



KF2240 Coating Technology 6.0 credits

Ytbehandlingsteknik

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

Establishment

Course syllabus for KF2240 valid from Autumn 2007

Grading scale

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

Education cycle

Second cycle

Main field of study

Chemistry and Chemical Engineering

Specific prerequisites

Knowledge corresponding to KF2250 Polymer materials and KF2210 Polymer chemistry

Language of instruction

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

Intended learning outcomes

After the course the students should be able to:

- Describe a coating system with respect to composition and the function of the different components in the coating
- Discuss choices of substrates, pre-treatments and application for specific coating systems
- Discuss the importance of good wetting and suitable rheological properties for the coating system
- Discuss different rheological performances and the cause of these
- Discuss demands on different rheological behaviours, both production and use of coating systems
- Describe the film formation process for both physically and chemically drying systems. Both wet film formation and the liquid/solid transformation should be described
- Choose a suitable coating system for a certain application and motivate why this is a good choice
- Describe the composition, curing mechanism and function of powder coatings
- Exemplify and motivate the use of polymers in thin film applications other than traditional coating applications
- Discuss the demands for good adhesion and adhesive strength
- Follow the drying of a coating with different experimental techniques
- Evaluate cured film properties (adhesion, hardness etc.)

Course contents

Introduction to coating chemistry. Resin chemistry: physically drying resins, chemically drying resins, radiation cured resins, powder coatings. Pigments and other additives. Paint manufacturing. Paint rheology. Application methods. Drying methods and equipment. Coating substrates. Pre-treatment methods. Testing methods

Course literature

Not decided yet

Examination

- TEN1 - Examination, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory Work, 1.5 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

Written examination (TEN1) 4,5 cr

Passed laboratory course (LAB1) 1.5 cr

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.