Technology
Arts Sciences
TH Köln

Course
SMV - Sensors and evaluation of measurements

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General information

Long name	Sensors and evaluation of measurements
Approving CModule	SM_BaET
Responsible	Prof. Dr. Johanna May Professor Fakultät IME
Level	Bachelor
Semester in the year	summer semester
Duration	Semester
Hours in self-study	60
ECTS	5
Professors	Prof. Dr. Johanna May Professor Fakultät IME
Requirements	Fundamentals of electrical engineering, electrical measurement technology, higher mathematics, programming
Language	German, English if necessary
Separate final exam	Yes

Final exam

Details

50% project report and presentation
50% exam

Minimum standard

project: at least solved 50% of task
exam: at least reached 50% of points

Exam Type

50% project report and presentation
50% exam

Lecture / Exercises

Learning goals

Knowledge

temperature sensors, strain sensors, capacitive sensors, piezo sensors, pressure and flow sensors, magnet sensors (Hall, AMR, GMR, TMR), optical sensors, sensor systems, lambda sensor, microsystems, measurement signals, time discrete signals, measurement value transfer systems, discrete Fourier transform, short term spectral analysis, window functions

Skills

Evaluation of sensors with the aid of characteristic curves and characteristic parameters especially regarding sensitivity, cross sensitivity, accuracy, resolution

Expenditure classroom teaching

Type	Attendance (h/Wk.)
Lecture	2
Exercises (whole course)	1
Exercises (shared course)	1
Tutorial (voluntary)	2

Separate exam

none

Practical training

Learning goals

Skills

Determine characteristic curves of certain sensors, develop measurement scenario, evaluate values and present all lab results as project

Expenditure classroom teaching

Type	Attendance (h/Wk.)
Practical training	1
Tutorial (voluntary)	2

Separate exam

none