

Education plan

for

Masterprogram i meteorologi, oceanografi och klimatfysik 120.0 Higher Education Credits
Master's Program in Atmospheric Sciences, 120.0 ECTS credits
Oceanography and Climate Physics

Programme code:	NMTKO
Valid from:	Autumn 2024
Date of approval:	2023-06-07
Changed:	2023-12-06
Department:	Department of Meteorology

Decision

Finalized by: Områdesnämnden för naturvetenskap, 2023-06-07

Prerequisites and special admittance requirements

Bachelor's degree in Physics, Meteorology, Oceanography, or a Bachelor in Natural Sciences containing at least 90 HEC in Physics and Mathematics, including at least 30 HEC Mathematics and 30 HEC Physics. Also required is knowledge equivalent to English B.

Programme structure

The programme has four different courses of study, two with a general focus and two with a focus on weather forecasting:

Study course 1. General focus, for students who have already taken courses corresponding to Atmospheric structure (MO4005), 15 higher education credits (HECs) and Fundamental dynamics (MO4006), 15 HECs: The programme consists of a compulsory part of 15 HECs, an elective part of 45, 30 or 15 HECs, depending on the size of the degree project, an optional part of 30 HECs and a degree project of 30, 45 or 60 HECs.

Study course 2. General focus, for students who have not taken courses corresponding to Atmospheric structure (MO4005), 15 higher education credits (HECs) and Fundamental dynamics (MO4006), 15 HECs: The programme consists of a compulsory part of 45 HECs, an elective part of 15 HECs, an optional part of 30, 15 or 0 HECs, depending on the size of the degree project, and a degree project of 30, 45 or 60 HECs.

Study course 3. Focus on weather forecasting, for students who have already taken courses corresponding to Atmospheric structure (MO4005), 15 higher education credits (HECs) and Fundamental dynamics (MO4006), 15 HECs: The programme consists of a compulsory part of 22,5 HECs, an elective part of 37,5 HECs, an optional part of 30, 15 or 0 HECs, depending on the size of the degree project, and a degree project of 30, 45 or 60 HECs.

Study course 4. Focus on weather forecasting, for students who have not taken courses corresponding to Atmospheric structure (MO4005), 15 higher education credits (HECs) and Fundamental dynamics (MO4006), 15 HECs: The programme consists of a compulsory part of 52,5 HECs, an elective part of 22,5 HECs, an optional part of 15 HECs, and a degree project of 30 HECs.

Goals

The main field of study is atmospheric sciences, oceanography and climate.

For a Degree of Master (Two Years) students must:

- demonstrate knowledge and understanding in atmospheric sciences, oceanography and climate, including both broad knowledge in the field and substantially deeper knowledge of certain parts of the field, together with deeper insight into current research and development work,
- demonstrate deeper methodological knowledge in atmospheric sciences, oceanography and climate,
- demonstrate an ability to critically and systematically integrate knowledge and to analyse, assess and deal with complex phenomena, issues and situations, even when limited information is available,
- demonstrate an ability to critically, independently and creatively identify and formulate issues and to plan and, using appropriate methods, carry out advanced tasks within specified time limits, so as to contribute to the development of knowledge and to evaluate this work
- demonstrate an ability to clearly present and discuss their conclusions and the knowledge and arguments behind them, in dialogue with different groups, orally and in writing, in national and international contexts,
- demonstrate the skill required to participate in research and development work or to work independently in other advanced contexts,
- demonstrate an ability to make assessments in atmospheric sciences, oceanography and climate, taking into account relevant scientific, social and ethical aspects, and demonstrate an awareness of ethical aspects of research and development work,
- demonstrate insight into the potential and limitations of science, its role in society and people's responsibility for how it is used, and
- demonstrate an ability to identify their need of further knowledge and to take responsibility for developing their knowledge.

Courses

Study course 1

Compulsory courses:

Global climate system, second level, 15 HECs (MO7003)*

Elective courses of 45, 30 or 15 HECs, depending on the size of the degree project.

Optional courses of 30 HECs.

Atmospheric sciences, oceanography and climate, Degree Project, second level, 30, 45 or 60 HECs*

Study course 2

Compulsory courses:

Global climate system, second level, 15 HECs (MO7003)*

Atmospheric structure, first level, 15 HECs (MO4005)*

Fundamental dynamics, first level, 15 HECs (MO4006)*

Elective courses of 15 HECs.

Optional courses of 30, 15 or 0 HECs, depending on the size of the degree project.

Atmospheric sciences, oceanography and climate, Degree Project, second level, 30, 45 or 60 HECs*

Study course 3

Compulsory courses:

Climate and the general circulation, second level, 7,5 HECs (MO7021)*

Practical meteorology, second level, 15 HECs (MO8003)*

Elective courses of 37,5 HECs.

Optional courses of 30, 15 or 0 HECs, depending on the size of the degree project.

Atmospheric sciences, oceanography and climate, Degree Project, second level, 30, 45 or 60 HECs*

Study course 4

Compulsory courses:

Climate and the general circulation, second level, 7,5 HECs (MO7021)*

Practical meteorology, second level, 15 HECs (MO8003)*

Atmospheric structure, first level, 15 HECs (MO4005)*

Fundamental dynamics, first level, 15 HECs (MO4006)*

Elective courses of 22,5 HECs.

Optional courses of 15 HECs.

Atmospheric sciences, oceanography and climate, Degree Project, second level, 30 HECs*

The optional courses are decided by the department board each academic year, and a list of them is published on the department web page.

*The course belongs to the main field of study.

Degree

Degree of Master (Two years).

Misc

Students who have been admitted to the programme but not completed it during the scheduled two years can request to complete the program even after the programme syllabus no longer applies. In such cases, the limitations stated in the course syllabus apply.