Module title	**SM Code**
Lab Course Electrical Measurement Technology 1	**PMT1**

Module lecturer	**Faculty**	
N.N.	Electrical Engineering and Information Technology	
Module language	**Number of SWS / WSH**	**ETCS credits**
English	2 SWS / WSH	2

Teaching format
Laboratory course with practical exercises

Semester according to the study plan	
3rd semester	
Attendance/classroom hours	**Additional independent study**
15 hours	Preparation and follow-up work: 45 hours

Type of examination / Requirements for the award of the credit points
practical examination

Teaching content

- Digital multimeters (direct current, alternating current, mixed quantities)
- Oscilloscope (operation, input impedance, AC/DC operation, average values, sampling theorem, probe)
- Simple signal processing using operational amplifiers
- Measurement technology for signal propagation (ultrasound)
- Nonlinear two-poles
- Transistor characteristics and heat conduction
- Determination of AC resistances, frequency dependence
- AC measuring bridge, real coil

Learning objective: Professional competence

After successfully completing this module, students will be able to

- Set up and commission simple electrical circuits using sockets (3)
- use simple electrical laboratory and measuring equipment in a targeted manner (multimeter, oscilloscope, sources) (2)
- document an experimental setup and record measurement data (2)
- Systematically evaluate measurement data (2)
- deal with measurement uncertainties (1)

Literature

Recommended reading

- Hoffmann, Jörg: Pocketbook of Measurement Technology, Hanser-Verlag.
- Lerch, R.: Electrical Measurement Technology, Springer-Verlag.
- Schrüfer, E.: Electrical Measurement Technology, Hanser-Verlag.
- Tietze, U.:Semiconductor Circuit Technology, Springer-Verlag.

The numbers in brackets indicate the levels to be achieved: (1)-know | (2)-can | (3)-understand and apply