

UNIVERSITÄT
BAYREUTH



MASTER OF SCIENCE (M.Sc.) IN EXPERIMENTAL GEOSCIENCES

*For students who want to do research
right from the beginning*

UNIVERSITY OF BAYREUTH
BAYERISCHES GEOINSTITUT



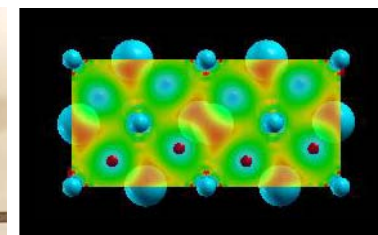
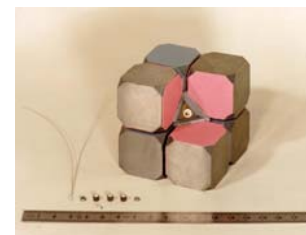
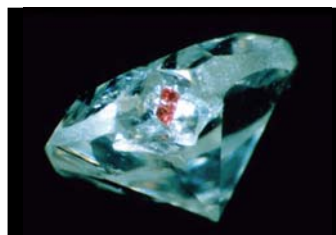
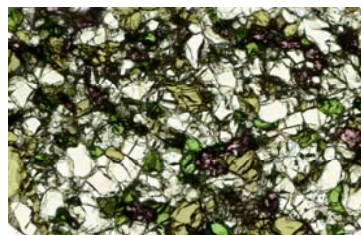
M.Sc. IN EXPERIMENTAL GEOSCIENCES

The M.Sc. program 'Experimental Geosciences' pursues training and research in one of the central areas in modern Earth Sciences: the experimental simulation of processes occurring in the Earth. This includes the characterization of physical and chemical properties of Earth materials to advance their understanding. The program in 'Experimental Geosciences' encompasses a number of traditional scientific fields: mineralogy, crystallography, solid state physics, inorganic chemistry, material sciences, geochemistry and cosmochemistry, as well as geophysics. Only by integrating these diverse subfields one can fully understand structure and dynamics of the Earth.

In the M.Sc. program, students are integrated into small research groups right from the beginning. They work on independent projects under the close and personal supervision of experienced scientists. The laboratory-based work is supplemented by lectures as well as literature and research seminars. Teaching language is English.

The program is organized in four major module areas, and encompasses a total of 120 ECTS credit points (CP). The module areas are:

1. Experimental Geosciences (core classes) 14 CP.
2. Research Techniques, including three one-semester long research projects with research reports, 69 CP.
3. Elective courses (11 CP) in any of the following:
 - The solid Earth.
 - Solid state physics.
 - Material sciences and catalysis.
 - Information technology.
 - Crystallography.
 - Environmental geochemistry.
4. Master thesis 26 CP. To be completed during the final semester of the curriculum.



THE BAYERISCHES GEOINSTITUT

The M.Sc. program 'Experimental Geosciences' is centered on the expertise of the Bayerisches Geoinstitut (BGI). BGI is a central research facility at the University of Bayreuth and one of the leading institutes in research and training in experimental geochemistry and geophysics worldwide. The institute is also involved in materials science research and has good contacts to industry.

Many key questions of modern Earth science can only be addressed by experimental methods. BGI has a wide range of excellent laboratory facilities, operated by some of the most capable scientists in the field:

- Analytical facilities to characterize samples: X-ray diffraction, spectroscopic methods (optical, IR, Raman, Mössbauer), electron microscopy, electron microprobe and laser ablation mass spectrometry.
- Synthesis facilities at high pressure and temperature: high temperature gas-mixing furnaces, hydrothermal laboratories, piston cylinder presses, autoclaves, multi-anvil presses and diamond-anvil cells.
- Facilities for in-situ measurements of physical properties: compressibility, electrical and thermal conductivity, magnetic and optical properties and ultrasonic interferometry.
- Computational facilities for ab-initio modeling of material properties.

In the M.Sc. program students will be trained in many of these techniques. They will build up a solid expertise in Earth and materials science that will allow them to pursue careers in both academics and industry.

A complete list of facilities, scientists and current research at BGI can be found at www.bgi.uni-bayreuth.de.

STUDYING IN BAYREUTH

Bayreuth is a city with 75,000 residents and located in northern Bavaria, about 70 km north of Nuernberg. As a former residence town Bayreuth offers an attractive historic city center. Bayreuth features rich cultural activities and a diverse social environment. The beautiful surrounding landscape (mountains, woods, lakes and rivers) allows diverse recreational activities, like biking, hiking, climbing, swimming, as well as downhill and cross-country skiing. Further information can be found on the city of Bayreuth website (www.bayreuth.de).

The University of Bayreuth features an attractive, modern campus where all facilities, including library and cafeteria are close together. Due to its moderate size with approx. 10,000 students and the proximity of facilities contacts with students, professors and university administrators are readily established. Further information about the university can be found under www.uni-bayreuth.de.

International students are readily integrated into university and city life with the help of the International Office and a number of private initiatives. The Language Center offers German classes for students at a nominal charge. Knowledge of German, however, is not required for the M. Sc. program in Experimental Geoscience.



APPLICATION REQUIREMENTS AND PROCEDURE

A Bachelor of Science (B.S.) or equivalent in a natural science or a related engineering field is required. The M. Sc. program in Experimental Geosciences starts both in the Winter (October) and Summer term (April) with application deadlines of July 15 (Winter term) and January 15 (Summer term).

For an application the following material must be submitted:

- Detailed B.S. (or equivalent) degree certificate, including official transcript. If the B.S. will be obtained only between the application date and the start of the M.Sc. program, an official certificate of the classes attended and the grades obtained so far must be provided.
- CV in tabulated form.
- A statement explaining the interest in studying 'Experimental Geosciences', not to exceed 2 pages (12pt font, in English).

Exceptionally qualified applicants will be admitted on the basis of this material.

Other well-qualified applicants will participate in a selection procedure consisting of:

- A written exam (60 minutes).
- A selection interview (20 minutes).



CONTACT

For further information please contact:

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Applications may be sent to:

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