



DEPARTMENT OF EARTH SCIENCES

GVN460 Climate Change in an Earth System Perspective, 7.5 credits

Klimatförändringar i ett geosystemperspektiv, 7,5 högskolepoäng

Second Cycle

Confirmation

This course syllabus was confirmed by Department of Earth Sciences on 2016-06-21 and was last revised on 2019-06-10 to be valid from 2019-09-01, autumn semester of 2019.

Field of education: Science 100%

Department: Department of Earth Sciences

Position in the educational system

This course can also be taken as an elective course.

The course can be part of the following programmes: 1) Atmosphere, Climate and Ecosystems, Master's Programme (N2ACE), 2) Master's Programme in Geography (N2GEO), 3) Master's Programme in Physical Oceanography (N2FOC), 4) Bachelor's Programme in Earth Sciences (N1GVS), 5) Marine Science, Master's Programme (N2MAV), 6) Environmental Sciences (N2MVN), 7) Master's Programme in Earth Sciences (N2GVS), 8) Master's Programme in Chemistry (N2KEM), 9) Atmospheric Science, Master's Programme (N2ATM) and 10) Biology, Master's Programme (N2BIO)

Main field of studies

Environmental Science

Earth Sciences

Specialization

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

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Entry requirements

60 higher education credits (hp) in the main field of Earth science, environmental science, biology (including BIO915 or equivalent) or geography or alternatively university studies of 180 credits in natural science programs or a bachelor's degree in

geography. Student with equivalent background can be accepted to the course after an examination.

Applicants from countries outside the Nordic countries or from non-English speaking universities must demonstrate proficiency in English through TOEFL tests or IELTS tests.

The following results should have been achieved: TOEFL with 600 points (computerized test: 250 points, Internet test: 100 points), or IELTS with 6.0 points and at least 6.5 points in the test's written part.

Learning outcomes

On successful completion of the course the student will be able to:

Knowledge and understanding

Have knowledge of

- meteorological processes and their relevance to the climate and its changes
- factors that affect historical and future climate
- Earth system, its components and how they affect the climate from historical time to the future.

Competence and skills

- Critically review, synthesize and present relevant scientific literature for the subject
- Describe different processes in the Earth system

Judgement and approach

- Students should have achieved a holistic perspective and scientific approach to the interactions between the earth system's spheres, relevant processes and climate.

The course is focused on sustainability, which means that sustainable development is the main focus of the course. At least one of the learning objectives of the course clearly shows that the course content meets at least one of the University's criteria for sustainability labeling.

The course is sustainability-focused, which means that at least one of the learning outcomes clearly shows that the course content meets at least one of the University of Gothenburg's confirmed sustainability criteria. The content also constitutes the course's main focus.

Course content

The course explores how the Earth system works and how it affects the global climate. The course begins with an introduction of the Earth system and its spheres and how they interact. Special focus will then be placed on the climate system and its ongoing and expected changes, meteorological processes, the weather, and how the ecosystem is linked to the climate system.

Form of teaching

The course is based on lectures, literature seminars and practical exercises with different focused topics. The lectures and used literature form the basis the written exam.

Language of instruction: English

Assessment

Part 1: Exercise, 1.5 U / G / VG

Part 2: Oral presentation of project work 2.0 U / G / VG

Part 3: Theory 4.0 U / G / VG

Active participation in compulsory seminars and approved on the exercises is required to get a pass of the course.

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). For a passing grade (G) for the entire course, a passing grade is required for all graded sections. To receive the grade passed with distinction (VG) for the final grade, the grade passed with distinction for theory as well as at least passed for both exercise and oral presentation of project work is required.

Course evaluation

The result and any changes in the course structure will be communicated to both the students who completed the evaluation and to the students who will begin the course.