

# National Institute of Technology (KOSEN), Kisarazu College





## Message from the President

The National Institute of Technology (KOSEN), Kisarazu College (Kisarazu KOSEN) is located in Kisarazu City, Chiba Prefecture, where highway networks to Tokyo and Haneda and Narita international airports provide us with convenient access to domestic and international cities. With a beautiful view of Tokyo Bay from our campus, KOSEN is host to 1,100 students majoring in science and engineering in five-year associate program and two-year advanced courses at the university level.

KOSEN's primary mission is to foster creative and practical engineers through vocational education that integrates general and professional education and practical training based on theoretical backgrounds. Considering the globalization of Japanese higher-level education, our mission is to provide engineers with intellectual, refined, and broad perspectives; liberal and engineering-based spirits to face any challenge; and the ability to think globally. Our system is widely admired for its high-level vocational education and has been commended in both industrial and academic sectors because of our graduates' success as engineers, managers, and researchers for the past half century.

Our academic programs include five engineering diplomas (mechanical engineering, electrical and electronic engineering, control engineering, information and computer engineering, and civil engineering) and three advanced bachelor's courses (mechanical and electrical engineering, control and information engineering, and civil and environmental engineering). Every year, about half of our graduates find industrial employment as engineers, while the other half transfer to four-year universities from the diploma course and progress to master's programs from our advanced course.

In Kisarazu KOSEN, we accept international students in the third year of the five-year program, and we have recently also enhanced short-term student exchange programs with overseas and polytechnic universities.

In addition to their studies, we encourage students to participate in sports and cultural activities as character-building opportunities.

Among over 120 staff members at Kisarazu KOSEN, many educational and technical members are active researchers collaborating with industry and other social services. Compared to most Japanese universities, we have relatively satisfactory instruments and facilities in related fields of engineering. Through Kisarazu KOSEN's activities, we wish to contribute to Japanese society and develop partnerships with organizations worldwide.

*YAMAZAKI Makoto*



## Characteristics of KOSEN

### Regular Course (Associate Program)

- A five-year technical education program starting at age 15.
- Curriculum emphasizing scientific experiments, workshop training, and practical manufacturing skills.
- Small classes, allowing teachers to pay close attention to students. Detailed teaching and assistance by dedicated teachers.
- Student dormitories are available.
- Inter-college competitions, such as the Robot Contest, Programming Contest, Design Competition, and more.
- International activities, such as teacher and student exchanges (470 international students).
- Accredited by JABEE as a qualified engineering education program.
- A wide variety of career courses are available after graduation, from employment to advancing to higher-level education programs.
- A very good reputation both in industry and academia.

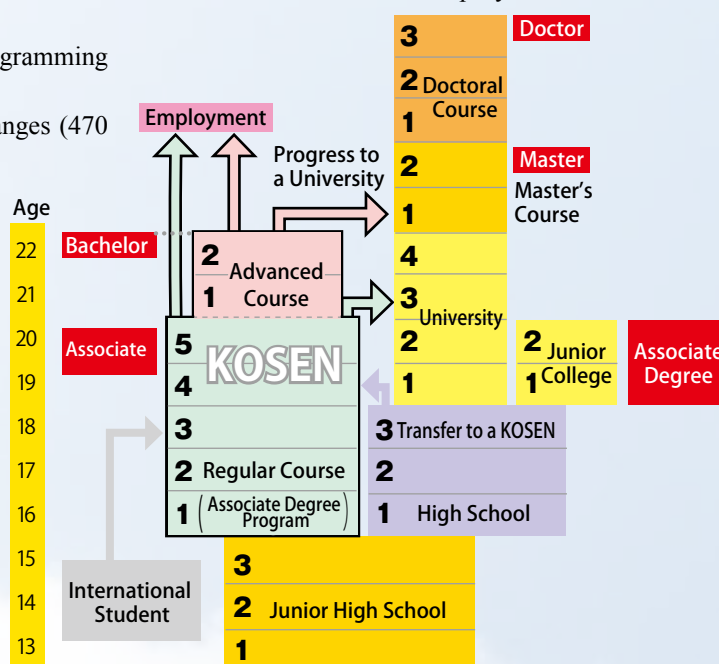
### Advanced Course (Bachelor's Degree Program)

- PBL (Project-Based Learning) on practical engineering tasks.
- A long-term internship (over a month) and COOP (cooperative education).
- Accredited by JABEE as a qualified engineering education program.

