Module title: Surface Science
Abbreviation: 11-SSC-Int-201-m01

Module coordinator: Managing Director of the Institute of Applied Physics
Module offered by: Faculty of Physics and Astronomy

ECTS: 6
Method of grading: numerical grade
Only after succ. compl. of module(s)

Duration: 1 semester
Module level: graduate
Other prerequisites: --

Contents:
Relevance of surfaces and interfaces, distinction from bulk phases, classical description, continuum models, Atomic structure: reconstructions and adsorbates, surface orientation and symmetries, Microscopic processes at surface, thermodynamics, adsorption and desorption, Experimental characterization, Electronic structure of surfaces, chemical bonding, surface states, spin-orbit coupling, Rashba effects, topological surface states, magnetism

Intended learning outcomes:
The students have an overview over the diverse aspects of surface science and they are familiar with the physical characteristic of surfaces and interfaces. The students know the most important experimental techniques for the investigation of surfaces, as well as their specific fields of application.

Courses:
(type, number of weekly contact hours, language — if other than German)
V (3) + R (1)
Module taught in: English

Method of assessment:
(type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)
a) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes per candidate) or d) project report (approx. 8 to 10 pages) or e) presentation/talk (approx. 30 minutes).
If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest.
Assessment offered: In the semester in which the course is offered and in the subsequent semester
Language of assessment: English

Allocation of places:
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Additional information:
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Referred to in LPO I (examination regulations for teaching-degree programmes):
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Module appears in:
Master's degree (1 major) Physics International (2020)
Master's degree (1 major) Quantum Engineering (2020)