

Modeling and Control of Robotic Manipulators					AR-106
Rota	Duration	Semester	SWS	Credit Points	Workload
annually WS	1 Semester	1st (Semester)	4 SWS	6	180 h
1	Modul Structure				
	Course (Abbreviation)	Type/ SWS	Presence	Self Study	Credit Points
	a) Modeling and Control of Robotic Manipulators (MCRM)	Lecture/ 2 SWS	25 h	65 h	3
	b) Modeling and Control of Robotic Manipulators (MCRM)	Tutorial/ 1 SWS	15 h	45 h	2
	c) Modeling and Control of Robotic Manipulators (MCRM)	Lab	10	20	1
2	Language English				
3	Content <ol style="list-style-type: none"> 1. Spatial Representations 2. Direct Kinematics 3. Differential Kinematics 4. Dynamics 5. Actuators and Sensors 6. Motion Control 7. Interaction Control 8. Robotics System Toolbox and ROS Literature: <ul style="list-style-type: none"> • Sciavicco, Siciliano: Modelling and Control of Robotic Manipulators 				
4	Competencies This course provides the students with a profound background of modelling, planning and control of robotic manipulators. The students acquire practical experience in robot kinematics, dynamics and motion control under ROS/Matlab.				
5	Examination Requirements written exam (3 hours)				
6	Formality of Examination <input checked="" type="checkbox"/> Module Finals <input type="checkbox"/> Accumulated Grade				
7	Module Requirements (Prerequisites)				
8	Allocation to Curriculum: Mandatory Course Program: Automation & Robotics)				
9	Responsibility/ Lecturer <i>apl. Prof. Dr. F. Hoffmann /apl. Prof. Dr. F. Hoffmann</i>				