VSB TECHNICAL UNIVERSITY OF OSTRAVA | FACULTY OF MINING AND GEOLOGY

Applied Geology

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Faculty	Faculty of Mining and Geology
Type of study	Bachelor
Language of instruction	English
Code of the programme	B0532A330041
Title of the programme	Applied Geology
Regular period of the study	3 years
Coordinating department	Department of Geological Engineering
Coordinator	Ing. Mgr. Martin Kašing, Ph.D.
Key words	Engineering Geology, Hydrogeology, Geophysics, Drilling Exploration, Applied Geology

About study programme

The study program is a technically focused geological field that includes all areas of geological research and exploration activities. Professional education is focused on the education of an operational geologist, for whom the scientific and technical basis will enable rapid professional adaptability to related and interdisciplinary fields.

Professions

- Geologist
- Geologist specialist
- Specialist in science, research and development
- Drilling rig operator
- Geologist for nature and landscape protection
- Researcher

Hard skills

- Modeling and simulation
- Knowledge of technical English
- Knowledge of English in written and spoken form
- 3D models and modeling
- Analytical skills
- Knowledge of geographic information systems, geoinformatics, and geoinformation technologies (GIS, GIT)
- Digital image processing
- Knowledge of statistical SW
- Spatial data processing (acquisition, storage, processing, visualization, publication)
- Project management
- Statistical data analysis
- Data analysis
- Designing
- Knowledge of system approach
- Knowledge of Czech legislation

Graduate's employment

Graduates find employment in companies and institutions operating in most industries, especially in the development of technology, the environment, the financial sector, construction, and in private geological companies. The evaluation of the applicability of graduates of the field of study Applied Geology shows that 70% of graduates have found employment in the private sector, 20% in state administration and other parts of the state and 10% work in scientific research positions. These are mainly the following positions:

- laboratory staff,
- staff of the research team,
- specialist technician,
- state administration officer,
- pedagogical worker at secondary school,
- researcher at the university or Academy of Science or in the commercial sphere.

Study aims

The aim of the study is to obtain a general geological overview, ie to have a broad basic knowledge in general geology, technical geology and applied geology. Students complete science and technology subjects. In theoretical and practical teaching, the study aims at the implementation, management, organization and evaluation of all types of geological work. The study is intertwined with the analysis of geological problems and related technical activities, evaluation of ecological aspects of geological, mining and industrial activities, applications of computer technology and geoinformatics.

Graduate's knowledge

The professional knowledge of the graduates is based on a strong general geological basis, which is followed by technical and applied geology during the study. Graduates have a wide geological and technical outlook, which allows them to hold the positions of field geological workers and intermediate operations technicians. Graduates will have expertise in engineering geology, hydrogeology, knowledge of technical and applied petrography, knowledge of environmental geochemistry, knowledge of deposit geology and knowledge of shallow drilling, engineering and technology of exploration and applied geophysics. Emphasis is also placed on quality knowledge in the field of visualization of the geological environment, but also on knowledge in the field of statistical processing of data obtained from the field.

Graduate's skills

Graduates will have these skills after successfully completing the study part. They will:

- capable of professional adaptability to related technical and natural sciences;
- able to create searches from domestic and foreign sources;
- able to create, manage and use geodatabases;
- able to manage, organize and evaluate all types of geological and shallow exploration work;
- capable of professional field activities;
- able to interpret and visualize the results of data obtained from field work;
- able to analyze geological problems and prepare and implement follow-up technical activities;
- be able to analyze problems and automate appropriate workflows.

Thanks to the emphasis on language skills (English as the dominant language of the professional geological public) they will graduates will be able to work not only in the environment of the Czech Republic, but with their professional knowledge they will be able to work in similar jobs in the world.

Graduate's general competence

- Adaptation to working conditions in various national and international working groups;
- Opportunities in further education (professional competence in the relevant geological and mining fields);
- Analytical and systems thinking.
- Presentation of the results of the work in front of a professional audience;
- Ability to apply theoretical knowledge in practice;
- Active cooperation within international working project teams.

Study curriculum

- form Full-time (en)