

Education plan

for

**Master's Program in Atmospheric Sciences,
Oceanography and Climate**

Masterprogram i meteorologi, oceanografi och klimat

**120 Higher Education Credits
120 ECTS credits**

Program code: NMOKO
Valid from: Autumn 2008
Date of approval: 2007-09-19
Department: Department of Meteorology

Decision

This syllabus has been approved by the Board of the Faculty of Science at Stockholm University 2007-09-19.

Prerequisites and special admittance requirements program

Bachelor's degree in Physics, Oceanography, or a Bachelor in Natural Sciences containing at least 90 HECs in Physics and Mathematics, including at least 30 HECs Mathematics and 30 HECs Physics. Also required is knowledge equivalent to Swedish upper secondary school course English B or equivalent to one of the following tests; Cambridge CPE and CAE: Pass, IELTS: 6.0 (with no part of the test below 5.0), TOEFL (paper based): 550 (with minimum grade 4 on the written test part), TOEFL (computer based): 213, TOEFL (internet based): 79.

Program structure

This programme is for students who want to apply knowledge about mathematics, physics and chemistry to understanding the atmosphere and oceans. General subjects of the programme are how physical and chemical processes influence the Earth's climate and how we can understand the connections between anthropogenic activity and climate change. The programme also provides possibilities to obtain knowledge about weather prediction in theory and practice. Teaching takes place in English or Swedish.

Goals

The main subject of the programme is meteorology, oceanography and climate. For a master exam the student is expected to

- show good knowledge about meteorology, oceanography and climate, including broad knowledge on the subject, significantly deepened knowledge in some areas, as well as deep insight in current research and development work
- show deepened knowledge about methods in meteorology, oceanography and climate
- demonstrate ability to critically and systematically integrate knowledge, as well as analyse, judge, and handle difficult phenomena, problems, and situations even with limited information
- demonstrate ability to critically, independently, and creatively identify and formulate problems, to plan and with adequate methods carry out tasks within given time frames and thereby contribute to the development of knowledge, and evaluate that work
- show ability to orally and in writing report conclusions, both in national and international connections, as well as discuss the underlying knowledge and evidence in a dialog with various groups
- demonstrate the ability that is needed to participate in research and development or to independently work with

other qualified activities

- show ability to make judgements with regard to relevant scientific, societal, and ethical aspects in the area of meteorology, oceanography and climate, as well as show an understanding concerning ethical aspects of research and development
- show insight in the possibilities and limitations of science, its roll in society as well as man's responsibility for how it is applied
- demonstrate ability to identify her/his need for additional knowledge and take responsibility for developing her/his knowledge

Courses

Compulsory course: Global climate system, 15 HEC (MO7003*). Courses that can be chosen: The student who does not sufficient previous knowledge in meteorology has to choose the following courses during the first year of the programme: Meteorology I, 15 HEC (MO8001*) and Meteorology II, 7,5 HEC (MO8002*). Other courses that can be chosen are decided by the Department Board at the beginning of each programme year. Optional courses with at maximum 30 HEC. Meteorology, oceanography and climate, degree project*, 30, 45, or 60 HEC. (Courses marked with * are part of the main subject area.)

Exam

Master's degree.

Misc

Students who have been admitted to the programme and have not completed the programme within the envisaged two-year study period, can apply for completing the programme even after the syllabus for the programme is no longer valid. In that case the limitations apply that are listed in the syllabi for the courses that are part of the programme.