

COURSE DETAIL

PHOTOVOLTAIC SYSTEMS TECHNOLOGY

Country

Sweden

Host Institution

Lund University

Program(s)

Lund University

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Engineering Electrical Engineering

UCEAP Course Number

168

UCEAP Course Suffix**UCEAP Official Title**

PHOTOVOLTAIC SYSTEMS TECHNOLOGY

UCEAP Transcript Title

PHOTOVOLTAIC SYSTMS

UCEAP Quarter Units

6.00

UCEAP Semester Units

4.00

Course Description

The course covers how solar cells and photovoltaic systems technology work in different applications, especially when integrated into the built environment. In developing countries where many live outside the electric grid, standalone PV systems are also of great interest. The ability to design and optimize the performance of PV systems through computer simulations is an important part of the course. The course covers: 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 angles and the irradiance on different surfaces; the PN-junction and Solar cell physics and construction and function of a PV-module; function and performance of the components in the PV-system; batteries, power point tracker, DC-AC inverter, charge regulator; system design of standalone and grid connected systems; building integration of PV-system; hand calculation of economic profitability of PV-systems; calculations of climate impact of solar cells in carbon dioxide emissions; use of simulation programs; laborations and computer simulations; and studievisits to PV installations. Assumed prior knowledge: Basic courses in electricity and electronics. Experience from the use of calculation program like Matlab and Excel.

Language(s) of Instruction

English

Host Institution Course Number

AEBN35

Host Institution Course Title

PHOTOVOLTAIC SYSTEMS TECHNOLOGY

Host Institution Course Details

https://kurser.lth.se/kursplaner/25_26-en/AEBN35.html

Host Institution Campus

Lund

Host Institution Faculty

Engineering

Host Institution Degree**Host Institution Department****Course Last Reviewed**

2025-2026

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