KF1080 Polymers for Future Society 6.0 credits

Polymerer för framtidens samhälle

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

Establishment

Course syllabus for KF1080 valid from Spring 2013

Grading scale

P, F

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

90 credits for basic eligibility including at least 30 credits in Chemical Science and Engineering or Materials Science. English B.

Language of instruction

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

Intended learning outcomes

The student should after completed course be able to:

- Describe basics of polymer structure, properties, applications and polymer nomenclature
- Define the basic concepts of polymer synthesis and production
- Describe and choose techniques for characterization of functional and structural polymeric materials
- Compare oil-based versus bio-based and inert versus degradable materials and select drives and barriers for applications of respective materials
- Illustrate examples from research front in the different areas of polymer science and contemporary development trends within the field
- Reflect over the development in the field of polymer science with regard to environmental issues and sustainable development
- Reflect, assess and critically review own and others´ scientific results
- Present the group assignment orally and in writing

Course contents

The course consists of lectures and a project work. The main subjects covered:

Introduction to polymeric materials
- Basics of polymer structure, properties, synthesis, characterization, manufacturing and applications

Environmental issues connected to polymeric materials
- oil-based versus bio-based, inert versus degradable, recycling, littering

Materials at research front
- e.g. biomedical materials and health care, renewable materials, degradable materials, smart materials, nanocomposites, antimicrobial materials, energy related materials

Project work where the student will look deeper into a specific application

Course literature

To be announced at the latest three weeks before the course starts

Examination

- PRO1 - Project, 3.0 credits, grading scale: P, F
- TEN1 - Examination, 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.

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

PRO1 – Project, 3.0 credits, grade scale: P, F
TEN1 - Examination, 3.0 credits, grade scale: P, F

Other requirements for final grade

Passed examination (TEN1) - 3,0 credits
Passed project (PRO1) - 3,0 credits

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.