# ECE 555 HW#5 (Spring 2022)

## Due: April 7th (7:00 pm)

The Figure below is an RRP robot. For this robot system:

1. D-H Parameters **(10 points)**
2. Determine the symbolic tool-tip velocities using partial differential equations **(20 points)**
3. Determine the symbolic tool-tip linear and angular velocities using the O and Z vector from the A Matrix. **(20 points)**
4. For the robot configuration shown below, where all the links are 1 unit and Theta1 and Theta2 is at zero degrees, determine the numerical Jacobian Matrix. **(10 points)**
5. Determine the inverse Jacobian for the Matrix found in Question 4. **(10 points)**
6. Write a MATLAB script to solve for the inverse kinematics, (q1, q2, q3) to position the robot at 0.25x + 0.25y + 1.354z **(30 points)**