## KOSEN System

### (College of Technology System)

Students are engaged in KOSEN's five-year engineering diploma program at the age of 15. After graduating, most students enter advanced universities or Advanced Courses of colleges, while the others find employment.



## Organization



## Contents

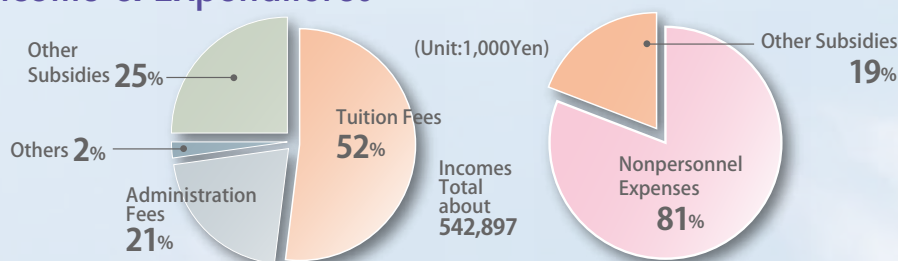
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## Number of Staff Members

	number of people
President	1
Professor	30
Associate Professor	34
Lecturer	4
Assistant Professor	5
Subtotal	74
Administrative Personnel	46
Total	120

## Income & Expenditures

\*Excluding facility maintenance subsidies



## Program accreditation by JABEE

Since 2005, JABEE (the Japan Accreditation Board for Engineering Education) has been a member of the Washington Accord, an agreement that provides a mechanism for mutual recognition between signatory bodies of engineering education accreditation processes.

KOSEN has been eager to obtain JABEE accreditation in order to gain internationally recognized quality assurance.

KOSEN's accredited programs correspond to the level of undergraduate engineering program at universities.

\* Our educational program obtained JABEE accreditation in 2006 as the program title of "General Engineering".

Advanced Course 2nd year
Advanced Course 1st year
5th year
4th year
3rd year
2nd year
1st year





# Regular Course (Associate Program)

## Department of Mechanical Engineering

The application field of mechanical engineering has spread to not only conventional factory production but also to various fields, such as information technology, automatic control, and electronics dependent on the technical innovation of an advanced information society.

In our mechanical engineering department, students learn the foundations of designing and manufacturing mechanical hardware. In addition, the curriculum of this department introduces applications to computers and electronics.

In this way, our department aims to train the students to become creative engineers in more fields than ever before, corresponding to the social demands of new technological development.

### Subjects >>>

Machine Design, Kinematics of Machinery, Thermodynamics, Measurement and Instrumentation, Strength of Material, Computational Fluid Dynamics, etc.



Experiment on an Internal Combustion Engine

## Department of Electrical and Electronic Engineering

This department is developing as a comprehensive department that covers all fields of modern electrical and electronic engineering, which offers a wide variety of subjects, including electrical and electronic, control, communications, materials, computers, measurements, and energy engineering, as well as optional subjects.

In order to ensure that all students acquire the skills to play a leading role in the industrial society of the next generation, the curriculum is practically and theoretically structured learning from basic to advanced technology.

### Subjects >>>

Electric Circuits, Electronic Circuits, Electromagnetics, Semiconductor Engineering, High Voltage and High Current Engineering, Power Electronics, etc.



Experiment with a Three-Phase Induction Motor

## Department of Control Engineering

This department aims to equip students with comprehensive knowledge and skills to construct control systems that support the industrialized world.

Because of the interdisciplinary nature of control technology, students in this department study various subjects from the fundamental level to applications, such as electric and electronic engineering, mechanical engineering and computer engineering.

