



National Institute of  
Technology



# Message from the President

“Engineering” is now expected very much to play an important role to make our society, even local, national and global societies, more active, advanced, human-friendly and innovative for the promising future, through producing not only advanced scientific and technological achievements, but also highly educated engineers as world-leaders.

Of course, “engineering” is the fundamental of the society, today. Here, I would like to say “engineers” are, in other word, “Social Doctors”, because, engineers need to keep the society healthy in hard and soft aspects, and when the society has problems, engineers treat properly



for recovering the society healthy. We have a lot of challenges for the bright future.

Engineers should work so hard for the people and for the society. In addition, as you understand, engineers also create new concepts and new values to be in reality, for the future society. This means, engineers are the “Creator” as well. Creation is a top-level activity of human being. Thus, engineers need to be highly educated, not only in science and technology in their major fields, but also in social sciences including ethics to provide wealthy and affluent society.

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

As the president of NIT, Japan, I promise you all to bring you up to be world-class engineers with the challenging “KOSEN Spirit”, which I am very much proud of. We are very happy to promote international collaboration and invite you to join us from all over the world.

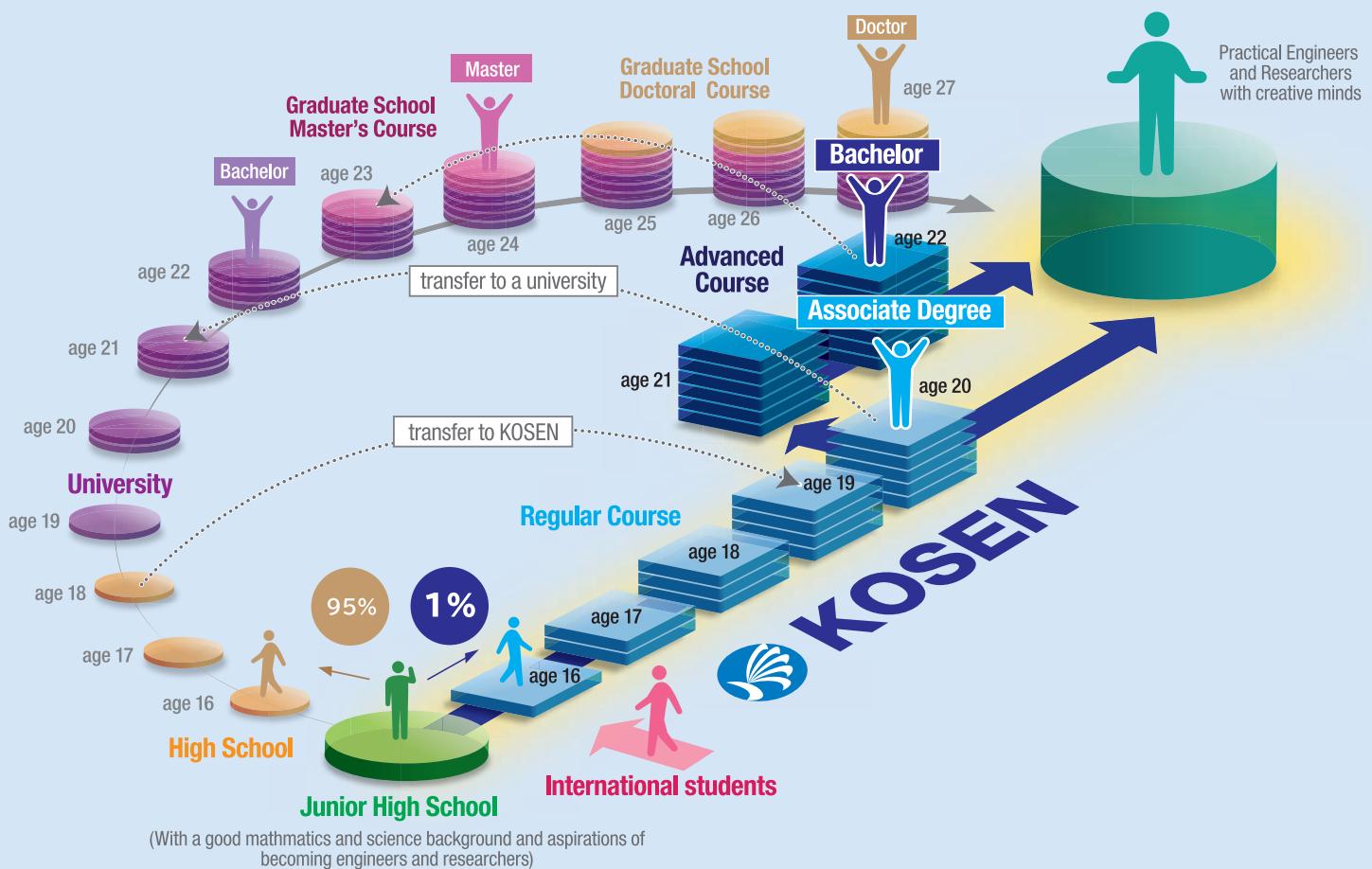
Thank you very much.

