Module title: Image and Signal Processing in Physics
Abbreviation: 11-BSV-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
Duration: 1 semester
Module level: graduate

Contents:
Periodic and aperiodic signals; basic principles of the discrete and exact Fourier transformation; basic principles of the digital signal and image processing; discretization of signals/Shannon sampling theorem; Parseval theorem, correlation and energy consideration; statistical signals, image noise, moments, stationary signals; tomography: Hankel and Radon transformation.

Intended learning outcomes:
Advanced knowledge about digital image and signal processing. Familiarity with the physical principles of image processing and various methods of signal processing. Capability of describing the various methods and in particular of applying them to tomography.

Courses:
(type, number of weekly contact hours, language — if other than German)
V (2) + Ü (2)
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:

Additional information:

Referred to in LPO I (examination regulations for teaching-degree programmes):

Module appears in:
keinem Studiengang zugeordnet