The research themes of the department's faculty cover many fields including plastic forming, intelligent robots, electronic devices, communication engineering, instrumentation and measurement, vibration control, embedded systems and so on.

### Subjects >>>

Control Engineering, Electronic Circuits, Mechanics of Materials, Computer Technology, Electronics, Actuator Technology, Robotics, etc.



Robot arm control based on electromyogram

## Department of Information and Computer Engineering

This department provides education in both computer hardware and software, including artificial intelligence, systematic programming, design and analysis of data structures, computer architecture, and information communication networks.

The curriculum focuses on practice, experiment, and research to train future engineers to be able to solve problems creatively and independently.

### Subjects >>>

Programming Language, Intelligent Systems, Computer Network, Signal Processing, Operating Systems, Computer Interfaces, Programming Training, Computer Architecture, etc.



Experiment with Hardware Systems

## Department of Civil Engineering

The curriculum of this department covers issues concerning urbanization and environmental problems, as well as traditional civil engineering.

Civil engineering contributes to industrial development, for example in the construction of bridges, roads, and parks, and to the enrichment of public facilities, which are the basis of civil life.

As the field develops, however, more attention is now focused on urban and environmental problems.

In response to this demand, the department aims to train engineers who seriously consider the safety and maintenance of the landscape and environment in constructing public facilities.

### Subjects >>>

Surveying, Structural Mechanics, Hydraulics, Soil Mechanics, Urban Design, Remote Sensing, Bridge Structure, etc.

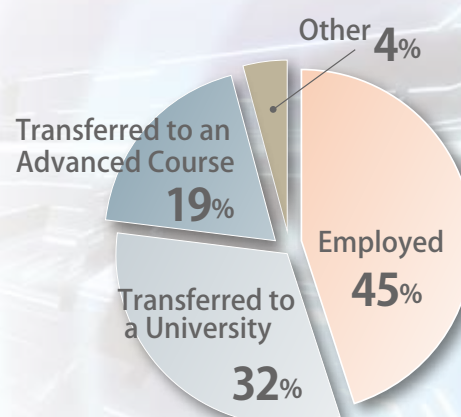


Field Practice in Surveying

## Number of Students

Dept. of	Capacity Statutory Total
Mechanical Eng.	200
Electrical and Electronic Eng.	200
Control Eng.	200
Information and Computer Eng.	200
Civil Eng.	200
Total	1,000

## Graduate from the Regular Course





# Advanced Course (Bachelor's Degree Programs)

Established in 2001, Kisarazu KOSEN's Advanced Course provides two-year higher-level technology education, based on the five-year Regular Course education.

Students can obtain bachelor's degrees by earning the required credits in the Advanced Course and passing the evaluation of learning outcomes by the National Institution For Academic Degrees and Quality Enhancement of Higher Education. If they pass this evaluation, graduates are qualified to go on to graduate school.

This course consists of three fields: the Mechanical and Electrical Course, the Control and Information Course, and the Civil and Environment Course.

## Mechanical and Electrical Course

This advanced course aims to cultivate creative and practical engineers with skills from both the mechanical and electrical fields, who thereby have the flexibility to research and develop new technologies.

### Subjects >>

Production Engineering,  
Tribology,  
Systems Control,  
Microwave Circuit Engineering,  
Energy Engineering, etc.

## Control and Information Course

This advanced course aims to provide education in a wide variety of subjects including decision support, software, communication, and mechatronic and control technologies, on the basis of information processing engineering, and aims at training students to be core and leading engineers capable of dealing with creative and practical control systems.

### Subjects >>

Learning Control Engineering,  
Control System Engineering,  
Semiconductor Devices,  
Human Interface,  
Simulation and Modeling, etc.

## Civil and Environment Course

This advanced course aims to train creative and imaginative engineers who can carry out research and development (R&D) and can flexibly cope with problems related to the environment and urbanization, which have become more serious and widely spread.