**Isao Taniguchi**  
President

## National Institute of Technology

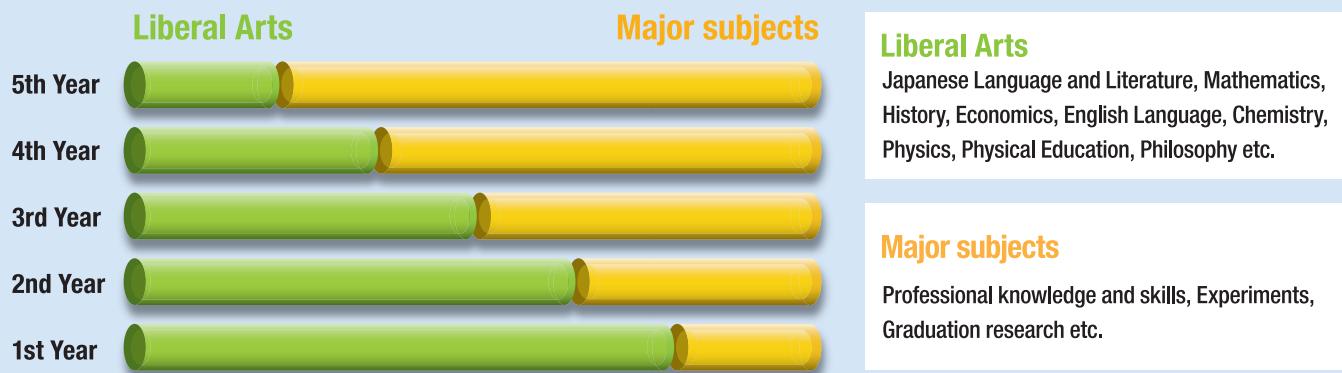
## Characteristics of KOSEN

- Unified five-year education from 15-year old (Regular Course)
- Wedge-shaped education: designed to generate an upward spiral of knowledge and ability
- Top-up two-year degree program (Advanced Course)
- More than 80 % of faculty members hold the highest degree in their research field.
- Cooperation with industry through internships and other co-op education programs
- Inter-college competitions such as Robot Contest, Programming Contest and Design Contest
- Student dormitories available at all colleges provide opportunities for personal and educational growth.
- Positive reviews from industry and academia
- Approximately 99% of NIT graduates seeking employment get jobs in their field of study.



## Wedge-Shaped Education

Many of Liberal Arts are provided in the first year and decrease as major subjects increase in subsequent years.

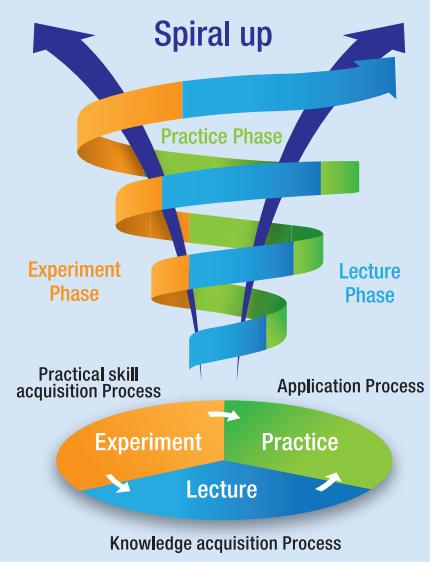


## Spiral Curriculum

To help students to improve their learning skills through three steps such as Lecture phase, Experiment phase and Practice phase.

Example of Electronic/Digital circuit course

	Lecture Phase	Experiment Phase	Practice Phase
3-1	Combinatorial logical 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



# Major Academic Fields of Study at KOSEN

## Mechanical & Material Engineering

In the Department, students will systematically learn about the design and production of machinery, which are the foundation of monozukuri, and the properties and production processes of materials in the Department of Material Engineering.



