

Saitama University (National) Graduate School of Science and Engineering

◆ Program name

International Graduate Program on Civil and Environmental Engineering

◆ Degrees:

Master of Engineering

◆ Credit and years needed for graduation:

30 credits, 2 years

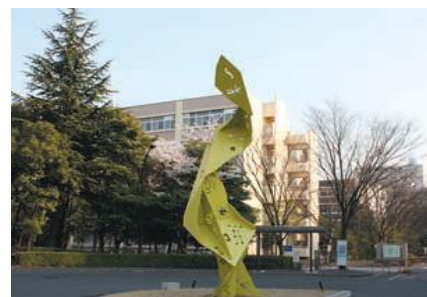
◆ Address:

255 Shimo-okubo, Sakura-ku, Saitama-shi,
Saitama, 338-8570, Japan



Features of University <http://en.saitama-u.ac.jp>

Saitama University is a national university established in 1949. It is composed of five faculties for undergraduate education (Faculty of Liberal Arts, Faculty of Education, Faculty of Economics, Faculty of Science, and Faculty of Engineering) and three graduate schools (Graduate School of Humanities and Social Science, Graduate School of Education, and Graduate School of Science and Engineering). Saitama University is reputed for higher education and research in Japan and is located in a quiet suburban area of Saitama City, the capital of Saitama Prefecture. Saitama City is situated about 30 km to the north of Tokyo. This location enables the residents of the university to easily access governmental research institutes, private companies, and other facilities in and around Tokyo area.



Saitama University has long been established as a respected national university within Japan. As a part of our global initiative, we disseminate outstanding results through our diverse research projects to scholars across the world.

The University is not a conventional Japanese national university. We create originality from original mindsets. Our students actively communicate with faculty. Our faculty's fields of expertise enable Saitama's unique curriculum of combining onsite classes and research to academics.

Features of Graduate School <http://www.saitama-u.ac.jp/rikogaku/en.html>

Many foreign students are enrolled to various departments of the Graduate School of Science and Engineering; the graduate school is really international. Besides offering academic classes in English, though not mandatory to take, the graduate school also provides Japanese language classes for foreign students to ease their daily lives in Japan.

■ Academic Schedule

The program starts in the end of September, which is the beginning of the fall semester. To obtain a master degree, students must be enrolled in the program for a minimum of two years. Just before finishing the first year's study, students are required to deliver a mid-term presentation, which should be based on the research work of master course.

■ Facilities

In order to contribute to international exchange in the fields of research and education, the International House of Saitama University was built to provide accommodation and related facilities to foreign faculty members, researchers, and students. The house consists of three buildings with a total of around 200 single, couple, and family rooms. Like other international students, JDS Fellows can apply for the residence after the enrollment. In principle, the minimum period of residence for all the researchers and students in the International House is one month while the maximum is one year. Currently, the International House does not have sufficient capacity for all

the international researchers and students; only approximately one third can be accommodated in the house. For the remaining two thirds, they need to find accommodation (e.g., renting a private apartment) by themselves.

Features of the Program <http://intl.civil.saitama-u.ac.jp/>

The International Graduate program on Civil and Environmental Engineering offers foreign students, including the JDS Fellows, an opportunity to pursue graduate studies and conduct research in the field of civil and environmental engineering. Fields of study include Infrastructure Management, Transportation Planning, Environmental Engineering, Ecological Engineering, Coastal and Ocean Engineering, Hydraulics and Water Resources Engineering, Geotechnical and Geological Engineering, Concrete and Material Engineering, Structural and Wind Engineering, Earthquake Engineering, and so forth. Moreover, the graduate program includes courses specially designed for international students where class instructions and research supervisions are all provided in English. Master thesis is accepted in English.



■Faculty members capable of guiding JDS Fellows

Research areas under the International Graduate Program on Civil and Environmental Engineering are categorized into five academic research groups (Transportation and Planning Group; Structural Engineering, Mechanics and Materials Group; Geotechnical and Geosphere Research Group; Earthquake Disaster Prevention & Mitigation Group; Hydraulic and Environmental Engineering Group). The groups in which the teaching staffs are capable of guiding JDS Fellows are introduced as follows:

***Transportation and Planning Group**

Transportation and Planning Group conducts research on urban and traffic planning to achieve better city life. Life in city is composed of 3 elements: Inhabiting, Working, and Relaxing. Travel behavior ties each element and is often called the 4th element of life in city. The group focuses on the importance of relationship between life and transportation behavior in cities. The main research themes are traffic calming, transport community development, regional transportation planning, tourism management, traffic demand management (TDM), traffic demand Omotenasi (TDO), traffic psychology and behavior, consensus building, mechanism design in reverse logistics, and intercity transportation network analysis.