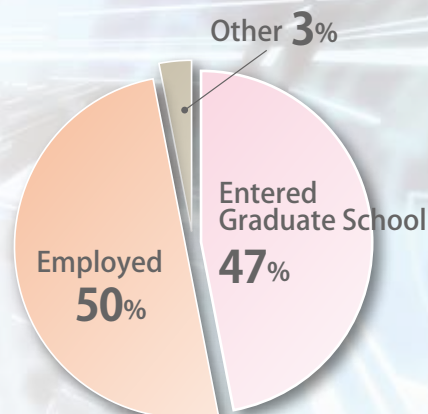
### Subjects >>

Environmental Biotechnology,  
Applied Structural Engineering,  
Preservation Engineering,  
Applied Geotechnical Engineering,  
Applied Material Engineering, etc.

## Number of Students

Course	Capacity Statutory Total
Mechanical and Electrical Course	16
Control and Information Course	16
Civil and Environment Course	8
Total	40

## Graduate from the Advanced Course



# Facilities & Equipment



- 1 Administration Building
- 2 General Research Building
- 3 Science Laboratory
- 4 Education Building



Education Building

- 5 Research Building No.1
- 6 Research Building No.2
- 7 Research Building No.3
- 8 Cooperative Technology Center



Cooperative Technology Center

- 14 Gymnasium No.1
- 15 Gymnasium No.2
- 16 Martial Arts Gymnasium
- 17 Swimming Pool
- 18 Extra-Curricular Activity Facility

## 9 Manufacturing Building/Practice Workshop



Manufacturing Building



Practice Workshop

- 10 Lecture Building A
- 11 Lecture Building B
- 12 Lecture Building C
- 13 Library & Information Technology Center



Library & Information Technology Center



Information Technology Center

## 19 Students' Hall



Students' Hall

- 20 Males' Dormitory (Yuho-Ryo)
- 21 Females' Dormitory (Nanohana-Ryo)
- 22 International Dormitory (Kokusai-Ryo)
- 23 Gatekeeper house



# Program sample

Three programs at Kisarazu KOSEN can be sampled: General Education in the Regular Course, the Department of Mechanical Engineering and the Advanced Course of Mechanical and Electrical Engineering.

## General Education

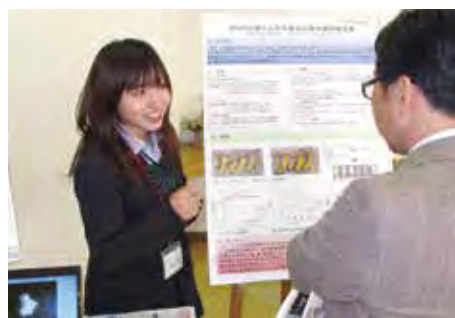
	Subjects Offered	Credits
1st	Japanese IA	2
	Japanese IB	2
	Geography A	1
	Geography B	2
	Fine Arts	1
	English IA	1
	English IB	1
	English IIA	1
	English IIB	1
	English Grammar	2
	Health and Physical Education IA	1
	Health and Physical Education IB	1
	Precalculus I	3
	Precalculus II	2
	Precalculus III	1
	General Science	1
	Physics I	1
	Fundamental Chemistry I A	1
	Fundamental Chemistry I B	1

	Subjects Offered	Credits
2nd	Japanese IIA	1
	Japanese IIB	1
	History A	1
	History B	2
	English IIIA	1
	English IIIB	1
	English IVA	1
	English IVB	1
	Health and Physical Education IIA	1
	Health and Physical Education IIB	1
	Linear Algebra IA	1
	Linear Algebra IB	1
	Calculus IA	2
	Calculus IB	2
	Physics IIA	1
	Physics IIB	1
	Chemistry IA	1
	Chemistry IB	1
	Japanese Cultural Studies	1

