Assignment 3

1. Design a four-bar mechanism to give the three positions of coupler motion. Ignore the fixed pivot points in the Figure 1. Use Graphical Synthesis

2. Design a four-bar mechanism to give the three positions of coupler motion. Use the fixed pivots shown in Figure 1. Use Graphical Synthesis

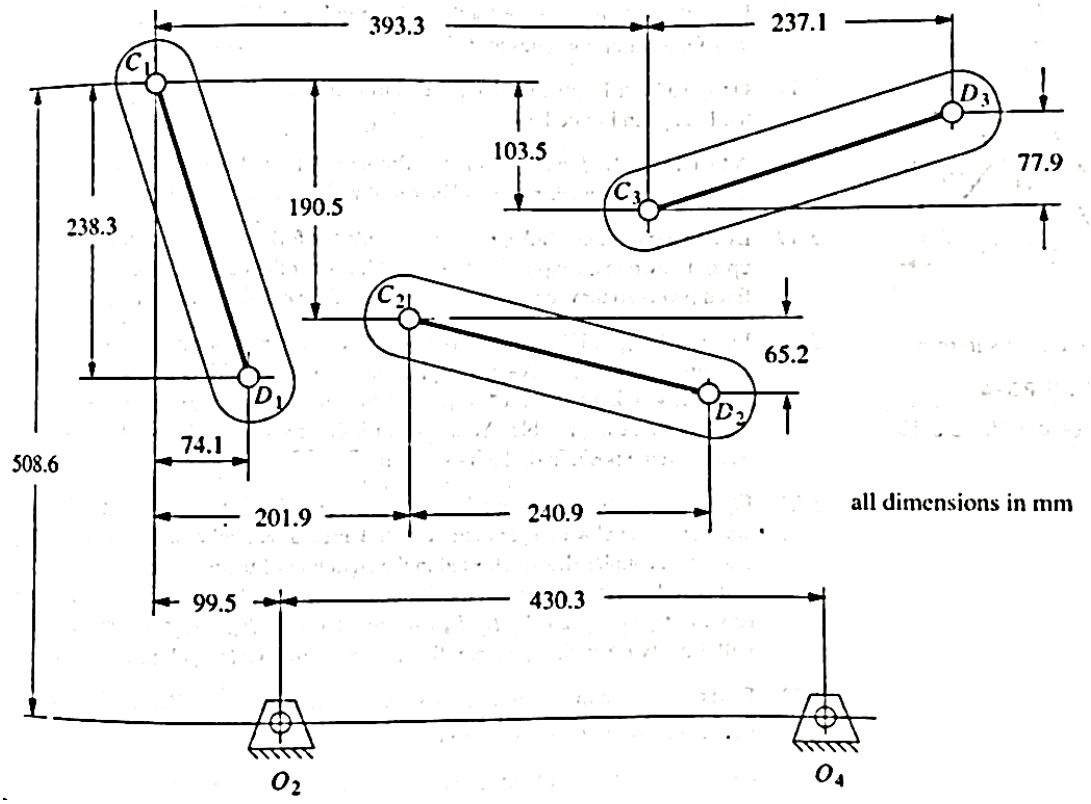

Figure 1

3. **(Graphical)** Figure 2 shows a "V-link" off-loading mechanism for a paper roll conveyor. Design a pin-joined linkage to replace the air cylinder driver that will rotate the rocker arm and V-link through the 90° motion shown. Keep the fixed pivots as close to the existing frame as possible. Does your linkage satisfy the Grashof condition? If not, then make a Grashof linkage.
   Sketch on right side shows three positions of the V-Link. Angle between adjacent link positions is 45° and link length is 1 m.

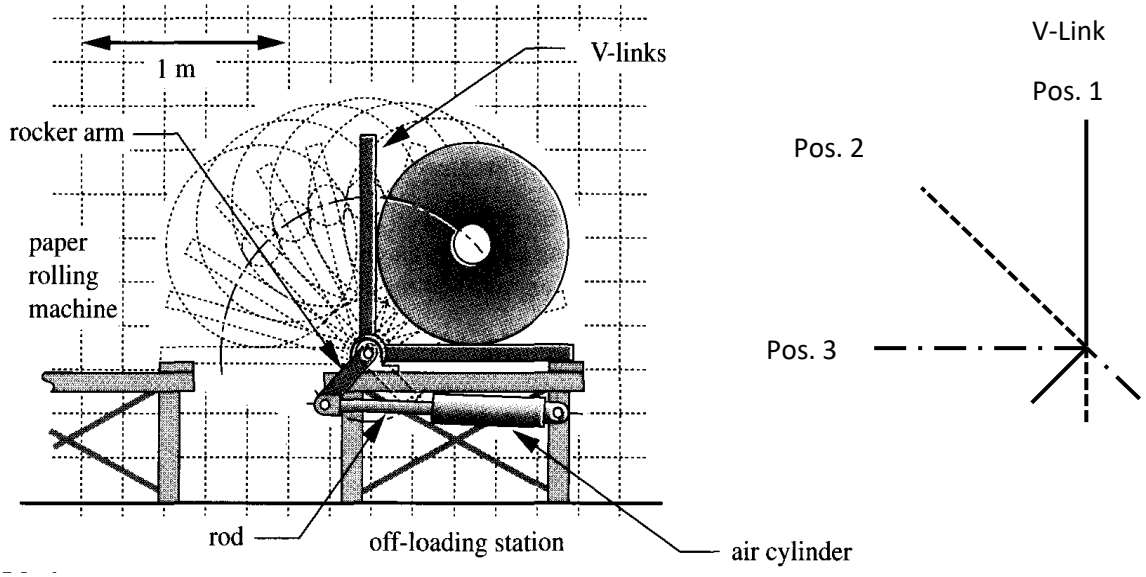
1 m
V-links
rocker arm
paper
rolling
machine
rod
off-loading station
air cylinder
V-Link
Pos. 1
Pos. 2
Pos. 3

Figure 2