

FACULTY AND GRADUATE SCHOOL OF INTERNATIONAL RESOURCE SCIENCES

AKITA UNIVERSITY



FEED YOUR CURIOSITY FOR THE EARTH.
GO OUT AND EXPLORE THE WORLD.



Message from the Dean

Let's Unlock the Door to Resource Sciences!

With its small reserves of underground resources, Japan relies heavily on imports to supply natural resources. Among these resources are not only oil and natural gas but also mineral resources, including rare metals. Despite the limited availability of resources within the nation, Japan's demand for resources is significant on a global scale. In some resource-rich countries, the resource industry has made substantial contributions to economic growth.

On the other hand, achieving carbon neutrality is essential as a measure against global warming. To fulfil a low-carbon society, we must optimize the use of renewable energies, establish societal systems, and engage in discussions on economic and political fronts. Furthermore, ensuring a stable production and supply of critical minerals is vital to boost electrification while promoting resource circulation aimed at creating a sustainable society is another crucial endeavor.

As we approach the mid-21st century, it becomes increasingly pressing to address new aspects of resource sciences and ensure a stable supply of various resources. Undoubtedly, resource development in harmony with the Earth and the environment will play an ever more crucial role. Wouldn't you like to join us in studying resource sciences to support the 21st century? The opportunity to open the door to the future generations in this field awaits you.

SHIBAYAMA Atsushi

Dean of Faculty and Graduate School
of International Resource Sciences

Graduated from the School of Engineering at Kyushu University in 1994. After working in the design of recycling plants, he joined Akita University in 2000. His research fields include Mineral Processing, Recycling, and Extractive Metallurgy.

Five Key Features



01 Leading team of resource science experts

Building on advanced expertise and an extensive network of domestic and international contacts, Akita University is an institution that provides students with a comprehensive, structured curriculum in resource sciences, covering everything from the mechanisms of resource generation through to exploration, development, and production.



02 Interdisciplinary approach to resource science education

The Faculty of International Resource Sciences consists of three departments that together range across social sciences/humanities and earth sciences/engineering fields. These fields are closely interconnected in an interdisciplinary curriculum that encourages study beyond any single specialization. In this way we cultivate, for example, experts in resource geoscience who are well-versed in mineral economics, and resource policy specialists who possess an understanding of geology and engineering.



03 Specialized education in English

The Faculty of International Resource Sciences offers a cosmopolitan academic environment in which English is used on a daily basis for interaction with faculty and students from many countries, and for the presentation of research findings in international forums. First and second year students improve their fundamental English proficiency through a special program in Intensive English for Academic Purposes (I-EAP), before beginning to take specialized courses taught entirely in English from the second year.



04 Compulsory resource science fieldwork overseas

With the aim of fostering the practical ability to address a range of challenges encountered at the front lines of resource development, we require all students to complete Resource Sciences Fieldwork Abroad, a four-week practical program. In combination with Creative Practice of International Resource Science taken before departing and after returning to Akita, this program prepares students for an independent graduation research project that they undertake in the final year.



05 Cutting-edge research in resource sciences

The Faculty of International Resource Sciences boasts top-of-the-line research facilities and equipment, which are freely available for the use of undergraduate students under the supervision of their instructors. Our faculty members pursue ground-breaking research with international partners. Students benefit from access to these new research insights as they are acquired.

International Fieldwork

This hands-on training program is a requirement in the third year of the course; students will conduct surveys and study the latest, actual state of resources in a foreign country. Students will utilize the fundamental knowledge of their specialty field to learn about the various resource-related issues facing the world while in a dynamic field offering experiences that cannot be had in Japan.

【Costs required for fieldwork】

Akita University will cover a portion of transportation fees. Students are responsible for their own costs such as accommodation, meals, and local transportation.



The fieldwork locations in 2023

Department of Resource Policy and Management

Japan depends on overseas sources for most of its supply of resources. In fact, over 80 percent of its oil supply is imported from Middle Eastern countries. While the trend toward decarbonization suggests a decrease in oil energy consumption, it remains a critical resource. Various mineral resources are essential for harnessing renewable energies as an alternative to oil. This underscores the importance of establishing strong relationships with multiple countries to ensure a stable supply of new resources for the transition to renewable energies. To achieve this goal, a global workforce with integrated knowledge in politics, economics, and culture in resource-rich nations, as well as in sciences and engineering, is crucial.

The Department of Resource Policy and Management offers the only programs in Japan that approach resources through the lens of humanities and social sciences. These programs aim to foster individuals who have a deep understanding of resource countries and can effectively address multiple resource-related challenges. We have sent students to 11 countries for long-term study. Our graduates thrive in governmental institutions related to energy and mineral resources, global resource companies and manufacturers, and consulting firms engaged in aid projects in developing nations.

Why not aim to play an active role in the global resource sector together?



INAGAKI Fumiaki

(Chair, Dept. of Resource Policy and Management)

Major Research Fields

Political Science and Public Policy

We study factors of resource conflict and ideal ways that resources can be sustainably explored, distributed, and governed.

International Relations, International Cooperation and Development Studies

We explore how international society should operate to effectively manage vulnerability and conflict risks faced by developing nations in resource development, while ensuring human security.

Law and Business Management

We study legal regulations such as international law and mining laws, as well as joint venture agreement and human rights in investment laws to understand how they relate to resource development and business management.

Resource Management and Area Studies

We study sustainable resource management to maintain the Earth's natural systems, with a focus on the environmental impact resulting from resource development and our relationships with resource-rich nations.

