



## DEPARTMENT OF MARINE SCIENCES

### **GVG320 Marine Geology, 7.5 credits**

Maringeologi, 7,5 högskolepoäng

*First Cycle*

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#### **Confirmation**

This course syllabus was confirmed by Department of Earth Sciences on 2012-09-27 and was last revised on 2023-04-20 by Department of Marine Sciences to be valid from 2023-08-28, autumn semester of 2023.

*Field of education:* Science 100%

*Department:* Department of Marine Sciences

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

The course can be taken as a separate course outside of a specific program.

The course can be part of the following programmes: 1) Marine Science, Bachelor's Programme (N1MAV) and 2) Bachelor's Programme in Earth Sciences (N1GVS)

#### *Main field of studies*

Marine Sciences

Earth Sciences

#### *Specialization*

G2F, First cycle, has at least 60 credits in first-cycle course/s as entry requirements

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#### **Entry requirements**

60 credits in the field of Earth Sciences or 90 credits in the field of Marine Sciences is required

#### **Learning outcomes**

After the course the students are expected to be able to:

*Knowledge and understanding*

- define, explain and distinguish geology in different parts of the ocean, shelf areas and coastal seas
- describe, explain and distinguish ocean geomorphology and major types and sources of sediment
- describe geology of shelf seas and climate history based on marine sediments and geological proxies
- define different methods used in mapping, sampling and analysis of marine sediments

#### *Competence and skills*

- plan and perform survey and sampling of marine sediments
- plan and perform marine sediment analysis (e.g. interpret X-Ray images of sediment cores, prepare samples for geochemical analysis, prepare and analyse samples for microfossils and other geological proxies)
- describe, interpret, explain and categorise results of the analyses
- identify the most common microfossil groups
- name and describe climate proxies obtained from the marine sediment record
- use all these obtained skills for strategic planning and decision making when sampling in the field

#### *Judgement and approach*

- describe and evaluate the analysis results
- interpret and evaluate different geological strata in marine sediment record
- obtain knowledge about different survey, sampling and analysis methods for mapping of the seafloor

### **Course content**

The aim of the course is to give a broad knowledge of marine geology by highlighting deep sea, coastal and continental shelf geology as well as underlying processes involved in sedimentation. This provides a starting point for more advanced studies in marine geology. In this course you will learn how to define and explain the geology of different ocean areas and to distinguish the morphology and sediments of the oceans. The course goes through geology, climate and development history based on the marine sediment record and geological proxies. You will be presented different working techniques for mapping and sampling of the marine sediments. You will learn how to plan and perform sediment sampling and analyses.

*Sub-courses***1. Theory (Teori), 4 credits**

Grading scale: Pass with Distinction (VG), Pass (G) and Fail (U)

**2. Exercises and field work (Övningar och fältarbete), 3.5 credits**

Grading scale: Pass (G) and Fail (U)

The course includes fieldwork and sediment sampling in fjords on the Swedish west coast. Students are expected to learn different sediment survey- and sampling strategies during the fieldwork.

Also a written literature assignment on geological climate proxies is anticipated during the course. Each student is expected to deliver a written report based on the chosen climate proxy and present the assignment for the entire class.

**Form of teaching**

Teaching is conducted in form of lectures, fieldwork, mandatory group exercises, written reports, literature assignments and presentations.

*Language of instruction:* English

**Assessment**

Sub-course 1. Theory (4 hp): Written exam U/G/VG.

Sub-course 2. Exercises and field work (3,5 hp): Active participation and written reports U/G.

For a student who did not pass the examination, will be offered possibilities to take re-exams. Possibility to complete previously non passed mandatory course part is limited and is decided upon council with the course leader

If a student, who has failed the same examined component twice, wishes to change examiner before the next examination, a written application shall be sent to the department responsible for the course and shall be granted unless there are special reasons to the contrary (Chapter 6, Section 22 of Higher Education Ordinance).

If a student has a recommendation from the University of Gothenburg regarding special educational support, the examiner (in case it is compatible with the course's objectives and if not unreasonable resources are required) can decide to give the student an alternative examination form.

In cases where a course has been discontinued or has undergone major changes, the student shall normally be guaranteed at least three examination occasions (including the ordinary examination) during a period of at least one year, but maximum two years from the last time the course was given.

**Grades**

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U). In order to obtain Pass (G) for the entire course, grade G must be obtained for all the course parts. In order to obtain Pass with distinction (VG) for the entire course, the student must obtain grade VG for sub-course 1 and grade G for the rest of the course.

**Course evaluation**

A written evaluation is done at the end of the course via Canvas. In the written evaluation, the student is anonymous. The results 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**

Field work may imply own smaller costs for travel, food and stay for students