

Modulname	Automotive Drive Systems	
Modulverantwortlicher/ Modulverantwortliche	Prof. Dr. Georg Weidner	
Qualifikationsziele	On the completion of this course the students should be able to give a quantitative contribution to the environmental discussion on motor vehicles. They will do calculations to the longitudinal dynamics and the demand for energy of cars. They can evaluate conventional and alternative drive systems concerning the demand for energy.	
Modulinhalte	1. Rolling resistance and adhesion to road surface 2. Aerodynamic drag 3. Empirical determination of air- and rolling resistance 4. Climbing resistance 5. Acceleration and deceleration 6. Translatory and rotatory inertia 7. Demand for energy and power at several test cycles 8. Maps of combustion Engines 9. Tractive force/speed diagram 10. Calculation of fuel consumption 11. Efficiency maps of DC- and AC-motors 12. Batteries 13. Adaption of electric motors to vehicles 14. Calculation of driving range of electric cars 15. Layouts of hybrid drive systems 16. Calculation of consumption of hybrid drive Systems 17. Transmission systems	
Lehrformen	Vorlesung (4 SWS)	
Voraussetzungen für die Teilnahme	fundamentals in physics (Newtonian mechanics)	
Literatur/multimediale Lehr- und Lernprogramme	BOSCH: Automotive Handbook Naunheimer, Bertsche, Ryborz, Novak: Automotive Transmissions Supporting documents: downloads (script, exercises)	
Lehrbriefautor	keiner	
Verwendbarkeit	Pool International (English Lectures for Contact students) F MB PI	
Arbeitsaufwand/Gesamtworkload	Präsenzzeit 60 h + Vorbereitung 90 h = 150 Stunden = 5.0 Credit Punkte	
ECTS und Gewichtung der Note in der Gesamtnote	5	1
Leistungsnachweis	written examination: 120 min	
Semester	2. Fachsemester	
Häufigkeit des Angebots	annually in the summer semester	
Dauer	1 Semester	
Art der Lehrveranstaltung (Pflicht, Wahl, etc.)	annually in summer semester	
Besonderes		