Mineral Economics and Energy-Environment Studies

We focus on issues of global warming caused by the expansion of energy and mineral resource usage, and explore economically and socially acceptable measures to reduce CO₂ emissions.

Intercultural Communication and Socio-Cultural Anthropology

Intercultural understanding and communication are studied in accordance with their importance in international negotiations and multi-stakeholder engagement in resource development and management.



Highlights

Scan this QR code for the latest information and details about our research.

<https://www.akita-u.ac.jp/shigen/eng/info/course01.html>



Department of Earth Resource Science



The Department of Earth Resource Science offers a distinctive education that addresses critical issues affecting future human activities in the field of earth science, including fossils, minerals, rocks, and volcanos. Among these issues are the sustainable development of energy and mineral resources, natural disasters caused by earthquakes and volcanic activity, and climate change related to global warming.

During the first and second years, students build basic academic skills through the special English curriculum and general education courses. From the second year onward, they receive professional education aimed at becoming earth science specialists. This includes specialized courses, outdoor training, fieldwork at overseas resource development sites, and the completion of a bachelor's thesis.

Earth science is a global field that requires proficiency in English. Our international environment, with numerous students from around the world, helps even those who initially struggle with English make impressive progress by the time they graduate.

Our graduates go on to excel in various roles, including positions in development companies for mineral and energy resources, business firms, infrastructure companies in the electricity and gas sectors, and resource, construction, and environmental consulting firms in Japan and abroad.

Why don't you acquire knowledge of earth science here in Akita to contribute to solving global challenges related to resources and the environment?

CHIYONOBU Shun
(Chair, Dept. of Earth Resource Science)



Major Research Fields

Stratigraphy and Paleontology

Using geological surveys and studies of microfossils and sedimentary facies, we recreate the ancient marine environmental changes from past to present, exploring the “where” and “why” oil resources and metal resources exist from the changes in organic matter production quantity and storage systems.

Economic Geology

We are interested in the natural processes that have concentrated metals to form mineral deposits throughout the Earth's history, from deep time to present. We study the formation of ores using field work and mine visits in Japan and overseas, microscopy observations and chemical analyses of rocks and minerals.

Petrology and Volcanology

We study the mechanisms of volcanic eruptions and disasters, physicochemical processes in magma reservoirs beneath the volcanoes, and the origin of magma and its relationship to mineral resources, using various techniques of the fieldwork in volcanoes and plutonic bodies and the observation and chemical analyses of their rock samples.

Geophysical Exploration Studies

Using electrics, magnetics, gravity, seismic waves, electromagnetic waves and other geophysical phenomena studies are conducted to reveal the structures beneath the surface of the earth.

Structural Geology

We investigate the fracture and deformation of strata and rocks, and elucidate the development process and mechanism of geological structures formed under tectonic stress. We also investigate active faults aiming to contribute to the prediction and mitigation of seismic hazards.

Petroleum Geology

Surface and subsurface studies, of source rock, reservoir rock, and trap mechanisms of petroleum from the standpoint of sedimentology, geochemistry, or paleoenvironment, are widely conducted based on 3D seismic, well-log data, and borehole samples provided from industries with the use of well equipped analyzing facilities.

Mineral Resources and Tectonics

This field studies formation and concentration processes of useful minerals, evaluates new mineral resource potential, and proposes exploration and exploitation strategies of ore deposits, based on geology, mineralogy petrology and geochemistry. Tectonic and sedimentary processes related to mineralization are also studied.

Environmental Geoinformatics

Our methods integrate multiple techniques from a number of fields, such as stratigraphy, sedimentology, paleoceanography, paleoclimatology, geochronology, etc., to better understand the Earth's history. We combine field work and laboratory analyses with data science, which is strongly emphasized in order to clarify and understand the uncertainty in our measurements. This informs interpretation of our results and improves our confidence in conclusions.

Highlights

Scan this QR code for the latest information and details about our research.



https://www.gipc.akita-u.ac.jp/~earth-resource/index_eng.html

Department of Earth Resource Engineering and Environmental Science

The Department of Earth Resource Engineering and Environmental Science focuses on engineering aspects related to resource development. Underground resources include mineral resources used as materials, such as copper, iron, aluminum, limestone, and diamonds, as well as energy resources like oil, natural gas, and coal. Additionally, there are other resources such as water.

In the area of mineral resource development, resource sciences mainly encompass the process from mining through tunnels or open pits to smelting and refining, which involves extracting mineral resources from ores and purifying them. Smelting and refining techniques are also used for recycling mineral resources, as seen in urban mines. On the other hand, oil and natural gas development is divided into the upstream sector of exploration, development, and production, and the downstream sector of refining, sales, and transportation. The upstream sector, which is primarily based on underground engineering, falls within the scope of resource sciences. Oil and natural gas development techniques are also applied to geothermal resource development and carbon dioxide capture and storage (CCS).

Addressing complex issues to achieve optimized, environmentally friendly, and sustainable resource development, as well as a carbon-neutral society, requires multifaceted abilities. These include not only capabilities in resource engineering, but also knowledge of earth science, including the Earth's natural system and its underground resources. A broad perspective of humanities and social sciences that considers people, regions, and societies is equally essential, while international awareness is necessary to thrive on the global stage.

One significant feature of this Department is its comprehensive curriculum in resource engineering, which sets it apart from other universities. Students can study this field with an interdisciplinary approach alongside peers from the Department of Resource Policy and Management and the Department of Earth Resource Science.



