

Syllabus

for course at first level

Geochemistry in the Field and Laboratory

Geokemi i fält och i laboratoriet

7.5 Higher Education

Credits

7.5 ECTS credits

Course code:	GG4206
Valid from:	Spring 2018
Date of approval:	2017-01-16
Department	Department of Geological Sciences
Main field:	Earth Sciences
Specialisation:	G2F - First cycle, has at least 60 credits in first-cycle course/s as entry requirements

Decision

This syllabus was approved by the Faculty of Science at Stockholm University 2017-01-16

Prerequisites and special admittance requirements

Admission to the course requires completion of 37.5 credits in Geology or Earth science, including the courses Geology and geophysics 15 credits and Basics of geochemistry 7.5 credits, or Tellus I - Geology 15 credits, Tellus II - Geology 12.5 credits, Tellus III - Geology 2.5 credits and Geochemistry 7.5 credits, or equivalent.

Course structure

Examination code	Name	Higher Education Credits
HELA	Geochemistry in the field and laboratory	7.5

Course content

The course deals with methods to obtain and analyse water, gas, and sediment samples.

The course covers

- sampling methods for water, sediments, soil and rocks
- physical properties of sediments
- nutrient, pH, and redox geochemistry in aqueous environments
- the influence of microorganisms on geochemical processes
- carbon mineralisation processes and kinetics in soil, natural waters, and sediments
- gas exchange between soil, water, sediment, and atmosphere
- organic and inorganic chemical composition of soils, sediments, waters, and sedimentary rocks

Learning outcomes

After completion of this course, the student will be able to:

- independently obtain samples and know how to treat redox-sensitive samples
- understand the influence of microorganisms on geochemical processes
- have knowledge about methods for analyzing organic and inorganic compounds in soil, water, sediment, and sedimentary rocks
- apply basic statistical methods to describe sample and compositional variability of geochemical data
- apply basic field equipment for chemical analysis (spectrophotometer, pH meter, conductivity meter,

microburettes) for analyses of resistivity, oxygen, nutrients and redox active substances (N, Mn, Fe, S, O)
• present data in graphical format and interpret geochemical data

Education

Teaching consists of introductory lectures, field work, and laboratory work. There will be seminar presentations by the participants. Attendance in all components of the course is mandatory. Under special circumstances can the examiner together with the instructor waive certain parts of the course.

Course instruction language will be Swedish and English.

Forms of examination

a. Knowledge assessment and examination are in the form of written field and laboratory reports, and written examinations.

b. Grades will be set according to a seven-point scale related to the learning objectives of the course:

A = Excellent

B = Very good

C = Good

D = Satisfactory

E = Adequate

Fx = Fail, some additional work required

F = Fail, much additional work required

c. The grading criteria will be distributed at the beginning of the course.

d. In order to pass the course, students must receive the minimum passing grade E on all course units and participate in all mandatory instruction.

e. Students who receive a failing grade on a regular examination are allowed to retake the examination as long as the course is still provided. The number of examination opportunities is not limited. Other mandatory course elements are equated with examinations. A student who has received a passing grade on an examination may not retake the examination to attain a higher grade. A student who has failed the same examination twice is entitled to have another examiner appointed, unless there are special reasons to the contrary. Such requests should be made to the department board.

g. There is no facility to improve the grade Fx to a pass grade in this course.

Interim

Students may request that the examination be conducted in accordance with this course plan even after it has ceased to be valid. However, this may not take place more than three times over a two-year period after course instruction has ended. Requests must be made to the department board. The provision also applies in the case of revisions to the course plan.

Limitations

The course may not be included in degrees in combination with the course Geochemical Field Methods 7.5 credits (GG4011, GG4022, GG5102), or equivalent

Misc

The course is part of the Bachelor's Programme in Geology, Geochemistry and Geophysics and the Bachelor Programme in Earth Science, but can also be read as a separate course.

The course may include field trips that can entail costs for the student.

Required reading

The course literature is decided by the department board and published on the Department of Geological Sciences website at least two months before the start of the course.