KF1020 Project Course in Polymer and Cellulose Based Materials 15.0 credits

Fördjupningsarbete i polymera och cellulosabaserade 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 KF1020 valid from Autumn 2007

Grading scale

A, B, C, D, E, FX, F

Education cycle

First cycle

Main field of study

Technology

Language of instruction

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

Intended learning outcomes

After finished in-depth studies the student should be able to:

- Apply knowledge and skills about organic materials obtain in earlier courses
- Lead and evaluate scientific literature in English and Swedish
- Obtain necessary information for formulation of problems
- Formulate issues about a problem and apply methods in the field
- Plan and carry out experimental work with connection to the issues
- Evaluate and draw conclusions about experimental data
- Present an oral and written report based on the actual issue

Course contents

The in-depth field towards polymers and cellulose based materials gives a broad and deepened education with focus on organic materials, such as plastics, rubber, composites and cellulose based materials. The in-depth studies deal with synthesis, production, properties, characterization, working and long-term properties of products produced by chemical synthesis (synthetic polymers) and/or by using natural polymers (e.g. polysaccharides, proteins, wood, natural fibers). The application fields of the in-depth studies can be found in pharmaceutical-, forest- (e.g. paper), packaging-, electronics, coating-, chemical engineering and other industries using material.

In the course part of the in-depth studies applicable organic chemistry for a more profound understanding of the structures and properties of synthetic and natural polymers are deepened and repeated in the form of seminars. The new development of materials by mimicking natural polymers, so-called biomimetic structures is discussed. In the project part the student will do a literature survey about the actual issue and read the necessary Swedish and English scientific literature as a basis to be able to formulate issues around a problem. Then the student will plan and carry out an experimental work with the aim of solving the issues. The experimental results are analysed and validated and the work will then be reported in writing and orally. The report is examined with regard to content and structure with relevant referring to sources, figures, tables and formulae. The report is also examined with regard to language, where Skrivregler för svenska och engelska (TNC) is used. An English or Swedish summary must be included in each report. Every student also makes an opposition of someone else's work and in this part the student should examine and give viewpoints on a technical work and be able to answer corresponding viewpoints on his/her own work.

The in-depth studies can be carried out at Polymer Technology, Polymeric Materials, Coating Technology, Fiber Technology, Wood Chemistry/Pulp Technology and Paper Technology

Specific prerequisites

MH1000 Fundamentals of Materials Science and Engineering

Course literature

Scientific papers.

Examination

- PRO1 - Project, 15.0 credits, grading scale: A, B, C, D, E, FX, 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

Project, 15 cr (PRO1)

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.