

COURSE DETAIL

CRYSTAL GROWTH AND SEMICONDUCTOR EPITAXY

Country

Sweden

Host Institution

Lund University

Program(s)

Lund University

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Physics Engineering

UCEAP Course Number

165

UCEAP Course Suffix**UCEAP Official Title**

CRYSTAL GROWTH AND SEMICONDUCTOR EPITAXY

UCEAP Transcript Title

CR GROWTH&SEMICOND

UCEAP Quarter Units

6.00

UCEAP Semester Units

4.00

Course Description

This course treats the fundamental aspects of crystal growth, e.g. the thermodynamic prerequisites for crystal growth such as chemical potential, construction of binary phase diagrams, supersaturation, and nucleation. Further on, surface energies, surface diffusion, and Wulff's theorem are studied. In the course section on epitaxial growth surface reconstructions, lattice mismatch, and dislocations, as well as characterization – both in- and ex-situ are discussed. Growth techniques and reactor models are also dealt with. During the course, the various moments are illuminated by examples from modern research, especially research on epitaxy of nanostructures. Assumed prior knowledge: FFFF11 Processing and Device Technology, a basic course in thermodynamics and materials science.

Language(s) of Instruction

English

Host Institution Course Number

FAFN15

Host Institution Course Title

CRYSTAL GROWTH AND SEMICONDUCTOR EPITAXY

Host Institution Course Details

https://kurser.lth.se/kursplaner/25_26-en/FAFN15.pdf

Host Institution Campus

Lund

Host Institution Faculty

Engineering

Host Institution Degree

Host Institution Department

Course Last Reviewed

2025-2026

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