Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

SLUkurs

Syllabus

PFS0155 Forest tree and stand growth and dynamics: Multiple effects and problems when analyzing data, 6.0 credits

Syllabus approved

2018-06-18

Subjects

Forest Management

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

Students must be enrolled as PhD-students in forest management or similar subjects. The course will be held in English.

Objective, including learning outcomes

After the course, students should have knowledge about forest experimental design and how to choose dependent and independent variables. Students should develop

their skills in analyzing experimental data of various complexity and size as well as getting a basic understanding of different types of models used in forest growth and yield studies. Students should know how to use and where to find different data such as climate, site characteristics and national forest inventory data. Lastly, students should understand and be able to include stand dynamics (regeneration, competition, mortality, stand structure development, etc.) in models and analysis of experimental data.

Content

The course length corresponds to 4 weeks (6 HCTS). The course will start with a literature study when students prepare for the intensive in-door and out-door classes during the course week. The intensive class- and field-week will be during November 5-9, 2018. In order to give students enough time for literature-studies, the literature-list will be available from early September. Thereafter, students who want to receive all credits should complete an assignment that will take approximately two weeks to finish. The assignment should be completed and approved by assigned supervisors no later than December 31, 2018.

Before the course week, students will get a literature list that should be studied. During the course week, each day will be filled with lectures, exercises and excursions. The course week will take place at Tönnersjöhedens experimental station so the forest is around the corner and can be visited with short notice. During the course-week, students will also present their PhD-project and present a problem that can be solved during and after the course week. Before leaving, students should also prepare an assignment that should be solved during the coming three-four weeks. The course ends with one or two Skype-meetings when the problem-solving assignment is presented.
The course will cover the following subjects:

- Experimental design and establishment of survey plots
- Response variables, e.g. volume, biomass, carbon, wood density, wood quality
- Allocation of growth
- Establishment of seedlings
- Density, competition and mortality
- Site characteristics and its variation on different scales
- Stand structure, its representation and effects on growth
- Inclusion of weather and climate in analysis of experiments and in growth and yield models
- Mechanistic vs. empirical models

- Literature study – one week during the period of September-October 2018

- Course week – November 5-9, 2018
- Assignment – November-December, 2018
- Web-seminar – One day, December, 2018

Requirements for examination

- Participation in exercises, classes, excursions and analysis of data
- Approved assignment and participation in web-seminar

Additional information

Deadline for application is August 30 2018, applications should be sent to Urban Nilsson

Teachers during the course:
Mickey Allen, NIBIO, Norway
Ignacio Barbeito, SLU, Sweden
Andreas Brunner, NMBU, Norway
Clara Anton Fernandez, NIBIO, Norway
Emma Holmström, SLU, Sweden
Jari Hynynen, Luke, Finland
Urban Nilsson, SLU, Sweden

Responsible department

Department of Southern Swedish Forest Research Centre