Access to Hokkaido University

From New Chitose Airport to Sapporo Station: 40 minutes by express train or 50 minutes by bus/car
From Sapporo Station to campus: 10 minutes by walk or 3 minutes by car

English Engineering Education PROGRAM
Kita 13 Nishi 8, Kitaku
Sapporo, Hokkaido, 060-8628 JAPAN
☎ +81-11-706-8089
✉ +81-11-706-8094

If you have any inquiries write to
✉ eprogram@eng.hokudai.ac.jp

For details please check our home page
http://www.eng.hokudai.ac.jp/e3/

Study in English in JAPAN!
Welcome to the Graduate School of Engineering at Hokkaido University! I am excited to see that you are interested in our international program, e³. Over the past 150 years, our university has formulated educational philosophies built on a "frontier spirit", promoting "all-round education", taking a "global perspective", and pursuing "practical learning". These philosophies remain as relevant as ever in today's world, with global competence playing a key role in the modern international education.

The e³ program, started in 2000, aims to expand our university’s reach beyond the boundaries of Japan. Multidisciplinary English education allows our students to benefit from the best Japanese technology and gives them access to cutting-edge knowledge and an international environment, so that they can develop communication skills and cultural awareness, become flexible researchers and engineers in the diverse fields of science and technology, and graduate ready for the global challenges.

13 Master’s and 12 Doctoral degree programs in 13 divisions:
- Applied Physics
- Materials Science and Engineering
- Mechanical and Space Engineering
- Human Mechanical Systems and Design
- Energy and Environmental Systems
- Quantum Science and Engineering
- Field Engineering for the Environment
- Engineering and Policy for Sustainable Environment
- Architectural and Structural Design
- Human Environmental Systems
- Environmental Engineering
- Sustainable Resources Engineering
- Cooperative Program for Resources Engineering*
  (*Master’s degree only)

Excellent academic reputation
Study in one of the top 10 Japanese universities, which is also ranked highly in Asia and in the world.
**Sapporo** is the 5th largest city in Japan, with a population of almost 2 million people, and it is often rated as one of the most desirable places to live in Japan. The Hokkaido University campus is located in a beautiful setting in the center of Sapporo with easy access from the international airport. Enjoy plentiful nature of Hokkaido and experience skiing, hiking, and many other outdoor activities!

**Good infrastructure and support services**

**How do I fit in?**

Ask our staff! Friendly English-speaking staff of e+ International Affairs office of Engineering will help you with various issues, from academic affairs to everyday life.

Meet your buddy! Newly arrived international students are paired up with an enrolled student(s) and are given help to adjust to their new environment smoothly; by registering at the ward office and opening bank account to learning about the research facilities. Join e+ orientation For new students to meet your colleagues and learn about the program.

Don’t miss e+ welcome party, welcome trip and various social activities organised by e+ students.

**Will I learn Japanese?**

Optional courses of different levels, from introductory to advanced, are offered on campus. Learning some Japanese will help you to enjoy your everyday life and better understand Japan's unique culture.

**Commuting stress free**

Many students live nearby and commute by bike or walk. Central railway station is within walking distance and subway passes right next to the campus.

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**Global perspective**

Study together with colleagues from all over the world, join e+ active social life and create your own unique international experience!

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**Reasonable cost of living**

**Where can I stay?**

For the first semester or two, most students will stay at the University accommodation. There are total 148 fully furnished, internet-enabled rooms (including 47 for family and couples) available.

Many affordable Private apartments are located in close proximity to the campus. On-campus room guide service is available for free.

**Is life in Sapporo expensive?**

Sapporo provides an excellent quality of life and more reasonable cost of living compared with other major cities in Japan. You can comfortably live on a budget of approximately JPY 80,000 to 110,000 per month*

<table>
<thead>
<tr>
<th>Rent</th>
<th>Single</th>
<th>Couple/Family</th>
</tr>
</thead>
<tbody>
<tr>
<td>University accommodation</td>
<td>JPY 4,700-31,000</td>
<td>JPY 57,000-31,000</td>
</tr>
<tr>
<td>Private apartment</td>
<td>JPY 25,000-40,000</td>
<td>JPY 60,000-90,000</td>
</tr>
</tbody>
</table>

*As of March 2023. Your budget depends on the lifestyle you choose. The amount is for reference only.

