CS 370 Intelligent Mobile Robots, Winter 2015 (CRN: 12357)(Lec. 01)

SYLLABUS January 2015

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CS370 Course Description

Classroom: Jamrich Hall 2309
Meeting Times: 4:00-5:40pm, 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!)

(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 an EDUCAT 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 quizzes 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 quizzes, 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 Dean of Students Office at 2001 C. B. Hedgcock Building (227-1700). 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://euclid.nmu.edu/~jeffhorn/Classes/CS370/Winter2015/syllabus.html).