



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.

Establishment

Course syllabus for FKF3340 valid from Spring 2013

Grading scale

G

Education cycle

Third cycle

Specific prerequisites

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 passed course the student shall be able:

- to describe the structure and properties of common renewable polymeric materials

- to critically evaluate effects of variations in materials structures and compositions and how this will influence the performance
- to give an overview on how green materials can be utilized in value-adding applications
- to 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

Polymers derived from renewable resources and green materials are discussed from a scientific and commercial perspective, covering the entire span from established knowledge to future developments. The course curriculum includes (i) structures and typical property profiles of common renewable polymeric materials, (ii) the effect of structural variations on the material performance, (iii) a commercial and scientific overview of some industrially anticipated and implemented applications, such as textiles, packaging, biocomposites and nanocellulose, (iv) degradation and composting issues, and (v) a critical discussion of the commercial potential and cost efficiency of potential green material products.

Course literature

- Handouts
- Relevant material found in the literature

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.

- Handouts
- Relevant material found in the literature search connected to the home exam

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.