



Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

SLUkurs

Syllabus

PFS0123 Nordic vegetation under the future climate, 5.0 credits

Syllabus approved

2015-05-13

Subjects

Biology

Education cycle

Third cycle

Grading scale

Pass / Failed

The requirements for attaining different grades are described in the course assessment criteria which are contained in a supplement to the course syllabus. Current information on assessment criteria shall be made available at the start of the course.

Language

English

Prior knowledge

The course is primarily intended for PhD students with interest in the following areas: plant ecology, paleo- and dendrochronology, quaternary ecology, forestry, vegetation modelling, boreal and temperate forest ecology, and climate change issues. The potential applicants should be active PhD students at SLU or other Swedish or European universities, and have Master degree completed in one of the above mentioned areas

Objective, including learning outcomes

The course will provide students with a broad overview of modern approaches to reconstruct and model vegetation dynamics in the Nordic context. After the course completion students will acquire knowledge to understand and critically analyze results obtained by different methods and evaluate applicability of these methods in their own research programs.

Content

By adopting a wide and multi-disciplinary approach, the course will provide an overview of the recent advancements in understanding historical, modern, and future vegetation dynamics of Northern Europe. A particular focus will be given to the potential effects of climate variability on the natural, and commercially-relevant distribution limits of species in the Northern Europe and relevant climatically-driven ecosystem processes.

The course will cover, among others, the following topics:

1. Paleochronological reconstructions and Holocene-level dynamics of species distribution limits
2. Overview of methodology to reconstruct historical dynamics of vegetation
3. Indirect effects of climate variability on vegetation dynamics: importance of natural disturbance regimes and competitive interactions
4. Case studies across boreal and temperate regions of Northern Hemisphere
5. Reconstruction and modeling of historical climatic variability
6. Forestry view on dynamics of biomass productivity: composition and geographical limits of the commercial forests be in the future.
7. Legacy of human land use and its interactions with climate variability: what is a natural vegetation?

One week course will consist of a series of presentations , supervised group discussions, excursions to locations in Southern Sweden. A pre-course assignment will include reading of the selected research papers.

Requirements for examination

One week course will consist of a series of presentations, supervised group discussions, a project work done in mini-groups (3-4 students per group), and excursions to locations in Southern Sweden. A pre-course assignment will include reading of the selected research papers. These papers will be presented during a seminar during the course. A post-course assignment will be in the form of a short (3-5 pages) synthesis paper on the topic related to one of the course themes. A list of major texts given to students prior to the course, will provide a basis for fast and efficient leaning processes during the course itself.

Evaluation of student performance will be carried out in three ways:

- (a) assessment of student activity during discussions following lectures.
- (b) presentation of a report written within a mini-group during the course
- (c) post-course assignment, a 3-5 page synthesis on a topic covered by the course program.

The student evaluation will be done according the following scale: U, 3, 4, 5, where "5" is the highest mark and "U" means "fail".

For successful completion of the course students should actively follow the lectures, excursions, actively participate in discussions and group work, produce a synthesis paper as a result of this work, as well as complete a post-course assignment.

Additional information

Course home page -

<http://www.dendrochronology.se/NordicVegetation2015.htm>

Please contact Igor Drobyshev (Igor.Drobyshev@slu.se) for further information and registration.

Responsible department

Department of Southern Swedish Forest Research Centre