

Module title		Abbreviation
Measurement Technique		10-I-LMT-172-m01
Module coordinator		Module offered by
Dean of Studies Informatik (Computer Science)		Institute of Computer Science
ECTS	Method of grading	Only after succ. compl. of module(s)
6	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	undergraduate	--
Contents		
Definitions of terms, units of measurement, fundamental measurement techniques, sensitivity of analogue and digital measurement devices, measurement errors and measurement uncertainty, error kinds, error propagation, measurement uncertainty, measurement of electric values, voltage and current measurement, power measurement, resistance measurement (effective resistance and reactance), measurement bridge, influence of ground and stray capacitance, noise effects, dynamic behaviour of electrical systems, sensors and measurement techniques for: pressure, length, angle, temperature, sensors for optical measurements, force and acceleration, angular acceleration, measurement amplifier, measurement signal processing, AD-converter, digital measurements, frequency and time measurement, display of time dependence of electrical signals, computer-aided measurement recording, inertial navigation with inertial sensors, acceleration sensors, rotation (gyroscope), Coriolis angular sensor, position measurement using satellite navigation (GPS/GALILEO).		
Intended learning outcomes		
The students master the fundamentals of measurement for aerospace systems and for applications in robotics and automation.		
Courses (type, number of weekly contact hours, language — if other than German)		
V (3) + Ü (2)		
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. 180 to 240 minutes) If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 30 minutes). creditable for bonus		
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		
Bachelor's degree (1 major) Aerospace Computer Science (2017) Module studies (Bachelor) Orientierungsstudien (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020)		