

Class Schedule (Subject to change, check webpage clander for most up to date schedule)

September

Date	Topic
9/9	Introduction to Autonomous Robotics Reading: Wilson OUT: Assignment 0 - Create Spotting
9/11	Lab: SVN/CMake and Create Tutorial
9/14	Robot Middleware Optional reading: http://playerstage.sourceforge.net/ Optional reading: http://msdn.microsoft.com/robotics/
9/16	Kinematics and Dynamics
9/18	Lab: Robot Operation Tutorial and Allocation OUT: Assignment 1 - Enclosure Escape DUE: Assignemnt 0 - Create Spotting
9/21	Autonomous Control Architectures Optional reading: Arkin Ch. 1 Optional reading: Wikipedia “Segmentation (image processing)” Optional reading: Wikipedia “PID Control”
9/23	Object Recognition and Color Blobfinding Optional reading: Wikipedia “Segmentation (image processing)” Optional reading: Wikipedia “PID Control”
9/25	Lab: Blobfinding and Color Calibration OUT: Assignment 2 - Object Seeking DUE: Assignment 1 - Enclosure Escape
9/28	Finite State Machine Controllers Optional reading: Wikipedia “Finite State Machines”
9/30	Path Planning: Dijkstra, A* Optional reading: Wikipedia “Dijkstra’s Algorithm” Optional reading: Wikipedia “A*”

Notes

October

Date	Topic
10/2	Lab: Soccer Setup and Smurvstadium OUT: Assignment 3 - Path Planning DUE: Assignment 2 - Object Seeking
10/5	Path Planning: Potential Fields Optional reading: Choset Ch. 4
10/7	Path Planning: RRT
10/9	Lab: Odometry Tutorial
10/12	Fall Weekend (No Class)
10/14	Localization: Bayes Filter Optional reading: Choset Ch. 8-9, Thrun Ch. 7-8
10/16	Path Planning Waypoint Demos DUE: Path Planning Waypoint Milestone
10/19	"Great Robot Race" / Project Troubleshooting
10/21	Localization: Particle Filters
10/23	Project Demos and Matches OUT: Assignment 4 - Robot Localization DUE: Assignment 3 - Path Planning
10/26	Path Planning Project Presentations
10/28	Range and Bearing Estimation
10/30	Lab: Range and Bearing Estimations

Notes

November

Date	Topic
11/2	Robot Learning: Q-learning Optional reading: Wikipedia “Linear Regression” Optional reading: Wikipedia “k-nearest neighbor algorithm” Optional reading: Wikipedia “Reinforcement Learning” Optional reading: Thrun Ch. 14
11/4	Reactive Control: Subsumption
11/6	Range and Bearing Waypoint Demos DUE: Range and Bearing Waypoint Milestone
11/9	Localization Troubleshooting
11/11	Physics-based Human Tracking
11/13	Project Demos and Matches OUT: Assignment 5 - Subsumption DUE: Assignment 4 - Robot Localization
11/16	Localization Project Presentations
11/18	Mobile Manipulation
11/20	TBD
11/23	TBD
11/25	Thanksgiving Recess (No Class)
11/27	Thanksgiving Recess (No Class)
11/30	Multi-robot Coordination: Auctions

Notes

December

Date	Topic
12/2	TBD OUT: Multi-robot Teaming - Robot Soccer DUE: Assignment 5 - Susumption
12/4	Lab: Networked Robotics
12/11	DUE: Multi-Robot Soccer DUE: Final Course Report

Notes

Important

This information can also be found on the course's online calendar. The calendar may be more up to date than this syllabus.

Notes