



## DEPARTMENT OF EARTH SCIENCES

### **GVK450 Glacial Landforms and Sediments, 7.5 credits**

Glaciära landformer och sediment, 7,5 högskolepoäng

*Second Cycle*

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#### **Confirmation**

This course syllabus was confirmed by Department of Earth Sciences on 2022-01-24 to be valid from 2022-12-05, autumn semester of 2022.

*Field of education:* Science 100%

*Department:* Department of Earth Sciences

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

The course includes 7.5 credits at the master's level. The course is offered as an elective course subject to availability.

The course can be part of the following programme: 1) Master's Programme in Earth Sciences (N2GVS)

#### *Main field of studies*

Earth Sciences

#### *Specialization*

A1N, Second cycle, has only first-cycle course/s as entry requirements

#### **Entry requirements**

Admission to the course requires 150 credits in the main field of Earth Sciences, of which at least 15 credits from advanced courses at undergraduate level.

#### **Learning outcomes**

On successful completion of the course the student will be able to:

#### *Knowledge and understanding*

- understand how glacial landforms and sediments are formed and their connection to the glacier processes.

- understand how glaciers and ice sheets are effected by various climatic, geographic and temporal factors.
- understand how glacial landforms and sediments can be used for paleoglaciology, that is, reconstructing glacial processes, environments, and events of earlier glacial periods.

#### *Competence and skills*

- map using GIS and investigate glacial landforms and sediments.
- identify glacial sediments (till, outwash, glaciomarine, glaciolacustrine) in the field.
- reading and understanding scientific literature about glacial landforms and sediments.
- give a presentation of findings from mapping and literature.

#### *Judgement and approach*

- critically review, synthesize and present relevant research for the subject.

The course is sustainability-related, which means that at least one of the learning outcomes clearly shows that the course content meets at least one of the University of Gothenburg's confirmed sustainability criteria.

#### **Course content**

The course deals with glacial landforms and sediments and their connection to glacial and paraglacial processes. Processes in alpine glaciers and ice sheets and the connection to glacial landforms and sediments will be explored. Field, cartographic and methods are used to investigate glacial landforms and sediments. There will be some focus on how glacial landforms and sediments can be used in glacial reconstructions and the potential and limitations with glacial reconstructions.

A major part of the course consists of project work, which is self-directed studies of glacial landforms/sediments in the field and/or through remote sensing.

While not being a main focus of the course, associated fields such as Quaternary history, regional and global glacial history and paleoclimate will also be dealt with.

#### **Form of teaching**

The teaching consists of lectures, seminars, project work and public presentations.

*Language of instruction:* English

**Assessment**

Part 1: Theory, 4 credits: U/G/VG

Part 2: Project work, 3.5 credits: U/G/VG

Active participation in all compulsory components of the course is required for the grades Pass (G) and Pass with Distinction (VG).

Theory is assessed by graded presentations and seminars on various aspects of glacial landforms and sediments.

Project work is assessed by the quality of the results and the public presentation.

Failed or unfulfilled obligatory components of the course may potentially be fulfilled by carrying out complementary tasks.

If a student who has twice received a failing grade for the same examination component wishes to change examiner ahead of the next examination session, such a request should be made to the department in writing and should be approved by the department unless there are special reasons to the contrary (Chapter 6 Section 22 of the Higher Education Ordinance).

If a student has received a recommendation from the University of Gothenburg for study support for students with disabilities, the examiner may, where it is compatible with the learning outcomes of the course and provided that no unreasonable resources are required, decide to allow the student to sit an adjusted exam or alternative form of assessment.

In the event that a course has ceased or undergone major changes, students are to be guaranteed at least three examination sessions (including the ordinary examination session) over a period of at least one year, but no more than two years after the course has ceased/been changed. The same applies to internships and professional placements (VFU), although this is restricted to just one additional examination session..

**Grades**

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U).

For the grade Pass (G) for the entire course, a passing grade is required for both graded sections. To receive the grade Pass with Distinction (VG) for the entire course, the grade Pass with Distinction (VG) is required for both graded sections.

**Course evaluation**

The students are given the opportunity to make an anonymous written evaluation of the course.

The results of and possible changes to the course will be shared with students who participated in the evaluation and students who are starting the course.