### Module title
Measurement Technique

#### Abbreviation
10-I-LMT-092-m01

#### Module coordinator
Dean of Studies Informatik (Computer Science)

### Module offered by
Institute of Computer Science

#### ECTS
6

#### Method of grading
numerical grade

#### Only after succ. compl. of module(s)
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### Duration
1 semester

#### Module level
undergraduate

#### Other prerequisites
Admission prerequisite to assessment: exercises (type and scope to be announced by the lecturer at the beginning of the course).

### 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
V + Ü (no information on SWS (weekly contact hours) and course language available)

### Method of assessment
written examination (approx. 50 to 60 minutes); if announced by the lecturer by four weeks prior to the examination date, the written examination can be replaced by an oral examination of one candidate each or an oral examination in groups (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes)

### Allocation of places
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### Additional information
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### Referred to in LPO I
( examination regulations for teaching-degree programmes)

### Module appears in
Bachelor' degree (1 major) Aerospace Computer Science (2009)