



FKF3320 Chemical Structure Analysis of Natural and Chem- ically Modified Polysaccharides 5.0 credits

**Kemisk struktur och analys av naturliga och kemiskt modifierade poly-
sackarider**

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

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

Establishment

Course syllabus for FKF3320 valid from Spring 2014

Grading scale

Education cycle

Third cycle

Specific prerequisites

Basic knowledge about polysaccharide structure and chemistry.

Language of instruction

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

Intended learning outcomes

Give reasons for the importance of structure elucidation of polysaccharides

Activate knowledge on carbohydrate structure and chemistry with respect to error sources in analysis

Explain the general approach of comprehensive polysaccharide analysis

Describe the principle and methods for

- the sugar constituent analysis of polysaccharides
- the linkage pattern analysis
- oligosaccharide sequencing by mass spectrometry
- molecular mass determination
- location of non-sugar substituents in polysaccharide derivatives

Give examples for the application of enzymes in polysaccharide analysis

Know methods of quantification in carbohydrate

Course contents

Carbohydrate structure and chemistry

Chemical, enzymatic, chromatographic, electrophoretic, and spectroscopic, especially mass spectrometric methods in polysaccharide analysis

Determination of the substitution pattern of polysaccharide derivatives with focus on cellulose ethers

Eight lectures including small exercises, home assignment/presentation

Course literature

Kursmaterial delas ut under kursen.

Course material handed during the course reviews/articles sent during the course.

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.

In order to pass the course, absence on maximum two lectures is allowed. Those missing a lecture/lecture/seminar receive an assignment which covers the particular topic. This assignment will be handed in either as a report or presented during a seminar.

All students are required to give a seminar presenting an article or the solution to a given problem of carbohydrate analysis.

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.