

TENTATIVE SCHEDULE FOR Robot Planning CLASS
Spring 2019

Date	Day	Topic	HW out	HW due
14-Jan	Mon	Introduction; What is Planning?		
16-Jan	Wed	planning representations: grid-based graphs		
21-Jan	Mon	MLK DAY - NO CLASS		
23-Jan	Wed	search algorithms: Uninformed A*		
28-Jan	Mon	search algorithms: A*	HW1	
30-Jan	Wed	heuristics, weighted A*, Backward A*		
4-Feb	Mon	interleaving planning and execution: Anytime heuristic search		
6-Feb	Wed	interleaving planning and execution: Freespace assumption, Incremental heuristic search		
11-Feb	Mon	interleaving planning and execution: Limited Horizon search, LRTA*		
13-Feb	Wed	planning representations: lattice-based graphs, explicit vs. implicit graphs		HW1
18-Feb	Mon	case study: planning for autonomous driving	HW2	
20-Feb	Wed	planning representations: PRM for continuous spaces		
25-Feb	Mon	planning representations/search algorithms: RRT, RRT-Connect		
27-Feb	Wed	case study: planning for mobile manipulation and articulated robots		
4-Mar	Mon	search algorithms: IDA*, Beam Search, Multi-goal A*		
6-Mar	Wed	case study: planning for exploration and surveillance tasks		HW2
11-Mar	Mon	SPRING BREAK - NO CLASS		
13-Mar	Wed	SPRING BREAK - NO CLASS		
18-Mar	Mon	search algorithms: Markov Property, dependent vs. independent variables, Dominant Relationship		
20-Mar	Wed	planning representations: state-space vs. symbolic representation for task planning	HW3	
25-Mar	Mon	search algorithms: symbolic task planning algorithms		
27-Mar	Wed	final project proposal presentations		
1-Apr	Mon	planning under uncertainty: Minimax formulation		
3-Apr	Wed	planning under uncertainty: Expected Cost Minimization formulation		HW3
8-Apr	Mon	planning under uncertainty: Solving Markov Decision Processes		
10-Apr	Wed	planning under uncertainty: Solving Markov Decision Processes (cont'd)		
15-Apr	Mon	TBD		
17-Apr	Wed	exam review		
22-Apr	Mon	exam		
24-Apr	Wed	multi-robot planning: centralized planning		
29-Apr	Mon	multi-robot planning: decentralized planning		
1-May	Wed	final project presentations		