Linnæus University

Jnr: FAK 2011/532

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 University board 2009-09-02

Date of Ratification
Approved by Committee for First and Second Cycle under the Faculty Board of Science and Engineering 2009-09-02
The programme syllabus is valid from autumn semester 2012

Revised 2012-02-03

Prerequisites
General entry requirements.

Description of Programme

The aim of the programme is to prepare students for a future career either in private forestry, in the forestry industry, or in a related industry. The main emphasis of the programme is on technical and sustainable management, and on planning and production, both within private forestry and within the forestry industry, as well as within related industries and regulatory bodies. The programme also serves as a foundation for further studies within the main field – forest and wood engineering.

Objectives

General Graduation Objectives in Accordance with the Higher Education Ordinance

Knowledge and understanding
In order to obtain a bachelor's degree students must:

- demonstrate knowledge and understanding in the main field of study, including knowledge of the scientific foundation for the main field of study, knowledge of applicable field-specific methods, specialized knowledge within one area of the main field of study, and be familiar with current research in the field

Skills and abilities
In order to obtain a bachelor's degree students must:

- demonstrate the ability to search out, gather, evaluate, and critically interpret information relevant to a problem, and the ability to critically discuss phenomena,

issues, and situations
- demonstrate the ability to independently identify, formulate, and solve problems, and the ability to complete tasks within given time frames
- demonstrate the ability to present and discuss information, problems, and solutions, both orally and in writing, in dialogue with different groups
- demonstrate sufficient mastering of skills required to work independently in the field of study

Judgment and approach
In order to obtain a bachelor's degree students must:

- demonstrate the ability to make accurate assessments in the main field of study, taking into account scientific, societal, and ethical aspects
- demonstrate insight into the role of knowledge in society, and into the fact that we as humans are responsible for the administration of this knowledge
- recognize the need to further deepen their knowledge and develop their competence

Programme-specific objectives
Knowledge and understanding
After completing the degree programme students are expected to:

- have knowledge on the conditions and practices of forest production
- have knowledge on the wood material and on the processing and use of forest raw materials
- demonstrate an understanding of the forest as a source for forest-based products and energy, and of the major environmental importance of the forest
- demonstrate an understanding of the correlation between forest management and wood properties
- have knowledge on how forestry and wood processing is carried out in a sustainable manner, taking into account environmental, economic, and societal needs
- be familiar with legislation, financial control, organization, contract procedure, and technology relating to the forestry and wood industry
- demonstrate an understanding of the conditions, on a national level as well as on an international level, of forestry companies and the private forestry sector
- have sufficient knowledge on how to run a small company in the forestry and wood industry

Skills and abilites
After completing the degree programme students are expected to:

- be able to use and develop methods and techniques applicable in the forestry and wood industry
- be able to communicate relevant issues relating to the forestry and wood industry to people in the industry as well as to the public, both orally and in writing
- be able to develop operations along the chain from forest production to the processing industry

Judgement and approach
After completing the degree programme students are expected to:

- be able to make qualified evaluations of the impact on humans, the economy, and the environment, of changes in the forestry, wood, and biofuel industries, with a basis in the premise of a sustainable society
- be able to make assessments of the goals of different interested parties, and to weigh the pros and cons for each assessment
- recognize the need to further deepen their knowledge of sustainable management

and production in the forestry and wood industry

Content

Programme overview

The degree programme comprises 180 higher education credits and leads to a Bachelor of Science in Forest and Wood Engineering. The degree programme is given in distance format and students can choose between full and part time studies.

During the first year, students who study full time will take compulsory courses focusing on the conditions and applications of forest production, the wood material, and forest fuel, as well as on legislation and technology relevant to operating in the forestry and wood industry. The second and the third year comprise both compulsory and eligible courses in order to let students both widen and deepen their knowledge in the main field of study. Also included in the programme is an eligible, educational internship and a bachelor's thesis comprising 15 higher education credits. The bachelor's thesis should be part of the main field of study and correspond to the objectives of the programme.

Courses in the programme

Courses within the main field of study are marked with an asterisk (*). Students who study full time will take the following courses in the first year:

Course name Scope Level
Forestry basic course* 15 credits G1N
The course deals with fundamental principles and terminology for forest mensuration, silviculture, and forest production.

Methodology course 7.5 credits G1N
The course deals with different methods along the chain from information retrieval to scientific report.

Forest products* 7.5 credits G1N
The course provides basic knowledge of the wood material and its qualities, processing, and use.

Technical management of forest holdings* 7.5 credits G1N
The course provides knowledge of rules and regulations relevant to property owners.

Forest fuel science* 7.5 credits G1F
The course provides basic knowledge of forest fuel, control systems, logging methods, and the utilization of different types of forest fuel.

Geology, hydrology and flora in woodlands 7.5 credits G1N
The course deals with the importance of geology, earth and soil types, for the composition of plant communities and forest production.

GIS in forestry* 7.5 credits G1F
The course provides knowledge of the fundamental principles of geographic informationsystems (GIS), and knowledge of how these systems are used in forestry.

In the second year students will take the following courses:

Forest management planning* 7.5 credits G1F
The course provides knowledge of forest management planning, taking into account both economic and biological aspects, it also provides skills in each stage of the operation resulting in a forest management plan.

Silviculture* 7.5 credits G1F
The course deals with forestry principles and silviculture, focusing on regeneration and

forestry measures.

