UNIVERSITY OF GOTHENBURG

DEPARTMENT OF EARTH SCIENCES

GVG220 Sedimentology and Stratigraphy, 15 credits

Sedimentologi och stratigrafi, 15 högskolepoäng

First Cycle

Confirmation

This course syllabus was confirmed by Department of Earth Sciences on 2011-10-10 and was last revised on 2019-02-18 to be valid from 2019-02-18, autumn semester of 2019.

Field of education: Science 100%
Department: Department of Earth Sciences

Position in the educational system

The course is included in the Bachelor's programme in earth sciences with a specialisation in geology. The Course can also be read as a single subject course.

The course can be part of the following programmes: 1) Bachelor's Programme in Earth Sciences (N1GVS), 2) Marine Science, Master's Programme (N2MAV) and 3) Master's Programme in Earth Sciences (N2GVS)

Main field of studies	*Specialization*
Earth Sciences	G1F, First cycle, has less than 60 credits in first-cycle course/s as entry requirements

Entry requirements

For admission to the course, 60 credits are required completed courses in the main field of study earth sciences of which 75% with the grade lowest Approved. Students with equivalent education can after assessment be given admission to the course. Students on N1GVS Bachelor's programme in earth sciences has precedence to the course.

Learning outcomes

Upon successful completion of the course, the student will be able to:

Knowledge and understanding
Define, explain and distinguish basic sedimentological properties that influence or have been influenced by sedimentary processes: fluid properties, flow velocity, particle size, orientation of grain, geochemistry of depositional environments, etc

define, explain and distinguish basic processes in sedimentology: e g erosion, weathering, transport and sedimentation, as well as have basic knowledge of stratigraphy such as lithostratigraphy, biostratigraphy, chronostratigraphy, and sequencestratigraphy.

compile the regional geology of a region- on the basis of paleozoic and mesozoic sequences

identify, explain and illustrate different depositional environments (delta, flood plain, alluvial fan, reef, etc.) as well as typical characteristics for these

describe relative and absolute dating chronologies, for example, varve and tephrochronology, radiometric methods particularly C14, cosmogenic dating methods, stable isotopes as well as thermoluminiscence dating.

Competence and skills
Plan and carry out field work, logging as well as measurement of paleo flows in sedimentary sequences and, in the lab, sediment analyses (for example dry and wet sieving, grain size analys as well as pipette dispersion)

evaluate analyses as well as describe, explain and categorise these.

identify the most common minerals and rocks in sedimentary rocks (on the basis of thin section)

read scientific articles in the area and discuss these

Judgement and approach
To with a scientific approach apply sedimentological, stratigraphic and geochronological knowledge on different geoscientific issues as well as to give an increased understanding of sedimentology and stratigraphy, as well as the most important dating methods and to be a disciplinary foundation for continued studies in geology.

Course content
The course is given full-time and includes three components. The teaching consists of lectures and labs that include compulsory exercises, compulsory group assignment in the field, and compulsory seminars. In addition there is a compulsory field trip to Bornholm (can be substituted with a project agreed with the course coordinator in case the student cannot participate in the field trip). On the island of Bornholm, we examine and investigate coastal outcrops of sedimentary rocks from the mesozoic and paleozoic, as well as observe modern sedimentological processes along the coast and in rivers. We are in the field all days that week.

Form of teaching
1. Theory- Aim of 1-5 during Knowledge and understanding is examined through written examination--a final tenta and 4-6 quizzes. To receive Pass with distinction on the module, the student may not be failed on one of the 5 aims.
2. Exercises/field exercises- Aim of 1-4 during Competence and skills is examined through written reports.
3. Field trip- Participation.
4. Seminars- Aim of 5 during Competence and skills and aim of 1 during Judgement and approach is examined through attendance and activity during 4-6 seminars.

Language of instruction: English

Assessment
Components 1 Theory (Theory) 9 credits Fail/Pass/Pass with distinction

Components 2 Exercises/field exercises (Exercises/Field exercises) 3.5 credits Fail/Pass

Component 3 Field trip (Excursion) 1.5 credits Fail/Pass

Components 4 Seminars (Seminars) 1 credit Fail/Pass/Pass with distinction

Grades

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U).
For a passing grade (G) for the entire course, a passing grade is required for all graded sections. To receive the grade passed with distinction (VG) for the final grade, the grade passed with distinction for the Theory section (examination) as well as at least passed for all other sections is required.

A student that has failed the same examination twice is entitled to have another examiner appointed, if it is possible. The application shall be in writing and sent to the department.

In cases in which the course has been discontinued or major changes have been made a student should be guaranteed at least three examinations to complete the course (including the regularly scheduled examination) during a time period of at least one year from the last given course.

Course evaluation

The result and any changes in the course structure will be communicated to both the students who completed the evaluation and to the students who will begin the course.

Additional information

The field trip can imply certain additional costs for the student. According to the policy of the department, students who participate in the field trip should pay up to 200 Swedish crowns per night for transport and housing.

The teacher understand and speaks Swedish.