

Course Number	06002
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2006 「The International Priority Graduate Programs (PGP)」

～Advanced Graduate Courses for International Students～

【1. Profile of the University】

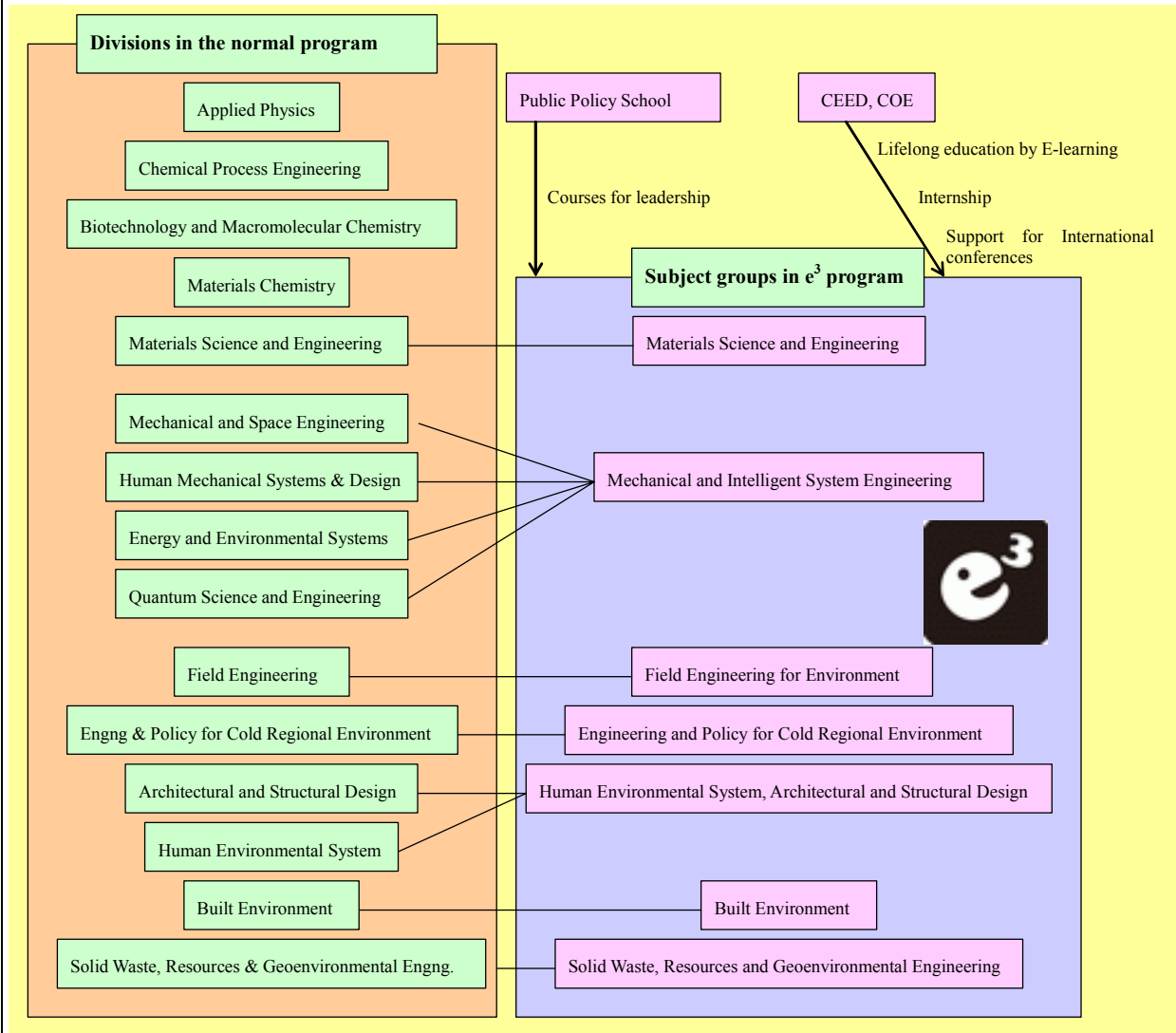
①University Department	Graduate School of Engineering, Hokkaido University			
②President	Mutsuo NAKAMURA			
③Address (Headquarters)	〒060-0808 N8W6, Sapporo			
④Contact	Division	Division of Solid Waste, Resources and Geoenvironmental Engineering		
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⑤Web-Address	http://www.eng.hokudai.ac.jp/e3/			
⑥Enrollment (only Graduate School)	563	(include MEXT's Scholarship Students: 214)		

