

Modulname	Drives in Automation Systems
Modulverantwortlicher/ Modulverantwortliche	Prof. Dr. Andreas Braunschweig
Qualifikationsziele	Students shall understand demands and structures of drive systems in automated mechatronic systems. They must be able to analyze the special problems of several automated drive applications. They have to know structure and function of the main kinds of mechatronic drive elements. It must be possible for them to synthesize drive systems from partial components. Here they also shall include control and measuring devices for the drive systems. Students shall master selection and dimensioning of application oriented drive systems. Fundamental knowledge of optimization possibilities must be known.
Modulinhalte	<ul style="list-style-type: none"> -Fundamentals of Movements; Basic Structures of Drive Systems; -Electric Drive Elements (electro magnet, step motor, DC-motor) -Pneumatic Drive Elements (cylinders) -Special mechatronic Drives -Control strategies for Drive Systems; gears in mechatronic systems -Measuring systems for kinematic parameters -Calculation and Dimensioning of Drive systems -Optimization possibilities
Lehrformen	Lectures and exercises, lab experiments, self-study
Voraussetzungen für die Teilnahme	Bachelor Study in Mechan. Eng. or similar; Knowledge/experience in Mechanics, Mechan. Design, Electrical Eng., Gear systems, Automation
Literatur/ multimediale Lehr-und Lernprogramme	
Lehrbriefautor	
Verwendbarkeit	Master Mechatronics (Mechanical Engineering).
Arbeitsaufwand/ Gesamtworkload	Lectures and exercises 45 h + lab 15h + self-studies 90 h = 150 hours = 5 credits
ECTS und Gewichtung der Note in der Gesamtnote	5 ECTS
Leistungsnachweis	Written exam 120min, written lab reports
Semester	Winter semester
Häufigkeit des Angebots	annually
Dauer	one semester
Art der Lehrveranstaltung (Pflicht, Wahl, etc.)	Optional compulsory modul
Besonderes	