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**Academic Calendar / Events**

October | November | December | January | February | March | April | May | June | July | August | September

Classes begin | New Year’s Break | Classes finish by early February | Graduation ceremony | Classes begin | Golden week holidays | University Festival | Classes finish by early August | Graduation Ceremony | Classes finish by early August | Graduation party

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The philosophy behind the e+ program makes it like a small world. Excellent students from all around the world gather here to develop their knowledge and share ideas. e+ has built a warm and tight community to serve its purpose. There are many activities which not only help us to expand our Japanese culture, but also help us to know each other and know the countries we are representing.

Sheoq Fung, M2 (China) - Laboratory of Environmental Biotechnology (LEB)

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I am glad to carry out my studies at Hokkaido University under the atmosphere that I can expect by interacting with researchers from many parts of the world. The programs offered not only encompass course work and research but field trips, conference opportunities and overseas trips that help to balance one's life.

Frances Semida CHKANDA, D1 (Malaysia) - Laboratory of Environmental Biotechnology (LEB)
Human Mechanical Systems and Design

The division of human mechanical systems and design aims to conduct advanced research on "man-machine" systems that support new fields and bring about progress in biotechnology, robotics, and control engineering. Researches are based on the concept of human-centric engineering, as well as on the recognition of the value of human-centered education related to these fields.

2 Research groups

- Biomechanics and Robotics
  Tissue biomechanics, human movement, medical engineering, assistive technology, motion and vibration control, robot navigation, mobile robot, smart structure, structural health monitoring

- Microelectromechanical Systems
  Fluid and solid mechanics, thermal conductivity, composites, functional material, sensor, actuator, mechanism, bio-MEMS, mechatronics, optimization, static and dynamic analysis

Energy and Environmental Systems

Our division is engaged in research and education on advanced energy systems through research on hydrogen fuel cells, next-generation engine systems, and innovative devices for measurement and control of thermo-fluid phenomena, together with research and education on the evolution and development of future nuclear energy technologies including innovative nuclear systems, nuclear power plant safety, reactor physics, and radioactive waste management.

2 Research groups

- Applied Energy Systems
  Applied energy systems, energy conversion systems, flow control, applied thermal engineering, engine system engineering, internal combustion engine

- Nuclear and Environmental Systems
  Nuclear and environmental systems, nuclear reactor, nuclear safety and system engineering, nuclear waste management, boiling heat transfer

Quantum Science and Engineering

The research activities of this division cover a wide area of physics and engineering for the quantum beam science and the plasma. Based on the fundamental study of these research fields, we are aiming for state-of-the-art materials characterization and fabrication techniques, medical care and cancer therapy equipment, new devices for energy generation and saving, and environmental monitoring technology.

3 Research groups

- Applied Quantum Beam Engineering
  Neutron generation, neutron scattering/imagining, quantum beam, radiation detection/measurement, nuclear instrumentation, medical physics, proton therapy, neutron capture therapy

- Plasma Science and Engineering
  Plasma processing, plasma diagnostics, laser emission, laser processing, plasma-surface interactions, fusion engineering, vacuum engineering, simulation of electromagnetic field in plasma

- Nanomaterial Science
  Quantum beam irradiation effects, in-situ observation, nuclear materials, transmission electron microscope, synchrotron radiation, surface science, well-defined catalysis

ADVANCED RESEARCH FACILITIES

"soil website was very easy to navigate so I immediately fell to
me that the program is very well organized compared to other universities. I applied to Prof. Takeshi Nakamura lab and I was very happy to get through. My research is focused on finding the characteristics of crack propagation in a particular type of steel which is used in High Speed Railways, space structures, etc. Additionally to the experiments at our own facilities, my lab organized trips to Spring-8, one of the five largest synchrotron radiation facilities in the world located in Hyogo Prefecture. Our research project is the first of its kind initiated in the world and has been cited all over the world.

The environment in our lab is wonderful. We study together, help each other in research, go out and play baseball together. My whole image about Japanese people as being reserved has changed.

