

*TENTATIVE SCHEDULE FOR Integrated Planning and Learning CLASS
Spring 2026*

Date	Day	Topic	Papers	Presenters
12-Jan	Mon	Introduction; Why Integrate Planning and Learning?		
14-Jan	Wed	Integrating learning into planning: speeding up planning	"A Survey on the Integration of Machine Learning with Sampling-based Motion Planning" by McMahon et al. "Roadmaps with Gaps over Controllers: Achieving Efficiency in Planning under Dynamics" by Sivaramakrishnan et al. "Learning Heuristic Functions for Mobile Robot Path Planning Using Deep Neural Networks" by Takahashi et al. "Learning Local Heuristics for Search-Based Navigation Planning" by Veerapaneni et al.	Instructor
19-Jan	Mon	NO CLASS		
21-Jan	Wed	Integrating learning into planning: speeding up planning (cont'd)		Instructor
26-Jan	Mon	Integrating learning into planning: learning cost functions for planning	"Learning to search: Functional gradient techniques for imitation learning" by Ratliff et al.	Instructor
28-Jan	Wed	Integrating learning into planning: support for imprecise goal conditions for planning	"Open-World Task and Motion Planning via Vision-Language Model Inferred Constraints" by Kumar et al. "A Survey of Optimization-Based Task and Motion Planning: From Classical to Learning Approaches" by Zhao et al.	
2-Feb	Mon	Integrating learning into planning: planning with imperfect world dynamics model	"CMAX++: Leveraging Experience in Planning and Execution using Inaccurate Models" by Vemula et al. "SACHA: Soft Actor-Critic With Heuristic-Based Attention for Partially Observable Multi-Agent Path Finding" by Lin et al.	
4-Feb	Wed	Integrating planning into learning: scaling up learning-based control to long-horizon tasks	"SPIN: distilling Skill-RRT for long-horizon prehensile and non-prehensile manipulation" by Jung et al. "Skill Discovery for Exploration and Planning using Deep Skill Graphs" by Bagaria et al.	
9-Feb	Mon	Integrating planning into learning: ensuring safe task achievement in learning-based control	"Motion Planning Diffusion: Learning and Adapting Robot Motion Planning with Diffusion Models" by Carvalho et al.	
11-Feb	Wed	Integrating planning into learning: learning from planning	"Planning-Guided Diffusion Policy Learning for Generalizable Contact-Rich Bimanual Manipulation" by Li et al.	
16-Feb	Mon	Integrating planning into learning: improving inference via planning	"Offline Imitation Learning Through Graph Search and Retrieval" by Yin et al.	
18-Feb	Wed	research project proposal presentations	"Stream of Search (SoS): Learning to Search in Language" by Gandhi	
23-Feb	Mon	research project proposal presentations		
25-Feb	Wed	Integrating planning into learning: improving inference via planning (cont'd)	"Monte Carlo Tree Diffusion for System 2 Planning" by Yoon et al.	
2-Mar	Mon	SPRING BREAK; NO CLASS		
4-Mar	Wed	SPRING BREAK; NO CLASS		
9-Mar	Mon	Learning to plan	"Value Iteration Networks" by Tamar et al. "Path Planning using Neural A* Search" by Yonetani et al.	
11-Mar	Wed	Integrating learning into planning: speeding up planning	"Using VLM Reasoning to Constrain Task and Motion Planning" by Yan et al. "MOSAIC: A Skill-Centric Algorithmic Framework for Long-Horizon Manipulation Planning" by Mishani et al.	
16-Mar	Mon	Integrating learning into planning: learning cost functions for planning	"Learning Navigation Costs from Demonstration via Differentiable Planning" by Wang et al. "Learning Navigation Costs from Demonstration with Semantic Observations" by Wang et al.	
18-Mar	Wed	Integrating learning into planning: support for imprecise goal conditions for planning	"Fast and Accurate Task Planning using Neuro-Symbolic Language Models and Multi-level Goal Decomposition," by M. Kwon, et al., '25	
23-Mar	Mon	research project progress presentations	"Large Language Models as Commonsense Knowledge for Large-Scale Task Planning" by Zhao et al., '23	
25-Mar	Wed	research project progress presentations		
30-Mar	Mon	Integrating learning into planning: planning with imperfect world dynamics model	"Learning Skills to Patch Plans Based on Inaccurate Models" by LaGrassa et al. "Guided Uncertainty-Aware Policy Optimization: Combining Learning and Model-Based Strategies for Sample-Efficient Policy Learning" by Lee et al.	
1-Apr	Wed	Integrating planning into learning: scaling up learning-based control to long-horizon tasks	"Motion Planner Augmented Reinforcement Learning for Robot Manipulation in Obstructed Environments" by Yamada et al. "Search on the Replay Buffer: Bridging Planning and Reinforcement Learning" by Eysenbach et al. "Planning-Augmented Hierarchical Reinforcement Learning" by Gieselmann et al.	
6-Apr	Mon	Integrating planning into learning: ensuring safe task achievement in learning-based control	"Do what you say: Steering vision-language-action models via runtime reasoning-action alignment verification" by Wu et al., '26 "Planning with Diffusion for Flexible Behavior Synthesis" by Janner et al., '22	
8-Apr	Wed	Integrating planning into learning: learning from planning	"Imitating Task and Motion Planning with Visuomotor Transformers" by Dalal et al., '23 "PLAN-SEQ-LEARN: Language model guided RL for solving long horizon robotics tasks" by Dalal et al., '24	
13-Apr	Mon	Integrating planning into learning: improving inference via planning	"Parallel Heuristic Search as Inference for Actor-Critic Reinforcement Learning Models" by Yang et al., '26 "Tree of thoughts: Deliberate problem solving with large language models" by Yao et al., '23	
15-Apr	Wed	Learning to plan	"Beyond a*": Better planning with transformers via search dynamics bootstrapping" by Lehnert et al., '24	
20-Apr	Mon	final project presentations	TBD	
22-Apr	Wed	final project presentations		