



Faculty of Health, Science and Technology
Physics

Syllabus

Surface Physics

Course Code: 2FYS003
Course Title: Surface Physics
Ytfysik
Credits: 7,5 ECTS
Degree Level: Doctoral

Course Approval

The syllabus was approved by the Faculty of Health, Science and Technology, 27 September 2017 and is valid from the spring semester 2018.

Language of instruction

English

Prerequisites

Admission to doctoral studies in physics or a Master's degree in physics. Also PhD students in other science and technology subjects may be admitted if they have basic knowledge of Solid State Physics.

Learning Outcomes

The aim of the course is for students to acquire advanced knowledge of the composition of the surfaces of solid materials, the physical and chemical processes on the surfaces and how these can be studied and applied. The course also aims to inspire students to adopt a scientific approach to research and to prepare them for doctoral studies.

Upon completion of the course, students should be able to:

- 4 demonstrate basic knowledge of ultra-high vacuum technologies and its application in preparing and characterizing pure crystalline surfaces, as well as physical processes in the growth of ultra-thin films and technologies of the thin-film growth.
- 4 give an account of the various types of surface morphologies, the atomic structure of surfaces, relaxation and surface reconstruction as well as the physical basis of these phenomena.

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Reading List

Surface Physics

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Books

Lüth, Hans. *Solid surfaces, Interfaces and Thin Films*.
Last edition. Springer-Verlag.

Reference literature

Ertl, Gerhard & Küppers, Jürgen. *Low Energy Electrons and Surface Chemistry*. Last
edition. VCH Verlagsgesellschaft mbH.

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