Linnæus University

Jnr: HL/2009-0178

Programme syllabus

Faculty Board of Science and Engineering
School of Engineering

Skogs- och träprogrammet, 180 högskolepoäng
Forest Production and Wood utilization Programme, 180 credits

Level
First Level

Establishment of Programme
Established by Organisational Committee 2009-09-02

Date of Ratification
Approved by Organisational Committee 2009-09-15
The programme syllabus is valid from autumn semester 2010

Prerequisites
General entry requirements.

Description of Programme

The aim of the programme is to prepare students for a career within private forestry and its related branches. The focus is on technical management, planning and production within both private and company driven forestry, wood product processors and regulators. The programme also provides a foundation for further studies within the field of forest and wood engineering and its specializations.

Objectives

Knowledge and understanding
To obtain a Bachelor's degree the student must:

• Demonstrate knowledge and understanding of the primary field, including knowledge of its scientific foundations, knowledge of appropriate field specific methods, and obtain a deeper understanding about current research issues;

Skills and abilities
To obtain a Bachelor's degree the student must:

• demonstrate the ability to research, acquire, evaluate and critically interpret information that is relevant to a problem, and to critically discuss phenomena, issues and situations;
• demonstrate the ability to independently identify, formulate and solve problems as well as perform tasks within specified time limits;
• demonstrate the ability to present and discuss information, problems and solutions in dialogue with different groups, orally and in writing;
• demonstrate the skills required to work independently in the field of study.

Judgment and approach
To obtain a Bachelor's degree the student must:

• demonstrate an ability to make assessments in their main field of study, taking into account relevant scientific, social and ethical aspects;
• demonstrate insight into the role of knowledge in society and into people's responsibility for how knowledge is used;
• demonstrate the ability to identify its need of further knowledge and to upgrade its capabilities.

Programme-specific objectives
Knowledge and understanding
After completion of the degree course the student shall have:
• knowledge of the conditions and practices of forest production;
• an understanding of the relationship between silviculture and timber properties;
• knowledge of wood as a material, how it is milled and processed, as well as the possibilities and problems occurring through the process chain;
• knowledge of sustainable forestry and wood processing with consideration of environmental, economic and social needs;
• an overall knowledge of economic constraints, legislation, contract procedure, marketing, logistics and organization, as it is relevant to the forest and wood branch;
• an understanding of the conditions of private forestry as well as of forestry companies nationally and internationally;
• knowledge to run a small company within the forestry-, wood- or bio-energy sector.

Judgment and approach
After completion of the degree course the student shall:
• from the basic premise of a sustainable society, be able to effectively evaluate the effects of changing production systems within the forest-, wood- and bio-energy sectors, on humans, the economy and the environment;
• evaluate the interest goals, and weigh the pros and cons, for these groups;
• be able to identify the need for continuing education to further develop its knowledge about the management of private forestry and production within the wood processing industry.

Content
Organization
One instructor within the programme has the responsibility for the degree course.

A programme council is tied to the degree course. This council is composed of teachers, students and representatives from the concerned branches (industry, government agencies, and educators). The council meets on a regular basis to discuss the organization, content, professional relevance and student evaluations of the degree course.
Joint studies occur with other programs and courses within the subject Forest and Wood Engineering, as well as other education areas.

Program Overview
The degree course consists of 180 credits and leads to the Bachelor of Science in Forest and Wood Engineering.

During the first year of the degree course students take courses in Sustainable small-scale forestry, Forest fuel science, Forest products, GIS, Geology, hydrology and flora in woodlands.
- Sustainable small-scale forestry (basic course): This basic course studies forest mensuration, production, silviculture, logistics, wood material theory and processing.
- Forest fuel science: This course gives basic knowledge of forest fuels, machine systems, harvesting and transport operations, and the use of different assortments of forest fuels.
- Forest products: The course provides basic understanding of wood, its qualities, and

how it is produced and used.
- GIS: The course presents the use of Geographic Information Systems in forestry.
- Geology, hydrology and flora in woodlands: This course deals with the importance of geologic formations in regards to timber production and vegetationtypes.

During the second year of the degree course students take course in Sustainable small-scale forestry (continuation), Broad-leaved forestry and utilization, Operational efficiancy or Manufacturing in the wood industry, and Forest production.
- Sustainable small-scale forestry (continuation): The course provides a deeper understanding of the technical management of private forestry in regards to the chain from clearing to building. During this course students can use their own forestry company or a practice company as laboratory example.
- Broad-leaved forestry and utilization: This course provides increased knowledge about silviculture, production, and the industry of broad-leaved trees.
- Manufacuring in the wood industry: The course deals with the basic principles of production techniques, the planning of production processes and acquired knowledge used in case studies.
- Forest production: The course provides increased knowledge and understanding about models of how trees and forest stands grow, as well as how forestry practices are related to forest production.

