



DEPARTMENT OF EARTH SCIENCES

GVN340 Applied climatology, 7.5 higher education credits

Tillämpad klimatologi, 7,5 högskolepoäng

First Cycle

Confirmation

This course syllabus was confirmed by Department of Earth Sciences on 2011-09-26 and was last revised on 2015-10-21 to be valid from 2015-10-21, autumn semester of 2016.

Field of education: Science 100%

Department: Department of Earth Sciences

Position in the educational system

The course can be part of the following programmes: 1) Bachelor's Programme in Earth Sciences (N1GVS), 2) Master's Programme in Earth Sciences (N2GVS) and 3) Atmospheric Science, Master's Programme (N2ATM)

Main field of studies

Earth Sciences

Specialization

G2F, First Cycle, has at least 60 credits in first-cycle course/s as entry requirements

Entry requirements

Pass in 90 hec in the main fields of Natural Science; knowledge of climate systems corresponding to GV1410 Geosciences Basic Level, GE0400 Geography Introductory Level, or GVN460 Climate change in an earth system perspective. GVN460 Climate change in an earth system perspective. High school Mathematics B and English B or the equivalent. Students with equivalent qualifications may enquire for access to the course.

Learning outcomes

Knowledge and understanding

After completion of the course, students are expected to understand applied climatology as the study of quantitative relationships between climate and weather-

sensitive aspects of society and the environment.

Students' knowledge will be complemented with specific knowledge, depending on the themes of a particular course. For example, knowledge about effects of climate on fields within agriculture, transport, or air quality; knowledge of appropriate use of climate change scenarios.

Skills and abilities

After completion of the course the student is expected to:

- devise solutions to complex problems that use scientifically-sound analysis methodologies,
- use data analytic software to analyze climate data,
- work in group environments,
- cite scientific literature authentically,
- use oral and written communication skills, including tables and graphs, to convey technical information effectively and accurately,
- organize work in a systematic way using scientific style.

Judgement and approach

Students should be able to:

- think creatively to encapsulate partially-defined or abstract assignments into a form that they can be addressed using systematic procedures.
- critically-evaluate and synthesize multiple sources of information.
- objectively weigh the costs and benefits of response strategies to climate-related risk.

Course content

The field of applied climatology is the study of how weather and climate affect society and the environment. Applied climatology involves turning climate knowledge into a useful application, for operational planning or risk calculations. The course deals with how to integrate weather data with physical/chemical equations to estimate air quality and road conditions. Results from climate change simulations will be combined with expert knowledge in order to estimate risks and opportunities in agriculture. The skills can be applied in a Bachelor Thesis, and beyond that in a Masters project or to conduct climate risk assessments or climate change impact assessments in the real world.

The course will comprise compulsory classes, seminars and three projects. The course is divided into two sub-courses.

Form of teaching

Project work 5,0 hec - Written and oral presentations U/G/VG

Exercises and seminars 2,5 hec - Participation in obligatory class exercises and seminars U/G

Language of instruction: English

Assessment

Students have the right to change examiner, if that is practically possible, after failing twice with the same examiner. Application must be made to the institution in writing.

Grades

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U).

To receive a pass final grade for the course requires that all mandatory elements must be passed.

Course evaluation

Course evaluation is performed in GUL where the students answer an anonymous questionnaire.

Additional information

Students enrolled in the Bachelors programme in Earth Sciences, N1GVS, have priority to the course.