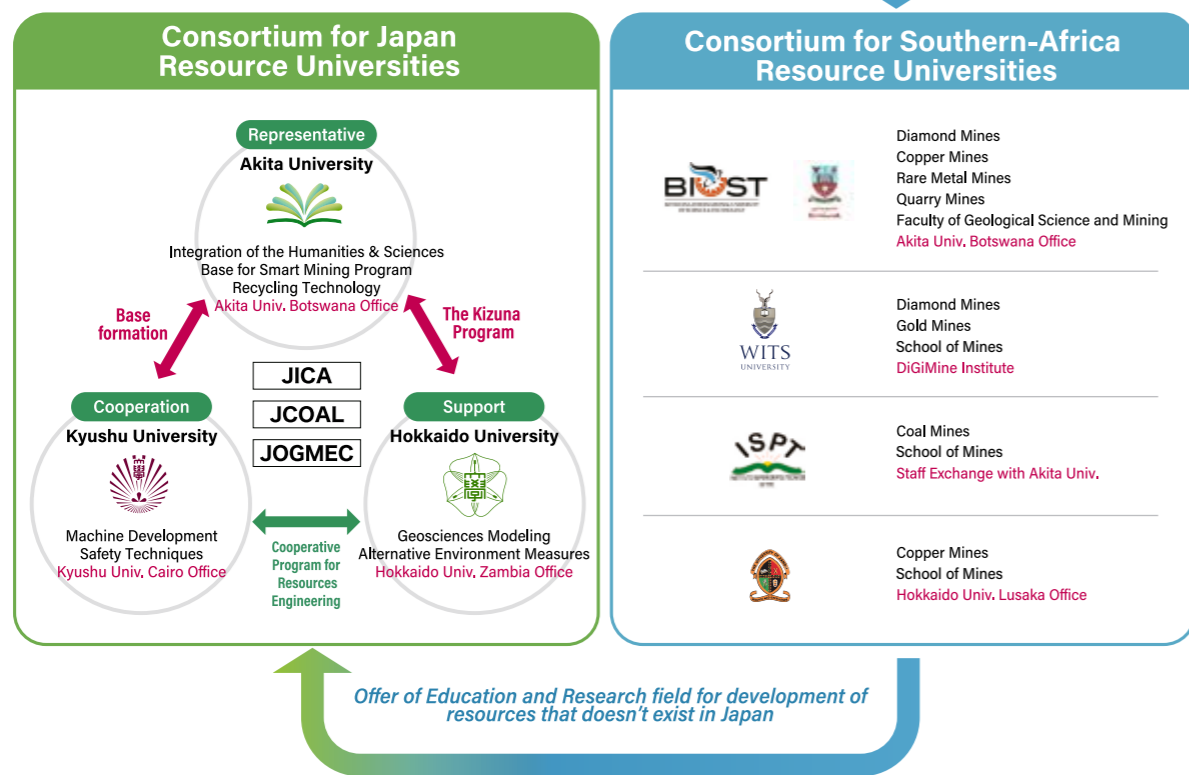


Consortium for Japan-Africa Resource Universities

Training of global human resources between Japan and Africa, who, using their combined knowledge of both past and present resource development and information engineering, will be able to implement new resource development technology in the coming decades (Smart Mining).

Offer of Japanese advanced resource technical research (Smart Mining) & education



Akita University/Kyushu University Smart Mining Program

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INTER-UNIVERSITY EXCHANGE PROJECT MEXT

Akita University/Kyushu University
 An innovative program for development of core human resources for smart mining to lead sustainable resource development in Southern Africa





Purpose and Overview of Exchanging Program

In resource-rich Southern Africa countries, advanced development of those underground resources is critical for economic growth, with an urgent need for increased education and research ability to better equip personnel with the skills needed to balance effective resource development with environmental conversation. This coursework-based undergraduate and master's program develops a base for multi-layered enterprise development. Information engineering (AI, IoT, and Big Data etc.) is the core technology of "Industrial 4.0" and "Society 5.0" that is in turn based on both the traditional and current state-of-the-art in which Japan excels. This program will produce globally-minded individuals who possess the ability to practice the future of resource informatics (Smart Mining) in both Japan and Southern Africa.

Nurturing Global Talent

Training of the global leaders skills listed below

1. Practical skills based on advanced technical knowledge
2. Ingenious technological development skills based on a solid foundation of Information Engineering to allow for a dimensional transition into the next stage of current resource development studies
3. Design and management compatibilities with a panoramic view of the whole resource and environmental system
4. Ability to negotiate between producer and consumer countries with a sense of balance that demonstrates a firm understanding of the positions of both parties



Curriculum

Selection of Students for the Master's Program 2021~

A total of 10 undergraduate students can participate in the master's program regardless of participation in the undergraduate program.

Short-Stay Program 2021~ (UG)

A total of 10 undergraduate students from Africa (WITS, BIUST, UB, ISPT, and UZ) will visit Akita University to attend lectures and meet with representatives of companies and government agencies.

Resource Fieldwork Abroad 2021~ (UG)

A total of 10 undergraduate students from Akita University and Kyushu University will visit one of the Southern Africa resource consortium universities to attend an approximately month-long training session.

Collaborative Training of Humanities (Online) 2022~ (M1)

Discussion exercise and liberal arts classes related resource development, such as resource economics, environmental economics, Sub-Saharan Africa development, and international relations, will be held online. This unit is to provide the theoretical basis of research development through comprehensive education in sustainably resource development.

Virtual Traveling Class (On-Demand) 2022~ (M1)

Students will attend virtual, on-demand lectures that simulate travel to Akita University, Kyushu University, and Hokkaido University to further foster a basic understanding of resource development.

Basics of Mining Informatics (On-Demand) (M1~M2)

Both Japanese and African students will self-study the basics of resource informatics by using GOOCUS (LMS) (This is fundamental engineering informatics education for resource science students and is a core part of this program).

Japanese/English Language Training (On-Demand) (M1~M2)

On-Demand self-studies by using GOOCUS (LMS)

Collaborative Training of DigiMine (M2)

Students will receive approximately 10 days of practical experience in the Smart Mining technique that is currently under development at the DigiMine Lab. In Witwatersrand University. This will provide important context to the knowledge obtained through the Basics of Resource Informatics unit.

Collaborative Research Project (M2)

A collaborative research team comprised of students from the Japan-Africa program will participate in a two-week initiative at the Akita University International Center for Research and Education on Mineral and Energy Resources following a course set by the Consortium of Japan-Africa Resource Science Universities. The team will be mixed of Japanese and African students to deepen engagement and increase cross-cultural awareness. In structuring the course, requests from both faculty members and resource professionals in both Japan and Africa are considered.

Certificate

Graduate students who participate in the program will receive a master's degree from their own institution and certificate of program completion.