

Module MA-INF 4214	Lab Humanoid Robots				
Workload 270 h	Credit points 9 CP	Duration 1 semester	Frequency every semester		
Module coordinator	Prof. Dr. Maren Bennewitz				
Lecturer(s)	Prof. Dr. Maren Bennewitz				
Classification	Programme M. Sc. Computer Science		Mode Optional	Semester 2.	
Technical skills	Practical experience and in-depth knowledge in the design and implementation of perception, state estimation, environment representation, navigation, and motion planning techniques for humanoid robots. In small groups, the participants analyze a problem, realize a solution, and perform an experimental evaluation.				
Soft skills	Self-competences (time management, goal-oriented work, ability to analyze problems theoretically and to find practical solutions), communication skills (collaboration in small teams, oral and written presentation of solutions, critical examination of implementations).				
Contents	Robot middleware (ROS), perception, state estimation, environment representations, navigation, and motion planning for humanoid robots.				
Prerequisites	Recommended: At least 1 of the following: MA-INF 4215 – Humanoid Robotics MA-INF 4113 – Cognitive Robotics				
Format	Teaching format	Group size	h/week	Workload[h]	CP
	Lab	8	4	60 T / 210 S	9
	T = face-to-face teaching; S = independent study				
Exam achievements	Oral presentation, written report (graded)				
Study achievements	none (not graded)				
Forms of media					
Literature	- S. Thrun, W. Burgard and D. Fox: Probabilistic Robotics. MIT Press - B. Siciliano, O. Khatib (Eds.): Springer Handbook of Robotics - K. Harada, E. Yoshida, K. Yokoi (Eds.), Motion Planning for Humanoid Robots, Springer - Selected papers.				