

**ECE 5397/6397: Intro to Robotics**

**Class Worksheet – Lecture 7** Forward kinematics of MeARM (due Feb 11)

Today, build your robotic arm. Build instructions are at <http://www.mearm.com/pages/instructions>  or on [http://www.instructables.com/id/MeArm-Robot-Arm-Your-Robot-V10/](http://www.instructables.com/id/MeArm-Robot-Arm-Your-Robot-V10/" \t "_blank)

The inverse kinematics are possible. A handout will come next class

<http://www.mearm.com/blogs/news/14090025-mearm-gets-inverse-kinematics-code>

The robot arm has 4 DoF, but one is for the gripper, so it has 3 DoF for position control. It has 4 rotational joints, but is a function of and such that the gripper is parallel to the floor. In the DH parameters, assume the robot has 4 DOF. We will add the constraint to later

\* indicates variable

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­­­­­­­Now, compute the A matrices. You may use robotica, a mathematica plugin available at

<https://github.com/UH-ECE6397/Class-Materials/blob/master/code/>

See the sample code for solving DH parameters for both a two-link planar manipulator and a 6-DOF Stanford Manipulator at:

<https://github.com/UH-ECE6397/Class-Materials/blob/master/code/ExampleRobotica.nb>