



## DEPARTMENT OF EARTH SCIENCES

### **GVG490 Advanced Geochemistry, 7.5 credits**

Avancerad geokemi, 7,5 högskolepoäng

*Second Cycle*

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#### **Confirmation**

This course syllabus was confirmed by Department of Earth Sciences on 2021-02-23 to be valid from 2022-01-17, spring semester of 2022.

*Field of education:* Science 100%

*Department:* Department of Earth Sciences

#### **Position in the educational system**

The course includes 7,5 credits at masters's level. The course is offered as an elective course subject to availability.

The course can be part of the following programme: 1) Master's Programme in Earth Sciences (N2GVS)

*Main field of studies*

Earth Sciences

*Specialization*

A1N, Second cycle, has only first-cycle course/s as entry requirements

#### **Entry requirements**

For admittance to the course requires 165 credits in completed courses within Earth Sciences, including GVG380 Geochemistry with at least 90% with passing grades and English B/English 6 or an international language test, for example TOEFL, IELTS.

#### **Learning outcomes**

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

*Knowledge and understanding*

- principles of geochronology in magmatic and metamorphic systems.
- formation ages versus cooling ages (diffusion's role).
- trace element distribution in magmatic and metamorphic minerals.

*Competence and skills*

- utilize the laser ablation ICP-MS.
- reduce and interpret laser ablation ICP-MS data.
- utilize geochemistry literature.
- develop research strategies for geochemistry.
- present results both in written and oral form.

*Judgement and approach*

- evaluate and discuss geochemical literature as well as our collected course data with a scientific approach and understanding.

**Course content**

This course provides experience with a variety of analytical instruments used in geochemistry and take advantage of facilities (e.g. laser ablation ICP-MS) available at the Department of Earth Sciences.

**Form of teaching**

The course is taught full-time and is divided into lectures, group exercises, laboratory work and presentations.

The students work in small groups with current geological problems, utilize scientific literature as well as deducing and evaluating their own collected data. The results of their projects are presented in the form of a written report and a seminar presentation.

*Language of instruction:* English

**Assessment**

The student will be examined by:

Moment 1 Advanced Geochemistry, 7,5 hp: Fail, Pass, Pass with Distinction.

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 the 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).

In order to pass (G), at least 60% of all required points must be achieved; for pass with distinction (VG), at least 75% are required.

### **Course evaluation**

The students are given the opportunity to make an anonymous written evaluation of the course.

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 the N2GVS Master's Programme in Earth Sciences have precedence for admittance to the course.