



DEPARTMENT OF MARINE SCIENCES

GVM460 Marine Micropaleontology and Paleoceanography, 15 credits

Marin Mikropaleontologi och Paleoceanografi, 15 högskolepoäng

Second Cycle

Confirmation

This course syllabus was confirmed by Department of Earth Sciences on 2012-09-27 and was last revised on 2021-04-21 by Department of Marine Sciences to be valid from 2022-01-16, spring semester of 2022.

Field of education: Science 100%

Department: Department of Marine Sciences

Position in the educational system

This course can be taken separately from any of the programs stated below.

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

Main field of studies

Earth Sciences

Marine Sciences

Specialization

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

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Entry requirements

For this course it is required to have 150 hp in geosciences, marine sciences or equivalent. All grades for the taken courses should be passed.

Learning outcomes

After the completed course the students are expected to demonstrate:

Knowledge and understanding

- Knowledge of marine geological proxies, their application and importance for paleoceanography
- Knowledge of marine microfossils, including their ecology, stratigraphic ranges, importance and applications
- Understanding of how to prepare and analyse micropaleontological samples and to interpret the data
- Understanding of how to apply stratigraphic tools like stable isotopes, dating methods, multivariate statistic
- Understanding of how to reconstruct contemporary and past changes in marine environments with help of stratigraphic tools and marine geological proxies and how to interpret those changes

Competence and skills

- Ability to present oral and written results
- Ability to read research articles, discuss these, perform new calculations and discuss eventual dissimilarities in own and other's results
- Ability to apply the obtained knowledge through participation in scientific discussions and seminars

Judgement and approach

- Ability to plan and perform research projects within course subject field.

Course content

The course includes studies of marine geological proxies including marine microfossil fauna and flora. The development and stratigraphic distribution of the various microfossils as well as the stratigraphic changes in marine climate and environmental proxies are discussed. An important area of study are benthic and planktonic foraminifera and their importance for interpreting both contemporary environments influenced by humans as well as ancient marine environments. The course also includes key elements of the paleoceanography with special emphasis on marine proxy analysis and their applications to reconstruct climatic, oceanographic, eustatic and geographical changes.

*Sub-courses***1. Theory (Teori), 7 credits**

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

Written exam

2. Field work and Laboratory work (Fältarbete och laborationer), 3 credits

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

Written report and Powerpoint presentation of the research project.

3. Exercises (Övningar), 5 credits

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

Active participation and written assignments

Form of teaching

The course consists of lectures, mandatory group exercises and seminars, research report writing and written assignments.

Language of instruction: The course is given in Swedish or English depending on the students' language skills.

Assessment

Normally written examination is arranged at the end of the course, but other forms of exam can also take place. Participation in seminars, laboratory work and eventual field work is mandatory. Teacher grading the course is able though to free the student from participation in the mandatory parts if there are special reasons.

For a student which did not pass the examination, there is a possibility to take re-exam. Possibility to complete previously non passed mandatory course parts is limited and is decided upon council with the course leader.

If a student fails twice the same examination or mandatory part of the course and would like to change the examiner before the next examination, such request shall be send to the department responsible for the course and will be granted if there are no special reasons against this (HF 6 kap § 22).

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 situation when the course in question is not given any longer or has undergone substantial changes, student shall be guaranteed a possibility of at least three examination occasions (including the original exam) during the period of at least one year based on the earlier version of the course.

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 "Pass/G" shall be obtained for all course parts. In order to obtain "Pass with distinction/VG" for the entire course, students shall obtain "Pass with distinction/VG" for the course part 1 and grade "Pass/G" shall be obtained for the rest of the course.

Regarding the application of ECTS-scale to all course grades, please see decision from the Vice-Chancellor of the University of Gothenburg 2007-05-28, dnr G 8 1976/07 samt 2011-02-28, dnr O 2009/5545.

Course evaluation

Course evaluations is performed first, through the dialogue with involved teachers and students and second, through the anonym questionnaire send via SUNET survey. The results and possible changes to the course will be shared with students who participated in the evaluations and students who are starting the course.

Additional information

Eventual field work may imply smaller costs for travel, food and stay for students.