UNIVERSITY OF PANNONIA

COURSE DATASHEET

Semester:	2015/16/1
Course:	Communication system in automotive industry
Code:	VEMKGEM444A
Responsible department:	Institute of Mechanical Engineering
Department code:	MKGEI
Responsible instructor:	Dr. Dénes Fodor

Course objectives:

The aim of the course is to highlight the purpose and features of automotive communication systems. To give insight view in different communication systems and to present analyzing and testing tools for this technologies. The students will be able after the course to distinguish between different topologies and protocols and to set up a testing environment.

Course content:

Introduction, Vehicle bus systems
Purpose of different vehicle communication systems
Overview about performance and features of different bus systems
Architecture and topology of distributed systems in vehicles, topology possibilities, reasons
Example from different vehicle manufactures
Bus Hardware description of different vehicle bus systems
(CAN, LIN, ISO-K-line), Wiring
Bus Hardware description of different vehicle bus systems
(FlexRay, MOST), Wiring
Bus software layers: according to OSEK and AUTOSAR, Interface Application.
Bus software layers: according to VOLCANO/MentorGraphics,Vector, 3Soft…, Interface Appl.
Particular Bus Features: Network management, transport layer, interaction layer
Particular Bus Features: CAN calibration Protocol, Extended Calibration Protocol
Vehicle diagnostic, diagnostic communication (overview about the application, used communication)
Diagnostic protocols (ISO, UDS…)
Diagnostic feature and functions (EOL services, assembly line services, service station services, dynamic defined records)

Requirements, evaluation and grading:

30% achievement on midterm examinations

Required and recommended readings:

CAN protokoll jegyzet, CANopen protokoll jegyzet

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Required and recommended readings:

Bosch GMbH. CAN Specification v2.0.
Wolfhard Lawrenz: CAN System Engineerging; Springer, 1997.
M. Farsi - M.Barbosa: CANopen