Specialist's Degree Program

GEOPHYSICAL METHODS OF THE SEARCH AND PROSPECTING OF MINERAL DEPOSITS

The geophysics studies the structure of the earth's interior, using natural and artificially induced acoustic, seismic, electromagnetic, gravitational, radiation and other fields. Geophysical methods are used in search, prospecting and exploitation of solid, liquid and gaseous mineral fields. Registrations of various geophysical fields were carried out using the latest technical means by sea, land, underground (borehole), air and space methods. A geophysicist must have high qualifications, be able to build new physical and geological models of environments and develop innovative methods for processing large amounts of information.

Professional activity of geophysicists is a combination of modern technologies, means and methods of scientific and practical activities aimed at studying the structure of the earth's interior in the search and exploration of mineral fields.

Prerequisites:

• Secondary general education or secondary vocational education
• Passing the entrance tests in SFU and/or passing the exam in mathematics, Russian language and physics.
• Applicants are encouraged to have advanced training in mathematics and natural sciences.

Qualification: Mining engineer-geophysicist

Skills/ objectives:

1. Knowledge of theory of geophysical fields and geophysical methods of exploration of the Earth’s crust.
2. Knowledge of geological structures of ore deposits and oil and gas fields.
4. Solutions direct and inverse problems of applied geophysics.
5. Implementation and control of the technological processes measuring, processing and interpretation of geophysical field anomalies.
6. Performance of works on safety control during process execution of oil and gas production.
7. Preparation of technological, technical, field documentation in accordance with the chosen field of professional activity.
8. Capacity to form proposals for the introduction of advanced technologies in the process of geophysical researches, to form advanced methods and techniques of labor in the work of personnel.
9. Participation in applied research in accordance with the profile of their professional activities.

Program length: 5 years
Starting date: September, 1st
Language of instruction: Russian
Tuition fee per year: 250,000 rubles (~ 3,310 USD)
Program Leader: Prof. Valery M. Kiselev

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Doctor of Sciences (Physics & Mathematics), Head of Geophysical Department
GEOPHYSICAL METHODS OF THE SEARCH AND PROSPECTING OF MINERAL DEPOSITS

CURRICULUM

- History
- Philosophy
- Foreign language
- Foreign language (professional)
- Physical education and sports
- Economy
- Jurisprudence
- Mathematics
- Computer science
- Physics
- Chemistry
- Ecology
- Engineering and geological graphics
- Mechanics
- Electrical equipment
- Metrology, qualification and standardization
- Geology
- Physics of rocks
- Fundamentals of geodesy and topography
- Fundamentals of programming
- Theory of complex function
- Theory of fields
- Operational calculus
- Physics of the Earth
- Prospecting geophysics
- Mathematical modeling
- Life safety
- Mineral deposits
- Complex of geophysical methods
- Applied heating physics
- Applied hydrodynamic
- Boring machines and well drilling
- Geophysical well logging
- Hydrogeology and engineering geology
- Economic and management of geological exploration

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