Department	03 Mechanical, Automotive and Aeronautical Engineering
Course title	**Automotive Mechatronics II**
Hours per week (SWS)	4
Number of ECTS credits	5
Course objective	To give the student an appreciation of mechatronic systems to improve vehicular dynamics, handling and ride comfort. After taking this unit the student should be able to: - Understand the basic working principles of mechatronic systems. - Design a mechatronic system for a given task - Describe the system boundaries for "Driver Assistance Systems" - Compose existing and new "Driver Assistance Systems" on the basis of mechatronic systems
Prerequisites	Informatics for Engineers
Recommended reading	Automobilelektronik: Eine Einführung für Ingenieure (Vieweg+Teubner)Bussysteme in der Fahrzeugtechnik: Protokolle, Standards und Softwarearchitektur (Vieweg+Teubner) Elektronik in der Fahrzeugtechnik: Hardware, Software, Systeme und Projektmanagement (Vieweg+Teubner)
Teaching methods	Course lecture 2 SWS, Laboratory 2 SWS
Assessment methods	Exam according to the legal framework of the degree program in which this course is offered. Approved aides for the examination will be published by means of the examination announcement.
Language of instruction	English
Name of lecturer	Prof. Dr. Markus Krug
Email	markus.krug@hm.edu
Link	
Course content	Common automotive sensors and actors, driver assistance sensors (radar, lidar, ultrasonic, camera); control loop for mechatronic systems; control loop for driver assistance systems; system boundaries for driver assistance systems and legal aspects; system partitioning; functional safety judgment; functional design; developing test cases and verification techniques.
Remarks	Time of involvement: Presence: 45h – self-study: 105h