

Mobile Robots					AR-225
Rota	Duration	Semester	SWS	Credit Points	Workload
annually SS	1 Semester	2nd (Semester)	3 SWS	5	150 h
1	Modul structure				
	Course (Abbreviation)	Type/ SWS	Presence	Self study	Credits
	c) Mobile Robots (MR)	Lecture/ 1 SWS	15 h	45 h	2
	d) Mobile Robots (MR)	Tutorial/ 2 SWS	30 h	60 h	3
2	Language English				
3	Content <ol style="list-style-type: none"> 1. Robot Operating System (ROS) 2. Robotics System Toolbox Matlab 3. Sensors, actuators and kinematics of mobile robots 4. Homing and trajectory following 5. Obstacle avoidance 6. Localisation 7. Path planning 8. Online trajectory optimization 9. Mapping and SLAM <p>Literature: Siciliano, Khatib: Springer Handbook of Robotics selected papers on mobile robotics from journals and conferences</p>				
4	Competencies The students acquire a profound knowledge of fundamental concepts and practical experience on mobile robots. Students are able to solve mobile robotic tasks such as obstacle avoidance, navigation and localization in a self-dependent manner with selected methods and algorithms in ROS/Matlab.				
5	Examination Requirements - successful completion of 75% programming assignments (prerequisite for eligibility to the written exam) - written exam				
6	Formality of Examination <input checked="" type="checkbox"/> Module Finals <input type="checkbox"/> Accumulated Grade				
7	Module Requirements (Prerequisites)				
8	Allocation to Curriculum: Program: Automation & Robotics, Field of study: Robotics, Cognitive Systems				
9	Responsibility/ Lecturer <i>apl. Prof. Dr. F. Hoffmann /apl. Prof. Dr. F. Hoffmann</i>				