	Subjects Offered	Credits
3rd	Japanese III	1
	Contemporary Society A	1
	Contemporary Society B	2
	English VA	1
	English VB	1
	German IA	1
	German IB	1
	Physical Education IA	1
	Physical Education IB	1
	Linear Algebra II	1
	Calculus II	2
	Calculus III	2
	Life Science/Earth Science	1
	Physics III	1
	Physics IV	1
	Chemistry II	1
	General Education Seminar	1

	Subjects Offered	Credits
4th	Japanese Expression	1
	Physical Education II	1
	English Seminar IA	1
	English Conversation IA	1
	English Seminar IB	1
	English Conversation IB	1
	Philosophy A	2
	Economics A	2
	Sociology A	2
	Philosophy B	2
	Economics B	2
	Sociology B	2
	German IIA	1
	Chinese IA	1
	German IIB	1
	Chinese IB	1

	Subjects Offered	Credits
5th	Physical Education III	1
	English Seminar II	1
	English Conversation II	1
	Japanese Literature	1
	Psychology	1
	Law	1
	German IIIA	1
	Chinese IIA	1
	German IIIB	1
	Chinese IIB	1





## Department of Mechanical Engineering

	Subjects Offered	Credits
1st	Information Processing I	1
	Information Processing II	1
	Engineering Drawing I	1
	Engineering Drawing II	1
	Literacy for Engineer I	1
	Literacy for Engineer II	1
	Mechanical Engineering Laboratory IA	1
	Mechanical Engineering Laboratory IB	1

	Subjects Offered	Credits
2nd	Information Processing III	1
	Kinematics I	1
	Engineering Mechanics I	1
	Engineering Mechanics II	1
	Machine Design and Drawing I	1
	Electric Circuit	1
	Mechanical Engineering Laboratory IIA	1
	Mechanical Engineering Laboratory IIB	1
	Manufacture in Mechanical Workshop I	2

	Subjects Offered	Credits
3rd	Kinematics II	2
	Strength of Materials I	1
	Materials Technology I	1
	Materials Technology II	2
	Manufacturing Processes I	2
	Machine Design and Drawing II	1
	Machine Design and Drawing III	1
	Measurement and Instrumentation I	1
	Measurement and Instrumentation II	2
	Mechanical Engineering Laboratory IIIA	1
	Mechanical Engineering Laboratory IIIB	1
	Manufacture in Mechanical Workshop II	2
	Project Experience	1

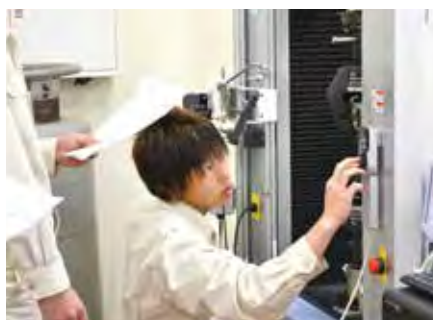
	Subjects Offered	Credits
4th	Applied Mathematics A	2
	Applied Physics Experiments	1
	Dynamics of Machinery I	2
	Strength of Materials II	2
	Strength of Materials III	2
	Materials Technology III	2
	Thermodynamics I	2
	Thermodynamics II	2
	Fluid Dynamics I	1
	Fluid Dynamics II	2
	Manufacturing Processes II	2
	Machine Design I	1
	Machine Design and Drawing IV	1
	Microcomputer Control	1
	Practice of Electrical Engineering	1
	Mechanical Engineering Laboratory IVA	1
	Mechanical Engineering Laboratory IVB	1
	Manufacture in Mechanical Workshop III	1
	Manufacture in Mechanical Workshop IV	1
	Engineering Seminar	1
	Applied Mathematics B	2
	Applied Mathematics C	2
	Internship	2

	Subjects Offered	Credits
5th	Dynamics of Machinery II	2
	Heat Transfer Engineering	1
	Fluid Dynamics III	2
	Machine Design II	1
	Logic Circuits	1
	Control Engineering I	2
	Control Engineering II	2
	Practice in Subjects of Mechanical Engineering I	1
	Practice in Subjects of Mechanical Engineering II	1
	Practice in Subjects of Mechanical Engineering III	1
	Study for Graduation (Graduation Research)	8
	Statistics	2
	Applied Physics	1
	Practice of Industrial English	1
	Writing Technique for Engineers	1
	Practice in Subjects of Mechanical Engineering IV	1

