



Course syllabus

Faculty of Technology

Department of Forestry and Wood Technology

4TS042 Lokal innovation, 22,5 högskolepoäng

Local Innovation, 22.5 credits

Main field of study

Forest and Wood Engineering, Mechanical Engineering

Subject Group

Forest Science

Level of classification

Second Level

Progression

A1N

Date of Ratification

Approved by Faculty of Technology 2014-10-03

The course syllabus is valid from autumn semester 2015

Prerequisites

General entry requirements for studies on second level, and specific entry requirements: 90 credits within the main field of Mechanical Engineering or Forest and Wood Technology (including a Degree Project of at least 15 credits) or the equivalent, English B/English 6 or the equivalent

Objectives

Module 1: Interdisciplinary Innovation Processes, 5 credits

After finished course, the student is expected to be able to:

- formulate a problem statement, search out, gather, and, with criticism of the sources, examine information within relevant fields of theory
- describe an innovation process from idea to implementation
- establish and, both orally and in writing, account for decision support regarding a sustainable innovation process
- constructively contribute to the implementation of an idea, based on his/her field of competence, in a team containing a number of different disciplines
- discuss the connections between the contributions of different fields of competence in an interdisciplinary project
- plan and carry out an innovative interdisciplinary process

Module 2: Process - Design, 5 credits

After finished course, the student is expected to be able to:

- constructively and actively contribute in a team where different disciplines are involved in a creative process

- account for and discuss the concept of design and the general features of the design process in relation to one's own discipline
- implement the design process in an interdisciplinary project
- identify and account for consequences of the artefacts' significance in society
- form an artefact that lives up to the demand for sustainable development
- identify and discuss the local conditions for innovation in the immediately surrounding society from a design perspective
- examine the concept of innovation and its process from a design perspective

Module 3: Lead Process - Engineering, 5 credits

After finished course, the student is expected to be able to:

- lead a project with a number of participating disciplines on the project team
- communicate and assess the discipline's basis, approach, and methods to other team members
- take responsibility for the development of an innovation that lives up to the demand for sustainable development
- examine the concept of innovation and its process from an engineering perspective

Module 4: Process Business Administration, 5 credits

After finished course, the student is expected to be able to:

- constructively and actively contribute in a team where different disciplines are involved in a business administration process
- account for and discuss the concept of business administration and the general features of the innovation process in relation to one's own discipline
- use business administration tools for supporting the innovation process
- form innovation that lives up to the demand for sustainable development
- identify and discuss the local conditions for innovation in the immediately surrounding society from an business administration perspective
- critically examine the concept of innovation and its process from the perspective of business administration

Module 5: Skill and Technology, 2.5 credits

After finished course, the student is expected to be able to:

- account for dialogue seminar method and be able to, in a constructive way take part in dialogue seminars
- write essays
- profoundly understand his/her own profession using critical reflection through perspectives given in the course literature

Content

The course consists of 5 different modules:

Module 1 Interdisciplinary Innovation Processes 5 credits

The course consists of the following parts:

- interdisciplinary project work
- the design process
- sustainable development
- the innovation concept
- integrated market communication
- calculation and forecasting
- supply chain
- choice of material

- blueprint/product specification
- construction aspects

Module 2 Process - Design 5 credits

The course consists of the following parts:

- the various parts of the design process (theories/analysis/concept/formation)
- visualisation
- sustainable development
- the innovation process

Module 3 Lead Process - Engineering 5 credits

The course consists of the following parts:

- project management in an engineering project
- communication of the discipline's basic (material selection, drawings, product specification, engineering design manufacturing)
- sustainable development

Module 4 Process - Business Administration 5 credits

The course consists of the following parts:

- innovation project
- sustainable development
- calculation (extended product costing)
- supply (sourcing)
- integrated market communication

Module 5 Skill and Technology 2.5 credits

The course consists of the following parts:

- introduction to the area of Skill and Technology, make distinctions between rules and the following of rules, between the abstract and the concrete, and problems and dilemmas in society from the perspective of professional skill
- introduction to the dialogue seminar method
- introduction to the terms case study, dialogue, tacit knowledge, the dream about the exact language, model and reality

Type of Instruction

The course consists of lectures, workshops and seminars based on the different perspectives presented by the participating disciplines. The course also contains a mandatory project work which is supported by supervisors from all disciplines. The teaching is carried out on campus and at project organizations. Obligatory parts are stated in the schedule.

Examination

The course is assessed with the grades A, B, C, D, E, Fx or F.

The grade A constitutes the highest grade on the scale and the remaining grades follow in descending order where the grade E is the lowest grade on the scale that will result in a pass. The grade F means that the student's performance is assessed as fail (i.e.

received the grade F).

The course is examined through project report, artefact, oral presentation, written exam, workshops and discussion seminars. The final grade is a weighted average in relation to the size of the modules.

Students who do not achieve a satisfactory result in the examinations are permitted to make a second attempt approximately 5-8 weeks after the normal examination date.

Course Evaluation

A written course evaluation is carried out and compiled in a report, which is archived at the faculty. The results and possible measures taken are communicated by the course coordinator and presented to the students the next time the course is given, or in another way deemed suitable by the course coordinator. Other types of course evaluations, for example regular evaluations throughout the course or discussions with students, will be included and encouraged with the aim of ensuring continuous quality development.

Credit Overlap

This course cannot be part of a degree in combination with another course in which the content fully or partly correspond to the content of this course: 4TS040 Local Innovation, 22,5 hp to 100%.

Other

Grade criteria for the A–F scale are communicated to the student through a special document. The student is to be informed about the grade criteria for the course by the start of the course at the latest.

Required Reading and Additional Study Material

Required reading

Ashby, M. F., Shercliff, H. & Cebon, D. *Materials: Engineering, Science, Processing & Design*. BUTTERWORTH – HEINEMANN. Latest edition. 672 pages.

Atkinson, A. *Management Accounting*. Pearson. Latest edition. 526 pages.

Göranzon, B. (2009). *The Practical Intellect*. Santerus Academic Press. 160 pages.

Hannington, B. & Martin, B. *Universal Methods of Design: 100 Ways to Research Complex Problems Develop Innovative Ideas, and Design Effective Solutions*. Rockport Publishers Inc. Latest edition. 208 pages.

Lidwell, W., Holden, K. & Butler, J. *Universal Principles of Design*. Rockport Publishers Inc. Latest edition. 214 pages.

Slack, N., Brandon-Jones, A., Johnston, R. & Betts, A. *Operations and Process Management*. Pearson. Latest edition. 540 pages.

Thorpe, A. *The Designer's Atlas of Sustainability*. Island Press. Latest edition. 221 pages.

Trott, P. *Innovation Management and New Product Development*. Prentice Hall. Latest edition. 620 pages.

Ulrich, K. & Eppinger, S. *Product Design and Development*. McGraw-Hill Higher Education. Latest edition. 358 pages.

Scientific articles. About 100 pages.

Reference Literature

van Weele, A. *Purchasing and Supply Chain Management*. Cengage Learning

EMA. Latest edition. 418 pages.