



LUND
UNIVERSITY

Faculty of Science

GEOM07, Sedimentary Geology and Basin Analysis, 15 credits

Berggrundsgologi: Sedimentär geologi och bassänganalys, 15 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2013-01-17 to be valid from 2013-01-18, spring semester 2013.

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.

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 aim of the course is that students should have acquired the following knowledge and skills on completion of the course; they should

- be able to account for the effects of tectonics on sedimentary basins in different plate-tectonic environments,
- be able to account for global sea-level changes and their causes during Phanerozoic time,
- be able to account for sedimentary basins at a general level and their economic values (petroleum reservoirs) in a global perspective,
- in detail be able to account for the formation, occurrence and extraction of petroleum resources,
- in detail be able to account for continental and marine sedimentation environments regarding processes and products,
- be able to describe and understand the most common stratigraphic and geophysical methods for characterisation and interpretation of the structure,

This is a translation of the course syllabus approved in Swedish

- facies and evolution of sedimentary basins,
- in detail be able to account for Phanerozoic sedimentary basins in Scandinavia, specifically regarding their formation and development.
 - be able to apply the most common methods for large-scale analysis of sedimentary basins; primarily in terms of sequence stratigraphy, secondly be able to understand and analyse geophysical drill-core logging data and seismic stratigraphy,
 - be able to assimilate, critically assess and discuss scientific primary publications within the subject, and based on such material be able to summarise a current research topic.

Course content

The following parts are included in the course:

- Tectonic environments and large-scale tectonic evolution of sedimentary basins
- Sediment petrography
- Sedimentary facies and facies analysis in continental and marine environments
- Analysis and interpretation of drill cores
- Sequence stratigraphy and sea-level changes
- Petroleum and reservoir geology
- Geophysical examination methods and their applications in basin analysis
- Excursions within Sweden and/or abroad
- Project work, mainly based on scientific literature

Course design

The teaching consists of lectures, field exercises, seminars, excursions, group work and project work. Participation in field exercises, seminars, excursions, group work and project work is compulsory. As the lectures are integrated with other teaching and contain information that is not included directly in textbooks and listed primary publications, it is strongly recommended that all lectures are followed.

Assessment

The examination takes place in writing in the form of examination and through assessment of project reports.

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. To pass the entire course, approved examination, passed project reports 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 75 credits in geology including GEOB01-GEOB04 or the equivalent knowledge, and English B or the equivalent. English B or the equivalent.

Further information

The course may not be included in a higher education qualification together with GEOM02 Solid Earth Geology: Sedimentary basins, palaeoclimatology and stratigraphy, 15 credits.

Subcourses in GEOM07, Sedimentary Geology and Basin Analysis

Applies from H12

1301 Sedimentary Geology and Basin Analysis, 15,0 hp
Grading scale: Fail, Pass, Pass with distinction