## Advanced Course of Mechanical and Electrical Engineering

	Subjects Offered	Credits
1st	General English	2
	Humanity and Culture in Japan	2
	German Seminar I	1
	German Seminar II	1
	Technical English I	2
	Elasticity and Plasticity	2
	Computer Science	2
	Problem Solving	1
	Advanced Applied Mathematics	2
	Advanced Applied Physics	2
	Advanced Applied Chemistry	2
	Fundamentals of Environmental Engineering	2
	Circuit Engineering	2
	Materials	2
	Internship	2
	Advanced Research I	6
	Advanced Laboratory	2
	Advanced Seminars and Exercises I	2
	Production Engineering	2
	Tribology	2
	Microwave Circuit Engineering	2
	Electromagnetic Waves	2
	Energy Engineering	2

	Subjects Offered	Credits
2nd	Modern Civilization	2
	Engineering Ethics	2
	Technical English II	2
	Disaster Prevention Engineering	2
	Advanced Environmental Chemistry	2
	Creative Design Engineering	2
	Magnetic Materials	2
	Theory of Technology	1
	Advanced Research II	8
	Advanced Seminars and Exercises II	2
	Systems Control	2
	Visual Information Processing	2
	Optomechatronics	2
	Semiconductor Physics	2
	Energy Conversion Engineering	2



# International Exchanges

There are two types of international students at Kisarazu KOSEN:

1. Third-grade enrollment students

International students enter KOSEN in their third year after they have finished a high school level.

2. Short-term international students based on the following programs.

## International Exchange Programs

### Exchanges with the National United University in Taiwan

A 3-week internship exchanges with NUU.

### Exchanges with the Nanyang Polytechnic in Singapore

Nanyang Polytechnic come to KOSEN for 3-month periods and KOSEN students visit Nanyang Polytechnic for 1-month periods.

### Exchanges with the Republic Polytechnic in Singapore

Republic Polytechnic come to KOSEN for 5-month periods and KOSEN students visit Republic Polytechnic for 1-month periods.

### Exchanges with the Sekolah-Sultan-Alam-Shah in Malaysia

A 1-week exchanges.

### Exchanges with the Heinrich-Hertz-Berfuskolleg in Germany

A 1-2-week exchanges.

### Exchanges with the Ideaz Institute in Austria

A 2-week exchanges.

### Exchanges with the Mechanical Engineering School Pančevo in Serbia

A 1-week exchanges.



## Scholarships

Privately financed international students can apply for scholarships provided by the Japan Student Services Organization (JASSO).

# International dormitory

There are three student dormitories, a females' dormitory, males' dormitory, and international dormitory. The International Dormitory was opened in April 2022 for strengthening international exchange. International students, their tutors and advanced degree students are eligible to stay in this dormitory. International and Japanese students are expected to cooperate naturally, with each other to ensure the better dormitory experience.

The dormitory has security cameras system and an electronic gate at the entrance hall of the dormitory.

Students are expected to prepare their own meals. There is a service unit on the first floor dedicated to Halal meals. The kitchen in each unit is equipped with an induction heater, microwave oven, and refrigerator.

Dormitory Name	Kokusai-Ryo
Capacity	34 male students 34 female students
Unit System	There are 10 service units shared by some rooms, which consist of a kitchen, bathroom, laundry, and lounge.
Amenities	Living quarters, Shared kitchen, Shower, Toilet, Landry rooms, Shared space, etc.
Monthly room charge	¥800
Monthly service charge	about ¥15,000



International dormitory



# List of Partnership Agreements

We proactively pursue cooperation with domestic and foreign universities, academic organizations, and non-academic organizations such as self-governing bodies, with the aim of regional development and nurturing personnel for an international market.

