



Week #	Date	Topic	Lecture segment names	Lecturer	Online release date and problem set	Number worked exercises	Problem set (yes/no)	Problem set due date
1.	20.02.2018	Introduction and Motivation	Introduction and Lecture Overview	R. Siegwart	14.02.2018			
2.	27.02.2018	Locomotion Concepts	Introduction to Legged Robotics Basics of Rigid Body Kinematics Application of Rigid Body Kinematics (optional) <i>Worked Exercise 1 & 2 (optional)</i> Example of Wheeled, legged and Flying Robots (lecture)	R. Siegwart	21.02.2018	2	optional	03.03.2018
Ex1	27.02.2018	Introduction to V-Rep simulator		In Kyu Sa, K. Bodie	21.02.2018			
3.	06.03.2018	Mobile Robots Kinematics	Introduction to Wheeled Locomotion Differential Kinematics Wheeled Kinematics <i>Worked Exercise</i>	R. Siegwart	28.02.2018	1	yes	10.03.2018
4.	13.03.2018	Perception I (to 4.3) and Perception II (to 4.4)	Sensors Camera Image Formation, Perspective Projection Introduction to Computer Vision Omnidirectional Projection, Camera Calibration, Unified Model Stereo Vision <i>Worked Example: Structure from Motion</i>	M. Chli	07.03.2018		yes	17.03.2018
Ex2	13.03.2018	Kinematics and Control of a differential drive		A. Vempati, H. Blum	07.03.2018			
5.	20.03.2018	Perception III: Image Saliency (to 4.5)	Correlation and Convolution Edges and Points <i>Worked Example on Image Filtering</i>	M. Chli	14.03.2018	1	yes	24.03.2018
6.	27.03.2018	Perception IV: Place Recognition & Line Fitting (to 4.6)	Place Recognition The Error Propagation Law Line Extraction	M. Chli	21.03.2018		yes	31.03.2018
Ex3	27.03.2018	Line extraction		T. Hinzmann, F. Tschopp	21.03.2018			
Quiz 1	27.03.2018	Quiz 1		T. Novkovic, M. Grinvald	27.03.2018			10.04.2018
	03.04.2018	Week off - Easter Holiday						
7.	10.04.2018	Localization I (to 5.2)	Introduction to Map-Based Localization Refresher on Probability Theory	R. Siegwart	04.04.2018		yes	14.04.2018
8.	17.04.2018	Localization II	The Markov Approach The Kalman Filter Approach	R. Siegwart	11.04.2018		yes	21.04.2018
Ex4	17.04.2018	Line-based Extended Kalman Filter		T. Hinzmann, F. Tschopp	11.04.2018			
9.	24.04.2018	SLAM I	The SLAM problem	M. Chli	18.04.2018	1	no	
	01.05.2018	Labor Day / Tag der Arbeit						
10.	08.05.2018	SLAM II	Monocular SLAM and beyond <i>Worked Example on SLAM</i>	M. Chli	02.05.2018	1	yes	12.05.2018
Ex5	08.05.2018	EKF SLAM		P. Schmuck, F. Achermann	02.05.2018			
11.	15.05.2018	Planning I (to 6.2)	Introduction Collision Avoidance Potential Field Methods <i>Worked Example on Harmonic Potential Fields</i>	J. Nieto, N. Lawrance	09.05.2018	1	yes	19.05.2018
12.	22.05.2018	Planning II (to 6.3)	Graph Construction Graph Search <i>Worked Example on A*</i>	J. Nieto, N. Lawrance	16.05.2018	1	yes	26.05.2018
Ex6	22.05.2018	Dijkstra's algorithm and the dynamic window		R. Bähmann, D. Dugas	16.05.2018			
Quiz 2	22.05.2018	Quiz 2		T. Novkovic, M. Grinvald	22.05.2018			05.06.2018
13.	29.05.2018	Summary	Summary	R. Siegwart			no	