Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

Syllabus

BI0984.1 Biology and characteristics of the tree, 14.0 credits

Trädets biologi och egenskaper

Version 1 in Slukurs. Corresponds to version 1, 2 and 3 in Ladok

Syllabus approved

2 June 2008

The version applies to students admitted from spring 2008 to autumn 2012

The version is not a module version

Subjects

Biology/Forest science

Education cycle

First cycle

Modules

Title	Code	Credits
Single module	0101	14.0

Advanced study in the main field

First cycle, has only upper-secondary level entry requirements (G1N)

Grading scale

5:Pass with Distinction, 4:Pass with Credit, 3:Pass, U:Fail
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

Swedish

Prior knowledge

Admitted to the MSc in Forestry programme.

Objectives

After the course the student should
- have knowledge about the biology of trees, including anatomy, physiology, genetics and dispersal of trees.
- have knowledge about creation of wood and wood fibres, function, composition and diffrent types of wood.
- have knowledge about how trees are influenced by their environment including important pathogens and the defence of the tree.
- be able to recognize and know taxonomy and autoecology for a number of foreign coniferous trees that are common in the parks of Sweden.
- have knowledge about different woods, their appearances, characteristics and utilisation.

Content

The course starts with basic plant physiology, classic and molecular genetics. Basic plant anatomy. Photosynthesis, respiration, translocation and allocation of carbohydrates. Uptake, transport and loss of water. Uptake, transport and assimilation of mineral nutrients. Physiology of plant development. Structure of wood in relation to its biological functions. Physiological and genetic control of wood formation.
Thereafter the course is divided into five interdisciplinary parts:
1. Wood structures and characteristics. Structure of wood and fibres. Different wood types and anomalies. Variations depending on site and within- and between-tree differences. Different wood characteristics and their importance for commercial utilisation.
2. Dendrology and climate. Brief orientation about the diversity of tree species in a global perspective. The relationships between climate, biome and dynamics of forests. Taxonomy and autoecology for a limited number of boreal and temperate tree species. Identification of wood samples from various tree species. Present distribution of the most common tree species and their migration as a result of climate change during Holocene. The reproduction biology of Swedish tree species,

i. e. flowering, seed production, dispersal and seedling establishment.
3. Wood knowledge. Includes the appearence, characteristics and use of our most common Swedish woods.
4. Interactions between the tree, the soil, and the climate.
5. Pathogens and the defence of the tree. Infection biology of pathogens; life cycles and morphology. The susceptibility of trees and their reactions to attacks.

Implementation

Timetabled activities:
Lectures ca. 90 h
Laboratory work ca. 25 h
Field exercises ca 30 h
Written examination ca. 13 h
Other examination ca. 7 h
Individual studies:
Project work ca. 35 h
Literature studies ca. 190 h
Total ca. 380 h

Formats and requirements for examination

Approved theoretical and practial tests, approved oral presentation of project work and participation in compulsory parts.

- If the student fails a test, the examiner may give the student a supplementary assignment, provided this is possible and there is reason to do so.
- If the student has been granted special educational support because of a disability, the examiner has the right to offer the student an adapted test, or provide an alternative assessment.
- If changes are made to this course syllabus, or if the course is closed, SLU shall decide on transitional rules for examination of students admitted under this syllabus but who have not yet passed the course.
- For the examination of a degree project (independent project), the examiner may also allow the student to add supplemental information after the deadline. For more information on this, please refer to the regulations for education at Bachelor's and Master's level.

Additional information

The course is an integrated multisubject planned course.

- The right to take part in teaching and/or supervision only applies to the course date to which the student has been admitted and registered on.
- If there are special reasons, the student may take part in course components that require compulsory attendance at a later date. For more information on this, please refer to the regulations for education at Bachelor's and Master's level.

Responsible department

Department of Forest Genetics and Plant Physiology
Cooperating departments:
Department of Forest Ecology and Management
Department of Wildlife, Fish, and Environmental Studies

Supplementary Information

Finalized by: Programkommitté skog och mark
Biology Area: Botany
Replacement course: BI4276 BI0691