FKF3340 Renewable polymers and Green Materials 3.0 credits

Förnyelsebara polymerer och gröna material

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 FKF3340 valid from Spring 2021

Grading scale

P, F

Education cycle

Third cycle

Specific prerequisites

Eligible for studies at the third-cycle level and fundamental knowledge in chemistry, organic chemistry and polymer technology.

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 doctoral student should have the knowledge and ability to

- describe the structure and properties of common renewable polymeric materials
- critically evaluate effects of variations in materials structures and compositions and how this will influence the performance
- give an overview on how green materials can be utilized in value-adding applications
- discuss challenges and opportunities in the design and waste management of green materials and in the utilization of green materials in commercial applications, such as textiles, packaging, biocomposites and nanocellulose.

Course contents

- Structures and typical property profiles of common renewable polymeric materials.
- The effect of structural variations on the material performance.
- A commercial and scientific overview of some industrially anticipated and implemented applications, such as textiles, packaging, biocomposites and nanocellulose.
- Degradation and composting issues.
- Acritical discussion of the commercial potential and cost efficiency of potential green material products.

Examination

- TEN1 - Written exam, 3.0 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.

Other requirements for final grade

Mandatory presence of at least 90%

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.