UNIVERSITY OF PANNONIA

SUBJECT DATASHEET

Semester:	2011/12/1
Subject:	Communication system in automotive industry
Code:	VEMKGEM444A
Responsible department:	Department of Mechanical Engineering
Responsible department code:	MKGE
Responsible lecturer:	Dr. Dénes Fodor

Educational 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.

Detailed content of the subject:

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:

30% achievement on midterm examinations

Required and suggested references:

CAN protokoll jegyzet, CANopen protokoll jegyzet
Bosch GMbH. CAN Specification v2.0.

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Required and suggested references:

Wolfhard Lawrenz: CAN System Engineerging; Springer, 1997.
M. Farsi - M.Barbosa: CANopen