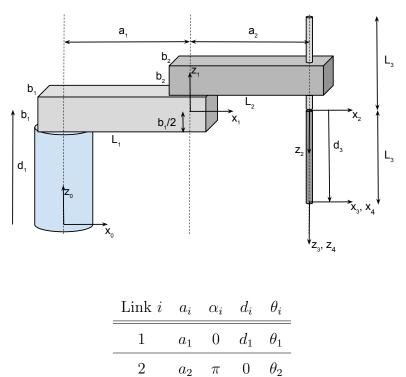
## Dynamics of a SCARA-type Robot

Use the Lagrangian and Lagrange equation to find the dynamic equations for the SCARA-type robot with DH Table shown below.



3	0	0	$d_3$	0
4	0	0	0	$ heta_4$

**Clearly** write your answer(s) in terms of the general dimensions labeled, and make the following assumptions:

- 1. all links have symmetric geometry and uniformly distributed mass,
- 2. link 1 can be represented by a rectangular parallelopiped of mass  $m_1$  and dimensions shown,
- 3. link 2 can be represented by a rectangular parallelopiped of mass  $m_2$  and dimensions shown, and
- 4. links 3 and 4 can be represented by slender rods of equal length and equal mass  $m_3$ .