

TENTATIVE SCHEDULE FOR Planning and Decision-making in Robotics CLASS				
Fall 2026				
Date	Day	Topic	HW out	HW due
24-Aug	Mon	Introduction; What is Planning?		
26-Aug	Wed	planning representations: explicit vs. implicit graphs, skeletonization, cell decomposition & lattice-based graphs		
31-Aug	Mon	search algorithms: A*, Multi-goal A*, Weighted A*, Backward A*		
2-Sep	Wed	search algorithms: Heuristic functions, Multi-Heuristic A*	HW1	
7-Sep	Mon	LABOR DAY - NO CLASS		
9-Sep	Wed	interleaving planning and execution: Anytime heuristic search, Incremental heuristic search		
14-Sep	Mon	interleaving planning and execution: Real-time heuristic Search		
16-Sep	Wed	case study: planning for autonomous driving		
21-Sep	Mon	planning representations: PRM for continuous spaces		HW1
23-Sep	Wed	planning representations/search algorithms: RRT, RRT-Connect, RRT*	HW2	
28-Sep	Mon	case study: planning for mobile manipulators and legged robots		
30-Sep	Wed	search algorithms: Markov Property, dependent vs. independent variables, Dominance		
5-Oct	Mon	case study: planning for coverage, mapping and surveillance tasks		
7-Oct	Wed	planning representations: state-space vs. symbolic representation for task planning		HW2
12-Oct	Mon	FALL BREAK - NO CLASS		
14-Oct	Wed	FALL BREAK - NO CLASS		
19-Oct	Mon	search algorithms: planning on symbolic representations	HW3	
21-Oct	Wed	planning under uncertainty: Minimax formulation, Minimax Backward A*		
26-Oct	Mon	planning under uncertainty: Markov Decision Processes, Value Iteration, RTDP		
28-Oct	Wed	final project proposal presentations		
2-Nov	Mon	planning under uncertainty: Markov Decision Processes, Value Iteration, RTDP (cont'd)		HW3
4-Nov	Wed	planning under uncertainty: Partially-Observable Markov Decision Processes		
9-Nov	Mon	planning under uncertainty: Partially-Observable Markov Decision Processes (cont'd)		
11-Nov	Wed	multi-robot planning		
16-Nov	Mon	multi-robot planning (cont'd)		
18-Nov	Wed	TBD		
23-Nov	Mon	exam		
25-Nov	Wed	THANKSGIVING - NO CLASS		
30-Nov	Mon	learning in planning		
2-Dec	Wed	final project presentations		