Department of Geological Sciences

Stockholm University

Syllabus

for course at first level

Geochemical Modelling
Geokemisk modellering

7.5 Higher Education Credits
7.5 ECTS credits

Course code:	GG4214
Valid from:	Autumn 2017
Date of approval:	2017-01-16
Department	Department of Geological Sciences
Main field:	Earth Sciences
Specialisation:	G1F - First cycle, has less than 60 credits in first-cycle course/s as entry requirements

Decision

This syllabus was approved by the Faculty of Science at Stockholm University 2017-03-13.

Prerequisites and special admittance requirements

Admission to the course requires completion of 30 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	Geochemical Modelling	7.5

Course content

The course covers:
• basic knowledge of the quantification of geochemical data using computer models
• computer models as a tool for studying geochemical processes
• data analysis with the equilibrium models and applications in environmental geochemistry
• programming of simple box models for studying geochemical cycles, river runoff and vegetation distribution
• basic programming of simple reaction transport models to simulate groundwater and sediment diagenetic processes

Learning outcomes

After completing the course, the student is expected to be able to:
• construct a simple box model with a geochemical application
• analyse chemical data using equilibrium models
• formulate quantitative connection between transport and chemical reactions

Education

Instruction consists of lectures, computer exercises, and independent projects. Participation in exercises and independent projects are mandatory. In the event of special circumstances, the examiner may, after consultation with the teacher concerned, grant a student exemption from the obligation to participate in certain compulsory instruction.

Forms of examination

a. Knowledge assessment and examination are in the form of written examinations and project reports.

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. The course has at least two examination sessions per academic year the year of tuition given. Intermediate years are given at least one examination.

f. 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.

Misc

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

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.