

KOSEN

NATIONAL INSTITUTE OF
TECHNOLOGY



Mechanical Engineering/Material Engineering
Electrical/Electronic Engineering
Information Technology
Civil Engineering/Architectural Engineering
Chemical Engineering/Biological Engineering
Maritime Technology
Departments Responding to Social Demands
Integrated Course



MESSAGE

from the President

“Engineering” is now expected to play a crucial role in making our society—local, national, and global—more active, advanced, human-friendly, and innovative by producing not only advanced scientific and technological achievements but also highly educated engineers as world leaders. In recent years, entrepreneurship education has also become necessary for creating new businesses and opening up promising societies.

Of course, “engineering” is the fundamental driving force of society today. Engineers are, in other words, “social doctors” as they are required to keep society healthy in hard and soft aspects, and when the society has problems, engineers are expected to act accordingly to recover society’s health. We have ample challenges for the bright future.

Engineers should work hard for the people and society. Moreover, as you understand, engineers also create new concepts and new values that will become realities for the future society. This means that engineers are the “creator or innovator” as well. Creation is a top-level activity of human beings. Thus, engineers must be highly educated not only in major fields such as science and technology but also in social sciences such as ethics and economics to provide for a wealthy and affluent society. Our education system is designed on the basis of “Model Core Curriculum”, which includes not only classroom lectures but also various laboratory works. Additionally,

various unique contests, such as “robot contest”, “programming contest”, “design contest”, “deep-learning contest”, “disaster prevention and risk reduction contest”, and “GIRLS SDGs x Technology contest”, work together to foster students to be top-level engineers.

The National Institute of Technology (NIT), Japan, which includes 51 National Colleges of Technology (KOSEN, 55 Campuses, including 5 Colleges of Maritime Technology), provides a unique and successful higher education system, the main five-year engineering education, and an additional two-year advanced course for young students aged 15 and above. This is provided under close cooperation with industry and society to foster top-level practical and creative/innovative engineers as human resources (or as “Treasures of the Society”).

As the president of NIT, Japan, I can proudly promise you all to bring you up to be world-class engineers from the challenging “KOSEN Spirit: Challenging spirit”. We are glad to promote international collaboration and invite you all to join us from all over the world.

Thank you very much.

Taniguchi Isao
President

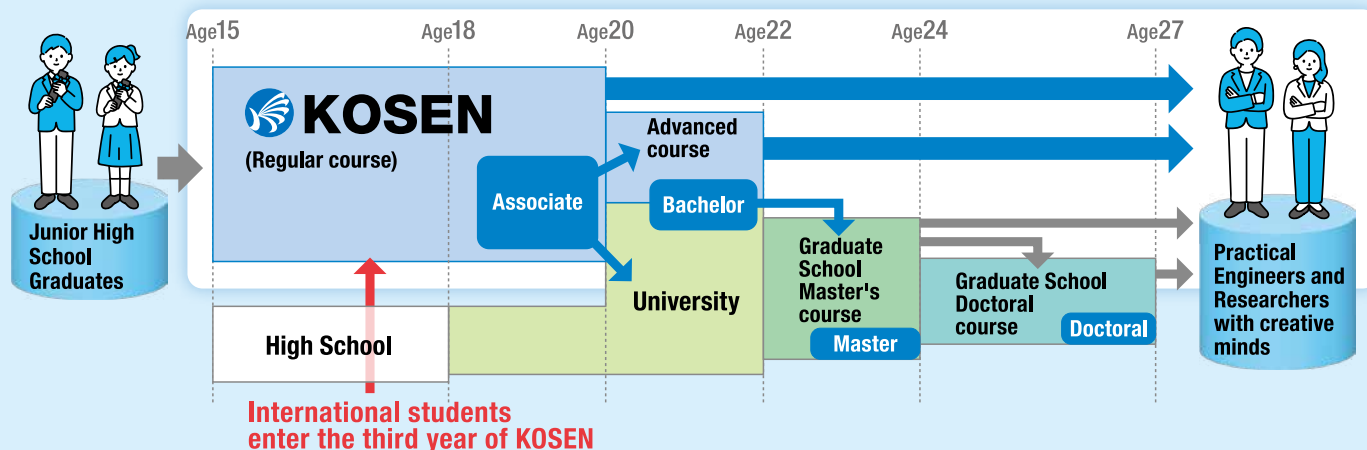


Characteristics of KOSEN

- 5-year integrated engineering education starting at the age of 15
- Specialized education, emphasizing experiments and practical training
- Two years of sophisticated education in advanced courses
- Outstanding faculty with diverse backgrounds (over 30% have experience in private-sector corporations, etc., whereas over 90% hold doctoral or master’s degrees)
- Cooperation with industry through internships and other cooperative education programs
- Contests in the fields of robotics, programming, design, entrepreneurship, etc.
- Student housing on all campuses offers opportunities for personal and educational growth
- High reputation in industry and academia

