



Sveriges lantbruksuniversitet  
Swedish University of Agricultural Sciences

# SLUkurs

## Syllabus

**PFS0180 Nordic Dendrochronological Fieldweek, 7.0 credits**

## Syllabus approved

2021-11-04

## 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

Master in forestry, biology, geography, environmental sciences, and related fields. The participants should be admitted as PhD or Licentiate student in a relevant subject.

## Objective, including learning outcomes

The main objective of the course is to help students master a range of practical skills, which should allow them to independently collect and analyze tree-ring datasets

for the studies in forestry, forest ecology, climatology, environmental monitoring, and archeology.

## **Content**

The use of tree-rings is strongly increasing in ecological and environmental sciences, especially in ecology and forestry. Disturbance history, climate reconstructions, analysis of human impact on forest ecosystems, retrospective assessment of various ecosystem services are areas where methods of tree ring research can add new and unique information. With the course, we would like to give a broad overview of dendroecology, concentrating on field and lab techniques and statistical routines to analyse the dendrodata. The course will provide a solid starting point for students to integrate dendrochronological methods in their own research project and to avoid numerous pitfalls associated with this group of methods. We would like to emphasize that the course will give students practical experience to develop methodological setup for studies involving tree rings, to collect data, and to apply a range of analytical routines. Pre- and post-course literature review assignments are designed to inform the students on the start-of-the-art in the field and to provide a solid theoretical background for this intensive practical course.

The pedagogical method used during the course will be oriented towards creating a stimulating learning environment for students with diverse background in environmental sciences. The teaching will be based on a combination of lectures, discussions, field exercises and a series of mini-projects. In mini-projects, the participants will be responsible for the whole range of steps typically present in a research project (data collection, lab analysis, statistical analysis, interpretation and presentation). The main pedagogical approach of the dendroweek will be "learning by doing", allowing the participants to obtain first-hand experience with dendrochronological methods.

Interactive elements of the course will include the following elements:

- (1) lectures in the format which allow unrestricted communication between the teachers and the students,
- (2) work in a mini-groups (3-5 participants) during project assignments with one of the teachers supervising work on assignment (the major interactive moment),
- (3) direct access to the teachers during the whole length of the of the course, facilitating further knowledge transfer, and
- (4) pre- and post-course literature review assignments. The pre-course assignment will be designed with the student research interests in mind and will be discussed during the course.

**Requirements for examination**

Examination is based (1) submission of the project report based on a mini-project carried out during the course, (2) evaluation of pre- and post-course assignment. Scale: Fail/Pass/Pass with honors.

**Additional information**

Teachers: Docent Igor Drobyshev, Inst. för sydsvensk skogsvetenskap, Alnarp  
Docent Mats Niklasson, Inst. för sydsvensk skogsvetenskap, Alnarp  
Ph.D. Olafur Eggertsson, Lecturer, The Agricultural University of Iceland, Iceland  
Ass. Prof. Tuomas Aakala, University of Helsinki, Finland  
Ph.D. Shawn Fraver; a senior researcher at the US Forest Service, Northern Research Station, Minnesota US  
Daniela Robles, Senior researcher, Karelian Forest Research, Russia  
Nina Ryzhkova, MS, University of Quebec, Canada

**Responsible department**

Department of Southern Swedish Forest Research Centre