

SYLLABUS

Process efficiency and improvement, wood technology 7.5 credits W7007T

Processeffektivisering, träteknik

Course syllabus admitted: Autumn 2023 Sp 1 - Present

**DECISION DATE
2021-02-17**

Process efficiency and improvement, wood technology 7.5 credits W7007T

Processeffektivisering, träteknik

Second cycle, W7007T

Education level	Grade scale	Subject	Subject group (SCB)
Second cycle	G U 3 4 5	Träfysik	Wood Physics and Wood Technology

Main field of study

Wood Technology

Entry requirements

Selection

The selection is based on 30-285 credits

Course Aim

This course focuses on the efficiency of production processes and how a number of small individual process steps defines the efficiency of the whole process. The course is based on LEAN philosophy and concepts such as continuous improvement, constraints, value and waste, variation.

Knowledge and understanding:

After the course the student be able to explain the basic principles of the Lean concept in order to independently analyze and streamline a production process and in particular explain:

- The relationship between high resource utilization and high flow efficiency in a manufacturing process
- What a variation and disturbance is and in what way the process is affected
- The concepts of customer value and quality

Skills and Abilities:

After the course, the student shows an ability of:

- Map and analyze a process with regard to quality, productivity and flow efficiency
- Identify and quantify capacity constraints in a process and design improvement proposals in order to increase the system's capacity
- Orally and in writing present the outcome of the completed survey and analysis to industry representatives

Valuation and approach:

After the course, the student shows an approach of:

- Demonstrate the ability to collaborate with other students and people from the industry.
- Reflect on and evaluate your own work effort.

Contents

The course consists of 50% theory related to principles of LEAN-philosophy and 50% project work in order to apply theoretical principles in practice.

Great emphasis, on understanding and ability to analyze which parameters are important for a raw material-based industrial process that characterized by a high material flow.

Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.

Theory :

Study of literature according to instructions given in the study guide followed up with supervisor meetings based on the student's needs and understanding of the subject.

Before each supervisor meeting, the student must therefore prepare:

- A discussion topic whose purpose is to provide an in-depth understanding of the dissertation section
- Formulated a number of examination questions including answers

The supervisor meeting is designed to meets the student's level of knowledge and needs.

The discussion topic, examination questions and the supervisor meeting are compulsory elements in the course. For a more detailed description of the structure, see the course's study guide.

Application:

The student will analyze an industrial process out of the principles of LEAN and apply its methods in order to find improvement measures.

The outcome of the work reported orally as well as in writing for the stakeholders.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided.

Compulsory assignments:

1) Discussion topic

Grades: Pass/Fail

2) Examination questions including correct answers.

Grades: Pass/Fail

The examination of the case study is based on the written report.

Grades: Fail, 3, 4, 5

Note! The ability to meet set deadlines for submission will be part of the examination and a missed delivery will affect the grade negatively.

See the study guide for a detailed description of the examination.

Examination can take place a maximum of three years after course registration.

Grades: Fail, 3, 4, 5

Unauthorized aids during exams and assessments

If a student, by using unauthorized aids, tries to mislead during an exam or when a study performance is to be assessed, disciplinary measures may be taken. The term "unauthorized aids" refers to aids that the teacher has not previously specified as permissible aids and that may assist in solving the examination task. This means that all aids not specified as permissible are prohibited. The Swedish version has interpretative precedence in the event of a conflict.

Course offered by

Department of Engineering Sciences and Mathematics

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0001	Compulsory Assignments	G U 3 4 5	3.5	Mandatory	A14	
0002	Case	G U 3 4 5	4	Mandatory	A14	

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students

applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Last revised

by Head Faculty Programme Director Niklas Lehto 2021-02-17

Syllabus established

by Mats Näsström 2014-02-14