COURSE DETAIL

SOLAR HEATING TECHNOLOGY
Country Sweden
Host Institution Lund University
Program(s) Lund University
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Engineering
UCEAP Course Number 140
UCEAP Course Suffix
UCEAP Official Title SOLAR HEATING TECHNOLOGY
UCEAP Transcript Title SOLAR HEATING TECH
UCEAP Quarter Units 6.00
UCEAP Semester Units 4.00

Course Description

This course focuses on how a solar heating system can be integrated into and cooperate with a building's main energy system. An important part of the course is to teach the uses of simulation programs for investigating the performance of the solar system. The course covers the following topics: basic energy knowledge and the problems connected to the use of energy; radiation physics, the annual irradiance distribution and the climatic conditions for using solar energy in Sweden, calculation of solar angels and the irradiance on different surfaces; performance and efficiency of different types of solar collectors; material and optical properties of different types of energy-efficient surfaces; the function and performance of the components in a solar thermal system; system design of small and large solar thermal systems; building integration of solar systems; and the use of simulation programs for estimation of annual and monthly performance of solar thermal systems. The course includes laboratory lessons, computer simulations, and study visits to solar thermal installations. The recommended background is basic knowledge in mathematics, building and service installations, and thermodynamics as well as experience in using calculation programs such as e.g. Excel or Matlab.

Language(s) of Instruction
English

Host Institution Course Number
AEBF25

Host Institution Course Title
SOLAR HEATING TECHNOLOGY

Host Institution Course Details
https://kurser.lth.se/lot/course/AEBF25

Host Institution Campus
Lund

Host Institution Faculty

Engineering

Host Institution Degree

Host Institution Department
Engineering- Energy and Building Design

Course Last Reviewed
2023-2024

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