NAGANAWA Shigemi

(Chair, Dept. of Earth Resource Engineering and Environmental Science)

Major Research Fields

Resource Environment Substance Circulation Studies

Studies are conducted regarding the movement and concentration mechanisms of metallic elements and hazardous substances involved in resource development and water resource conservation.

Rock Engineering

Studies are conducted regarding environmentally sound resource development through rock surveys, stability analysis, and water jet drilling technologies, with a foundation in rock dynamics.

Energy Resources Engineering

Studies are conducted through experimentation and numerical calculation regarding efficient and environmentally friendly production methods of petroleum and geothermal resources.

Geosystem Engineering

Studies are conducted regarding oil, gas, geothermal, and other resource developments including offshore resources and CCS with focuses on drilling engineering and reservoir simulation.

Mineral Processing

Studies are conducted to efficiently recover target metals, including rare metals from both primary and secondary resources while utilizing mineral processing, recycling and extractive metallurgy techniques that are environmentally sustainable.

Metallurgical Process Engineering

Studies are conducted regarding the efficient recovery of metal resources, and the basic principles of pyro/hydro-metallurgy.

Mining Technologies

Studies are conducted to develop a new discipline which takes an interdisciplinary approach such as ICT (Information and Communication Technology), Soft-computing and Robotics into Mining and Disaster Control.

Highlights

In the Rock Engineering Laboratory, we conduct research related to environmentally sustainable resource development using rock mechanics-based surveys, stability analysis, and water jet excavation technology. Through collaborative research with local companies, we strive to enhance our technical expertise and contribute to safety measures and environmental management in local quarries. Furthermore, our study of mining history in Akita aims to train engineers with a historical perspective.



Admission

		Common Courses	Dept. of Resource Policy and Management	Dept. of Earth Resource Science	Dept. of Earth Resource Engineering and Environmental Science
1st year	I-EAP (Intensive English for Academic Purposes)	<ul style="list-style-type: none">• Introduction to International Relations• Practice of Resource Science• Introduction to Resource Geology• Discussion Seminar	General Education Courses Freshman Seminar Thematic Courses International Language Courses Sports and Culture Courses	Basic Education Courses <ul style="list-style-type: none">• I-EAP Certificate• Cross-cultural Communication• Resource Development and Human Rights• Micro Economics• International Cooperation of Japan• Linear Algebra• Fundamentals of Physics• Fundamentals of Chemistry• History of International Relations on Resources• Macro Economics• Physics Laboratory Work• Chemistry Laboratory Work etc.	
2nd year					
3rd year	Creative Practice of International Resource Science	<ul style="list-style-type: none">• Introduction to Earth Resource Engineering and Environmental Science• Introduction to Earth Science• Introduction to Resource Policy and Management• English for Specific Purposes etc.	Practice of Resource Science		
			Specialized Courses <ul style="list-style-type: none">• Studies on Resource Policy• International Law• Energy and Environment• Policy Process• International Development• Cultural Anthropology• Negotiations• Energy Geopolitics• Studies on Resource Area• Current Trend on Resource Development• International Affairs Analysis• Resource and Peacebuilding• Mining Law• Contractual Framework for Resource Development• Mineral Economics• Energy Systems and Policy• Advanced Studies on Resource Area• Special Lecture on International Cooperation• Presentation Skills• Historical Geology• Material Cycles Studies• Recycle Process System Engineering etc.	Specialized Courses <ul style="list-style-type: none">• Historical Geology• Geologic Mapping• Petroleum Geology• Laboratory for Paleontology• Mineralogy• Economic Geology• Laboratory for Mineralogy• Petrology• Laboratory for Petrology• Geophysics• Paleoenvironmental Analysis• Sedimentology• Structural Geology• Laboratory for Petroleum Deposits• X-ray Crystallography• Laboratory for Stratigraphy• Laboratory for Economic Geology• Remote Sensing Geology• Laboratory for Petrology, Mineralogy and Economic Geology• Presentation Skills• Geophysical Exploration• International Law• Strength of Materials• Rock Mechanics etc.	Specialized Courses <ul style="list-style-type: none">• Strength of Materials• Fluid Mechanics• Physical Chemistry• Analytical Chemistry• Fundamental Drawing and Design in Engineering• Petroleum Engineering• Geochemistry• Petroleum Engineering• Environmental Remediation for Sustainable Engineering• Instrumental Analysis• Mineral Processing• Rock Mechanics• Foundation Laboratory Work for Engineering• Surveying and Practice• Materials Processing• Computer Programming• Geothermal Engineering• Rock Engineering• Recycling and Wastewater Treatment• Refining Process Engineering• Presentation Skills• Geophysics• Economic Geology• Geophysical Exploration• Mineral Economics etc.
4th year			Resource Sciences Fieldwork Abroad		
			<ul style="list-style-type: none">• Senior Research Proposal etc.	<ul style="list-style-type: none">• Applied Economic Geology• Applied Mineralogy• Research Proposal etc.	<ul style="list-style-type: none">• Literature Reading• Research Proposal etc.
			Bachelor Thesis		

Graduation

TEACHING STAFF



Dean
Professor
SHIBAYAMA Atsushi

Dept. of Earth Resource Engineering
and Environmental Science

Mineral Processing, Recycling,
Extractive Metallurgy



Vice Dean
Chair of Dept. of Resource
Policy and Management
Professor
INAGAKI Fumiaki

