



KF2495 Polymer Composites - Micro and Nanoscale 7.5 credits

Polymera kompositer - mikro- och nanoskala

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 KF2495 valid from Autumn 2023

Grading scale

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

Education cycle

Second cycle

Main field of study

Chemical Science and Engineering

Specific prerequisites

Bachelor's degree in Chemistry or a closely related subject within a programme that includes:

50 university credits (hp) in chemistry or closely related subject, 20 university credits (hp) in mathematics, numerical analysis and computer science.

KF2110 Mechanical properties of materials, or equivalent.

Language of instruction

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

Intended learning outcomes

After completing the course, the student should be able to

Describe basic concepts, methods and principles related to process, structure and properties of polymeric composites.

Explain the relationship between the process, structure and properties, including the experimental aspects (for example from the laboratory work) as well as compare different composites environmental impact.

Course contents

The main focus of the course is related to the following topics: Fibers and polymer matrices, particles (nano to microscale), fiber-matrix interface, nanocomposites and short fiber composites, geometric aspects, processing methods and processing science of conventional and nanocomposites, elastic properties and strength of unidirectional composites, plant fiber composites, moisture effects, structure and properties of nanocomposites as well as case-studies.

Examination

- INL1 - Assignment, 2.0 credits, grading scale: P, F
- LAB1 - Laboratory course, 1.5 credits, grading scale: P, F
- TEN1 - Written exam, 4.0 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

Active participation in all compulsory activities as specified in Course information.

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.