FMJ3114 Heat Transfer 7.5 credits

Värmeöverföring

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 FMJ3114 valid from Spring 2019

Grading scale

P, F

Education cycle

Third cycle

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.

Disposition

Course is given in form of 8 seminars. During four seminars students are following theories of heat transfer from two books. These seminars (2-5) are divided into two activities. In the first part of the seminar student is asked to prepare a lecture of a given topic from course literature from at least two different books. The comparison of the theory should highlight the similarities and differences of these two books. At the second part of the seminar the student presents two papers from literature which is related to the topic of his/her presentation. The seminars are compulsory.

During seminars 6-8, students are working with the application of heat transfer theory to their project. Also they are working on a conference or a journal paper. In seminars 6-8 students submit four pages report and a presentation related to the report into Bilda. Each topic project should be reviewed by another student. The content of seminars 6-8 is adapted to the special interests/needs of the attending students.

The course will be given every two years.

Specific prerequisites

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

Course literature

Frank P. Incropera, David P. Dewitt, Theodore L. Bergman, Adrienne S. Lavine, **Principles of Heat and Mass Transfer**, Seventh Edition, John Willey & Sons, Inc.

Other similar books and handouts.

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.

Other requirements for final grade

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

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.