Module descript	ion: Physical Principles of Sensor Technology
Module Code	t.BA.DSP.PGS.20HS
ECTS Credits	4
Language of Instruction/Examination	German
Organizational Unit	IAMP
Module Coordinator	Joanna Weng
Legal Framework	The module description is part of the legal basis in addition to the general academic regulations. It is binding. During the first week of the semester a written and communicated supplement can specify the module description in more detail.
Module Characteristic	Туре За
	2 lecture lessons per semester week and class+ 2 lab bi-weekly lessons per semester and half-class
Module Description	The physical principles of sensors are discussed, by means of various examples. Based on the laws of physics, the processes of measurement, the processing of raw data, and the relationship of this data to data-based models, are explored both theoretically and experimentally.
Module Content	Introduction into sensors and measurement technology
	Relevance of sensors for data generation and interpretations of data based models
	Measurement uncertainty and error analysis
	Introduction into Physics basics
	Common measurands for the characterisation of systems (e.g. length, time, temperature, voltage, current etc.) as well as derived notions like energy or power
	Basic requirements and/or limitations to the design of measurements tasks. The usage of physical laws and effects is discussed by means of various examples.
	During the practical part of the course, different sensors are explored in the context of measurement tasks, and various procedures of data processing are implemented.
Prerequisite Knowledge	Mathematics from the first year

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	End-of-module Assessment exam		Length (min.)	Weightin	g Form	orm	
written e	exam	Grade	90	60	acc. to magreeme		
	Performance assessment during the semester		Assessment	Length (min.)	Weighting	Form	
report			Grade	0	20	acc. to module agreement	
written e	exam		Grade	45	20	acc. to module agreement	
Classroom Attendance None Requirement Obligator	None   Obligatory labs (2 labs, 2x 90 minutes), will be commuicated in the module agreement.						
Learning material		2x00 minat00),	will be commun				
Comments		2x00 minut00),					