KOSEN Education System

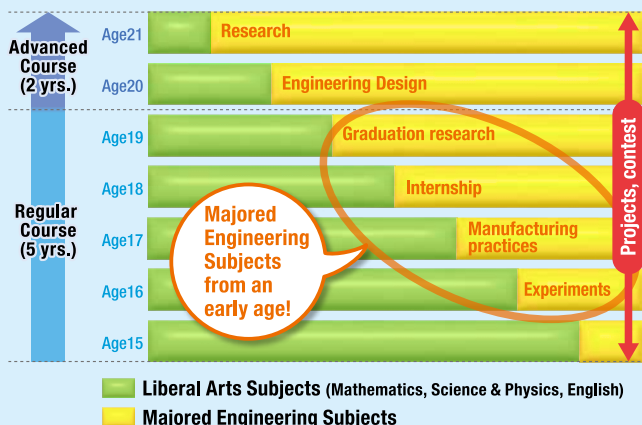
KOSEN accepts junior high school graduates and provides them an integrated five-year engineering education. International students enter the third year of KOSEN.



Strengths of KOSEN's Balanced Educational Structure

The KOSEN curriculum is designed with a well-balanced educational structure to provide a solid foundation in the fundamental major subjects for students in the early years and build a fundamental engineering background as students advance through the grades.

KOSEN education organically combines the three key elements of lectures, experiments, and practice enhancing students' skills and outcomes. Furthermore, KOSEN fosters practical and creative engineers from an international perspective. Students deepen their understanding to the point where they can freely apply their specialized knowledge to any situation through a combination of "head-on" thinking experience through lectures and exercises and "hands-on" actual experience through experiments and practice.



Example of Electronic/Digital circuit course

Lecture Phase		Practice Phase		Experiment Phase	
3-1	Combinatorial logic circuit	3-2	Simplified method	3-3	Basic logic circuit-making
2-1	Logic circuit	2-2	Truth table creation	2-3	AND/OR circuit
1-1	Elements (diode, Tr)	1-2	Current-voltage calculation	1-3	Circuit structure and measurement

MCC (Model Core Curriculum)

The MCC sets the minimum level of competences and contents to be acquired (core) and the guidelines for further enhancements to KOSEN education (model); it serves as the basis for visualizing the characteristics and strengths of KOSEN education and maintaining and improving educational quality assurance.

KIS (KOSEN International Standard)

The KIS is an evaluation and accreditation system launched in 2022 by the Japan Engineering Education Association as a framework ensuring educational quality at the international level to clearly demonstrate, domestically and internationally, the assurance of quality relating to KOSEN education (five-year integrated education system) based on the MCC. All national KOSEN colleges are scheduled to undergo sequential assessment.

Major Academic Fields of Study at KOSEN

Mechanical Engineering/ Material Engineering

Students learn the specialized subjects indispensable for the design and development of engineering systems (e.g., robots) in a systematic manner. Furthermore, students acquire solid fundamental skills and flexible imagination and adaptability, enabling them to adjust to the technical innovations in a new era.



Electrical/ Electronic Engineering

Students learn a wide range of knowledge and technology regarding the electricity and electronics for them to be able to connect and control electronic devices, home appliances, robots, and so on. Moreover, students acquire the expertise and adaptability required in a variety of fields.



Information Technology

Students study a variety of technology supporting the current information society, such as computer systems, software, programming, security, communication and network technologies. Students consequently acquire solid fundamental skills and flexible imaginations in information engineering.



Civil Engineering/ Architectural Engineering

Students gain the knowledge and skills required for structural engineering (e.g., bridges, rivers, underground spaces, railways, and waterworks) and spatial design (e.g., urban planning and landscape design) as well as infrastructure operation and maintenance. Furthermore, they learn about the residential and urban development on which our lives are founded.



Chemical Engineering/ Biological Engineering

Students study a wide range of technologies, such as science-technology and biotechnology, to develop and produce chemical and pharmaceutical materials. Furthermore, they learn about the recycling technology and environmental improvement technology to build a sustainable society in harmony with the environment.