Domestic partner	Agreement date (renewal date)	Agreement contents
Waseda University Graduate School of Information, Production and Systems	May 26th, 2015	Memorandum regarding admission by recommendation, concluded in 2005
Yamagata University, Faculty of Engineering	March 4th, 2009	Agreement regarding education and research exchange
Chiba University	February 16th, 2010	Comprehensive agreement regarding education, research, and contributions to society
Japan Advanced Institute of Science and Technology	December 8th, 2014	Agreement regarding admission by recommendation, concluded in 2005
Kisarazu City	February 6th, 2015	Agreement regarding comprehensive cooperation
Chiba Institute of Technology	February 24th, 2015	Agreement regarding comprehensive cooperation
Chiba University, Graduate School & Faculty of Engineering	March 24th, 2015	Agreement regarding education and research exchange
Kisarazu City Education Department	July 6th, 2015	Agreement regarding comprehensive cooperation
The Chiba Bank, Ltd.	October 27th, 2015	Agreement regarding comprehensive cooperation
Graduate School of Media Design, Keio University	November 10th, 2015	Agreement regarding comprehensive cooperation
Institute of Information Security	March 10th, 2016	Agreement regarding comprehensive cooperation
Chiba Prefecture Police • SME Support Organization • Academic organization	July 28th, 2016	Mutual cooperation agreement regarding cybersecurity
Seiwa University and Seiwa Junior College	July 7th, 2017	Agreement regarding comprehensive cooperation
Chiba City Foundation for the Promotion of Industry, Public Interest Incorporated Foundation	September 12nd, 2017	Industry-academia collaboration agreement
Kisarazu High School	December 13rd, 2017	Agreement regarding comprehensive cooperation and education exchange

International partner	Agreement date (renewal date)	Agreement contents
The National United University (Taiwan)	December 13th, 2006	Agreement regarding mutual exchange of educational and research activities
Sekolah Sultan Alam Shah (Malaysia)	September 17th, 2014	Cooperative Exchange Agreement
Nanyang Polytechnic (Singapore)	August 5th, 2015	Cooperative Exchange Agreement
Heinrich-Hertz-Berufskolleg (Germany)	September 28th, 2015	Partnership agreement
Republic Polytechnic (Singapore)	September 20th, 2016	Cooperative Exchange Agreement
Pančevo School of Mechanical Engineering (Serbia)	December 13rd, 2016	Cooperative Exchange Agreement
Tribhuvan University (Nepal)	March 17th, 2017	Cooperative Exchange Agreement
Central Taiwan University of Science and Technology (Taiwan)	April 17th, 2017	Cooperative Exchange Agreement
National Chin-Yi University of Technology (Taiwan)	April 17th, 2017	Cooperative Exchange Agreement
Inje University, Department of Design Engineering (Korea)	March 20th, 2018	Cooperative Exchange Agreement
Ideaz Institute (Austria)	March 29th, 2018	Cooperative Exchange Agreement
Mandalay Technological University (Myanmar)	March 19th, 2019	Cooperative Exchange Agreement
Institute of Engineering and Technology, Mongol Kosen College of Technology (Mongolia)	December 6th, 2019	Cooperative Exchange Agreement
Mongolian University of Science and Technology Kosen College of Technology (Mongolia)	December 6th, 2019	Cooperative Exchange Agreement
New Mongol College of Technology of New Mongol Academy (Mongolia)	December 6th, 2019	Cooperative Exchange Agreement

