inf331 - Automated and Connected Driving

Module label: Automated and Connected Driving
Module code: inf331
Credit points: 6.0 KP
Workload: 180 h

Used in course of study:
- Master's Programme Computing Science > Technische Informatik
- Master's Programme Engineering of Socio-Technical Systems > Embedded Brain Computer Interaction

Contact person
Module responsibility
- Frank Köster
- Die im Modul Lehrenden

Authorized examiners
- Frank Köster
- Die im Modul Lehrenden

Entry requirements
Skills to be acquired in this module
This module introduces the principles of automated driving.

Professional competences:
The students:
- Discuss different levels of automated driving (e.g., SAE-Level) and the differences
- Discuss different levels of connected driving and the differences
- Discuss core-domains of automated vehicles
- Discuss important technological pillars in the areas sense, plan, and act
- Discuss transition between different levels of automation
- Discuss the impact of connected vehicle functions on automated driving
- Discuss the impact of automated vehicle functions on connected driving
- Characterise the impact of automated and connected driving on road traffic
- Characterise the interaction of humans and automated and connected vehicles
- Design an abstract procedure for the change of different levels of automation
- Design a rough vehicle architecture for automated and connected driving

Methodological competences:
The students:
- Analyze complex automated and connected vehicles (→ domains)
- Analyze core-functions of automated and connected vehicles (→ functions)

Social competences:
The students:
- Work in teams
- Discuss their outcomes appropriately

Self-competences:
The students:
- Acknowledge the limits of their ability to cope with pressure during the analysis of complex (automated and connected) socio-technical systems

Module contents
- levels of automated driving (e.g., SAE-Level)
- levels of connected driving
- core-domains of automated vehicles
- sense, plan, and act in the context of automated and connected vehicles
- transition between different levels of automation
- selected connected vehicle functions
- selected automated vehicle functions
human factors and socio-technical systems
vehicle architectures

Reader’s advisory

Suggested reading:


Links
Language of instruction
Duration (semesters)
Module frequency
Module capacity
Modullevel
Modulart
Vorkenntnisse / Previous knowledge

Examination
Final exam of module
Time of examination
Type of examination
Praktical work and oral exam

Course type
Comment
SWS
Frequency
Workload attendance

Lecture
2.00
SuSe
28 h
Exercises
2.00
SuSe
28 h

Total time of attendance for the module
56 h