Teaching staffs and research interests <http://www.civil.saitama-u.ac.jp/en/org/index.html>

Assoc. Prof. Kiyotaka Fukahori

Landscape engineering

Assoc. Prof. Aya Kojima

Urban transportation planning, Micro-area transportation planning, Consensus building

Assist. Prof. Atsushi Sugama

Transportation & Planning

***Structural Engineering, Mechanics and Materials Group**

Structural Engineering, Mechanics and Materials Group conducts research and development on planning, design, performance evaluation, and maintenance of civil engineering structures such as steel, reinforced concrete, prestressed concrete and composite structures. Particularly, studies on mechanical and physicochemical behavior of construction material and development of new structural types, new construction methods and new materials are being carried out in this group. The research topics in structural mechanics include understanding the mechanical behavior of new structural system, the relationship of microstructure with mechanical characteristics and fracture phenomena in structural materials.



The research areas in structural dynamics cover understanding and mitigation of dynamic responses of structures to earthquake, wind or traffic, vibration-based structural health monitoring, and, additionally, human responses to vibration and noise. The concrete and rubber materials are mainly studied, aiming to quantitatively evaluate the long-term behavior based on chemical reaction, microstructure, and time dependent behavior of material characteristics related with temperature. Furthermore, application of new material, such as fiber reinforced polymers, in civil engineering structures are investigated. As aforementioned, the Structural Engineering, Mechanics and Materials Group works on safety and durability of civil engineering structures by conducting comprehensive research and developments in wide academic field.

Teaching staffs and research interests <http://www.civil.saitama-u.ac.jp/en/org/index.html>

Prof. Yoshiaki Okui

Structural mechanics, Applied mechanics, Bridge engineering, Micro-mechanics

Prof. Yasunao Matsumoto

Structural Dynamics, Human response to vibration and noise, Building vibration, Low frequency noise

Prof. Takeshi Maki

Concrete engineering, Reinforced concrete engineering & mechanics, Earthquake engineering, Finite element method and its application

Assoc. Prof. Shingo Asamoto

Cementitious materials subjected to high temperature, Cementitious materials behavior in deep underground, Durability of concrete with mineral admixture, Prediction model for concrete structures deterioration

Assoc. Prof. Ji Dang

Structure nonlinear mechanic, Structure dynamics, Steel bridge, Structure isolation and energy dissipation, Structure seismic design

Assist Prof. Yao Luan

Concrete engineering, Durability of concrete materials, Construction materials, Bioremediation

***Geotechnical and Geosphere Research Group**

Geotechnical and Geosphere Research Group consists of three subgroups, "Geotechnical engineering for disaster mitigation", "Geoenvironmental engineering", and "Geosphere system engineering". "Geotechnical engineering for disaster mitigation" covers research topics related to soil liquefaction, slope stability, ground reinforcement and improvement techniques. Various kinds of laboratory testing, field-scale investigation and numerical modeling are used to understand soil's mechanical properties and behaviors. "Geoenvironmental engineering" covers research topics related to environmental risk assessment at contaminated ground, development of site-specific appropriate techniques for pollution control, measurements and models for water, gas, solute, heat transport in soil, and characterization of soil structure and pore networking. "Geosphere system engineering" covers research topics related to geological disposal of radioactive waste and evaluation of the rock properties and their behaviors for construction and maintenance of rock structures. Research on weathering process and its restoration technique for archeological sites and civil engineering heritages are also investigated on the basis of the knowledge of geology.



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Teaching staffs and research interests <http://www.civil.saitama-u.ac.jp/en/org/index.html>

Prof. Ken Kawamoto

Geoenvironmental engineering, Solid waste management in developing countries

Prof. Masahiko Osada

Rock mechanics, Applied geology

Prof. Taro Uchimura

Geotechnical engineering, Geohazard prevention engineering, Mechanics of geostructures