During the third year of the degree course students take courses in Certified forestry, Purchasing and sales, Leadership, Forest yield and wood utility, International forestry and ownership, as well as Forest experience. (Of the final three afore mentioned, two are chosen)
- Certified forestry: The course deals with certification guidelines, the forests natural dynamics, as well as, silvicuture from the perspectives of production-, nature conservation and recreation
- Purchasing and sales: The course deals with the planning of buyers and sellers, budgets and contracts.
- Leadership: Deals with organization, group dynamics, conflict management, and personal development.
- Forest yield and wood utility: The course deals with the link between forest yield, wood quality and utility.
- International forestry and ownership: The course studies production conditions, certification, plantation forestry, plant breeding, the markets, and ownership-structure.
Forest experience: The course explores how nature can be used economically and educationally for such ventures as Eco-tourism.
A Degree Project is required within one of the primary fields that equate to the programme goal description.

Programme courses
Sustainable small-scale forestry 30 credits, G1N SoT
Forest fuel science 7.5 credits, G1N SoT
Forest products 7.5 credits, G1N SoT
Sustainable small-scale forestry (continuation course) 30 credits, G1N SoT
Broad-leaved forestry and utilization, 15 credits, G1F SoT
Operational efficiency / Manufacturing in the wood industry, 7.5 credits, G2F SoT
Forest yield and wood utility, 7.5 credits, G2F SoT
Forest production, 7.5 credits, G1F SoT
Degree Project 15 credits, G2E SoT

Geology, hydrology and flora in woodlands, 7.5 credits, G1N Nv-Tek
Purchasing and sales 7.5 credits, G2F Nv-Tek
Leadership 7.5 credits, G2F Nv-Tek
Forestry experience 7.5 credits, G2F Nv-Tek
International forestry and ownership 7.5 credits, G2F Nv-Tek
Certified forestry 7.5 credits, G2F Nv-Tek
GIS 7.5 credits, G1N Nv-Tek

Summary of which areas courses are divided into:
Forest and Wood Engineering (SoT): 90 credits
Technology-Science (Nv-Tek): 60 credits
Courses outside of the primary area of study: 30 credits
Total credits: 180

Work experience
Guest lecturers and excursions to/from industry, governmental organizations, and research make up an important part of the degree course. Included in several of the programme courses are projects tied to both industry and organizations. To make it easier for students to come in contact with these groups, prior screening is done within the student's home county. In general the courses deal with issues arising in the professional field. The final degree project is done in with ties to the field of research, or with a company dealing with real issues.

Study abroad
Study abroad can be accomplished by way of the students own initiative. Planning is completed through consultation with the international coordinator and program head.

Programme perspectives
>Sustainable development:
Sustainable development is a reoccurring theme of an education that deals with sustainable forestry.

>Gender and diversity:
Gender and diversity is dealt with through exemplifying the forestry community, preferences, choices and valuations.

>Globalization:
There exists an expressed ambition that students, during their time of study, can participate in different international conferences, foreign lecturers and courses with international students.

Quality Development
The course is evaluated through reoccurring written and oral evaluations. A programme council, composed of students, teachers and industry, continually (two to four times per year) evaluate the courses content and execution in regards to appropriateness. A summary of course and programme evaluations is archived by the university. Course and programme evaluations are available to concerned students and personnel by way of the Learning Management System.

Degree Certificate
The student, after completion of studies in accordance with the requirements listed in the Higher Education Ordinance Decree and those of the local examination system at Linnaeus University, can apply for a degree. Those who have completed the degree course Bachelor of Science –Forest and Wood Engineering will receive the following degree:

Bachelor of Science
Main Field of Study:
Forest and Wood Engineering

The diploma is bilingual (Swedish/English). This certificate is also accompanied by a Diploma Supplement (in English).

Other Information

There is an opportunity for those students who wish to take a two year college degree to do so after completing 120 credits. The examination requirements for college degree must be met. Students who wish to take this degree are encouraged to complete an individual study plan together with the program head.

Field and study trips, as well as other obligatory activities can occur during the course of the program. These activities can mean additional costs to students.