	Date	Topic	Reading	Assignment
1	9/4/19	Course intro and odometry	Braitenberg	
2	9/9/19	Robot basics and control laws	control tutorial	Individual Skills due 9/9 (M)
3	9/11/19	Dynamical systems and control law tuning		
4	9/16/19	Occupancy grid mapping	Konolige, AuRo, 1997	
5	9/18/19	Localization	Fox, IJRR, 2003, sect.1-2	Control Lab due 9/20 (F)
6	9/23/19	Sensor and Action Models	Fox, JAIR, 1999, sect.3	
7	9/25/19	Particle filters		
8	9/30/19	Linear algebra: rotations & translations	Spong, et al, 2006	
9	10/2/19	Forward kinematics		
10	10/7/19	Inverse kinematics		
11	10/9/19	Images and transformations		SLAM Lab due 10/11 (F)
	10/14/19	**Fall Break**		
12	10/16/19	Cameras and color spaces		
13	10/21/19	Identifying shape models		
14	10/23/19	ArmLab work day		ArmLab due 10/25 (F)
15	10/28/19	Exam review & Team formation		
16	10/30/19	**Midterm exam (in class)**		Project proposal due 11/1 (F)
17	11/4/19	Kalman filter	Maybeck	
18	11/6/19	Extended Kalman filter	Welch & Bishop	
19	11/11/19	KF applications		
20	11/13/19	KF applications		Progress report 1 due 11/15 (F)
21	11/18/19	EKF landmark mapping	Smith, Self & Cheeseman	
22	11/20/19	GraphSLAM	Thrun & Montemerlo	
23	11/25/19	Robot motion planning		
24	11/27/19	Hybrid Spatial Semantic Hierarchy (HSSH)	Beeson et al, IJRR, 2010	Progress report 2 due 11/27 (W)
		Thanksgiving		
25	12/2/19	Foundational learning for robots	Pierce & Kuipers, AIJ, 1997	
26	12/4/19	Ethics for Robotics and AI		
27	12/9/19	Final project internal review		
28	12/11/19	**Project Expo - Tishman Hall**		
	12/11/19	**Final Project Due**		Final project due 12/11 (M)