Economics of forestry enterprise 7.5 credits G1F
The course provides students with the skills necessary to run a forestry business with respect to the administration and development of forest property, forest contracting, and other similar enterprises aiming to maximise the utilisation of the forest resource in different ways.

Purchase and sales* 7.5 credits G2F
The course deals with the planning, meetings, and negotiation skills of both purchaser and seller, as well as with various types of sales forms and contracts.

Operational efficiency* 7.5 credits G2F
The course provides knowledge of wood supply chains, transportation,forestry technology, machine types, costs, and operational procedures.

Forest industry markets* 7.5 credits G2F (eligible)
The course provides knowledge of forest assets globally, regulations, trade, trade barriers, and marketing.

Manufacturing in the wood industry* 7.5 credits G2F (eligible)
The course deals with the fundamentals of production technology and the planning of production processes.

Forest growth and yield* 7.5 credits G2F (eligible)
The course provides a deeper understanding of tree and stand growth, and the effects of different forestry measures on forest production.

Business opportunities for non-industrial private forest owners* 7.5 credits G2F (eligible)
The course deals with the business opportunities of private forest owners and provides the skills necessary to develop and formulate a business plan.

Trainee on company placement* 7.5 credits G1F (eligible)
Trainee period on company placement.

In the third year students will take the following courses:

Certified forestry 7.5 credits G2F
The course deals with rules of certification, the natural dynamics of the forest, and maintenance from a production and conservation perspective.

Leadership* 7.5 credits G2F
The course deals with leadership, organization, group dynamics, and conflict solving.

Broadleaved and utilization* 15 credits G2F
The course provides further knowledge of the management, production, and processing industry of broadleaved trees.

International forestry and ownership* 7.5 credits G2F (eligible)
The course deals with forest owner structures, condition of forest production, and forestry methods in different parts of the world.

Forest yield and wood utility* 7.5 credits G2F (eligible)
The course provides an understanding of the correlation between silviculture, wood quality, and product quality.

Forest experience 7.5 credits G2F
The course provides the skills necessary in order to communicate knowledge of forestry and the forest, both to people in the business and to the public.

Bachelor's thesis* 15 credits G2E
Degree project within the main field of study.

Please notice that the order in which courses are given may be subject to change.

Professional relevance
External lecturers from the industry, different authorities, and research play a vital role in the education. Most courses in the programme include some kind of project work tied to the industry, or to organizations relevant to the industry. An eligible trainee period at a company or organization is included in the programme – the company or organization need to be of relevance to the objectives of the degree programme. The degree project, which will result in a bachelor's thesis, is carried out in connection to current research, or at an external employer dealing with real issues.

Studies abroad
Students have the possibility to study abroad, on their own initiative, preferably within the frame of exchange studies at Linnaeus University. The teacher responsible for the degree programme and the international coordinator at the School of Engineering plan the exchange studies in consultation with each other.

Programme perspectives
Sustainable development, gender, diversity, and global are perspectives integrated as a natural part of the degree programme. Sustainable development is a recurring theme focusing on how to take consideration to environmental, economic, and societal needs while engaging in forestry and business. The programme provides knowledge of the wood material – a renewable material contributing to a sustainable development.

Forests make up a global resource and the degree programme exemplifies how this resource is maintained and utilized in different parts of the world. There is an explicit ambition that students on the programme should be able to get international experience through study tours, joint studies with exchange students, and by attending lectures given by foreign guest lecturers.

We take part in the national equality strategy for the forestry and wood industry. This strategy acts to make educations relating to the forestry and wood industry attractive to both men and women. The equality perspective is integrated in the programme with focus being on gender and age representation in the Swedish forest owner pool, and on forest owner's preferences, decisions and values.

Quality Development

Recurring written course and programme evaluations ensure that the quality of the programme remains high. The results from these evaluations, and what measures are taken to improve courses, are reported to the students. The evaluation report is readily available to students and filed and stored according to departmental regulations.

There is a continuous dialogue between the responsible teacher, the teaching staff, and students regarding content, structure and results. The programme council evaluates the content and execution of the programme, as well as the relevance of the content of each course, on a regular basis.

The overall responsibility for the degree programme falls on one teacher. There is also a programme council consisting of the responsible teacher, other teachers, student representatives, and representatives from the forestry and wood industry. The programme council assembles on a regular basis to discuss the structure, content, and professional relevance of the programme, as well as to discuss programme and course evaluations. Joint studies with other programmes and courses within the subject of forest and wood technology occur, as well as joint studies with programmes and courses from other fields of study.

Degree Certificate

After completion of studies in accordance with the requirements listed in the Higher Education Ordinance and those of the degree system at Linnaeus University students can apply for a degree. Students who have completed the Forest Production and Wood Utilization Programme will receive the following degree:

Bachelor of Science with specialization in Forest Management and Utilization
Main field of study: Forest and Wood Engineering

The degree certificate is bilingual (English/Swedish). Along with the degree certificate students will also receive a diploma supplement (English).

Other Information

The programme is given in distance format, which means that the courses and most other information flow and communication take place on the Internet, through the use of a digital learning platform.

Therefore, students will need a computer with a good Internet connection. Included in the programme are educational visits, excursions, study tours, and other similar mandatory elements. Such elements may result in expenses; these are paid for by the students themselves.