, and also of conducting pioneering research in the fields of environmental science, life sciences and applied chemistry. Furthermore, our department aims to nurture students in attaining global competence so that they can play important roles as global leaders.

5. Department of Architecture and Civil Engineering

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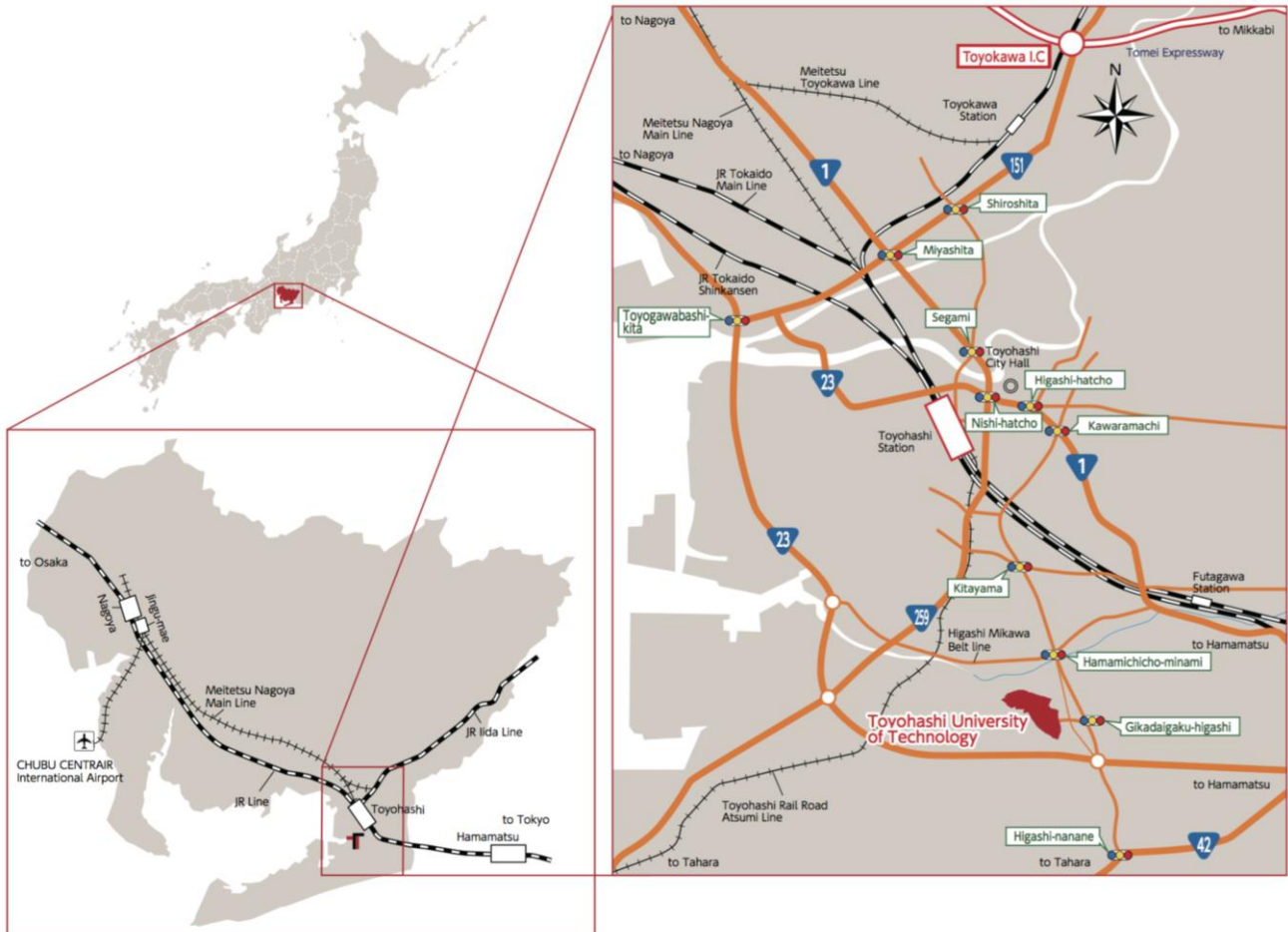
The Department of Architecture and Civil Engineering is committed to educating students so that they will develop professional skills to plan, design and manage buildings and infrastructures in cities and rural areas in order to maintain safe, comfortable and high-quality living environments.

The undergraduate program prepares students to pursue both basic and professional knowledge as well as the applied 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 such subjects as: Introduction to Engineering, Practice of Architectural Design, Project Study, and more. In the junior and senior years, students will be required to take a compulsory credits from within either from the Architecture and Building Science Course or the Civil and Environmental Engineering Course, both offering specialized subjects.

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

In addition, in conjunction with the Research Center for Collaborative Area Risk Management (CARM), all students are provided valuable experience for promoting research that will contribute to a reduction in the risk for areas not only hit by natural disasters but also, from an environmental perspective, the large risks included in every-day life.

Access and Contact



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