# COURSE DETAIL

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