



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 Spring 2010

Grading scale

G

Education cycle

Third cycle

Specific prerequisites

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 will have a thorough knowledge of:

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

Course contents

Mechanical pulping chemistry, Kraft pulping chemistry, sulphite pulping chemistry, anthraquinone 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 of process conditions.

Course literature

Ljungberg textbook of pulp and paper

Examination

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.

Written examination, written report and oral presentation.. Grad scale P, F.

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.