Maritime Technology

This department comprises two courses: the nautical science course for future navigators and captains and marine engineering course for future engineers and chief engineers. In both courses, through abundant experiments and practical lessons, students learn a wide range of knowledge and technology necessary for maritime work, including ship operation.



Departments Responding to Social Demands

These departments have been established to flexibly respond to the needs of industry and society as well as social changes and diverse economic developments. Education therein cultivates businesspersons capable of active work overseas.



Integrated Course

Students learn basic knowledge on multiple subjects during the lower grades and then proceed to specialized courses as per their abilities and interests. They acquire the ability to solve problems from a broad perspective by studying knowledge and skills across multiple fields.



International Education and Research at KOSEN

In response to the rapid social and economic globalization in recent years, NIT is committed to developing globally capable engineers with language skills, cross-cultural understanding, and leadership and management skills to meet the needs of the industry. NIT works with academic institutions, governments, and other organizations worldwide to develop strategic partnerships promoting engineering education and research.

For KOSEN Students

- Global Engineer Training Program
- KOSEN Global Camp
- Overseas Activity Support Program for KOSEN students
- Global Entrepreneurship Program

For KOSEN Faculty and Staff

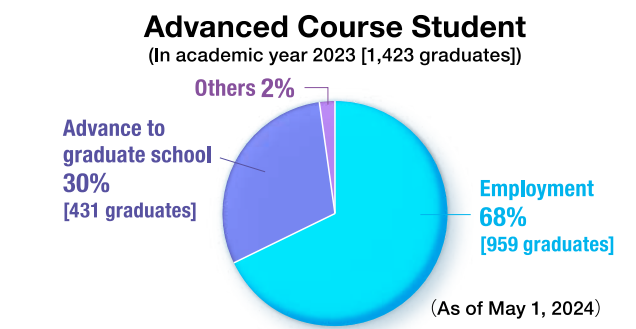
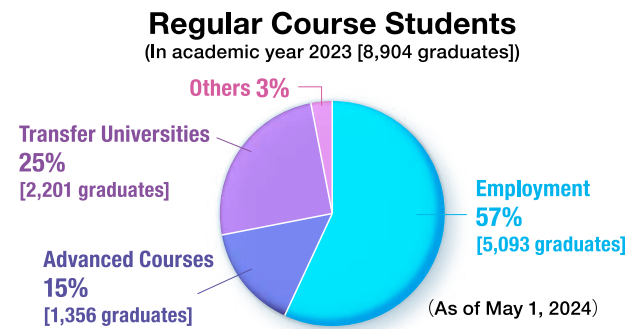
- Research Abroad Program
- International Symposium on Advances in Technology Education (ISATE)
- Global Staff Development

Acceptance of International Students

NIT has approximately 500 international students from over 30 countries and regions. We accept international students for the third year of study through the following five admission methods.

- Japanese government (MEXT) scholarship international students a. Embassy recommendation b. NIT recommendation
- Malaysian government international scholarship students
- Mongolian government international scholarship students (New acceptances ended in JFY 2021)
- Thai government international scholarship students (enrolment in the first year (New acceptances ended in JFY 2023) and transfer in the third year from Thai KOSEN)
- Privately financed international students

