FMJ3114 Heat Transfer 7.5 credits

Värmeöverföring

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

Establishment

Course syllabus for FMJ3114 valid from Spring 2019

Grading scale

P, F

Education cycle

Third cycle

Specific prerequisites

Doctoral student admitted to postgraduate studies.
Undergraduate course in heat transfer (MJ1401 or similar), thermodynamics and fluid mechanics.

Language of instruction

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

Intended learning outcomes

To broaden as well as deepening understanding in heat transfer and facilitate training in modeling and problem solving related to Heat Transfer.

Course contents

Basically following the text book (in seminars 2-5), i.e. conduction (1-3 dimensional, steady state and transient), convection (free and forced, interior and exterior, laminar and turbulent), falling films, condensation, evaporation/boiling, radiation, heat exchangers.
During seminars 6-8, students relate the course content to their PhD project.

The course is given in the form of 8 seminars. At each seminar, each student presents part of the reading for the day. All students read the book by Incropera et al., but each student also reads the corresponding section of another text book. Differences between the books are discussed.
For each seminar, home assignments are distributed. The seminars are compulsory.

Examination

- SEM1 - Seminars, 3.0 credits, grading scale: P, F
- TEN1 - Exam, 4.5 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

Acctive participation in seminars (presentation and discussion). Approved home assignments, written exam.

Course litterature:
Frank P. Incropera, David P. Dewitt, Theodore L. Bergman, Adrienne S. Lavine, Principles of Heat and Mass Transfer, one of the later editions, John Willey & Sons, Inc.

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.