## Information Technology

In the Department, students will learn about the foundation of these technologies, such as computer systems, software, programming, information processing, and network technologies.



## Civil Engineering

In the Department, students will learn about space design and management, including the construction structures such as bridges, rivers, underground spaces, railways and water infrastructure, urban planning, and landscape design.



## Maritime Technology

In the Department, students will learn about the required subjects to acquire the knowledge and skills necessary for maritime officers, as well as subjects in marine transportation-related areas.



## Electrical & Electronic Engineering

In the Department, students will acquire broader knowledge ranging from sensor information gathering and action/control by motors, to wireless communication and power generation.



## Biological & Chemical Engineering

In the Department, students will learn about the basic theory and applied technologies of biology and chemistry, such as chemical technology and biotechnology, to develop and produce functional materials essential for industry, medical care and daily life, as well as recycling and environmental improvement technologies to create a sustainable society in harmony with the environment.



## Architectural Engineering

In the Department, students will learn about housing and machizukuri that serve as the basis of human life.



## Others

In order to flexibly respond to the needs of industry and society, as well as changes in industrial structure and the diversified development of today's scientific technologies, new departments other than those related to industry are established in which human resources that can play active roles internationally and create new business models are developed.

# International Programs

NIT creates diverse global learning opportunities that encourage intellectual and practical development through new knowledge, perspectives, skills and experiences. NIT offers study and research abroad opportunities for its students, faculty and staff and welcomes capable students, faculty and staff from around the world. In addition, NIT reaches out to academic institutions, governments and other organizations worldwide, building strategic partnerships that advance engineering education and research.



## For KOSEN Students

- Internship Abroad Program
- Japan Seminar on Technology for Sustainability (JSTS)
- International Symposium on Technology for Sustainability (ISTS)

## For KOSEN Faculty and Staff

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

## International Admissions

NIT enrolls about 450 international students from more than 20 countries & regions. Most international students apply for the following four types of international admission as third-year.

- Japanese Government (MEXT) Scholarship Students    a. Embassy Recommendation    b. NIT Recommendation
- Malaysian Government Sponsored Students         ● Mongolian Government Sponsored Students
- Privately Financed Students

## NIT International Partner Institutions

NIT including its individual colleges has approximately 230 agreements with higher education institutions and governments in over 30 countries and regions.

### Areas of Cooperation:

- Student/faculty/staff exchange         ● Exchange of scientific materials, publications and information
- Joint research and research meetings

## International Reputation

"They are widely admired internationally, not only for the quality of the high-level vocational training they offer, but also for their degree of responsiveness to the needs of Japanese industry, especially the manufacturing sector."

- OECD Reviews of Tertiary Education , JAPAN (2009)

"With workplace training, Japan's Kosen colleges bridge skills gap"

- Washington Post Web Version(2011)

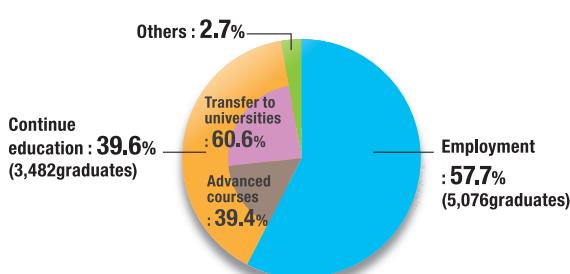
"Employers are eager to recruit Kosen students because of their trust for Kosen graduates"

- McKinsey & Company Report "Education to employment : Designing a system that work"(2012)

