Nagaoka University of Technology (National)
Graduate School of Civil and Environmental Engineering

◆ **Program name**

Civil and Environmental Engineering, International Graduate Program for Human Resource Development

画像
現在のHPから変更がない場合は不要です。

◆ **Degrees:**

Master of Engineering

◆ **Credit and years needed for graduation:**

30 credits, 2 years

◆ **Address:**

1603-1, Kamitomioka Nagaoka, Niigata
940-2188 JAPAN

Features of University

Objectives of the University

The remarkable strides made in Japanese science and technology over the last few decades have been accompanied by no less outstanding achievements by Japanese industry. The time has already arrived in which there is the need for a new approach to science and technology, one that can facilitate the formation of a positive, balanced, and supportive relationship between human's environment and the progress and needs of industry.

This vital goal requires the training of a new generation of engineers, steeped in practical expertise and a creative approach to the tasks they are faced with Nagaoka University of Technology (NUT) was founded for the purpose of this important undertaking.

Basic Philosophy

NUT aims to establish itself as an indispensable member of global society, a university which creates GIGAKU with a proactive approach to societal change, produces engineers with practical, creative capabilities and a spirit of service who will lead society into the future, and places emphasis on graduate-level education.

Development of Leading Engineers

NUT provides common classes to every student in order to foster their management skills and establish cultural, social, and international knowledge. This is consistent with the university's goal of graduating talented people who are not only highly competent in their respective fields but also capable of undertaking effective organizational leadership.

(Lecture Bldg.)

International Students

NUT has been pursuing international exchanges with universities and research institutes all over the world. The university has concluded about 110 Academic and Educational Cooperation Agreements and developed various international collaborative education programs including twinning programs. Currently about 250 international students from about 25 countries and regions are studying at the university. This corresponds to about 12 % of all the students at the university, which is a considerably high ratio among Japanese universities.

NUT joins Top Global University Project and improves the study environment for foreign students proactively.

Nagaoka City

(The Phoenix at Nagaoka Fireworks)

As Nagaoka is the second biggest city in Niigata Prefecture, JDS fellow will enjoy urban life here. As it is a hub city of high speed transportation system: Jouetsu Shinkansen, Kanetsu Expressway, and Hokuriku Expressway, and it is easy to go to other big cities: it takes only one and half hour to go to Tokyo by the Shinkansen. In summer you will be impressed to see the best fires works in the world on August 2nd and 3rd.In winter, you will join ski tour for International Students.

(Ski Tour for International Students)

Features of Graduate School

The school of Civil and Environmental Engineering (SCEE) aims to throw up practical engineers who can plan, design, construct and maintain infrastructure. NUT has been actively accepting international students who are working professionals including government officers for about 30 years. The JDS fellow also follows this principle and studies for 2 years. The JDS fellow can be supervised by sub supervisors as well as main one. One salaried tutor supports the fellow with related to start-up of private life as well as academic work for first 3 months.

(Cherry Blossoms in NUT)

SCEE has eleven professors, ten associate professors, one lecturer, five assistant professors and one research associate. Fifteen professors and associate professors offer their classes in English and the rests offer their classes in both English and Japanese. The JDS fellow can obtain all credits for your graduation without any recognition of Japanese language. Most of staff have international research network with mainly Asian countries. SCEE has two foreign professors, two professors who have experience to teach at Asian Institute of Technology for two or three years as JICA experts, and nine professors who stayed abroad more than one year.

The number of professors who study Transportation Planning, Infrastructure Planning and Management, City Planning, and Road Engineering with related to this development issue was eleven. These professors who have strong relationship with this development issue can supervise the JDS fellow.

Features of the Program

Development of transportation infrastructure and human resource who can plan, operate and maintain them

comprehensively are necessary in order to obtain sustainable economic development. As it is very difficult to study all fields for only two years, the JDS fellow studies “Mathematical Programing”, “Cost Benefit Analysis” and “Statistics and Multivariate Analysis” at first. These subjects are basic subjects in infrastructure planning and management field but cover wide application range.

Next, you study “Transportation Demand Forecast”, “Supply Chain Management”, “Urban Planning and Development”, and/or “Infrastructure Maintenance” according to your research topic. You have also opportunities to learn disaster management both in classrooms and on fields. Niigata prefecture experienced frequent floods and landslides so that lessons are stored historically at administrative and community level. You can take a course relevant to this topic.

