

Applied Geochemistry: Exploration Geology, ore deposit models, alteration geochemistry

COURSE CONTENTS:

- Mineral exploration as a profession, and **reporting standards**
- Role of geochemistry in mineral **exploration**
- Geochemical **sampling, analytical methods** and **quality control**
- Geochemical data presentation
- Litho-geochemistry: classification, discrimination, norms, **interpretation**
- Hydrothermal alteration and mass change
- Mineral exploration case studies
- Geochemical visualization software
- Statistical processing of geochemical data

Wednesday, February 20

09:00-09:20: Welcome address (course program and logistic information)

09:20-10:30: Metal markets and commodities, exploration geology as a profession

Reporting standards and the importance of being earnest, the role of geochemistry in mineral exploration, the role of geochemistry in exploration for ore deposits and research

10:30-10:45 Coffee break

10:45-11:45 Geochemical sampling and analytical methods

11:45-12:15 Quality control of geochemical samples and data and why QA/QC is so important in the mineral exploration industry

12:15-13:45 Lunch break

13:45-15:15 Periodic table of elements, element mobility, rock and series discrimination, geochemical discrimination of least altered and altered volcanic rocks

15:15-15:30 Coffee break

15:30-17:00 Geodynamic settings, magmas, ores

Thursday, February 21

09:00-10:30 Hydrothermal alteration, alteration box plot, mass changes and vectors to the ore

10:30-10:45 Coffee break

10:45-12:15 Exploration case studies: VMS (northern Sweden, Paleoproterozoic)

12:15-13:45 Lunch break

13:45-14:45 Exploration case studies: Orogenic Gold and Nickel-Gold (West Greenland, Archean)

14:45-15:15 Software overview

15:15-15:30 Coffee break

15:30-17:00 Geochemical data processing practical, student presentations

17:15-18:00 Plenary lecture (Prof. Kolb)

Friday, February 22

09:00-09:45 Geochemical discrimination of least altered and altered plutonic rocks

09:45-10:00 Coffee break

10:00-11:45 Exploration case studies Gold (northern Sweden and southern Greenland, Paleoproterozoic)

11:45-12:00 Course summary and feedback

D. Schlatter, January 8, 2019, Helvetica Exploration Services GmbH, Lehrbeauftragter KIT