FMH3616 Damage Development at Elevated Temperature 9.0 credits

Skadeutveckling vid förhöjd temperatur

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 applies from Autumn semester 2020 accourding to ITM School decision on 2020-06-22, M-2020-0417

Grading scale

P, F

Education cycle

Third cycle

Specific prerequisites

Admitted to doctoral studies within the subject of Materials Science.

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:

- Understand the mechanisms and existing models of damage in materials at elevated temperature
- Formulate own models and apply them in research studies aimed at minimizing damage development

Course contents

- Creep deformation and fracture. Oxidation and high-temperature corrosion. Cavitation
- Stress analysis. Reference stress concepts
- Linear elastic and elastic-plastic fracture mechanics
- Dislocation mechanisms. Damage development
- Finite-temperature methods

Examination

- TEN1 - Written exam, 9.0 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.

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.