Mechatronics of Vehicles and Construction Machinery

Speciality
Vehicle Mechatronics
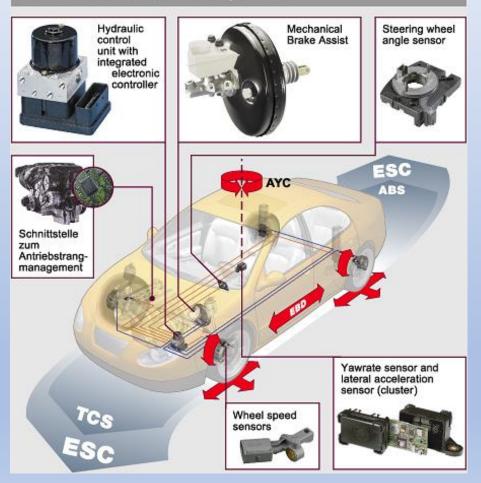

Speciality supervisor
PhD, Eng. Marcin Jasiński

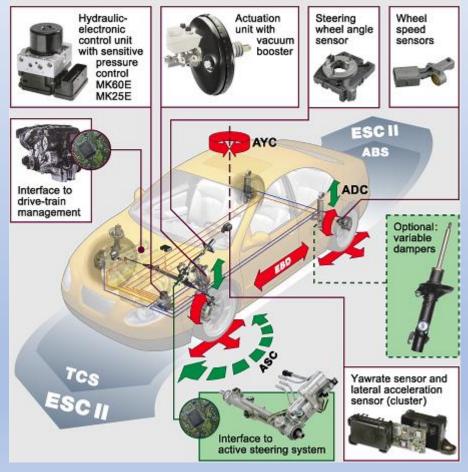# Vehicle Mechatronics

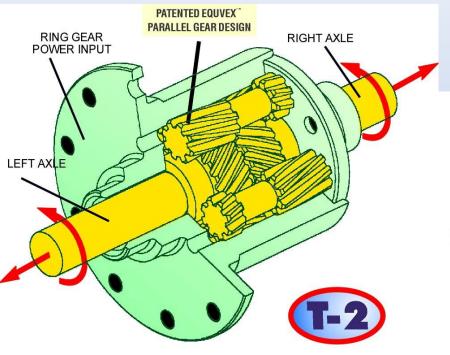| No.	Sem.	Module Title	Lecturer
1	6	**Vehicle mechatronics** **(30 h Lecture, 15 h Laboratory)**	PhD Eng. M. Jasiński
2	6	**Vehicles Acoustics** **(15 h Lecture, 15 h Laboratory)**	PhD Eng. M. Jasiński
3	6	**On-Board Vehicle Diagnostics** **(30 h Lecture, 15 h Laboratory)**	PhD Eng. Marcin Wojs
5	7	Autonomous Vehicles (30 h Lecture)	PhD Eng. Przemysław Szulim
6	7	Information Systems in Vehicles (15 h Lecture, 15 h Laboratory)	PhD Eng. K. Szczurowski
7	7	Theory of Electric Vehicles (30 h Lecture, 15 h Exercises)	Prof. A. Hajduga

Vehicle mechatronics

ESC – Functions and Components
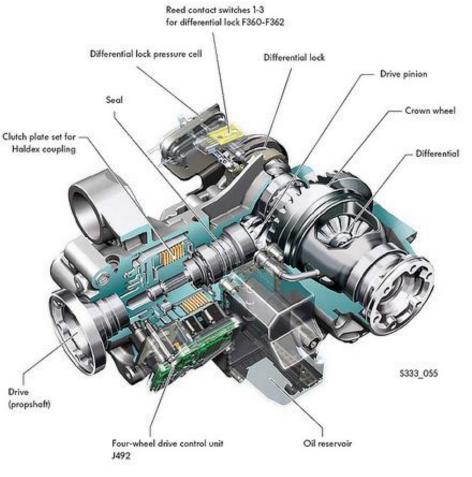
ESC II – Functions and Components

New vehicle power trains

PATENTED EQUVEX™
PARALLEL GEAR DESIGN

RING GEAR
POWER INPUT

RIGHT AXLE

LEFT AXLE

T-2

Reed contact switches 1-3
for differential lock F360-F362

Differential lock pressure cell

Differential lock

Drive pinion

Seal

Crown wheel

Clutch plate set for
Haldex coupling

Differential

Drive
(propshaft)

Four-wheel drive control unit
J492

Oil reservoir

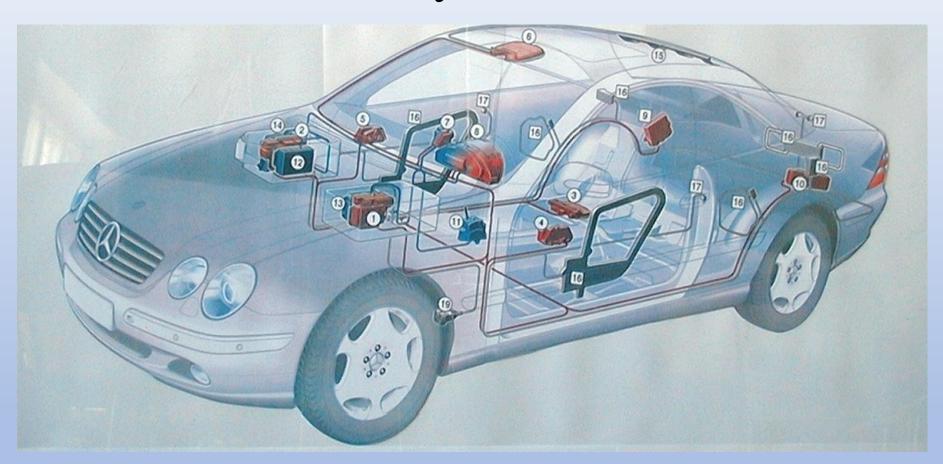S333_055

On-board diagnostics of vehicles

Autonomous vehicles

Information systems in vehicles

SRS, ABS + EBD, ASR, ESP, ABC, Radar, ...

Vehicles Acoustics

Vehicle Mechatronics

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Vehicle Mechatronics

Semester 6
Interim Project

Semester 7
Thesis

Topics of Interim Projects and Thesis

- **Simulators of engine power systems**
- **CAN networks**
- **Distributed diagnostic systems**
- **Autonomous platforms**
- **Image analysis in autonomous systems**
- **Vibration and noise propagation**
- **Precision farming**
- **Universal controllers in vehicles**
- **Damage-oriented motor controllers**
- **Analysis of magnetomechanical phenomena with the participation of moderately fast-varying vibrations**
- **Robotic stand for measuring key parameters of human-machine interfaces with eyetrackers**