Panas MESHKOVATTA (India)
Master’s course student, Laboratory of Mechanical and Functional Materials
Field Engineering for the Environment
This civil engineering division supports the development of engineers and researchers capable of formulating solutions to environmental and natural disaster issues that threaten human societies. Through the well-designed approach with well-balanced techniques rooted in field surveys, wide-area measurement and assessment, experiments with sophisticated equipment and facilities, and numerical simulation, students will graduate with specialized knowledge and skills in related civil engineering subjects.

2 Research groups
- Geotechnical and Material Engineering for Disaster Prevention
  Cement, sustainability, concrete durability, mineral additives, soil mechanics, geotechnics, geodimeter, soil testing, geoinformatics, foundations, numerical simulation, frost geotechnics
- Hydraulic and Aquatic Environment Engineering
  Environmental fluid mechanics, hydrometeorology, climate model, coastal hydrodynamics, coastal disaster, renewable energy, hydraulic geomechanics, watershed hydrology, river management, turbulence

Human Environmental Systems
The human environment consists of the built environment and partly of the natural environment. The human environment, such as residence space, indoor climates, forests and cities, is important for our lives and symbiosis with nature. Building envelopes, building facilities, urban green spaces, city facilities and so on are systems designed to improve properties of the built environment. We carry out research concerning the performance of that environment and systems to heighten the quality level. We also verify the properties under actual service conditions.

2 Research groups
- Human Settlement Design
  Design concept, modern architecture, documentation preservation, architectural planning, environment behavior, community design, disaster recovery and reconstruction, city planning, sustainable design, design simulations
- Structural and Urban Safety Design
  Shell structures, seismic protective systems, seismic isolation, seismic retrofit, OpenSees, seismic response analysis, seismic input estimation, vulnerability analysis, human behavioral monitoring, social economic impact analysis

Architectural and Structural Design
We aim at fostering human resources who can put the new sophisticated policy design and design for social safety and sustainability into practice based on acquired skills and field works related to safety mechanisms that support sustainable and urban spaces, by acquiring critical thinking and problem-solving abilities on issues related to principles of symbols in the environmental spaces of buildings and cities and their design.

2 Research groups
- Geoenvironmental Engineering
  Rock slope stability, tunnel deformation, acid mine drainage, soil-groundwater pollution, environmental fluid mechanics, beaches, groundwater, bioremediation, geophysical exploration, geothermal resources
- Resources Engineering
  Mineral processing, resources recycling, environmental mineralogy, water-ark interaction, ore deposit, inorganic material, soft matter, enhanced oil recovery, surface chemistry, geochemistry, resources management, project management, international cooperation

Environmental Engineering
The Division of Environmental Engineering aims to produce highly skilled professionals with special capabilities essential to build sustainable social systems by conserving the environment and creating safe and comfortable living spaces based on the sound circulation and metabolism of water, air and substances. Such professionals should be furnished with the ability to engage in specialized work and R&D on environment.

2 Research groups
- Water Metabolic System
  Environmental biotechnology, biosensor, microecology, public health, water quality standard, microsensor, fluorophores, lake Mashu, environmental risk engineering, innovative water treatment technology, drinking water guideline
- Environmental Management Systems
  Solid waste, landfill, thermal treatment, recycling, system optimization, air pollution, noise pollution, EIA, environmental health, sound materials, byproducts, soil and groundwaters contamination, risk communication

WELL EQUIPPED LABORATORIES

Engineering and Policy for Sustainable Environment
The Division of Engineering and Policy for Sustainable Environment aims to produce future leaders capable of solving complex environmental and social problems from global perspectives while building consensus with local residents and using methods including system-engineering and socioeconomic approaches. These are intended to create the spaces and environments essential for safe, comfortable and well-developed human activities and harmonization with nature.

2 Research groups
- Engineering for Sustainable Infrastructure System
  Structural mechanics, structural dynamics, bridge engineering, steel structures, concrete structures, hybrid structures, seismic engineering, maintenance engineering, life time engineering, life cycle management
- Policy for Engineering and Environment Infrastructure planning, national and regional planning, urban economics, transportation planning, traffic engineering, public involvement, mathematical programming, traffic information, construction management, image/video analysis, sensor data analysis, data visualization, data science

Sustainable Resources Engineering
Cooperative Program for Resource Engineering (master's course only)

The main research and educational topics of both our divisions are mining engineering including geology, rock mechanics, mineral processing, and extractive metallurgy. We also provide excellent opportunities to study environmental protection and remediation technologies, resources recycling of urban mine, and application of clean technologies, which are needed for sustainable extraction and supply of mineral resources to our society.

