Module title			Abbreviation
Methods of non-destructive Material Testing			11-ZMB-152-m01

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

ECTS	Method of grading	Only after succ. compl. of module(s)
4	numerical grade	--

Duration	Module level	Other prerequisites
1 semester	undergraduate	--

Contents

Principles of non-destructive material and component testing. Thermography. Neutron radiography. X-ray testing. Ultrasound. Optical testing, laser. Image processing.

Intended learning outcomes

The students have basic knowledge of the generation and interaction processes of different types of radiation (heat, X-ray, terahertz), particles (neutrons) or ultrasound waves with materials. They know the applied methods for the detection of radiation types, particles and ultrasound waves and are able to apply them to basic problems of material testing and characterisation.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + R (1)
Module taught in: German or 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)

written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or 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: Once a year, winter semester
Language of assessment: German and/or 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

Bachelor' degree (1 major) Physics (2015)
Bachelor' degree (1 major) Nanostructure Technology (2015)
Master's degree (1 major) Functional Materials (2016)
Bachelor' degree (1 major) Physics (2020)
Bachelor' degree (1 major) Nanostructure Technology (2020)