

CSCI-4290/6290: Robot Motion Planning
Lecture 22: November 18, 2003
**Motion Planning in Dynamic Environments,
and Multiple Robot Path Coordination**

Today's Class

1. Motion Planning in Dynamic Environments using Velocity Obstacles:

Tauseef Ansari will describe a motion planning approach for a single robot in a dynamic environment with moving obstacles that uses the notion of *velocity obstacles*.

2. Path Coordination for multiple robots:

Tom McCarthy will continue our discussion of multiple robot coordination by describing *path coordination*, a decoupled planning approach for multiple robots.

Reading

Chapter 8.2, Latombe. (optional)

References

Motion Planning in Dynamic Environments using Velocity Obstacles, P. Fiorini and Z. Shiller, *International Journal of Robotics Research*, volume 17, number 7, pages 760–772, July 1998.

Path Coordination for Multiple Mobile Robots: A Resolution-Complete Algorithm, Thierry Simeon and Stephane Leroy and Jean-Paul Laumond, *IEEE Transactions on Robotics and Automation*, volume 18, number 1, pages 42–49, Feb 2002.

Next Class

Real-time motion planning, and manipulation planning.