

## **NGEN01, Physical Geography: Climate Change and its Impacts on the Environment, 15 credits**

*Naturgeografi: Klimatförändringen och dess miljöeffekter, 15 högskolepoäng*  
Second Cycle / Avancerad nivå

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### **Details of approval**

The syllabus was approved by Study programmes board, Faculty of Science on 2007-03-01 (N2007266). The syllabus comes into effect 2007-07-01 and is valid from the autumn semester 2007.

### **General information**

*Language of instruction:* English

*Main field of study Specialisation*

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

### **Learning outcomes**

The course intends to provide advanced knowledge about observed and future climate changes influence on the environment.

On completion of the course, the student is expected to be able to:

- have good knowledge of observed climate variations in a perspective stretching over centuries,
- have good fundamental knowledge of climate models as tool to study climate changes
- have good knowledge how climate changes influence different ecosystem
- have good knowledge of feedback mechanisms i.e. how ecosystem influences climate conditions
- have good knowledge how climate changes can be detected in observations and data and in model scenarios

- understand how modelling tools can be used for studies of the effects of climate changes
- have ability to review and evaluate information and statements concerning future climate changes critically.

## **Course content**

Strong emphasis is attached at to study the causalities that can explain the variations and changes of the climate. Model scenarios are used to study global and regional climate changes and possible effects on for example hydrology, water resources, ecosystem, ecosystem processes, biodiversity, bio-geography, wind energy and storm damages. Methods for detection of climate changes are treated. In the teaching, observation data and model scenarios are used to train critical analysis of e.g. data representativeness, model assumptions and validation against independent information.

## **Course design**

The teaching consists of lectures, exercises, group assignments and project work . Exercises and group assignments are compulsory.

## **Assessment**

The examination consists of a written examination at the end of the course and grading of oral and written reports on exercises and project work during the course. For students who have failed the regular examination, additional occasion in close connection to this is offered.

## **Grades**

Grading scale includes the grades: Fail, Pass, Pass with distinction

In the course, the grades pass with credit, passed and failed are applied.

To pass the entire course, passed exercises, group assignments and project presentations are required and participation in all compulsory parts.

The final grade are decided through joining of the results that are included in the examination.

## **Entry requirements**

For admission to the course, general entry requirements are required and 90 credits science studies. The courses NGE604 The Climate system 10 credit points or NGEA06 The Climate system, 15 credits and NGEA04 Ecosystem analysis, 15 credits or NGE621 Ecosystem analysis, 10 credit points are recommended.

## **Further information**

The course may not be included in a higher education qualification together with NGE611 The Climate change and its environmental effects, 10 credit points.