Dept. of Resource Policy
and Management

International Politics,
Political Sciences,
Area Studies, Geopolitics



Vice Dean
Professor
TAKAHASHI Ryohei

Dept. of Earth Resource Science

Economic Geology,
Resource Geology



Director of Mineral
Industry Museum
Professor
OHBA Tsukasa

Dept. of Earth Resource Science

Petrology, Volcanic Geology



Director of RIGRe
Professor
ADACHI Tsuyoshi

Dept. of Earth Resource Engineering
and Environmental Science

Mineral Economics

Department of Resource Policy and Management



Professor **TAMAI Masataka**

International Relations, International Organization,
Multicultural Coexistence, Conflict Prevention



Professor **HANSEN Paul Simon**

Socio-Cultural Anthropology,
Animal-Human-Technology Relations



Associate Professor **ODA Junichiro**

Energy and the Environment, Energy Systems



Associate Professor **KAWAI Takayuki**

Hydrology and Water Resources



Lecturer **CACALI Evan**

Applied Linguistics, Second Language Acquisition,
American Studies



Project Assistant Professor **TANAKA Maria**

IPE, Area Studies (China), China's Foreign Policy,
China-Central Asia Relations



Assistant Professor **GOTO Manami**











Gulf Studies, Ethnography

















Assistant Professor **WATANABE Ayako**

International Law, International Relations,
Business and Human Rights

Department of Earth Resource Science

 <p>Chair Professor CHIYONOBU Shun</p> <p>Petroleum Geology</p>	 <p>Professor AGANGI Andrea</p> <p>Igneous Petrology, Economic Geology</p>
 <p>Professor OBROCHTA Stephen</p> <p>Stratigraphy, Paleoceanography</p>	 <p>Professor WATANABE Yasushi</p> <p>Economic Geology, Tectonics</p>
 <p>Associate Professor YAMASAKI Makoto</p> <p>Micropaleontology, Paleoceanography</p>	 <p>Associate Professor ECHIGO Takuya</p> <p>Mineralogy, Crystallography</p>
 <p>Associate Professor NISHIKAWA Osamu</p> <p>Structural Geology</p>	 <p>Assistant Professor HOSHIDE Takashi</p> <p>Petrology</p>
 <p>Assistant Professor SAKANAKA Shinya</p> <p>Exploration Geophysics, Geomagnetism</p>	 <p>Assistant Professor MANALO Pearlyn</p> <p>Economic Geology, Resource Geology</p>
 <p>Assistant Professor MATSUI Hiroki</p> <p>Micropaleontology, Paleoceanography</p>	 <p>Assistant Professor AOKI Shogo</p> <p>Geology, Geochemistry, Geochronology, Mineralogy</p>
 <p>Assistant Professor ANDO Takuto</p> <p>Organic Geochemistry, Biogeochemistry</p>	

Department of Earth Resource Engineering and Environmental Science

 <p>Chair Professor NAGANAWA Shigemi</p> <p>Drilling Engineering, Petroleum Engineering, Geothermal Engineering</p>	 <p>Project Professor ISHIYAMA Daizo</p> <p>Economic Geology, Geochemistry, Environmental Geology</p>
 <p>Professor IMAI Tadao</p> <p>Rock Engineering</p>	 <p>Professor FUJII Hikari</p> <p>Petroleum Engineering, Geothermal Engineering</p>
 <p>Associate Professor OGAWA Yasumasa</p> <p>Geochemistry, Environmental Chemistry</p>	 <p>Associate Professor KIZAKI Akihisa</p> <p>Rock Engineering</p>
 <p>Associate Professor TAKASAKI Yasushi</p> <p>Extractive Metallurgy</p>	 <p>Associate Professor HAGA Kazutoshi</p> <p>Mineral Processing, Extractive Metallurgy</p>
 <p>Associate Professor JEON Sanghee</p> <p>Mineral Processing, Hydrometallurgy, Recycling</p>	 <p>Associate Professor TORIYA Hisatoshi</p> <p>Remote Sensing, Machine Learning, Hyperspectral Imaging, Computer Vision</p>
 <p>Assistant Professor ABE Kazunori</p> <p>Petroleum Engineering, Material Engineering</p>	 <p>Assistant Professor BINA Saeid</p> <p>Renewable Energy, Geothermal Energy, Building Energy, Ground Source Heat Pump</p>
 <p>Assistant Professor BJARKASON Elvar</p> <p>Geothermal Reservoir Engineering, Reservoir Simulation, Data Assimilation</p>	 <p>Assistant Professor GODIRILWE Labone Lorraine</p> <p>Mineral Processing, Extractive Metallurgy</p>

Graduate School of International Resource Sciences

The Graduate School of International Resource Sciences aims to solve global resource issues, pursuing cutting-edge studies and research backed by expertise in the fields of earth resource science, earth resource engineering, and environmental science. We will foster global leaders with wide-ranging knowledge of earth science, resource development, and environmental conservation. All subjects are taught in English.

