



## COURSE DATASHEET

<b>Semester:</b>	2016/17/1
<b>Course:</b>	Communication system in automotive industry
<b>Code:</b>	VEMKGEM444A
<b>Responsible department:</b>	Institute of Mechanical Engineering
<b>Department code:</b>	MKGEI
<b>Responsible instructor:</b>	Dr. Dénes Fodor

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### 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...)



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### Course content:

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