

Mineral Resources Engineering

Master of Science



Thinking the Future
Zukunft denken

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Sustainably supplying people with mineral resources is an important task for the present and future. Specialists are needed to develop efficient mining and processing methods as well as intelligent recovery systems, in order to ensure sustainable handling of the Earth's resources. Graduates from the field of mineral resources engineering contribute greatly to making sure the following generations' need for mineral resources can be met.

Bachelor graduates from the mineral resources field or other engineering disciplines can study the Master's program Mineral Resources Engineering to develop from an all-around generalist to a specialist: Specialization fields such as mining and recycling are offered.

Students become intensively familiar with their specialization in two years (four semester). In an additional internship they are able to implement what they learned in their studies. Mineral resource engineers begin their professional careers equipped with comprehensive technical

knowledge, experiences in project and team work, and the awareness for technical and business questions in the mineral resources industry.

Characteristics of a RWTH Aachen Course of Study

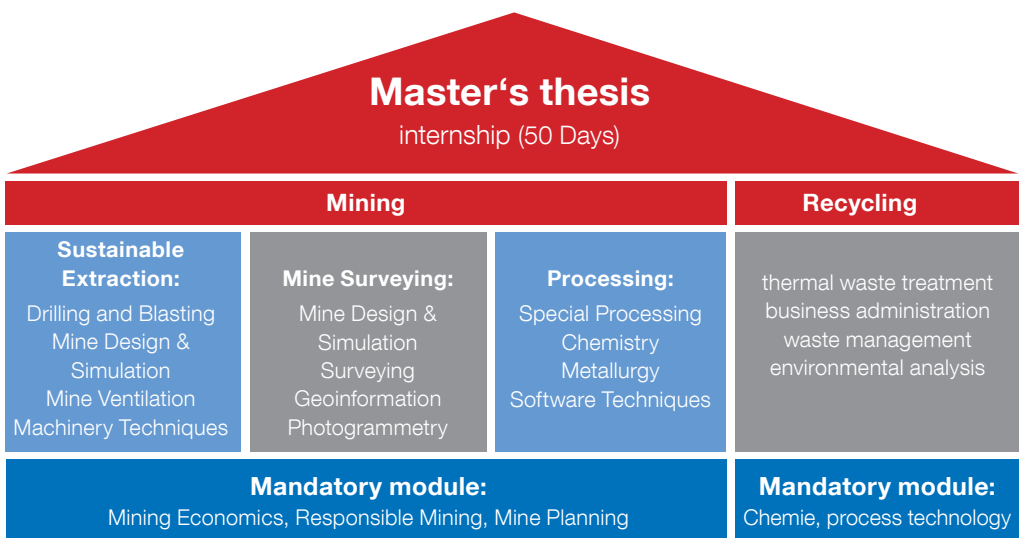
The Master courses offers extraordinarily individual and intensive teaching with possibilities to participate in current research projects. It teaches not only theoretical knowledge. Practical know-how is also very important. During the studies there are regularly scheduled excursions to different companies in Germany and worldwide. This allows students to work on and advance technical content on site. Whether they are heading to Brazil, Canada, Chile, the USA, or Sweden, the possibilities for students in mineral resources engineering are broad. Due to excellent supervisory relationships, Master's students gain intensive insights at current research projects and participate in them.

Degree Content

This course of study consists of a mandatory and elective component and a specialization. The foundation is formed by the mandatory section, which all students complete together. An elective block enables students to select courses from a catalogue. Although the elective component only makes up 20 percent of the Bachelor course, it makes up to 80 percent in the Master's studies. A set curriculum is completed in the selected specialization.

Specialisation mining

Mineral resources engineers specializing in extraction, study the detection of deposits, extraction of minerals using environmentally compatible and economically feasible technology, and the legal requirements governing mineral extraction. They decide which extraction methods to use in individual projects, and develop efficient extraction systems. Students learn about the characteristics of resources, occupational health & safety, geodata management, marketing the resources extracted, as well as fundamental legal and economic knowledge.





Specialisation mining – Sustainable Extraction

Mineral resources engineers specializing in sustainable extraction, design underground structures and tunnels in special civil engineering, work as development or sales engineers of machinery manufacturers, as blasting engineers for explosives manufacturers or they work for business consulting companies.

Specialisation mining – Mine Surveying

Mineral resources engineers specializing in the mine surveying, elective survey deposits and infrastructures using modern metrology methods, they document and assess geo- and basis data using geoinformation systems, and work on potential georisks in minerals extraction.

Specialisation mining – Processing

Mineral resources engineers specializing in Processing will concentrate on designing and modelling processing systems and deal with the actual processing or conditioning of mineral raw materials.



Specialisation Recycling

Mineral resources engineers specializing in recycling, work on recycling secondary raw materials. Among others, they are responsible for modelling processing processes as well as designing and commissioning processing systems and plants, they develop and optimize conversion technologies for plastics and paper and recycling of valuable metals such as Fe/Ni metals.

In addition, mineral resources engineers are experts in bio- and geothermal energy, but can also handle sustainable energies such as methane and geothermal energy.

Study Abroad

Students in the Mineral Resources Engineering M.Sc. course of study have the option of participating in the independent „European Mining Course“ Master program. EMC is organized by three universities: RWTH Aachen, Delft University and Aalto University in Helsinki. This four semester program is held in English. The Master students participate in classes at several universities during the first three semesters. During the last semester, they will study at one of the partnering university of their choice that will then also confer their dual degrees (M.Sc.) on them. The intense contact among students and with companies during the EMC is an important component of this program and provides a good opportunity to get to know potential employers.



Career Prospects

Resource-extracting and -processing industries (mineral oil, natural gas, coal, geothermal energy, ores, precious metals) are just a few of possible career paths.

Due to their interdisciplinary, academic education and training, graduates of the Mineral Resources Engineering M.Sc. course often work in management of companies in the resources industry, environmental technology, or in the energy sector. In addition, they can also assume regulatory, expert and consulting functions in the resources industry. They can also increasingly be found in business consulting companies, insurance companies or banks. Due to an

enormous demand for expertise and modern technology in the resources industry, mineral resources engineers are currently highly sought after all over the world.

Prerequisites

Prerequisite for admission to the program is an initial university degree. The required academic background is described in the exam regulations. The determination on whether the admissions requirements are met or not is made by the examination board.

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Where can I find more information?

Student Advisory Service:

Mineral Resources Engineering:

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Student council of the department:

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