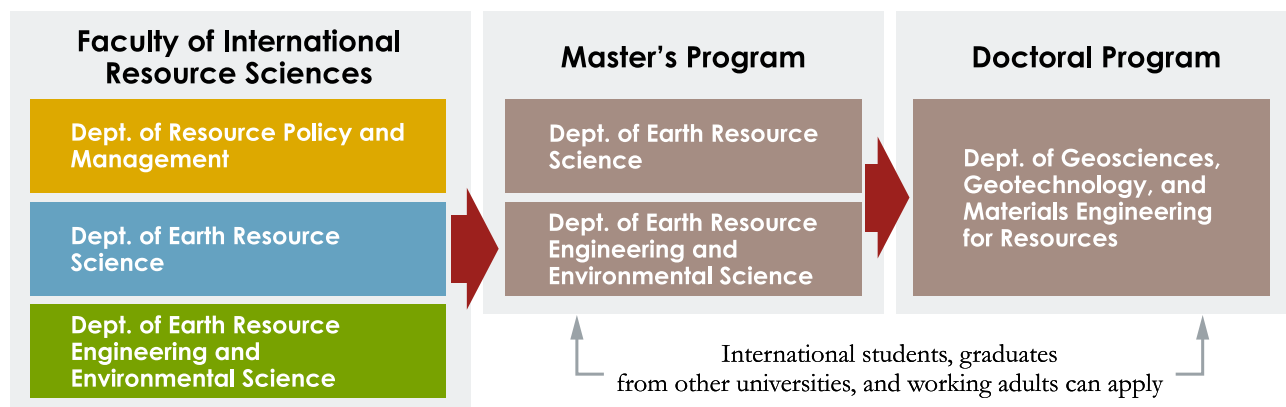


Program/Division Descriptions

Master's Program	Department	Outlines		Objectives	*Degrees Awarded
	Earth Resource Science (Capacity:17)	This Department explores earth science, with a focus on investigating generation and deposits of rare metals essential to developing new materials, as well as natural resources such as mineral and energy resources.		We will equip students with extensive knowledge in resource sciences and earth science, in order to meet society's needs in resource exploration and development.	Master's Degree in Resource Science or Science
	Earth Resource Engineering and Environmental Science (Capacity:23)	This Department provides education in recycling technologies and earth and resource system engineering. Our aim is to fulfill a sustainable society as well as environmentally-friendly resource development and production technology. Specialty areas include: •Resource environmental science •Development and production of various natural resources including oil, natural gas, minerals, and geothermal energy •The theory and latest technology of environmental conservation related to recycling and smelting techniques and wastewater treatment		This Program will foster world-class resource engineers with a state-of-the-art expertise in earth resource engineering and environmental science, aimed to meet society's needs. Students will be taught how to implement the next-generation resource development with a holistic view.	Master's Degree in Resource Science or Engineering
Doctoral Program	Department	Division	Outlines	Objectives	*Degrees Awarded
	Department of Geosciences, Geotechnology, and Materials Engineering for Resources (Capacity:10)	Earth Resource Science	This Department conducts cutting-edge resource sciences research in the areas of: •Exploration, production, and development compatible with conditions of generation and deposits of various resources, such as mineral and energy resources •Technology to solve environmental problems arising from resource exploitation •Resource economics •Resource recycling technologies	We will equip students with a sophisticated research capability and a high degree of expertise, enabling them to adequately apply research results to resource areas and propose new guidelines for resource exploration and development.	Doctoral Degree in Resource Science or Science
		Earth Resource Engineering and Environmental Science			Doctoral Degree in Resource Science or Engineering

*The degrees will be awarded to students who have satisfied specified requirements.

Process Flowchart



Projects for Education and Research

MEXT INTER-UNIVERSITY EXCHANGE PROJECT

“An innovative program for development of core human resources for smart mining to lead sustainable resource development in Southern Africa”

(Project duration : 2020 to 2024)



This collaborative program is conducted in Japan and Southern African countries with the aim of fostering global resource specialists. Known as “Smart Mining”, the coursework-based program on resource engineering integrates information technology, a core component of “Society 5.0”, in collaboration with Kyushu University (Cooperating University) and Hokkaido University (Supporting University).

Japanese university students and master's students from Southern African partner universities jointly acquire practical skills in Smart mining through courses such as “Basics of Mining Informatics”, “Collaborative Training”, and “Collaborative Research Project”.

Students will have opportunities to travel to Southern Africa and Japan, gaining hands-on experience in applying AI-driven machine learning programming and visiting active mines. We also actively offer online lectures and activities to facilitate broad participation among students from many different countries.

Collaborating universities in South Africa

- University of the Witwatersrand (Republic of South Africa)
- The University of Zambia (Republic of Zambia)
- The Polytechnic Institute of Tete (Republic of Mozambique)
- Botswana International University of Sciences and Technology (Republic of Botswana)
- University of Botswana (Republic of Botswana)



Visiting a mining pit in Southern Africa

JICA/JST Science and Technology Research Partnership for Sustainable Development

"Construction of a Decarbonized Heat Energy Supply System using Groundwater Resources"

(Project duration: 2021 to 2026; 2021 was a preparation year)



Tajikistan suffers from temperature extremes and lacks oil and natural gas resources. This research contributes to the country's regional stability and countermeasures for global warming by enhancing the energy situation and creating jobs. To achieve these goals, we are dedicated to promoting “Advanced Arid Region Geothermal Heat Pump System (“Tajikistan Model”)), which integrates ICT technology such as AI, making use of the country's rich underground water resources. Our research was showcased in *Nature's* online advertisement feature as one example of North-South cooperation.

Specifically, the project focuses on the following three research topics:

- (1) The development of groundwater flow and heat transport model based on field surveys, GIS data and AI for maps of potential use of geothermal and groundwater heat energy
- (2) The implementation of long-term heating and cooling tests using a demonstration plant based on multi-modal measurements and AI
- (3) Planning a system for dissemination for the “Tajikistan model”

The plan is to develop an optimal geothermal heating and cooling system based on (1) and (2) using AI, which will be reflected in the system planning for (3). The project involves working with stakeholders to develop and introduce a system for the industrialization of geothermal systems and the creation of jobs as a result, including the provision of financing.

