



DEPARTMENT OF EARTH SCIENCES

GVG380 Geochemistry, 7.5 credits

Geokemi, 7,5 högskolepoäng

First Cycle

Confirmation

This course syllabus was confirmed by Department of Earth Sciences on 2021-01-20 to be valid from 2021-08-30, autumn semester of 2021.

Field of education: Science 100%

Department: Department of Earth Sciences

Position in the educational system

The course includes 7,5 credits at the undergraduate level. The course is offered as an elective course subject to availability.

The course can be part of the following programme: 1) Bachelor's Programme in Earth Sciences (N1GVS)

Main field of studies

Earth Sciences

Specialization

G2F, First cycle, has at least 60 credits in first-cycle course/s as entry requirements

Entry requirements

Admission to the course requires participation in the courses GVG210 Mineralogy and GVG270 Petrology, of which at least one course must be successfully completed, and at least 90 credits in the main field of Earth Sciences is required. Applicants with equivalent education can, after review and approval, be admitted to the course.

Learning outcomes

On successful completion of the course the student will be able to:

Knowledge and understanding

- describe and explain the occurrence of the elements in our solar system, their nucleosynthesis as well as the most common theories of the formation of the solar system.
- describe and explain the geochemical subdivision from Goldschmidt as well as principles of major and tracer elements distribution in different minerals.
- explain the chemistry of Earth's crust's as well as the processes that underpinning its formation from a geoscientific perspective.
- describe and explain the principles of stable and radiogenic isotopes
- understand basic principles of geochemical analyses, as well as instrument technology (for example inductively coupled plasma mass spectrometer, scanning electron microscopes and x-ray diffractometer).

Competence and skills

- calculate and evaluate chemical analyses of different minerals.
- use MS Excel for chronology and mineral calculations.
- carry out geochemical analyses by means of available instrumental technology.

Judgement and approach

- apply the geochemical principles of problem-solving in Earth and Environmental sciences.
- apply geochemical principles to understand key events in Earth's geologic past (e.g., the Great Oxidation, Paleocene-Eocene Thermal Maximum) and draw conclusions for a better understanding of anthropogenic climate change.

Course content

The course explores the occurrence and origin of elements, the solar system and planets, as well as geochemical cycles. Geochemical classification and distribution of basic elements, geochemical concepts related to isotopes, theory and practice of instrumental analysis are also studied.

Form of teaching

The teaching consists of lectures and exercises.

Language of instruction: English

Assessment

Components 1: Theory, 4,5 credits: Fail/Pass/Pass with Distinction

Components 2: Exercises, 3 credits: Fail/Pass

A student who has taken two exams in a course or part of a course without obtaining a pass grade is entitled to the nomination of another examiner. The student needs to contact the department for a new examiner, preferably in writing, and this should be approved by the department unless there are special reasons to the contrary (Chapter 6, Section 22 of Higher Education Ordinance).

If a student has received a recommendation from the University of Gothenburg for special educational support, where it is compatible with the learning outcomes of the course and provided that no unreasonable resources are required, the examiner may decide to allow the student to sit an adjusted exam or alternative form of assessment.

In the event that a course has ceased or undergone major changes, students are to be guaranteed at least three examination sessions (including the ordinary examination session) over a period of at least one year, but no more than two years, after the course has ceased/been changed. The same applies to placements and professional placements (VFU), although this is restricted to just one additional examination session.

Grades

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U).

For the grade Pass (G) in the course as a whole, at least Pass (G) is required for both components.

For the grade Pass with Distinction (VG), the grade Pass with Distinction (VG) is required on the theory component of the course.

Course evaluation

The students may write an anonymous written course evaluation.

The results of and possible changes to the course will be shared with students who participated in the evaluation and students who are starting the course.

Additional information

Students admitted to N1GVS Bachelor's Programme in Earth Sciences have precedence for admittance to the course.