KF2150 Surface Coatings Chemistry 7.5 credits

Ytbehandlingskemi

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

Establishment

Course syllabus for KF2150 valid from Autumn 2019

Grading scale

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

Education cycle

Second cycle

Main field of study

Chemical Science and Engineering, Chemistry and Chemical Engineering

Specific prerequisites

Bachelor's degree in engineering or in sciences including 50 credits in chemistry or chemical engineering. English B/6.

Language of instruction

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

Intended learning outcomes

After graduating from the course the student should be able to:

- Describe what a coating system is and use the terminology in the field of organic coatings
- Discuss aspects of choice of substrate, chemistry of the coating resin and properties of the dry/cured surface coating
- Discuss environmentally driven challenges related to the coatings industry
- Demonstrate knowledge regarding industrial coating processes

Course contents

- Coating resin systems
- Application strategies and methods
- Wetting, flow and adhesion
- Film formation procedures in physically and chemically drying systems
- Environmental effects of different surface treatment systems
- Seminars by invited industrial guess
- Study visit to paint manufacturing industry

Experimental work:

- Synthesize a polymer suitable as a resin for organic coatings
- Characterize the coating resin with regards to composition and properties
- Apply the coating on substrates
- Follow the drying/curing of the coating resin by suitable methods
- Evaluate the properties (adhesion, hardness etc) of the dried/cured film.

Examination

- TEN1 - Written exam, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory Course, 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.

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.