<iTAG-SATREPS stands for “Innovative Tajik-Akita GSHP system” SATREPS project.>



Heat response test at the First Demo Site
(taken in September, 2023)

Student Lifestyle

Mohamad Shareiz Bin Shah Lan Country: Malaysia Dept. of Resource Policy and Management (Undergraduate)

6:00AM : Wake up & perform prayer
 10:20AM : Get to campus
 10:30AM : Classes
 12:00PM : Lunch & pray (at the Faculty's prayer room)
 4:30PM : Club activities (A-Con)
 8:00PM : Dinner & video call with family in Malaysia
 9:00PM : Pray & play video games
 12:00AM : Go to sleep



I am a member of A-Con club, an English club where international and Japanese students can sit together and enjoy chatting in English via many fun and interactive activities. Grammar and vocabulary mistakes are not important, and A-con value the "attitude to communicate." Therefore, students can actively take on challenges without being afraid of making mistakes.

I also did a lot of part-time jobs during the holidays like working at a kiritampo factory and transport factory in Akita, just to experience part-time work in Japan and engage with the locals.

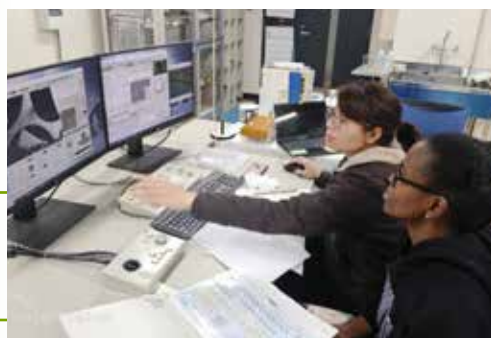


My hobby here is definitely snowboarding since it snows a lot. The photo is from Tazawako Ski Resort. I like winter since Malaysian can't experience snow in our country. These are moments that I'll cherish forever when I go back to Malaysia.

June Born Born Country: Myanmar Dept. of Geosciences, Geotechnology, and Materials Engineering for Resources (Graduate)

7:00AM : Wake up
 9:00AM : Get to campus
 10:30AM : Classes
 1:00PM : Lunch
 5:00PM : Part-time job
 8:30PM : Dinner
 9:00PM : Family call
 9:30PM : Reading or doing assignments
 12:00AM : Go to sleep

This is from my lab work. We study and have fun together. We can learn about many different cultures because we come from different countries.



In this photo I am presenting my research progress in a lab seminar.



In our lab, we also conduct fieldwork activities in different parts of Japan. This photo is from SEG fieldwork in Hokkaido. I enjoyed it because I got to travel with my friends and learn a lot from my professors.

Messages from International Students



Wang Yuan
From China

Dept. of Resource Policy and Management (Undergraduate)

This photo was taken by a friend during my participation in the Resource Sciences Fieldwork Abroad program in Kenya. It captures the moment when I was about to try an unfamiliar dish. During the program, I communicated with the locals in English and enjoyed interacting with people from different cultures. In cross-cultural exchanges, it is important to understand and respect the cultural backgrounds and customs of others. To avoid misunderstandings arising from ignorance or prejudice, I learned about the other culture in advance. Additionally, with the language barrier, I tried to use clear and concise expressions and incorporated gestures. Through this experience, I realized the joy and importance of connecting with people while overcoming cultural differences.

At the Faculty of International Resource Sciences, you can not only acquire knowledge and improve your English skills through conversations with international friends but also gain opportunities for overseas learning experiences! Hope to meet you at campus!



Eliaser Iiyambo
From Namibia

Dept. of Earth Resource Science (Graduate)

I decided to enter the master course at Akita University to gain knowledge and learn the skills of economic geology. The Department of Earth Resource Science is equipped with advanced human and technical resources, which allow students to explore a wide range of research topics. In addition to this, Akita prefecture's rich geological diversity offers a unique field experience with various mineral deposits. Moreover, the strong connection of Akita University to the industry through internships and collaborations gives students insight into real-world applications. Lastly, gaining a deeper understanding of the formation mechanisms of mineral deposits is essential for ensuring sustainable mineral exploration to meet the global demand for strategic minerals. This is why I chose to enroll at Akita University. Students from around the world who are interested in mineral resources can join the Faculty or Graduate School of International Resource Sciences at Akita University.



Bobur Gayratov
From Uzbekistan

Dept. of Earth Resource Engineering and Environmental Science (Graduate)

I have found an exceptional environment that blends advanced academic learning with a vibrant cultural experience. My major, mineral processing and extractive metallurgy, provides access to cutting-edge technologies and innovative research opportunities. The university's commitment to sustainability and international collaboration offers a unique platform for students to make meaningful contributions to the mining industry.

The supportive academic community at Akita University fosters an atmosphere of intellectual growth and practical application. The picturesque campus, surrounded by the natural beauty of Akita, enhances the learning experience, offering a serene and inspiring setting. Additionally, the exciting and diverse life of international students in Akita creates a dynamic and enriching environment both inside and outside the classroom.

Choosing Akita University means not only advancing your academic and professional goals but also immersing yourself in a culturally enriching and supportive community. Joining Akita University, where innovation meets tradition, will make your potential limitless in the long term.

