

Modeling and Simulation, 3rd Year Mechatronics

Section Assignment 4

For the figure shown below, find an expression for the total potential energy (V) and the total kinetic energy (T) of the system, and hence, calculate:

$$\frac{\partial T}{\partial x_1}, \frac{\partial T}{\partial x_2}, \frac{\partial T}{\partial \dot{x}_1}, \frac{\partial T}{\partial \dot{x}_2}, \frac{\partial V}{\partial x_1}, \frac{\partial V}{\partial x_2}, \frac{d}{dt} \left(\frac{\partial T}{\partial \dot{x}_1} \right), \frac{d}{dt} \left(\frac{\partial T}{\partial \dot{x}_2} \right)$$

