



GÖTEBORGS UNIVERSITET

Plant–Atmosphere Interactions in a Changing Climate, 3-4 hp

Course period: 2016-09-12 – 2016-09-16	Last day for application: 2016-08-07
Course leader / Address for applications: Johan Uddling / johan.uddling@bioenv.gu.se	
Course description (Advertisement for Ph.D. students): <p>Ongoing environmental change has profound impacts on plants in terrestrial ecosystems around the world, with important implications for ecosystem services such as food security, forest production, biodiversity, livelihood in low-income regions, and the regulation of biogeochemical cycles, hydrology and climate. This course deals with the responses of plants (mostly crops and forests) to global environmental change factors such as rising CO₂, warming, tropospheric ozone, and nitrogen deposition. Main emphasis is on ecophysiological plant responses and how they affect ecosystem processes such as productivity, carbon balance and water cycling. The representation of plants and vegetation in ecosystem and climate models will also be covered to some extent. The course content will suit Ph D students with emphasis on plant ecology/ecophysiology as well as those with a broader interest in land–atmosphere interactions and modelling. The course gives 3 or 4 Ph D student credits, depending on if individual reports are written after the course week or not.</p> <p>The course will be given at Wendelsberg conference centre and folk high school (http://wendelsberg.se/mat-boende-konferens/), 10 km east of Gothenburg, during 12-16 September in 2016. The course is free for all participants. Accommodation and daytime meals are provided by the organizer.</p>	
Responsible department and other participation departments/organisations: Dept of Biological and Environmental Sciences ClimBEco reaserch school (http://www.cec.lu.se/climbeco-graduate-research-school), in which the University of Gothenburg participate	
Teachers: Preliminary list: Johan Uddling, Danielle Way, Torgny Näsholm, Gina Mills, Håkan Pleijel, Göran Wallin, Fernando Jaramillo	
Examiner: Håkan Pleijel	

Faculty of Science; Department of Biological and Environmental Sciences



GÖTEBORGS UNIVERSITET

Plant–Atmosphere Interactions in a Changing Climate, 3-4 hp

Third cycle education

1. Confirmation

The syllabus was confirmed by the Head of the Department of Biological and Environmental Sciences, Lars Förlin, 2015-12-DD.

Disciplinary domain: Science

Department in charge: Department of Biological and Environmental Sciences

2. Position in the educational system

Elective course; third-cycle education.

3. Entry requirements

Admitted to third cycle education.

4. Course content

The course provides state-of-the-art knowledge on responses of plants (crops, for-ests) to global environmental change factors such as rising CO₂, tropospheric ozone, warming, and nitrogen deposition. Main emphasis is on ecophysiological plant responses and how they affect ecosystem processes such as primary production, carbon balance and water cycling. The representation of plants and vegetation in ecosystem and climate models will also be covered to some extent.

The course will consist of three parts: (i) preparatory literature studies (1 hp), (ii) lectures and discussion seminars during five days in Göteborg (2 hp), and (iii; optional) individual Ph. D. student projects, based on their own data and resulting in written reports (1 hp). The course gives 3 (part i + ii) or 4 (all parts) credits for Ph. D. students.

5. Outcomes

After completion of the course the Ph.D. student will have ...

1. Knowledge and understanding

- knowledge on how organisms physiologically respond to different environmental factors



GÖTEBORGS UNIVERSITET

- understanding of how plant responses to key global change factors (e.g. temperature, carbon dioxide, tropospheric ozone) affect ecosystem processes such as primary production and hydrology

2. Skills and abilities

- experience in using a simplified ecosystem model to explore vegetation response to changes in environmental conditions

3. Judgement and approach

- experience in extracting the key content of scientific articles within the research field and discussing it with others

6. Required reading

A list of literature to read to prepare for the course will be provided well in advance (at least two months before the course)

7. Assessment

PhD students will be assessed by their participation in three group discussions in which teachers and participants closely interact. If they chose to do an individual project after the week with lectures and seminars (part iii under point 4 above)

8. Grading scale

The grading scale comprises Fail, (U), Pass (G)

9. Course Evaluation

The course evaluation is carried out together with the Ph.D. students at the end of the course, and is followed by an individual, anonymous survey. The results and possible changes in the course will be shared with the students who participated in the evaluation and to those who are beginning the course.

10. Language of instruction

The language of instruction is English.