Halal Menu



Our university cafeteria offers daily special curry exclusively for Muslim individuals. Tandoori chicken is also available intermittently.

Check out our Instagram!



Prayer Room

The Faculty and Graduate School of International Resource Sciences provide a prayer room for enrolled students.



Partner Universities

The Faculty of International Resource Sciences has agreements with many universities and institutions inside and outside Japan, with an emphasis on the promotion of academic exchange.

While our partner universities have strongly supported our outgoing students for the Resource Sciences Fieldwork Abroad program, the exchange of researchers is actively carried out to promote research with each other.

Overseas Partner Universities

Inter-University Agreements*

- Liaoning Technical University (China)
- Northeastern University (China)
- Mongolian University of Science and Technology (Mongolia)
- Botswana International University of Science and Technology (Botswana)
- Kenyatta University (Kenya)
- Mongolian National University of Education (Mongolia)
- University of Botswana (Botswana)
- East Kazakhstan State Technical University (Kazakhstan)
- Technology, Institut Teknologi Bandung (Indonesia)
- University of the Philippines Diliman (Philippines)
- Chulalongkorn University (Thailand)
- Luleå University of Technology (Sweden)
- Memorial University of Newfoundland (Canada)
- Curtin University (Australia)
- University of Santiago (Chile)
- Eduardo Mondlane University (Mozambique)
- Trisakti University (Indonesia)
- University of Ferrara (Italy)
- University of the Witwatersrand (South Africa)
- University of Yangon (Myanmar)
- Gadjah Mada University (Indonesia)
- New Mongol Academy (Mongolia)
- Papua New Guinea University of Technology (Papua New Guinea)
- Universitas Pertamina (Indonesia)
- Cracow University of Economics (Poland)
- United Arab Emirates University (UAE)
- Padjadjaran University (Indonesia)
- University of Zambia (Zambia)
- Mining-metallurgical Institute of Tajikistan (Tajikistan)
- Kajaani University of Applied Sciences (Finland)
- Nazarbayev University (Kazakhstan)
- University of Banja Luka (Bosnia and Herzegovina)
- Razzakov Kyrgyz State Technical University (Kirghiz)

Inter-Department Agreements

- Faculty of Engineering, Hasanuddin University (Indonesia)
- Technical Faculty in Bor, University of Belgrade (Serbia)
- The AGH University of Science and Technology (Poland)
- Faculty of Geological Engineering, Universitas Padjadjaran (Indonesia)
- Faculty of Science, Kasetsart University (Thailand)
- Institut national de la recherche scientifique (Canada)
- National Institute of Chemistry, Technology and Metallurgy, University of Belgrade (Serbia)
- Faculty of Mineral Technology Universitas Pembangunan Nasional “Veteran” Yogyakarta (Indonesia)
- Uzbek-Japan Innovation center of Youth(UJICY) (Uzbekistan)
- Centre of Innovative Development of Science and New Technologies of the National Academy of Science of Tajikistan (Tajikistan)
- University of Geological Sciences, Uzbekistan(UGS) • Uzbek-Japan Innovation center of Youth(UJICY) (Uzbekistan) (Tripartite)
- Navoi State University of Mining and Technologies (Uzbekistan)
- Faculty of Engineering, University of Alberta(Canada)

Akita University Overseas Hubs*

Country	Base name
Mongolia	Akita University Mongolia Office
Thailand	Joint Laboratory of Akita University and Chulalongkorn University
Indonesia	Joint Laboratory of Akita University, Faculty of International Resource Sciences and Trisakti University Joint Laboratory of Akita University and Padjadjaran University
Botswana	Akita University Botswana Office
UAE	Joint Laboratory of Akita University and UAE University
Uzbekistan	Akita University Satellite Lab in Uzbekistan for Earth Resources Studies
Tajikistan	Akita University's Liaison Office in Tajikistan for SATREPS



Joint Laboratory of Akita University and Padjadjaran University Established in Padjadjaran University in 2019.



Akita University Botswana Office Established in Botswana International University of Science and Technology in 2017.

*Lists of universities and hubs that have a connection with Faculty of International Resource Sciences.

Q&A

Q. What kind of place is Akita?

A. Akita is located on the Sea of Japan side of northern Honshu. It is home to World Heritage sites such as, Shirakami-Sanchi and Lake Tazawa, the deepest lake in Japan. Akita is also well-endowed with abundant nature symbolized by the Oga Peninsula and Mount Hachimantai. Akita marks the seasons with cherry blossoms in spring, the Kanto Festival - one of the three major Tohoku festivals in summer, beautiful autumn foliage, as well as winter sports and festivals that can only be enjoyed in Akita's winter.

Akita University's campus is located in Akita City, the capital of Akita Prefecture, where the cost of living is much lower than in the Tokyo area, making it the perfect environment for international students.

Q. How many international students attend the school?

A. There are about 250 international students enrolled at Akita University. In the Faculty of International Resource Sciences, there are international students and non-degree seeking researchers from countries such as Mongolia, Indonesia, Malaysia, Vietnam, China, the Philippines, Botswana, and more.

Q. What level of Japanese is required?

A. In our faculty, specialized courses from the second year are entirely taught in English, whereas general and fundamental education subjects and specialized courses for first year students are all conducted in Japanese. Therefore, students will need adequate Japanese language skills.

