



Graduate School of International Resource Sciences

Outline

The Graduate School of International Resource Sciences was established to cultivate specialists with wide-ranging knowledge in fields spanning from earth science to resource development and environmental conservation, capable of operating as global leaders. It provides them with advanced knowledge and expertise in the fields of (1) Earth Resource Science and (2) Earth Resource Engineering and Environmental Science. All lectures are conducted in English.

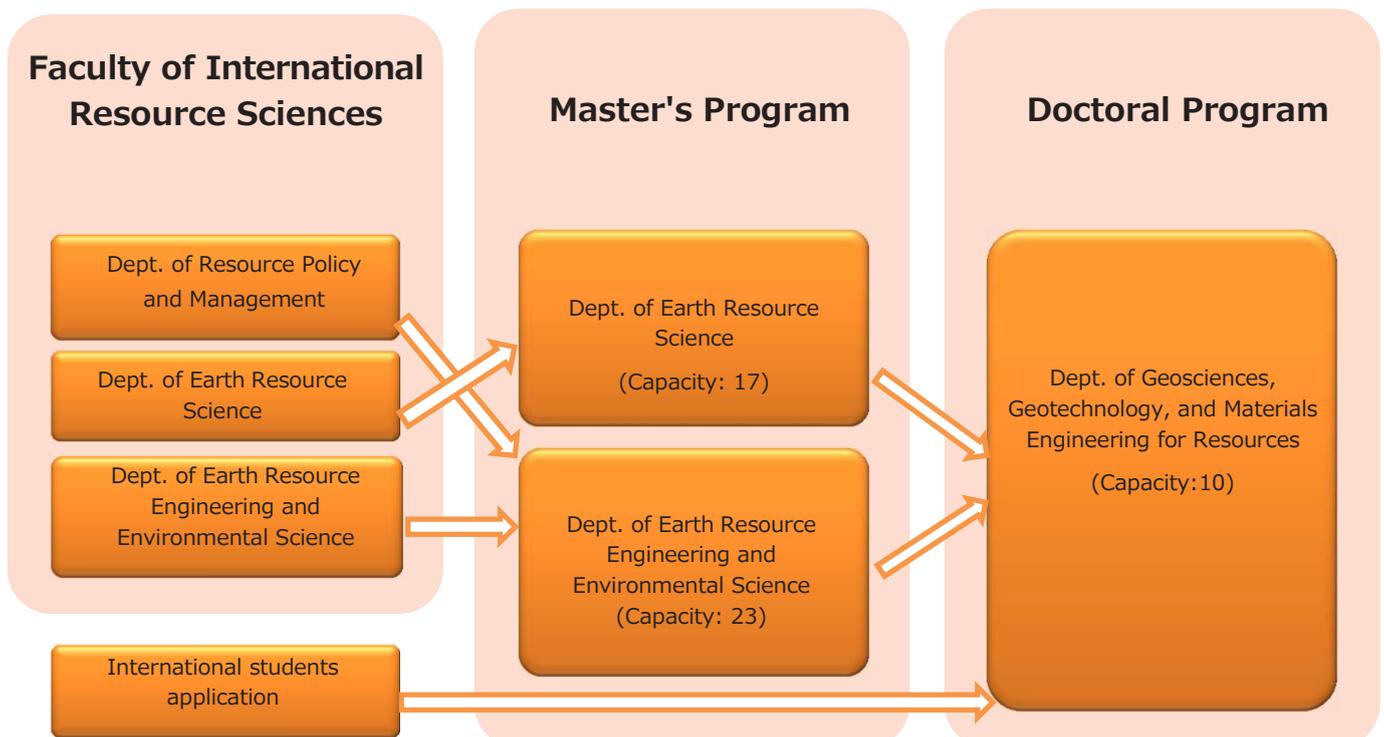
【Master's Degree Program】

This program equips students with basic research knowledge and skills to address issues related to energy and resource development, production and distribution. Graduates typically pursue employment in various resource-related companies or public sectors.

