CS 370 Intelligent Mobile Robots, Fall, 2006 (CRN: 12366)(Lec. 01)

SYLLABUS Sept. 5, 2006

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Office Hours: The table below lists my "open" office hours. Other hours are available by appointment (please email me a REQUEST, and I'll let you know if I can do it!). Subject to change.

	Mon.	Tues.	Wed.	Thurs
OPEN HOUR	2-3:00pm	6-7:00pm	5-6:00pm	2-3:00pm, 6-7:00pm
By Appointment		12-3:00pm	2-4:00pm 6-7:00pm	

Textbook (required): ***Mobile Robots***, by Jones ISBN #1-56881-097-0, 2nd Edition (1999) published by AK Peters., available in Campus Bookstore, as well as Amazon.com, etc.!

CS370 Course Description

Classroom: New Science Facility (NSF 1209) (but most of the time we will meet in the main CS lab, which is NSF 1207)
Meeting Times: 3:00-4:40pm, Tu,Th
Prerequisites: CS201 or CS330 or equivalent software or hardware experience *(THIS COURSE IS OPEN TO ANYONE WITH SOME HARDWARE EXPERIENCE or, lacking electronic hardware background, then significant programming background!)*
Our web page: http://cs.nmu.edu/~jeffhorn/Classes/CS101/Summer2006/

(I will use the web page EXTENSIVELY, posting everything I can up there as soon as possible. This includes all electronic forms of handouts, assignments, solutions, sample tests, etc. Also I will post announcements, links to interesting, topic-related sites, etc. So please check our page regularly! At the very least, twice a week. We will also have a WebCT page for posting grades, etc.)

TOPICS:

- Foundations for Intelligent, Mobile Robots
  - Effectors (e.g., Servo control)
  - Sensors (e.g., infrared, sonar, contact,
  - Processors (e.g., Basic Stamp, BasicX, Megatel, ThinkPad (yes!), etc.)
  - Programming (e.g., pBasic, C, real-time issues, concurrency and timing, embedded processor issues, walking gaits, communication)
  - AI algorithms for robots (e.g., obstacle avoidance, drop-off detection, goal-seeking, navigation, cooperation)
  - Simulation (e.g., Breve, 3D game engines, MS Robotics Studio)
- Domains of Expertise (choose one!)
  - Wiring
  - Servo Control
  - Infrared sensors
  - Sonar sensors
  - Contact sensors
  - Orientation sensors
  - Power management

    - Wireless communication
- Team Projects (examples)
    - Trilobot
    - All-over Rover
    - AmigoBot
    - Laptop Bob
    - ScooterBot

GRADING:

20% Individual assignments (both written homework and programs).
20% Team Project grade (everyone on a team earns the same grade).
10% Expert Domain grade (become expert in one domain).
20% Tests (a mixture of quizes and exams)
20% Final exam, comprehensive.
10% Instructor's discretion (will likely be added to the highest of the above grade components individually for each student)

> **Late Policy:** For programs and homeworks, 5% off for each day late (counting only days that the university is open; e.g., **not** weekends or snowdays). But of course I cannot accept them after solutions are handed out! As for exams, those cannot be made up except under the most severe and extenuating emergencies! Don't take a chance if you don't have to! (If we have "enough" assignments and/or quizes, I will drop the lowest grade in that category.

DISABILITY SERVICES

If you have a need for disability-related accommodations or services, please inform the Coordinator of Disability Services in the Disability Services Office at 2001 C. B. Hedgcock (227-1700; TTY 227-1543). Reasonable and effective accommodations and services will be provided to students if requests are made in a timely manner, with appropriate documentation, in accordance with federal, state and University guidelines.

(This document can be found online at http://cs.nmu.edu/~jeffhorn/Classes/CS370/Fall2006/syllabus.html.