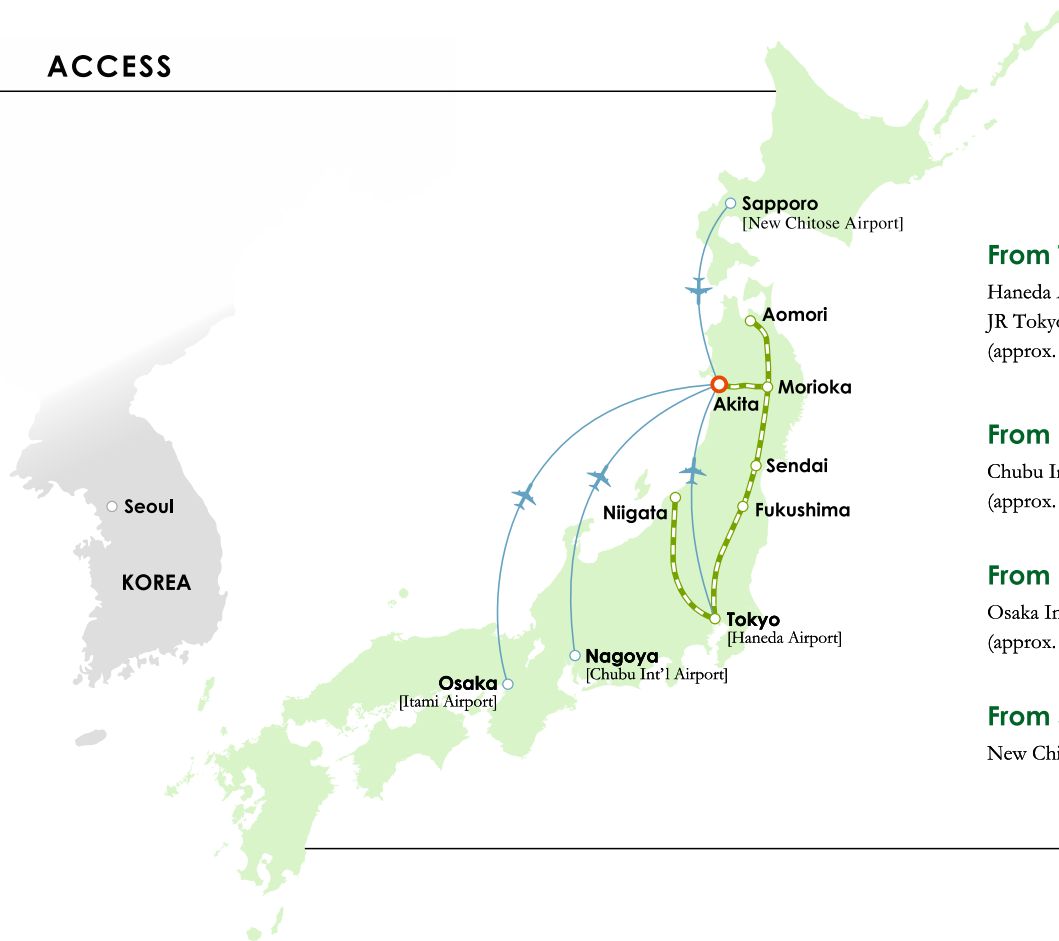
At Akita University, classes are offered to international students to improve their Japanese language proficiency and provide a better understanding of Japanese society and culture.

Q. Are there any scholarships or financial aid available to international students?

A. There are several forms of funding available to international students, including the Japanese government's MEXT scholarship program, as well as scholarships from foreign governments or private organizations. At the university level, we provide financial support to students whose academic excellence is recognized but have difficulty making payments for financial reasons. This support may take the form of exemptions, reductions, or deferments of admission and tuition fees. Additionally, there is the Akita University SPRING program for doctoral students that helps cover student's research and living expenses.

Q. Can international students have part-time jobs?

A. Only international students in Japan on a "student" visa who have been granted permission to engage in activities other than that permitted under the status of residence previously granted from the Immigration Bureau may engage in part-time work.



From Tokyo

Haneda Airport - Akita Airport (approx. 1hr)
JR Tokyo Station - Akita Station
(approx. 4hrs by Komachi, Akita Shinkansen)

From Nagoya

Chubu Int'l Airport - Akita Airport
(approx. 1hr 25mins)

From Osaka

Osaka Int'l Airport (Itami) - Akita Airport
(approx. 1hr 30mins)

From Sapporo

New Chitose Airport - Akita Airport (approx. 1hr)



Akita Kanto Festival

A festival held from August 3rd to 6th every year in Akita City. The largest of the Kanto poles weigh approximately 50 kilograms, and men balance them on their hands, lower backs, and foreheads, pitting their skills against one another in competition. The university also has a team that participates.



Namahage Sedo Festival

This festival is held on the second Friday, Saturday, and Sunday in February every year. It is fascinating to watch the brave and powerful Namahage.



Kamakura Igloos

Caves made from snow are called Kamakura. An altar is built within the Kamakura enshrining the god of water as an event of the Lunar New Year.



Lake Tazawa

Japan's deepest lake is located in Semboku City. One can enjoy its views as they change with the four seasons as well as swimming, canoeing, and rafting.



Onsen

Akita has many onsen (hot springs). Among them are the world famous Tamagawa Onsen and Nyuto Onsen.



Kiritanpo Hotpot

Akita's representative local cuisine. It is a hotpot dish consisting of rice that has been pounded and grilled, chicken, vegetables, mushrooms, and other ingredients.



Akita University

Faculty of International Resource Sciences

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