Furthermore, you can study the basis of infrastructure management from the viewpoint of infrastructure planning by analyzing how to minimize life-cycle costs of an infrastructure. One of the possibilities is to consider its easiness for maintenance works after the service commencement. You can research related topics, too.

(Opening Slide of a Former Mongolian Master Student)

NUT has MOU with International University of Japan at Urasa in Niigata, which has one of the highest reputation for MBA program. The JDS fellow can take some courses such as “Public Policy Process” and “Policy Modeling” to improve your skill as a government officer. The JDS fellow participates in long-term internship to improve your practical ability for political design or so. Finally, you write master thesis that deals with practical problems in your country.

Other features are described below:

Special lecture of outside experts: We will invite experts who has intimate knowledge of transportation infrastructure development in Asia. We plan to invite professors at University of Tokyo and at Graduate Institute for Policy Studies.

Intercommunion with Ministry of Land, Infrastructure, Transport and Tourism (MLIT): Our school has frame agreement with Hokuriku Regional Development Bureau of MLIT. The JDS fellow learns the Japanese experience about administration of transportation through site visit and opinion-exchanging meeting, and develops the ability of policy design and administrative capability.

Attendance at international student seminar: In order to obtain the information about the latest technology of transportation infrastructure planning and management, the JDS fellow has an opportunity to join international student seminar, such as “Shinkansen Summer Seminar for International Students” organized by The University of Tokyo, Japan Railway Technical Service, JR EAST and JR Central.

Internship opportunity: NUT has long experience of long-term internship since its establishment and obtains high appreciation. Students study practical issues at private companies or public office for 5 months. The JDS fellow is also dispatched to a private company or public office and obtains the ability.

Attendance at Conference of Infrastructure Planning and Management: As many international students and experts attend the conference from all over Japan, it is very helpful to have human network with them.

Attendance at seminar after graduation: We plan to hold seminar about development of transportation infrastructure in order to follow up the JDS fellow after your graduation.

Necessary Curriculum to Obtain the Degrees

For all students who belong to the Master’s Program in Civil and Environmental Engineering, the basic requirement for course work is to take 30 credits or more, including 9 credits from compulsory courses. Most of the compulsory courses are directly relevant to thesis completion, which is also required to complete the degree.

Compulsory Courses (Master's Program in Civil and Environmental Engineering) (9 credits)

(a) Seminar:
Seminar on Civil and Environmental Engineering 1 (1 credit)
Seminar on Civil and Environmental Engineering 2 (1 credit)
Seminar on Civil and Environmental Engineering 3 (1 credit)
Seminar on Civil and Environmental Engineering 4 (1 credit)

(b) Research Work:
Research work of Civil and Environmental Engineering 1 (2 credits)
Research work of Civil and Environmental Engineering 2 (2 credits)

(c) Lecture:
Research Integrity (1 credit)

Elective Courses (Master's Program in Civil and Environmental Engineering) (21 credits from below)

Elective courses are categorized into two subjects: general academic subjects and specialized subjects. 6 credits and more are taken from general academic subjects and 15 credits and more are taken from specialized subjects.

(a) General Academic Subjects (6 credits)

(1) SDGs –recognizing limitations and challenges-; (2) Japanese Industrial Development and SDGs; (3) Analytical Reasoning and Presentation; (4) Gigaku Innovation and Creativity; (5) Professional Discourse and Presentation; (6) Japanese for Graduate Students 1; (7) Japanese for Graduate Students 2; (8) Japanese for Graduate Students 3.

(b) Specialized Subjects (15 credits)

(1) Transportation Network Analysis by Big Data; (2) Microeconomic Modeling for Policy Analysis; (3) Advanced Infrastructure Planning and Management; (4) Supply Chain Management Analysis; (5) Advanced Urban Planning I; (6) Advanced Urban Planning II; (7) Advanced Road Engineering; (8) Advanced course of disaster management; (9) Energy Economics*; (10)Decision Behavior Theory*; (11)Business Strategy*; ; (12) Public Policy Process**;(13) Policy Modeling**; (14) Advanced Geotechnical Engineering I ;.(15) Advanced Geotechnical Engineering II; (16) Advanced Environment and Disaster Prevention Engineering I; (17) Advanced Environment and Disaster Prevention Engineering II; (18) Advanced Fluid Mechanics; (19) Advanced Topic on Atmospheric and Hydrosphere Science; (20) Advanced Concrete Engineering; (21) Advanced Structural Engineering; (22) Advanced Water Environmental Engineering I; (23) Advanced Water Environmental Engineering II; (24) Advanced Environmental Protection Engineering.

