

# METR4202 -- Robotics

## Tutorial 4 and 5 – Weeks 4 & 5:

### Robot Arm Torques & Trajectory Generation

---

#### Reading

Please read/review chapter 9 of Robotics, Vision and Control.

#### Questions

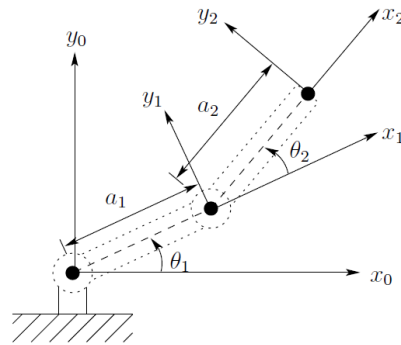


Figure 1: Two DOF Robot manipulator

1. Write the full equation of motion for the 2R arm above (i.e.,  $\tau_1$  and  $\tau_2$  as a function of  $\theta_1$  and  $\theta_2$  and its derivatives)