【2. Outline of the Course】

①Course	English Engineering Education Program (e ³ program)
②Degree	Master + Doctor (2 +3 years)
③Graduate Course, Department	Division of Solid Waste, Resources and Geoenvironmental Engineering, Graduate School of Engineering
	(Address)N13W8, Sapporo
④Collaboration (Universities, Graduate courses, Departments)	Divisions of "Materials Science and Engineering", "Mechanical and Space Engineering", "Human Mechanical Systems and Design", "Energy and Environmental Systems", "Quantum Science and Engineering", "Field Engineering for Environment", "Engineering and Policy for Cold Regional Environment", "Architectural and Structural Design", "Human Environmental System", "Built Environment" and "Solid Waste, Resources and Geoenvironmental Engineering"
⑤Quota	30 (Master: 17, Doctor:13) (include MEXT's Scholarship Students: Master 7, Doctor 7) (include Japanese : Master 6, Doctor 2)
⑥Faculties	79 (Full-time(only for this course):1 Full-time(at the department offering this course):78 Part time:)
⑦Representative of the Course	Job Title Dean of Graduate School of Engineering
	Name Takashi MIKAMI

【3. Contents of the Course】

e³ program accepts foreign students with and without scholarship to raise world leaders in engineering field. The education in e³ program is held only in English. e³ program consists of 7 subject groups which were organized according to the needs of foreign students and for quality control in education. Courses whose quantity and quality are the same as or more than the normal Japanese program are prepared. 11 divisions out of 15 in the Graduate School of Engineering participate in this program so that the program covers almost all engineering fields. Courses on project management and global economy will also be given by cooperation of Public Policy School. Intensive courses will also be offered under cooperation of 21st century COE Program.



Comparison between Japanese and e³ programs

The subject groups are explained below.

1. Subject Group of Field Engineering for Environment

With our eyes set on environmental pollution and deterioration of nature in Japan and other countries in the Asian region, we strive for the development of technologies for engineering control, management and restoration related to air, water and terrestrial environments by placing emphasis on the active use of a wide range of methods, such as remote sensing and on-site measurement, as well as cultivating engineers who are specialized in these technologies.

2. Subject Group of Engineering and Policy for Cold Regional Environment

The subject group is characteristic of the fusion of engineering with the policy, and develops an

overall system of analysis and evaluation in planning, construction, maintenance and disposal of social infrastructures built in cold regions, while achieving the harmony with environment. Using the method of system engineering and social economic, professional engineers and scholars who can solve a complex social problem from wide view and knowledge are educated.

3. Subject Group of Human Environmental System, Architectural and Structural Design

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. The group is also aimed at developing "Viewpoints," "Theories" and "Technologies" related to new plans and designs for structural and urban spaces that are geared toward pleasant and sustainable living environments.

4. Subject Group of Built Environment

The subject group consists of two Research Groups -- Water Metabolic System, and Sustainable Infrastructure System, whose core members are those who will be evaluated in the 21st Century COE Program "Sustainable Metabolic Systems of Water and Waste for Area-Based Society". The scope and target of research activities in the subject group are to establish a water metabolic system and sustainable infrastructure system to create a recycling-oriented society leading to a new international research base for socio-environmental engineering.

5. Subject Group of Solid Waste, Resources and Geoenvironmental Engineering

For sustainable development, environmental and health risk must be minimized and limited resources must be used effectively. For this, optimal disposal systems for solid waste and resources recycling systems from waste should be established. Assessment and management of land as a place for waste disposal and the remediation of polluted soils are also important issues. In our subject group, staffs and specialists of waste management, resources and materials processing, and geo-environmental engineering, are studying and teaching on the above issues.

6. Subject Group of Materials Science and Engineering

The subject group is composed of 3 research groups, Materials Design, Eco-Materials and Energy Materials, and has strong relation with Energy Conversion Materials Research Center and cooperative laboratories. These groups consist of 13 laboratories, and their activities cover the designing and characterizing of new materials and the controlling of material functions. The subject group is well equipped with a computerized system for materials studies, mass spectrometers, FT-IR spectrometers, X-ray diffraction apparatus, scanning electron microscopes, high-voltage microscope, high-resolution microscopes and X-ray photoelectron spectrometers.

7. Subject Group of Mechanical and Intelligent System Engineering

We aim to develop researchers and engineers who can initiate innovative and advanced R & D projects in areas such as biotechnology, nano- and micro-technology, energy & the environment and the ultimate frontiers of engineering. To achieve these ends, we ensure our students are knowledgeable in terms of "power," "flow" and "heat" which form the basis of mechanical engineering, and provide an education that fosters the ability and sense to create a variety of products and systems by applying this knowledge. We have enhanced the teaching of the fundamental principles in new areas outside the category of mechanical engineering, such as quantum mechanics and bioengineering. We also emphasize a method of education that allows students to solve problems with their own ideas and cultivates individuals that are capable of fulfilling active roles on the global stage.