* offered by the Master's Program in Information and Management Systems Engineering

** offered by International University of Japan (in process)

List of faculty members capable of guiding JDS Fellows

The List of Faculty Members as Potential Supervisors for JDS Fellows

Professor		
SANO Kazushi*	TAKAHASHI Osamu*	TOYOTA Hirofumi
KOMATSU Toshiya	OHTSUKA Satoru	LU Minjiao
HOSOYAMADA Tokuzo	IWASAKI Eiji*	SHIMOMURA Takumi*
YAMAGUCHI Takashi	IKEDA Takaaki*	
Associate Professor		
MATSUDA Yoko*	KUMAKURA Toshiro	TAKAHASHI Kazuyoshi
HIMENO Shuji	HATAMOTO Masashi	INUKAI Naoyuki
MATSUKAWA Toshiya*	FUKUMOTO Yutaka	NAKAMURA Fuminori
MIYASHITA Takeshi *		
Lecturer		
KATO Teppei*		
Assistant Professor		
TAKAHASHI Takao*	WATARI Takahiro	YANG Hongxuan
SHIGA Masataka	MARUOKA Akira*	

*Professors who can be a supervisor of JDS Fellows.

How We Assign Supervisors to JDS Fellows

(1) November and December: A number of faculty members examine JDS Application Forms for the initial screening; we read their research proposals carefully, examine the contents of research proposals and identify potential supervisors.

(2) January and February: When our delegates interview some JDS candidates, the delegates report the results of the interviews to the Faculty Meeting and the Master's Program in Civil and Environmental Engineering.

(3) March or April: When JDS Fellows are officially chosen, we will decide the suitable laboratories and supervisors for each JDS Fellow.

Academic Schedule

The Master's Program in Civil and Environmental Engineering has adopted the advisory committee system for the instruction of individual study/research. The standard time frame for the completion of the Program is two years or six terms. The following table shows the academic schedule that is applied to JDS Fellows:

FIRST Year (September 2024-March 2025)
Second Term (September - December) • Officially register academic supervisor and research topic • Register and take compulsory and elective courses in English • Presentation on one's research background at individual laboratory seminars • Participate at Conference of Infrastructure Planning and Management (November) • If necessary, conduct field surveys under the guidance of one's supervisor Third Term (January - March) • Presentation on one's research background at individual laboratory seminars • Participate in other JDS domestic internships/academic conferences • If necessary, conduct field surveys under the guidance of one's supervisor
SECOND YEAR (April 2025-March 2026)
First Term (April-August) • Register and take compulsory and elective courses in English • Presentation and thesis study on the research topic at individual laboratory seminars • Present at annual JDS international seminar (July)

Second Term (September - December) • Presentation on one's research background at individual laboratory seminars • Presentation at Conference of Infrastructure Planning and Management (November) • If necessary, conduct field surveys under the guidance of one's supervisor • If necessary take additional elective courses • Engage in thesis writing under the guidance of one's own supervisory committee Third Term (January - March) • Present research progress at "Interim Oral Presentation" (February) • Engage in thesis writing under the guidance of one's own supervisory committee
THIRD YEAR (April 2025-September 2026)
First Term (April-August) • Presentation and thesis study on the research topic at individual laboratory seminars • Engage in thesis writing under the guidance of one's own supervisory committee • Submission of thesis draft and thesis application (June) • Oral defense of the thesis (July)
GRADUATION (August 2026)

Facilities

Students Housing

We have the following 5 on-campus dormitories available for International students.

Dormitory Name	For	Room Types *1)
International House	Male/Couple/Family students	Single：46 rooms (42 rooms for International Students) Couple：8 rooms Family：5 rooms
International Student House	Female students	Single：50 rooms (15 rooms for International Students)
30th Anniversary Student House	Male/Female/Couple students	Single：18 rooms (8 rooms for International Students) Couple：5 rooms
Student Dormitory	Male students	Single：360 rooms (30 rooms for International Students)
LinkTeCH House (Share-house Dormitory)	Male/Female students	Single：12 Units, 82 rooms (about half of the total for International Students)

*1) Single room：a room for a single person
Couple room：a room for a married couple
Family room：a room for a family

(30th Anniversary Student House)

Library

Library supports learning ambition, educational improvement and research activities in the university by collecting, preserving and providing academic information. Also, our Library is open to the public.
We offer various electronic contents and services on our library webpage.
Nagaoka University of Technology Library provides access to a vast amount of the latest information, as a result of having installed online journal system, preceding other universities.
Doctoral dissertations and bulletins are available on the institutional repository.
Various electronic search tools are available to support students to search our online catalog or to interrogate information in globally known databases.
Intra-campus wireless LAN can be used throughout the library.
The library is available 24 hours a day for graduate students, fourth-year undergraduate students who have a laboratory assigned, and for faculty and staffs. (Except from Dec 28 to Jan 4.)
Others may use Library from 8:30 to 21:00 on weekdays and from 9:00 to 17:00 on weekends. Our library is open to the public; they are welcomed to use and borrow books.

