# MJ2442 Solar Heating Systems 6.0 credits

**Solvärmesystem**

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

## Establishment

Course syllabus for MJ2442 valid from Spring 2015

## Grading scale

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

## Education cycle

Second cycle

## Main field of study

Mechanical Engineering

## Specific prerequisites

Bachelor's degree of at least 180 credits with main field of study within mechanical engineering, energy technology, physics, chemistry or the equivalent. English B or the equivalent knowledge.

## Language of instruction

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

## Intended learning outcomes

After passing the course, the student should be able to:

## Course contents

Thermal heat storage technologies. Components in solar thermal systems. Thermosiphons and integrated solar collector storage systems.
Function and characteristics of various types of solar thermal systems: - large/small; hot water and combi systems/swimming pools; solar collector fields; short term /seasonal storage. Operation and control strategies.
Calculation of heat load. Simulation programs. Case study.

## Course literature

Duffie, John A., Beckman, William A . (2006), Solar engineering of thermal processes., 3rd ed., Wiley, Hoboken NJ, ISBN 0-471-69867-9
Ccompendiums from the department on: Solar Thermal Systems and Solar Heating Design Project
- Guidelines.
Relevant journal articles and conference papers.

## Examination

- INL1 - Written Assignment, 4.0 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Written Exam, 2.0 credits, grading scale: A, B, C, D, E, FX, 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 and laboratory session 2 credits (AF)
Home assignment 4 credits (AF).

## 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.