



## SWEDISH UNIVERSITY OF AGRICULTURAL SCIENCES

Department of Forest Mycology and Plant Pathology

### Syllabus

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#### **Biotic Forest Damages - Interactions, Ecology and Management** ***Ekologi och kontroll av svamp- och insektsskadegörare i skogen***

15.0 Credits

Code: SV0050

Finalized by: Ordföranden för programnämnden för utbildning inom skog (PN-S), 2023-12-22

Valid from: Autumn semester 2024 (2024-09-02)

Level within study regulation: Second cycle

Grading scale: TH Four-grade scale, digits

Main field of study with advanced study: SBV Forestry Science - A1N Second cycle, has only first-cycle course/s as entry requirements

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

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#### **Language**

English

#### **Biology specialisation**

Other Biology Courses

#### **Entry requirements**

Knowledge corresponding to 120 credits

60 credits in one of the following subjects

- Forestry science
- Forest sciences
- Forest Management
- Biology

3 credits in one of the following subjects

- Forest Pathology
- Plant Pathology
- Entomology

English 6

## Objectives

This course aims to provide understanding and skills relating to the biology of insects and fungi and how insects and microorganisms interact with forest and trees. Emphasis is on species which affect trees and forest ecosystems with a high impact on forest economy and environment.

Upon successful completion of the course, the student will be able to:

- identify and account for the common pathogenic fungi and insect pests in Northern Europe, and their impact, and also some of the most important pests and pathogens on trees worldwide
- estimate the risk for outbreak of diseases and pests.
- analyze and propose methods to counteract disease or pest outbreak.
- analyze important pathways for introduction of pests and diseases.
- discuss the impact of environmental changes and stress on important pest and pathogens and on their interactions with their host trees
- discuss the importance and use of management strategies that minimize the impact of forest pests and pathogens for sustainability in forestry.
- compile and synthesize relevant knowledge from the research area, and present it in both oral and written presentations.

## Content

*Subject-related content:*

The course focuses on the ecology of pathogens and pests and damage to trees and forest ecosystems caused by forest pathogens and pests. The aim of the course is that the student should be able to identify and choose forest management measures that reduce damage to trees and ecosystems. The course covers common forest pathogens and pests in the Nordic countries and globally, but also principles for population dynamics and factors of significance for pathogenicity and aggressiveness, such as climate impact and how introduced organisms can affect the stability of forest ecosystems.

The course also covers research and key methods in the field, such as resistance biology and breeding in trees, molecular tools for identification of species and population structure analyses. Furthermore the course covers the principles of Integrated Pest Management (IPM) and Pest Risk Assessment.

*Teaching formats:*

To further student learning and promote discussion, a variety of methods are used, for instance:

- Online- and pre-recorded lectures,
- Online seminars
- Excursions
- Exercises
- Practicals
- Case studies
- Presentations

The course focuses on the following generic competencies:

- Information competence
- Critical thinking

- Ability to work autonomously
- Oral and written communication

The following course components are compulsory:

- Online seminars
- Excursions
- Exercises
- Practicals

### **Examination formats**

Approved written exam, approved oral and written presentations of case studies and individual work and approved participation in compulsory elements.

### **Jointly responsible department**

Department of Ecology