ECE 3161/MEM 3295/ME 3295: Introduction to Robotics

INSTRUCTOR:

Shalabh Gupta
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Office Hours: TBD

CLASSES: TBD

TEXT BOOK: M. W. Spong, S. Hutchinson, M. Vidyasagar, *Robot Modeling and Control*, John Wiley & Sons, 2020.

PREREQUISITES: Background in Linear Algebra and Matrix Analysis is preferred but this course will review these concepts.

DESCRIPTION:

The course will cover various aspects of robotics. Topics include

- Review of Linear algebra and Matrix Analysis
- Robot Classification and Multidisciplinary Application Examples
- Robotic Manipulators and Coordinate Frame Transformations
- Modeling Rigid Body Motions
- Forward Kinematics for Robotic Arms
- Inverse Kinematics for Robotic Arms
- Velocity Kinematics

PROJECT: All students have to do a class project which could be hardware design or simulation based. Project topics will be approved and assigned after discussion with the instructor.

GRADING:

Homeworks	20%
Midterm Exam	30%
Final Exam	20%
Project	30%
Total	100%

LOGISTICS AND GENERAL RULES:

- As needed, the necessary course materials will be available at http://huskyct.uconn.edu.
- Homework assignments will be due back on the due date mentioned on each homework.
- Each assignment may include computer problems. The computer problems shall be implemented in MATLAB. MATLAB is available in the Engineering Learning Centers in ITEB.
- Make-up exams will be given only in case of illness or emergency condition, and a written note from the doctor or University Infirmary is required stating that the student is too sick to take the exam.