## A member of the CDIO

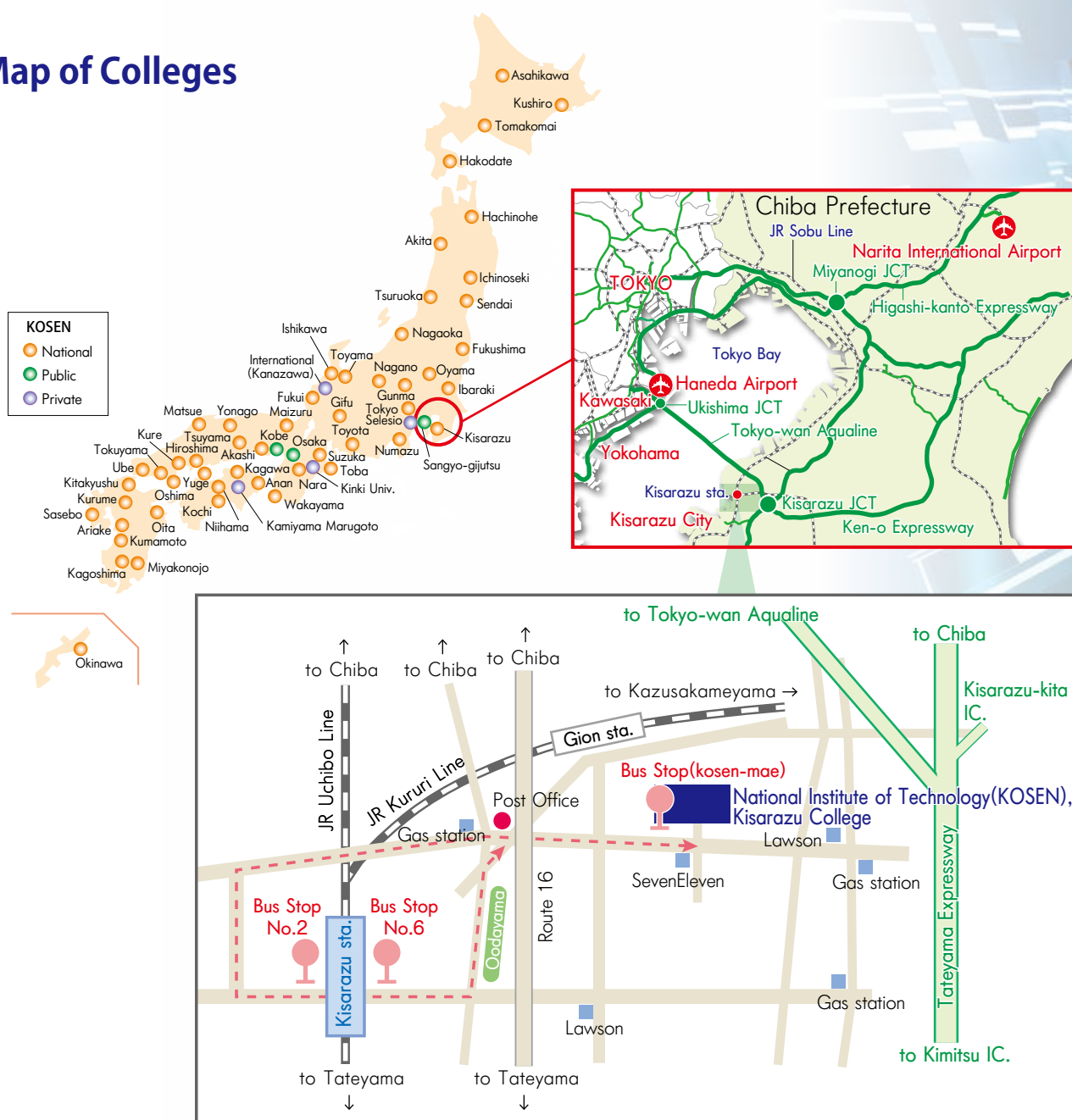
Date of joining	Content of activity
June 30th, 2016	The CDIO INITIATIVE is an innovative educational framework for producing the next generation of engineers.

## ACCESS 15 minutes from Kisarazu Station by bus

### Access to Kisarazu Station

From Tokyo Station	55min (JR Limited Express) 85min (JR Rapid Train) 60min (Highway Bus)
From Haneda Airport	40min (Highway Bus)
From Narita International Airport	100min (Highway Bus) 2hours (JR Train)
From Yokohama Station	60min (Highway Bus)

### Map of Colleges



## National Institute of Technology (KOKEN), Kisarazu College

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(2022)