



UNIVERSITY OF GOTHENBURG

FACULTY OF SCIENCE

ES2414, Global change biology, 15,0 higher education credits Globala förändringar i ett biologiskt perspektiv, 15.0 högskolepoäng

Second Cycle

1. Confirmation

The course syllabus was confirmed by Faculty of Science on 2007-06-15 to be valid from 2007-06-30.

Field of education: Science 100 %

Department: Department of Biological and Environmental Sciences

2. Position in the educational system

The course is given on an advanced level and assigned to be included in a Master degree in Environmental Sciences. The course can also be taken as an independent course and at the bachelor level.

Main field of studies
Environmental Science

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

3. Entry requirements

The entrance requirements are 30 higher education credits in Biology and 30 higher education credits in environmental sciences equivalent to the following courses: Natural resources (ES1301); Handling of environmental problems in the society (ES1302); Emission, dispersion, transformation and deposition of pollutants (ES1303); Pollutants effects on biological systems (ES1304). ES1301 and 1302 can be replaced by Natural resources management (ES1300). Students with equivalent education can be allowed to enter the course after a special evaluation.

4. Course content

The course will give knowledge on biomass production and survival of plants in different ecosystems with emphasis on the responses to changes in the global environment. The main stresses and disturbances that are covered by the course are related to climate, atmospheric carbon dioxide, radiation and mineral nutrients. Training in methods for field and laboratory measurements as well as introduction to modelling of vegetation-atmosphere interaction is also given. The course is based on lectures, seminars, experimental work, exercises and excursions.

5. Learning outcomes

After completing the course the students will have a far reaching understanding of:

- The fundamentals of plant production in different environments, with emphasis on temperate and boreal forest and agricultural ecosystems.
- How plants reacts on stress and disturbances in the environment.
- The principles and regulation of radiation balance, water balance, carbon balance and nutrient balance at whole plant, ecosystem and biome levels.
- The interaction between soil, vegetation and atmosphere with special application on how lands use changes will affect the emissions and uptake of green-house gases.
- Experimental design, measuring methods, simple modelling for studies of how plants and ecosystems respond to changes in the environment, with emphasis at water, carbon and nutrient balances.

The course is based on lectures, seminars, experimental work, exercises and excursions. A project work with a written report and oral presentation is included at the end of the course.

6. Literature

A separate list is available at the student office and/or at the course web site

7. Assessment

The course is approximately ten weeks full time work. Examination is based on a final exam in written form on theoretical aspects of the course (9 ECTS credits) and written report and oral presentation of group work (6 ECTS credits). In addition, seminars, field exercise, experimental work and excursions are compulsory. A student who has failed a test twice has the right to change examiner, unless weighty argument can be adduced. The application shall be sent to the board of the department and has to be in writing.

8. Grading scale

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

Three grades according to the Swedish grade system are given: Fail, Pass and Pass with honours.

9. Course evaluation

10. Additional information

Language of instruction: English.

The course is given in English.