Course Description – Summer 2023/22

Title	**Sensor Systems**
Faculty	Electrical Engineering
Professor	Prof. Dr.-Ing. Roy Knechtel
ECTS	5 Credit Points
Level	Master study
Requirements	Master student in electrical engineering or mechatronics engineering
Add. Information	Lectures and Exercises with in class experiments
Content	1. Introduction: the role of sensors systems for technical solutions in mobile devices, cars and traffic, industry, medical applications and more 2. Sensors Systems: Function, Realization, Application: 2.1 Integrated Pressure Sensor 2.2 Inertial Sensor Units 2.3 MEMS Microphones 2.4 Infrared Sensors (radiation-based temperature measurement) 2.5 Time of Flight sensors and LIDAR 3. Sensor data processing 3.1 Artificial Intelligence for Sensor Systems 3.2 Signal processing at the Sensor System Examples 4. Detailed exercises (analysis and application) related to 2 examples of sensor systems