Swedish University of Agricultural Sciences

P000036, Historical, technological and societal background to forestry and forest-based biorefining in Nordic countries , 4.5 Hp

Syllabus

Finalized by: FUN, 2023-02-07

Valid from: HT2023

Level within study regulation:

Third cycle

Subject:

- Technology

Grading scale:

Pass / Failed

Course language:

Swedish

Entry requirements:

A fundamental knowledge of forestry and/or forest-industrial processes is required, obtained either through undergraduate/postgraduate education at university level or industrial experience. The course is primarily intended for doctoral students, but it is also open for other persons who are interested in the development of Nordic forestry and the technology development within the Nordic forest-industrial sector.

Objectives:

After the course, the student will be able to:

- Critically reflect on past and new challenges of using forest biomass in forest industry.
- Understand the scientific background and the industrial environment within the forest-industrial and biorefinery sectors.
- Reflect upon the ecological, economic, societal and ethical issues associated with forest-based biorefining
- Discuss sustainability issues connected with the use of forest biomass in biorefineries and with technology development in the forest-industrial sector
- Elaborate on bioeconomy and the effects of national and European environmental laws and directives on the forest-industrial and biorefinery sectors.

Content:

Due to the environmental and geopolitical concerns associated with the consumption of fossil resources, biomass appears as an attractive source to produce fuels and chemicals. This course is a general introduction to the development of forest-based biorefineries. It gives a historical, technological and societal background to forest-based biorefining, with focus on the Nordic countries and on sustainable development. The course covers different aspects:

- Assessment of forest biomass supply chains for biorefining
- Historical aspects of forestry, forest-industrial processes, and forest-based biorefineries
- Development of main conversion processes for forest biomass (mechanical, chemical, thermal, and biochemical processes)
- Environmental impact and sustainability aspects

Modes of assessment:

The course consists of a combination of individual literature studies, classroom lectures, study visits, self-studies, small group discussions and a written assignment - If a student has failed an examination, the examiner has the right to issue supplementary assignments. This applies if it is possible and there are grounds to do so.

- The examiner can provide an adapted assessment to students entitled to study support for students with disabilities following a decision by the university. Examiners may

also issue an adapted examination or provide an alternative way for the students to take the exam.

- If this syllabus is withdrawn, SLU may introduce transitional provisions for examining students admitted based on this syllabus and who have not yet passed the course.
- For the assessment of an independent project (degree project), the examiner may also allow a student to add supplemental information after the deadline for submission. Read more in the Education Planning and Administration Handbook.

Organisation:

Department of Forest Biomaterials and Technology

Supplementary information

Other information:

- The right to participate in teaching and/or supervision only applies for the course instance the student was admitted to and registered on.
- If there are special reasons, students are entitled to participate in components with compulsory attendance when the course is given again. Read more in the Education Planning and Administration Handbook.