

Wydział: **Geologii, Geofizyki i Ochrony Środowiska**  
Rodzaj studiów: **stacjonarne II stopnia**  
Kierunek studiów: **Geologia Stosowana**  
Specjalność: **Economic geology**

### **Zagadnienia egzaminacyjne:**

#### **I. Geology, mineralogy, and genesis of metalliferous mineral deposits**

- Mineral deposit processes.
- Types of deposits connected with magmatic centres
- Hydrothermal deposits
- IOCG deposits and their geological characteristics.
- Geological characteristics of the iron-titanium mineral deposits.
- Geological model of porphyry type of deposits
- Geology of Sn deposits
- Geology of carbonatites
- Geology and mineralogy of chromite mineral deposits.
- Geology of pegmatites
- Geology of skarns and carbonate replacement deposits
- Geology of Ni-sulphides deposits.
- Geology of epithermal system
- Geology of Intrusion related type gold deposits
- Geology of the orogenic gold deposits.

#### **II. Prospecting and mineral exploration**

- Brownfield and greenfield exploration
- Stages of an exploration project
- Remote sensing and GIS in mineral exploration
- Role of geological models in mineral exploration
- The mineral system approach in mineral exploration
- Geophysics in mineral exploration
- Background and Threshold value in mineral exploration
- Soil geochemistry in geochemical exploration
- Schlich and stream sediments analyses
- Glacial till geochemical survey
- Geochemical exploration in weathered cover
- Sampling and analytical methods in geochemical exploration
- Indicator minerals
- Drilling methods in mineral exploration
- QA/QC protocols in mineral exploration

### **III. Economic Geology (industrial materials)**

- Salinity and chemical composition of seawater.
- Cyclic sedimentation of evaporates.
- World deposits of rock salt and K-Mg salts.
- Sources of sulphur and native sulfur deposits.
- Phosphorus cycle and world deposits of phosphorites.
- Coalification processes (major factors, products of different stages, coal rank).
- Coal lithotypes, identification of coal components.
- Coal mining and environment.
- Coal as an alternative energy source (coal bed methane, coal as source rock for hydrocarbons, underground coal gasification).
- The major coal basins in the world.
- Physical properties of rocks and testing.
- Igneous rocks - main geological formations they relate to application.
- Metamorphic rocks - properties, application, and occurrence.
- Sedimentary rocks - properties, application, and occurrence.
- Building stones – main deposits in Poland.

### **IV. Geology of the World**

- Origin of the Earth and the Solar System
- Structure of the Earth
- Plate tectonic theory
- Supercontinent Cycle
- Geology of world - Africa
- Geology of world - Antarctica
- Geology of world - Asia
- Geology of world - Europe
- Geology of South America.
- Geology of North America.
- Geology of Australia.
- Australian mineral resources.
- American mineral resources.