## **3.2** Automotive Sensors Applications

**Automotive Sensors Applications** 

Module code: STM320
Module coordinator: Prof. Dr. Frieder Keller
Credits (ECTS): 6
Semester: 3
Pre-requisites with regard to content:
Programming knowledge in C/C++, Basic knowledge in the field of "Combustion Engines", "Powertrain" and "Electronically Controlled Braking Systems"
Knowledge of "Theory of Probabilities"
Pre-requisites according to the examination regulations:
Competencies: The students know the special requirements for electronic technology in modern vehicles and the sensors and actuators applicable under mobile conditions. They understand the interaction of the components in the system, are able to analyze weak points in the system's security and safety and can apply concepts how to avoid them. The students are able to apply advanced software to evaluate information from laboratory measurement
systems.
Assessment: Written exam, 60 minutes; Lab: passed or failed
Course: Automotive Sensors
Module code: STM321
Lecturer: Prof. Dr. Frieder Keller
Contact hours: 15
Semester of delivery: yearly, summer
Type/mode: lecture / mandatory
Language of instruction: English
Content:
Electronics in Automobiles - An Overview
Sensorics in Drive Train Control
Safety Systems
Comfort Systems
• Sensors for Position, Speed, Acceleration, Angular Speed, Force, Torque, Temperature and Pressure,
Oxygen Concentration
System Design
Decommended reading:
1) Automative Handbook, Robert Rosch GmbH
2) Automative Flectronics Handbook, Robald K. Jurgen
3) Automobile Electronics, Fric Chonwanietz, Butterworth-Heinemann Ltd
Comments:



Course: Computer Aided Labs B

Module code: STM322

Lecturer: Prof. Dr. Helfried Urban

Contact hours: 30

Semester of delivery: yearly, summer semester

Type/mode: Lab, mandatory

Language of instruction: English

Content: Laboratory experiments set-up with modern measurement tools and computer control. Application of software tools for sensor signal evaluation.

Recommended reading:

1) Stonick, Virginia L / Bradly, Kevin, Labs for signals and systems using MATLAB

2) Doeblin, Ernest O, Measurement Systems

Comments: