Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

Syllabus

BIo653.1 The Biology and Biotechnology in Forest Production Systems, 15.0 credits

Biologi och bioteknik för skogliga produktionssystem

The course is given as course independent of study programme

Syllabus discontinued 23 October 2007

Version 1 in Slukurs. Corresponds to version 1 in Ladok

Syllabus approved

28 February 2006

The version applies to students admitted from spring 2006 to autumn 2008

The version is not a module version

Subjects

Biology

Education cycle

First cycle

Modules

Title	Code	Credits
Single module	0101	15.0

Advanced study in the main field

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 equivalent of: 60 Swedish University Credits (SUC) of basic (A-level), intermediate (B-level)and advanced (C-level) courses in Biology including the courses Plant Cell and Molecular Biologi 10 SUC and Plant Growth and Development 10 SUC.

Objectives

After the course the student will have advanced theoretical and technical knowledge about intensive forestry and optimal production of wood raw material, knowledge about the biology of wood and its implication in wood and fiber products, and knowledge of the potential of biotechnology in forest production systems.

Content

The course provides knowledge and understanding for an optimal production of forest raw materials from a biological and biotechnical perspective.. The course illuminates technologies to multiply genetically improved materials (such as somatic embryogenesis), and the optimal use of genetically improved material. The theory underlaying intensive culture and plantage forestry will be treated. The optimisation of water, minerals and photosynthesis, and limiting abiotic and biotic stress will be covered. The course also provide knowledge about biological and biotechnological possibilities to taylor wood fiber properties in different production systems. This part covers wood formation, wood cell wall biosynthesis, chemistry, ultrastructure and their relation to mechanical and industrial use. The course provides knowledge about biotechnical applications in forest trees and post harvest modifications of wood and fibers, and examples and prospects of new fiber based products such as biofuels and green chemicals. The course also provides theory and practice in state of the art technology for analysis of wood and fiber and their properties.

Implementation

Lectures, lessons, discussions and seminars ca 75 h.
Laboratory work and practices ca 150 h.

Examination

Requirements for examination

Presentations of laboratory work and seminar tasks, and written examination.

Approved laboratory reports, seminars and written examination. Compulsory participation in laboratory work, practices and seminars.

- 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 given as a part of the International Course Package in Plant and Forest Biotechnology.
The course is given by UPSC (Umeå Plant Science Centre) i.e. The Department of Forest Genetics and Plant Physiology at SLU in cooperation with The Department of Plant Physiology at Umeå University.

- 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

Supplementary Information

Finalized by: Programkommitté skog och mark
Biology Area: Other Biology Courses