

Module description

Module title					Abbreviation	
Biophysical Measurement Technology in Medical Science				e	11-BMT-161-m01	
Module coordinator				Module offered by	Module offered by	
Managing Director of the Institute of Applied Physics				Faculty of Physics and Astronomy		
ECTS	Meth	Method of grading Only after		after succ. compl. of module(s)		
6	nume	numerical grade				
Duration		Module level	Other prerequisit	Other prerequisites		
1 semester		graduate				

Contents

The lecture covers the physical principles of imaging techniques and their application in Biomedicine. The main topics are conventional X-ray technique, computer tomography, imaging techniques of nuclear medicine, ultrasound and MR-tomography. The lecture additionally addresses the systems theory of imaging systems and digital image processing.

Intended learning outcomes

The students know the physical principles of imaging techniques and their application in Biomedicine. They understand the principles of image generation and are able to explain different techniques and interpret simple images.

 $\textbf{Courses} \ (\text{type, number of weekly contact hours, language} - \text{if other than German})$

V(3) + 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)

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: German and/or English

Allocation of places

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Additional information

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Workload

180 h

Teaching cycle

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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 (2016)

Master's degree (1 major) Functional Materials (2016)

Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)

Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)

Master's degree (1 major) Physics (2020)



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Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Master's degree (1 major) Functional Materials (2022) exchange program Physics (2023)

JMU Würzburg • generated 20.10.2023 • Module data record 124119