



DEPARTMENT OF MARINE SCIENCES

MAR440 Marine project - From idea to action, 15 credits

Marint projekt - från idé till handling, 15 högskolepoäng

Second Cycle

Confirmation

This course syllabus was confirmed by Department of Biological and Environmental Sciences on 2013-10-10 and was last revised on 2018-07-30 by Department of Marine Sciences to be valid from 2018-09-03, autumn semester of 2018.

Field of education: Science 100%

Department: Department of Marine Sciences

Other participating department

Department of Biological and Environmental Sciences

Position in the educational system

The course is a mandatory course within Marine Science, Master's Programme and may be taken as elective course within the Master's Programme in Physical Oceanography. The course can also be taken as a freestanding course.

The course can be part of the following programmes: 1) Master's Programme in Physical Oceanography (N2FOC) and 2) Marine Science, Master's Programme (N2MAV)

Main field of studies

Marine Sciences

Specialization

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

Entry requirements

Bachelor's Degree (180 credits) in Marine Sciences, Biology, Chemistry, Oceanography or Earth Science where a thesis is included.

Learning outcomes

After completing the course the student is expected to be able to:

Knowledge and understanding

- Demonstrate knowledge of designing a sampling programme (e.g. monitoring programme or investigation) combining good scientific practice and financial constraints.
- Know how to access, analyse and disseminate large datasets using Excel, SIMCA, and Matlab.
- Demonstrate knowledge of group dynamics in project work.
- Describe relevant legislation e.g. the Water Directive, HELCOM and OSPAR.
- Describe why and how authorities (stakeholders) apply basic models.

Competence and skills

- Design a sampling program (e.g. monitoring programme or investigation), combining good scientific practice and financial constraints.
- Apply basic scientific instrumentation (e.g. CTD, fluorometer, radiation meter, microscopy).
- Handle and analyze large datasets with appropriate software.
- Display a professional commitment to group based project work.
- Display a willingness to communicate with e.g. stakeholders and authorities.

Judgement and approach

- Critically discuss different sampling programmes to choose an accurate design for making relevant interpretations of the outcome.
- Independently analyze and synthesize results and relate them to relevant scientific literature.

Course content

The course focuses on carrying out a marine project, for example a monitoring program, or commissioned research at a company or public authority. The students will address a marine issue both in theory and practice, from planning to execution, including sampling design (statistical approach), variables to be measured (cost vs benefit), multivariate analysis, and communication with stakeholders (written report and an oral presentation). Topics include for example group dynamics, how to set up a realistic budget, understanding basic models "why and when", how to choose key variables, statistical power analyses, and legislation relevant for the marine environment.

Students also receive training in handling large data sets in Matlab and Excel as well as in preparing print quality figures for dissemination of results. The second part of the

course involves a scientific cruise, including planning, sampling, analyses, interpretation of results and report (oral or poster). The focus of this part of the course is on field based research, in contrast to the first one where the emphasis is on processing existing data.

Form of teaching

The course starts with preparative workshops on transferable skills that will be used during the following, group based (3-6 students) problem based assignments. Each group will be assigned a project and a mentor for support and guidance. Depending on the project choice, visits to stakeholders are required. In addition, the course comprises seminars, workshops, lectures, group and stakeholder meetings. The last part of the course is oriented towards field-based work, and involves the planning and execution of a short expedition with the department's research vessel.

Language of instruction: English

Assessment

In addition to writing and orally presenting the projects, participation in seminars, workshops, meetings with the group and the mentor are compulsory as well as participation in the scientific cruise. Examination is based on work shop results, project reports and oral presentations.

The results (in percentages from 0 -100 %) from each part of the course are weighted and averaged into a final grade. A student have to pass all parts of the course to receive a pass or higher grade.

If a student, who has failed the same examined component twice, wishes to change examiner before the next examination, a written application shall be sent to the department responsible for the course and shall be granted unless there are special reasons to the contrary (Chapter 6, Section 22 of Higher Education Ordinance).

In cases where a course has been discontinued or has undergone major changes, the student shall normally be guaranteed at least three examination occasions (including the ordinary examination) during a period of at least one year from the last time the course was given.

Grades

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U). A minimum of 60% on each graded part of the course is required to obtain the grade Pass. Below 60 % results in Fail. The limit between Pass and Pass with Distinction is usually 80%.

Concerning application of the ECTS scale for grade please see Vice-Chancellor's decision 28/05/2007, No. G 8 197/07 as well as 28/02/2011, No. O 2009/05545.

Course evaluation

A written and oral evaluation of the course will be carried out at the end of the course. The results of the evaluation will be communicated to the students and will function as a guide for the development of the course.

Additional information

The scientific cruise and stakeholder visits could involve some extra cost for the participants. The required reading is published in a separate document on the university platform GUL. Due to the nature of the course, additional literature could be provided by e.g. stakeholders.