Courses in English
Course Description

Department	03 Mechanical, Automotive and Aeronautical Engineering
Course title	**Vehicle Dynamics**
Hours per week (SWS)	4
Number of ECTS credits	5
Course objective	To give the student an appreciation of factors affecting vehicle longitudinal dynamics, handling and ride comfort. After taking this unit the student should be able to: - Describe and analyze the dynamics of a vehicle. - Calculate the power demand and energy consumption of a vehicle.- Understand the tasks of vehicle suspension and predict vehicle ride behavior and steady state handling performance. - Explain the physical principles of road vehicle aerodynamic design.
Prerequisites	Dynamics, Engineering Math, Engineering Mechanics
Recommended reading	
Teaching methods	
Assessment methods	
Language of instruction	English
Name of lecturer	Prof. Dr. P. Pfeffer
Email	peter.pfeffer@hm.edu
Link	
Course content	Longitudinal, lateral and vertical vehicle dynamics, control loop "driver-vehicle-environment", demands on vehicle handling, disturbance and sensitivity. Basic suspension systems. System frequencies - bounce, pitch and roll. Anti-pitch and anti-squat. Tire behavior. Front/rear suspensions - springs and dampers. Roll center. Steady state handling characteristics. Airflows. Drag & lift. Economy & performance. Aerodynamic design.
Remarks	