Assoc. Prof. Chiaki Oguchi

Geosphere material sciences, Rock weathering and geomorphology

Assist. Prof. Yota Togashi

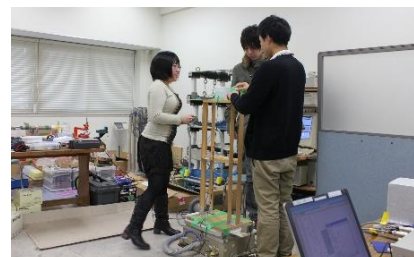
Rock mechanics and tunnel engineering

Assist. Prof. Kengo Nakamura

Environmental Risk, Geotechnical and Geospatial Research

***Earthquake Disaster Prevention and Mitigation Group**

Earthquake Disaster Prevention and Mitigation Group covers studies on earthquake engineering and the engineering applications of earth science. The main research activities are: geomechanics, seismology, seismic wave propagation, site and propagation path effects on strong ground motion, temporal and spatial variations of strong ground motion, dynamic failure of ground, mechanics on granular materials and numerical experiments of them, deformation of surface soil layer due to earthquake faults, seismic excitation systems and structural response, soil-structure interaction, base isolation systems, lifeline systems, and reliability theory.



Teaching staffs and research interests <http://www.civil.saitama-u.ac.jp/en/org/index.html>

Prof. Masato Saito

Earthquake engineering, Seismic design engineering, Soil and structure interaction

Assoc. Prof. Hidenori Mogi

Earthquake ground motion and response, Seismic wave propagation

Assoc. Prof. Hisashi Taniyama

Rock mechanics, Applied geology

Assist. Prof. Chandra Shekhar Goit

Earthquake engineering, Soil-structure Interaction

Assist. Prof. Usama Zafar

Earthquake engineering, Seismic analysis of structures

Necessary Curriculum to Obtain the Degree <http://intl.civil.saitama-u.ac.jp/list-of-courses>

As of current, more than 20 classes are conducted in English under the program, titles of which are as follows:

- Advanced Analysis of Vibrations and Waves
- Advanced Course in Technical English II
- Advanced Course in Transportation System
- Advanced Geoenvironmental Engineering
- Concrete and Advanced Cement Based Materials
- Advanced Lectures on Strong Motion
- Design and Maintenance of Concrete Structures
- Advanced Theory on Earthquake Engineering
- AI and Data Science for Civil Engineering
- Structural Design and Analysis
- Construction Management
- Numerical Analysis for Civil Infrastructures
- Earth Science for Civil and Environmental Engineers
- Geotechnical Earthquake Engineering
- Rock Weathering and Geomorphological Processes
- Advanced Course in Landscape Planning
- Mechanics of Geomaterials
- Mechanics of Geostuctures
- Numerical Analysis on Hydraulic Environment
- Practical Numerical Simulation on Hydraulic Environment
- Advanced Mathematics for Planning
- Structural Dynamics and Control

Student(s) can enroll in any of the aforementioned classes with the consideration of a single provision that they meet the requirements set forward for graduation. For the conferment of a master's degree, a student must comply with the following requirements:

- The period of full-time attendance to fulfill the requirements of the program is a minimum of two years.
- A minimum of 30 credits is required, including 10 credits for master thesis.
- A master thesis based on the research carried out under the supervision of his/her thesis supervisor must be completed and satisfactorily presented.

Message for Applicants

The International Graduate Program on Civil and Environmental Engineering was established in 1992. As of March 2023, over 430 masters' students and more than 200 doctoral students from over 30 different countries have graduated from the program. Our alumni are active in academia, research, industry, and government-related employment, or are pursuing higher studies. We regard the excellent performance of our alumni in their career paths as a reflection of the quality of the education offered by our university. We aim at providing high quality education by continuously striving for innovation in our graduate programs, and we sincerely welcome excellent students to apply for our program.

Vietnam is going through a rapid economic and urban development, the pace of which is expected to be faster in the next couple of years. Engineers, technicians and staffs who have knowledge of construction technology and are capable of planning, designing and managing transportation and infrastructures are already in a high demand and the demand is predicted to grow further. Therefore, quality education for such individuals (i.e., engineers, technicians, planners, etc.) is a very important aspect related to the overall development of Vietnam. The mission and objective of our program is to educate students who will be capable of serving in civil and urban development with various engineering knowledge and technologies. So far 93 students from Vietnam have already graduated from our program, obtaining their master's and/or doctoral degree of engineering. Currently, they are working actively as educators at universities, staff of government agencies, engineers and technicians in construction companies, etc. in Vietnam. More to this, Saitama University has been continuously supporting students from Vietnam under student exchange program with the Hanoi University of Civil Engineering (HUCE) in Hanoi, Vietnam.