COMP/ELEC/MECH 450: ALGORITHMIC ROBOTICS
Course Information - Fall 2008

Instructor:	Professor Lydia Kavraki Department of Computer Science and Department of Bioengineering Duncan Hall 3106, 348-5737, kavraki@rice.edu http://www.cs.rice.edu/∼kavraki
Office Hours:	Fridays 11-12 and by appointment

Location of the class:	ME 128
Time:	Tuesdays and Thursdays from 1:00-2:20
WWW:	http://owlnet.rice.edu/∼comp450

Book: Principles of Robot Motion (MIT Press) by Choset, Lynch, Hutchinson, Kantor, Burgard, Kavraki and Thrun.

Topics (subject to minor changes - a detailed list will be posted in the web page of the class):

- Introduction and Motivation (1 lecture)
- Simple Motion Planning Algorithms (2-3)
- Configuration Space and State Space (3-4)
- Sampling-Based Planning (5)
- Advanced Planning with Kinematic and Dynamics Constraints (3)
- Manipulation Planning/Assembly Planning/Multiple Robots (3)
- Planning in Dynamic Environments (4)
- Advanced Topics including topics from Hybrid Systems, Graphics, and Structural Computational Biology (2-3)

Programming Assignments, Exams and Grading:

Grading:
Project 1: 20% (has intermediate deliverables)
Project 2: 30% (has intermediate deliverables)
Paper and Class presentation: 10%
Exam 1: 20%
Exam 2: 20%

Policy for late assignments: 20% off for any project received late. Project more than 5 days late will not be accepted. The Web page of the class will clearly indicate the due date and time of the projects.

You have 1 grace day for the whole semester that can be used for your projects.

Pre-requisites:
COMP314 or instructor permission. (Non-CS students: talk with the instructor)

Recommended Background:
The following background will be helpful: 1) JAVA or C/C++ programming experience; 2) data structures and basic analysis of algorithms; 3) some mathematical sophistication. There is no requirement for prior exposure to robotics, graphics, or artificial intelligence.

Honor Code:
Besides the University Honor Code, the following rules apply for COMP450:

- For the projects in this class and the class paper/prepsentation you will work in teams and you are allowed to discuss the assignments only with the members of your team.
- You are not allowed to look at homeworks or exams of previous years.
- As far as the exams are concerned, you are not allowed to give or receive any help. Exams will be in-class and will be short (30-40 mins).

Students with disabilities:
Any student with a documented disability seeking academic adjustments or accommodations is requested to speak with me during the first two weeks of class. All discussions will remain as confidential as possible. Students with disabilities will need to also contact Disability Support Services in the Ley Student Center.