## KOSEN Students after Graduation

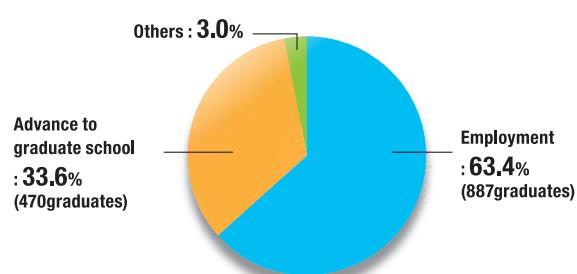
### Regular Course Students

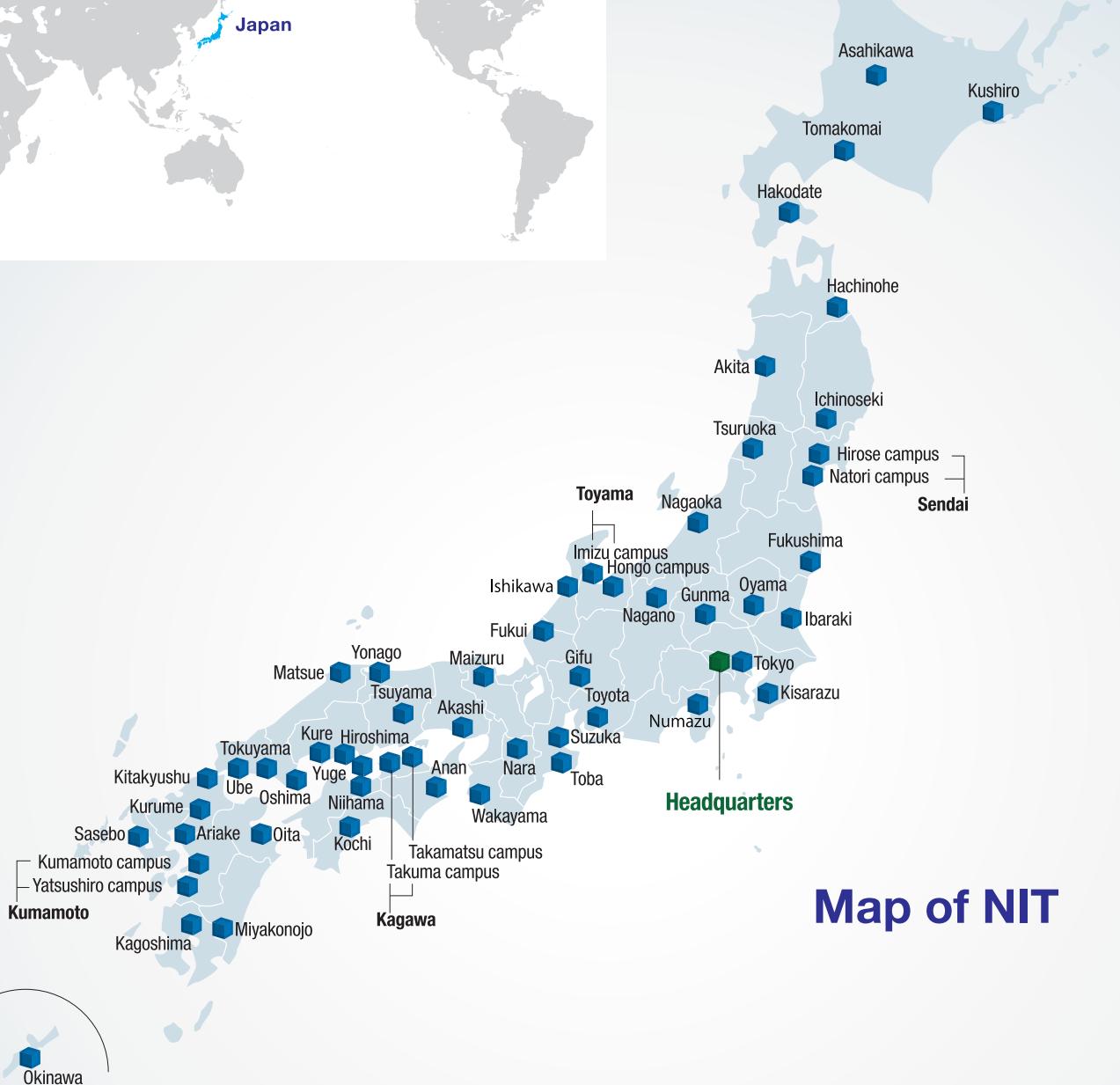
(in academic year 2014 [8,798 graduates])



### Advanced Course Students

(in academic year 2014 [1,399 students completed])





## Basic Figures on National KOSEN

Number of Colleges	51 (55 campuses)
Budget (as of April 1, 2016)	80 billion yen (in academic year 2016)
Tuition (as of April 1, 2016)	234,600 yen (per year)

### Number of Faculty and Staff (as of May 1, 2016)

Faculty	Administrative Staff	Technical Staff, etc.	Total
3,793	1,741	720	6,254

### Number of Departments and Enrollment Limits (as of April 1, 2016)

Category	Departments*	Enrollment Limits	Current Students
Regular Courses	201	9,360	48,748
Advanced Courses	108	1,080	2,818
Total	-	10,440	51,566

\*Departments in regular courses

- Mechanical & Material Engineering
- Electrical & Electronic Engineering
- Information Technology
- Biological & Chemical Engineering
- Civil Engineering
- Architectural Engineering
- Maritime Technology
- Others