



# FKF3010 The Chemistry of Pulp and Paper Processes 9.0 credits

De cellulosatekniska processernas kemi

This is a translation of the Swedish, legally binding, course syllabus.

## Establishment

Course syllabus for FKF3010 valid from Autumn 2020

## Grading scale

P, F

## Education cycle

Third cycle

## Specific prerequisites

Eligible for studies at the third-cycle level.

## Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

## Intended learning outcomes

After completion of the course the student should be able to:

- summarize scientific data to a written report and make an oral presentation of the data

- describe the reactions of wood polymers and extractives during pulping and bleaching, and biorefinery methods, and describe the reaction mechanisms for reactions during aging of chemical and mechanical pulp
- understand and predict how the hierarchic structures of wood and pulp is affected during pulping and aging
- critically evaluate effects on product quality and environment by changes in processes and raw materials
- describe the structure and properties of lignin- and cellulose derivatives, and other chemicals from wood
- predict structure and properties of wood polymers at changes in processes

## Course contents

- Mechanical pulping chemistry
- Kraft pulping chemistry, sulphite pulping chemistry
- Anthreaquinon and pulpsulphide pulping chemistry
- Chemistry of biorefinery methods
- Bleaching chemistry
- Chemical reactions during ageing of mechanical and chemical pulps
- Closing chemistry
- Synthesis of process chemicals
- The forest industry and the environment
- Dissolving pulps and cellulose derivatives
- Chemicals from lignin, hemicelluloses and extractives
- Influence on fiber properties by process conditions

## Examination

- LIT1 - Literature assignment, 1.0 credits, grading scale: P, F
- RAP1 - Report, 1.0 credits, grading scale: P, F
- TEN1 - Written exam, 7.0 credits, grading scale: P, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

## Other requirements for final grade

## **Ethical approach**

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.