【Doctoral Degree Program】

This program trains young scholars by providing cutting-edge research in geology, mining and energy sciences. Most graduates find employment in academia or policy-making institutions.

Flowchart of study



Content of Education and Research Areas

Department of Earth Resource Science

Field	Content	Faculty Members
Paleoenvironmental Geology	Stratigraphy, paleontology, sedimentology, paleoceanography and historical geology as a basis for the exploration of petroleum, coal, natural gas, and other energy resources	Prof. Stephen P. Obrochta Associate Prof. Makoto Yamasaki
Economic Geology	Broad review and analysis of the economic geology profession, including its societal context, the relevant metallogenic science, and the fundamentals and practice of mineral exploration	Prof. Andrea Agangi Prof. Ryohei Takahashi
Petrology	Geological and petrological analysis on various volcanic phenomena including eruptions, collapse, lahar, fluid-magma interaction, magmatic differentiation, and so on	Prof. Tsukasa Ohba
Structural Geology	Dynamic process and motion of earth's crust and upper mantle, and brittle and ductile deformation structures developed in rocks and minerals	Associate Prof. Osamu Nishikawa
Mineralogy	Wide scope of mineralogy, including crystallography, chemistry, mineral-forming conditions, and application to metallic and non-metallic ore deposition	Prof. Yasushi Watanabe Associate Prof. Takuya Echigo
Sedimentology and Petroleum Geology	Formation of petroleum, natural gas, and unconventional energy grounded in basic knowledge of stratigraphy, structural geology, geochemistry, and paleoenvironmentology, as well as exploration methods for these energies	Prof. Shun Chiyonobu
Applied Geophysics	Theory, experiments, measurement, analysis, and interpretation in relation to the use of geophysical data such as seismic waves and electromagnetism in geophysical surveys	



Department of Earth Resource Engineering and Environmental Science

Field	Content	Faculty Members
Circulation of Resource-Environment Substances	Mineral resources, geothermal resources, water resources, natural disasters, environmental protection, and resource use based on the characteristics of water, gas, and magma and the movement and circulation of these through the surface and interior of the Earth	Associate Prof. Yasumasa Ogawa
Rock Engineering	Basics and application of rock engineering in resource development and crust development	Prof. Tadao Imai Associate Prof. Akihisa Kizaki
Energy Resource Engineering	Theoretical and applied studies on the development of subterranean water and energy resources such as petroleum, natural gas, and geothermal energy	Prof. Hikari Fujii
Geosystem Engineering	Basic and applied researches on oil and gas, geothermal, and other related resource developments with a focus on drilling engineering	Prof. Shigemi Naganawa
Mineral Economics and Mining Informatics	Evaluation issues related to sustainable resource supply, consumption, recycling and environmental impacts using methods from economics and system engineering, and applying informatics to resource development to create new mining technology	Prof. Tsuyoshi Adachi Assistant Prof. Hisatoshi Toriya
Mineral and Resource Processing	Mineral processing and separation engineering, and development of recycling technologies for secondary resources and wastewater treatment for environment	Prof. Atsushi Shibayama Associate Prof. Sanghee Jeon
Resource Recycling Process Engineering	Smelting and refining principles in material manufacturing processes and the theory and practice of effective use of hard to process resources	Associate Prof. Yasushi Takasaki Associate Prof. Kazutoshi Haga
Resource Management	Cultural anthropology, social ecology, hydrology, and area studies as a basis for integrated sustainable resource management and community development at local, national, regional and global levels with particular focus on indigenous knowledge and participatory approach	Associate Prof. Takayuki Kawai
Resource Policy	Education and research on analysis and evaluation for sustainable resource governance based on political science, public policy, economic systems, and energy systems	Prof. Fumiaki Inagaki Prof. Masataka Tamai Associate Prof. Junichiro Oda