

ETH Master Course Autonomous Mobile Robots

151-0854-00L

Agenda Spring 2010

Lecture: Weekly on Monday 14.15 - 16.00, HG D 3.2

Extra Lecture of Monday 26 April 16.00 – 18.00 in HG D1.2

Exercises: Approximately every second week, Monday 16.15 - 18.00, HG K 32

Date	Time	Topic	Slides	Responsible
22.2.10	14 - 16	Introduction: problem statements, typical applications, video (1h) Locomotion with legs and wheels (1h)	1-2	R. Siegwart
1.3.10	14 - 16	Mobile Robots Kinematics and motion control (2h)	3	R. Siegwart
1.3.10	16 - 18	Exercise 1: Kinematics model and trajectory calculation of wheeled robots		R. Siegwart
8.3.10	14 - 16	Perception 1: Sensors (2h)	4a	D. Scaramuzza
15.3.10	14 - 16	Perception 2: Uncertainties, Line Features (2h)	4b	D. Scaramuzza
15.3.10	16 - 18	Exercise 2: Motion control of a differentially driven robot; Matlab and Lego-Robot		M. Rufli M. Liu
22.3.10	14 - 16	Perception 3: Vision - Part 1 (2h)	4c	D. Scaramuzza
29.3.10	14 - 16	Perception 4: Vision - Part 2 (2h)	4d	D. Scaramuzza
29.3.10	16 - 18	Exercise 3: Range sensing with omnidirectional camera;		S. Weiss J. Nikolic
5.4.10		Ostern / Easter		
12.4.10	14 - 16	Localization 1: Introduction and odometry error model	5a	D. Scaramuzza
19.4.10		Sechseläuten (Zurich spring festival)		-
26.4.10	14 - 18	Localization 2: Probabilistic map based localization and Markov localization (2h) Localization 3: Kalman filter localization (2h)	5b 5c	D. Scaramuzza
3.5.10	16 - 18	Exercise 4: Probabilistic map based localization based on Topological Map; Matlab and Lego-Robot		F. Colas R. Kästner
10.5.10	14 - 16	Planning and Navigation: Introduction, path planning, obstacle avoidance, decomposition (2h)	6	D. Scaramuzza
10.5.10	16 - 18	Exercise 6: Obstacle avoidance base on local grid; Matlab and Lego-Robot		M. Achtelik S. Leutenegger
17.5.10	14 - 16	SLAM (2h)	5d	D. Scaramuzza
17.5.10	16 - 18	Exercise 5: Particle Filter Based SLAM; Matlab and Lego-Robot		J. Shin L. Kneip
24.5.10		Pfingsten (Whitsuntide)	-	-
31.5.10	14 - 16	Summery and outlook	7	Siegwart