Welfare Facilities

The university facilities include 2 cafeterias (total capacity: 400 seats), a café (52 seats), an all-purpose store, and a barbershop. Electronic Money, Edy and QUICPay, are available at 2 cafeterias, café POPEYE and all-purpose store (called BAITEN).

International Friendship Lounge

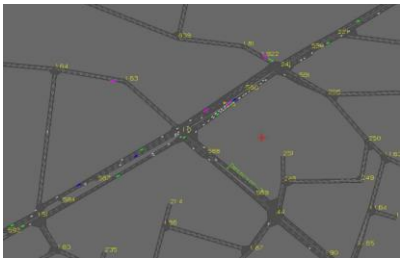
As a place for communication among international and Japanese students, individual studies and meetings, use International Friendship Lounge freely.

*Please refer to the “GUIDEBOOK FOR INTERNATIONAL STUDENTS”.
https://www.nagaokaut.ac.jp/gakusei/ryugaku_shien/ryugakusei/Guidebook2023.files/2023_guidebook_international_student.pdf

Message for Applicants

From Laboratory:

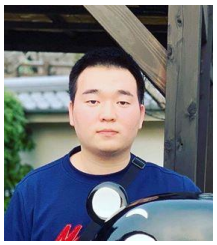
The Urban Transport Engineering and Planning Laboratory, which JDS fellow will mainly join, has a diversity of nation, currently 23 Japanese students and 10 international students including 4 excellent doctoral students. They can support your course work and research activities in Japan. Coming to our laboratory, you will have chance to broaden not only your knowledge, research’s skill but also the life experiences. We have cooperation with many ASEAN’s institute, AIT and many others. Beside the academic field, we also have a strong connection with many Japan organizations and private companies, JICA, Japan Railways group to name a few. We also possess a wide range of equipment to support students’ research, from the advanced simulation system such as PARAMICSM (Micro-Traffic Simulation Model), JICA STRADA (Transportation Demand Model), Gurobi (Optimization Solver), SPSS (statistical tools), SIS (Geographic Information System), and so on. With these ideal condition, we believe that students will have a great encourage in academic activities.



(Micro-Traffic Simulation Model: Pramics)

Our laboratory not only promote the research works but also encourage students discover the Japanese culture through the outside activities. If you are the nature-loving person, you will discover many charming places nearby, from the street of cherry blossom, the field of tulip, lavender and to the hill of rose. As located in the most famous rice terrace in Japan, the surrounding landscape itself is a breathtaking scenery, especially in the winter season. From the university view, the covering mountain chain change its color by seasons, green offspring for spring, twinkle flower for the summer, maple leaf for the autumn and white ice for the winter. The University also organizes many wonderful training course for snow sports, such as skiing, snowboarding or skating. 2-years in our lab could become yours most warming memories.

(Int. Students in Urban Trans. Lab.)



GANTUMUR GALMANDAKH
Bachelor student
From Mongolian University of Science and Technology
Twinning Program student

My experience at the Nagaoka University of Technology has been very great. I made lots of new friends and in general the vibe around the campus is great. The University has one of the biggest international community globally and you can see it just by walking around the area. And the campus area be comes so beautiful when cherry tree blooms. Nagaoka Firework is the best firework festival. I have never seen such a great firework. Coming from a foreign country, I am certain that I made the right decision choosing NUT.

GANZORIG TUVSHINZAYA
Bachelor student
From Mongolian University of Science and Technology
Twinning Program student

I am so happy to be studying at Nagaoka University of Technology. I like the atmosphere provided. The fact that it is a relatively small university, everyone is made an accessible and help can be seen at any time. Senior students are happy to help and answer questions. And the campus area becomes so beautiful when cherry tree blooms. Love the city and the course was mostly good. I have learnt a lot of new skills. I wish I had joined a few sports societies to fully embrace university more. Living in a slightly smaller city than other universities was perfect for me!

(Mongolian Students at University Festival)