



Topics „B”; Geology specialization

1. Genetic system of minerals with typical examples.
2. Classification, texture and main types of igneous rocks.
3. Structure, formation, composition (ophiolite series) of the oceanic crust.
4. Formation, texture and grain size of siliciclastic sedimentary rocks (stratification, grain-size distribution, grain morphometry). Formation and significance of allites and siallites.
5. Carbonate depositional environments (Wilson's facies) and the texture of carbonate rocks.
6. The role of metamorphism in rock formation (types, zones and facies of metamorphism, main metamorphic rock types).
7. The role, significance of environmental geology in identifying hazards. Anthropogenic processes endangering the geoenvironment.
8. General principles of subsurface water flow from the Darcy's law to the conceptual model of the unit basin.
9. Trends in the utilization of geothermal energy. The geological background of positive geothermal anomalies.
10. Methods of elemental concentration determination in geological samples (measurement techniques, necessary sample preparations).
11. The origin and abundance of chemical elements in the universe. Abundance of the elements in the Earth's crust. Goldschmidt's classification of the elements.
12. Significance of stratigraphy, its principles, relative and absolute age determination.
13. Types and significance of fossils (with examples).
14. Basic concepts in economic geology (mineral raw material, fossil energy resources, ore, non-ore raw material, seam, waste rock, etc.). The system of mineral resource occurrences based on the properties and formation of the raw material.
15. The most important geological and geophysical maps and profiles, their scale, colour legend, symbols and possible applications.
16. The role of shallow geophysical surveys in environmental geology, engineering geology, raw material exploration and archaeology (geoelectric resistance, georadar, magnetometric measurements).