

# Syllabus

for course at first level

**Paleoceanography and marine geology**  
**Paleoceanografi och maringeologi**

**7.5 Higher Education  
Credits**  
**7.5 ECTS credits**

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|--------------------------|--|
| <b>Course code:</b>      | GG4216   |
| <b>Valid from:</b>       | Autumn 2019  |
| <b>Date of approval:</b> | 2019-03-11   |
| <b>Department</b>        | Department of Geological Sciences  |
| <b>Main field:</b>       | Earth Sciences   |
| <b>Specialisation:</b>   | 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 2019-03-13

## Prerequisites and special admittance requirements

For admission to the course, knowledge equivalent to 45 credits in geology or earth sciences, including the course Marin and geophysical mapping methods, 7.5 credits (GG4121).

## Course structure

| Examination code | Name                                | Higher Education Credits |
|------------------|-------------------------------------|--------------------------|
| HELA             | Paleoceanography and marine geology | 7.5                      |

## Course content

The course covers:

- marine sediments as archives of global change; distribution, composition, stratigraphy and chronology
- marine microfossils; types and applications
- the modern climate system and links to marine geology; ocean/atmosphere circulation, the hydrosphere and cryosphere, oceanic and atmospheric biogeochemical cycles
- physical, biological and geochemical palaeoceanographic proxies
- palaeoceanographic history of the the last 150 million years

## Learning outcomes

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

- explain the different types of marine sediments, the controls on their distribution, and dating methods
- explain the different types of marine microfossils and their applications in environmental reconstruction
- explain the modern ocean-climate system and the governing mechanisms behind changes to this on different geological timescales
- explain different paleoceanographic proxies and their application in palaeoclimatology
- interpret the main trends and events in ocean-climate development over the last 150 million years

## Education

The course consists of lectures, exercises, seminars and possibly an excursion. Participation in set exercises, seminars and excursion 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. 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.

### **Limitations**

The course cannot be included in the degree together with the courses Paleoceanography, 10 p (GO3580), Marine geoscience II - paleoceanography, 15 credits (GG5005 / GG5013), Paleoclimatology and the ocean system, 7.5 credits (GG5124), Paleoceanography and paleoclimatology I, 15 hp (GG5113).

### **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.

### **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.