Cooperative Program for Resource Engineering is established through a collaboration between Hokkaido University and Kyushu University. The program aims to develop highly skilled resource engineers who can design and manage the entire process of the resource business.

2 Research groups
- Geoenvironmental Engineering
  Rock slope stability, tunnel deformation, acid mine drainage, soil-groundwater pollution, environmental fluid mechanics, beaches, groundwater, bioremediation, geophysical exploration, geothermal resources
- Resources Engineering
  Mineral processing, resources recycling, environmental mineralogy, water-ark interaction, ore deposit, inorganic material, soft matter, enhanced oil recovery, surface chemistry, geochemistry, resources management, project management, international cooperation

Katie Rumi ARNEZ FERRELL (2016)
Doctoral course student, Laboratory of Hydraulic Research

My love for nature and passion for mining took me across the globe, from the heart of South America all the way to the beautiful campus of Hokkaido University, Japan, where I first experienced what it means to meet students from different countries and learn new ideas and perspectives from them.
Apply for an acceptance letter or a scholarship through the e³ program

Japanese Government (MEXT) scholarships

Japanese government offers full-sponsorship scholarships for outstanding students (including monthly allowance of JPY 145,000 for PhD or JPY 144,000 for Master’s program; recipients are exempted from tuition and admission fees); e³ accepts applications through such frameworks as: University nomination (Including Top Global University Project slot), Foreign Study Coordinator slot (regions with coordinators office), Program for Indian Railways professionals, Embassy nomination.

Japanese Government (MEXT) scholarship via Embassy recommendation

You can apply for this type of MEXT scholarship through the Japanese embassy in your country of origin. After you pass the preliminary screening at the embassy, please contact the e³ program to receive an acceptance letter.

MEXT honors scholarship: reservation system

Financial assistance of JPY 48,900/month (for a period of 6 or 12 months) is available for a number of newly enrolled Master’s and Doctoral students with good academic performance accepted directly into the e³ program through the special selection.

e³ Grant for self-supported Doctoral students

A grant of JPY 150,000 upon enrollment (one-time payment) is offered.

If you are applying for a scholarship offered by your country’s government or some private scholarships and need a conditional offer letter, please contact us.

Other organizations’ full support scholarships

Chinese Government Scholarship — please apply to our program to obtain an acceptance letter.

Cost of education and tuition fee support

Tuition fee waivers

A discount of 25, 50, or 75% of full tuition fee waiver can be granted to the applicants in need.

Study support for Doctoral Students

Full tuition fee support through the combination of tuition fee waivers and employment as research assistant is available.

Join e³ as a Double degree candidate

Already enrolled in a graduate program at a partner university which has a double degree agreement with us? You have a chance to complete a part of your degree at e³, and by fulfilling the requirements of two schools you can obtain degrees from both universities. Find out more about double-degree programs:

- [Link to double-degree information]

Research Internship

Are you a full-time undergraduate or graduate student at a university outside of Japan? Join a research project at one of our laboratories on favorable terms.

Duration of the program is minimum 1 week, maximum 6 months. Please contact a potential supervisor at the Faculty of Engineering to agree upon the possible acceptance period and your research topic. Applications are accepted throughout the year.

Exchange programs

Are you a student at one of over 200 worldwide partner institutions of Hokkaido University? You are welcomed to spend one or two semesters with us as a tuition-waived exchange student!

Research-oriented program (Special Research Students)

Graduate students undertake research directed/ on their specialized areas at one of our laboratories under the supervision of a faculty member of the Graduate School of Engineering.

Course work-oriented program (Master’s Students)

Undergraduate or graduate students join regular classes (graduate students take courses from the e³ University curriculum). Acceptance is possible from October (Autumn semester) and April (Spring semester).

For more details:

- [Link to program details]
- [Link to application form]
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HOKKAIDO UNIVERSITY Graduate School of Engineering
Master’s and Doctoral Degrees / International Programs

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