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

INSTRUCTOR:

Shalabh Gupta  
Associate Professor  
Electrical and Computer Engineering  
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Office Hours: TBD

CLASSES: TBD


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.