Careers for KOSEN Students after Graduation



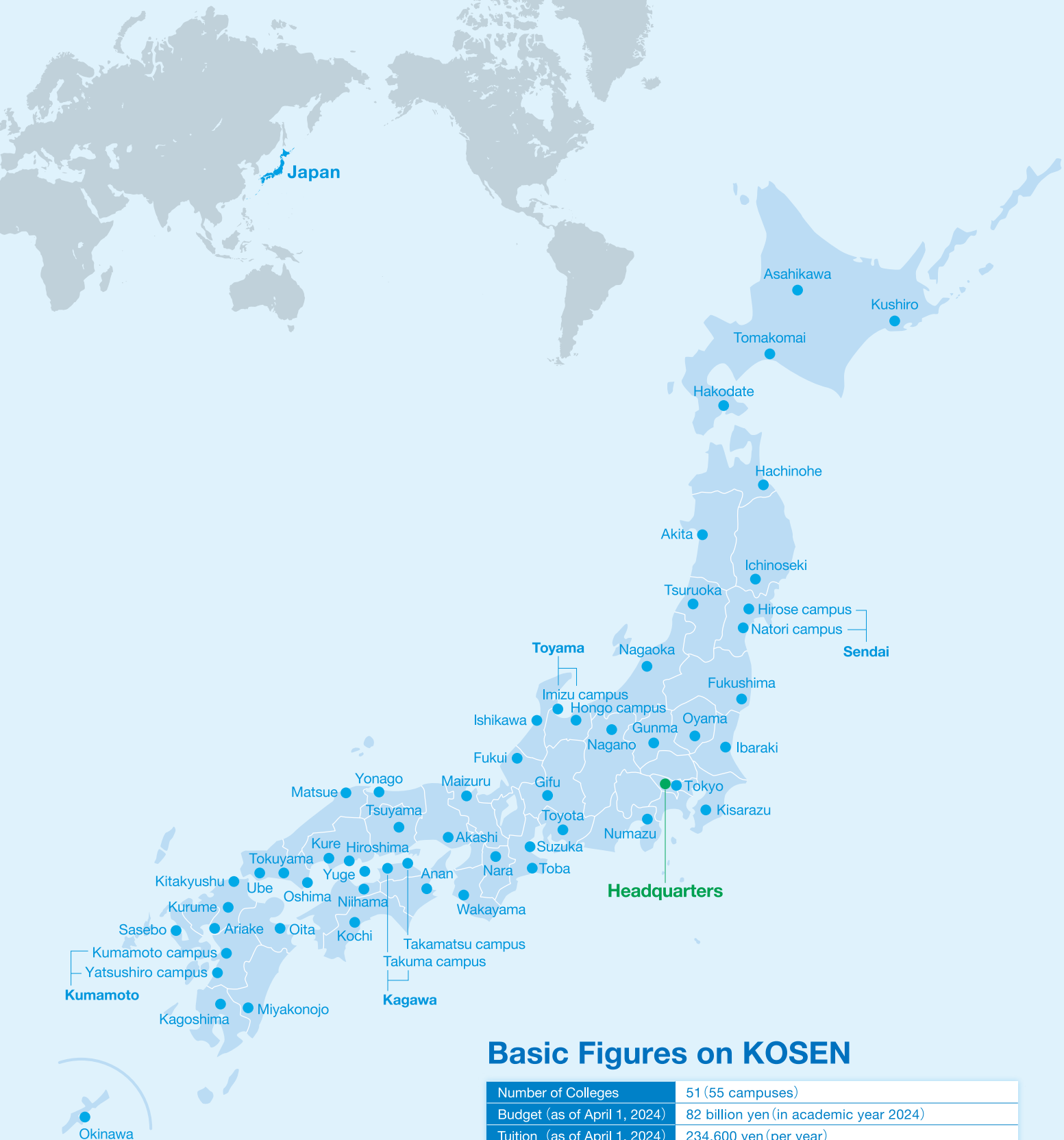
Employment and Further Education Opportunities for International KOSEN Students after Graduation (From May 1, 2022 to May 1, 2024)

Employment

Company Name	Number of Students
Global Trust Networks Co., Ltd.	2
COSMO INSTRUMENTS CO., LTD.	1
Komatsu Kaihatsu Kogyo	1
teamLab Inc.	1
TECMO CO.,LTD.	1
FPT Japan Holdings Co., Ltd.	1
Freewill, Inc.	1
Hitachi Astemo Korat Brake Systems Ltd.	1
YMIT Co., Ltd.	1
Employment in home country	6

Transfer to university, etc.

Name of University, etc.	Number of Students
Toyohashi University of Technology	61
KOSEN Advanced Course	29
Tokyo University of Agriculture and Technology	25
Nagaoka University of Technology	15
Tokyo Institute of Technology	13
Kitami Institute of Technology	11
University of Electro-Communications	9
Shimane University	8
University of Fukui	8
Mongolian University of Science and Technology	8
Kyushu University	7
Tohoku University	7
Niigata University	6



Basic Figures on KOSEN

Number of Colleges	51 (55 campuses)
Budget (as of April 1, 2024)	82 billion yen (in academic year 2024)
Tuition (as of April 1, 2024)	234,600 yen (per year)

Number of Faculty and Staff (as of May 1, 2024)

Faculty	Administrative Staff	Technical Staff, etc.	Total
3,458	1,731	713	5,902

Number of Departments and Enrollment Quota (as of May 1, 2024)

Category	Departments	Enrollment Quota	Current Student
Regular Courses	176	9,360	47,972
Advanced Courses	99	1,094	2,820
Total	-	10,454	50,792