

Syllabus

for course at first level

Igneous and Metamorphic Petrology
Magmatisk och metamorf petrologi

**7.5 Higher Education
Credits**
7.5 ECTS credits

Course code:	GG4212
Valid from:	Spring 2019
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 2017-01-16

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 (or Tellus I - Geology 15 credits, Tellus II - Geology 12.5 credits, Tellus III - Geology 2.5 credits) and Mineralogy and Petrology (including a metamorphic and igneous component) 7,5 credits, or equivalent.

Course structure

Examination code	Name	Higher Education Credits
HELA	Igneous and Metamorphic Petrology	7.5

Course content

The course focuses on metamorphic and igneous petrology and includes:

- description and classification of igneous rocks and processes
- phase diagrams
- plutonism, volcanism and plate tectonics
- description and classification metamorphic rocks and processes
- deformation mechanisms and microstructures
- metamorphic reactions, chemical transportation and plate tectonics

Learning outcomes

After completing the course, the student is expected to be able to:

- describe the basic principles of igneous and metamorphic petrology
- identify the minerals in common igneous and metamorphic rocks using optical microscopy
- identify igneous and metamorphic rocks in hand sample and using the microscope
- classify igneous and metamorphic rocks
- describe and interpret phase diagrams
- understand the relationships between the mineralogy, petrology and plate tectonic processes

Education

The course consists of lectures and exercises. Field work and seminars may occur. Participation in exercises,

seminars and field work and in any associated integrated instruction is compulsory. 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. The teaching language is English.

Forms of examination

- a. Knowledge assessment and examination are in the form of 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 a degree in combination with the courses Petrology 15 hp (GG4004), Igneous petrology 5 hp/7.5 hp (GG4012/GG4142), Metamorphic petrology 5 hp/7,5 hp (GG4013/GG4143) och Mineralogy och Petrology 15 hp(GG4019/GG5105), 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.