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 measure-
ment, resistance measurement (effective resistance and reactance), measurement bridge, influence of ground
and stray capacitance, noise effects, dynamic behaviour of electrical systems, sensors and measurement techni-
ques for: pressure, length, angle, temperature, sensors for optical measurements, force and acceleration, angu-
lar acceleration, measurement amplifier, measurement signal processing, AD-converter, digital measurements,
frequency and time measurement, display of time dependence of electrical signals, computer-aided measure-
ment recording, inertial navigation with inertial sensors, acceleration sensors, rotation (gyroscope), Coriolis angu-
lar 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 (3) + Ü (2)

Method of assessment
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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Referred to in LPO I
(examination regulations for teaching-degree programmes)
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Module appears in
Bachelor' degree (1 major) Aerospace Computer Science (2017)