

GEON02, Quaternary Geology: Palaeoecological Methods and Environmental Analysis, 15 credits

*Kvartärgeologi: Paleoekologisk metodik och miljöanalys, 15
högskolepoäng*

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2007-01-31 to be valid from 2007-02-01, autumn semester 2007.

General Information

The course is an elective course for second-cycle studies for a Degree of Master of Science (120 credits) in geology. The course is given in English.

Language of instruction: English and Swedish

Main field of studies

Geology

Depth of study relative to the degree requirements

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

Learning outcomes

The aims of the course are that students should have acquired the following knowledge and skills on completion of the course; they should

- independently be able to carry out pollen analyses, macrofossil analyses and mineral magnetic analyses, and process the results and draw conclusions from such studies
- have knowledge of dendrochronology, chronology based on varved sediments and palaeomagnetism, and be able to interpret results of such studies
- have good knowledge of the applicability of radiocarbon dating and to some extent other radiometric dating methods, their limitations and uncertainties, and be able to interpret results of studies based on these methods,
- have thorough knowledge of the composition, genesis and formation environments of organogenic deposits, as well as their occurrence regionally and

- in different types of stratigraphies,
- be able to present their own analysis results and interpretations as part of a poster presentation,
- be able to summarise primary scientific publications through oral presentation and be able to both argue for and critically evaluate published view points.

Course content

The course contents in the form of theoretical and practical parts are connected through project work that takes place continuously through the entire course. In the project work, the theoretical and practical knowledge is applied, and the results are presented in a joint poster presentation.

The following aspects are included in the course:

Fieldwork with coring of organogenic deposits and collection of working material for subsequent analyses.

Pollen analys, processing of data, computerised diagramme construction and interpretation of analysis results.

Macrofossil analys, processing of data and interpretation of analysis results.

Mineral magnetic methods, applications and uncertainties.

Laminated sediments and their applications in chronological studies.

Radiocarbon dating and other radiometric methods, their applications, limitations and uncertainties. Calibration of radiocarbon dates.

Dendrochronology, methodology and interpretation of results.

Formation of organogenic deposits and analysis of collected material.

Late Quaternary chronology, vegetation history and cultural landscape development.

Presentation of results, oral presentation techniques and poster production.

Course design

The teaching consists of lectures, laboratory sessions, field exercises, seminars, group work and project work. Participation in laboratory sessions, field exercises, seminars, group work and project work as well as other teaching integrated with these activities is compulsory.

Assessment

The examination takes place orally and in writing throughout the course. For students who have not passed the regular examination, additional examination in close connection to this is offered.

Subcourses that are part of this course can be found in an appendix at the end of this document.

Grades

Marking scale: Fail, Pass, Pass with distinction.

The grades in the course are passed with distinction, passed and failed.

The grades in the course are passed with distinction, passed and failed. To pass the entire course, approved examinations, passed project report and participation in all compulsory parts are required. The final grade is determined by summarising the

results of all parts that are included in the examination.

Entry requirements

For admission to the course, general entry requirements are required and 90 credits in geology including GEOB01-GEOB05 or the equivalent knowledge, or 90 credits in physical geography, biological subjects or archaeology, and English B or the equivalent.

Further information

The course may not be included in a higher education qualification together with KVG530 Quaternary geology: palaeoecological and chronological methodology, 10 credits, or KVG526 Quaternary geology, palaeoecological and chronological methodology, 10 credits.

Subcourses in GEON02, Quaternary Geology: Palaeoecological Methods and Environmental Analysis

Applies from H07

0701 Palaeoecological Methods and Environmental Analysis, 15,0 hp
Grading scale: Fail, Pass, Pass with distinction