Assignment (Industrial Automation)

(Task given 3rd March 2017)

(To be presented on 24th March 2017, 9 am onwards)

Problem:

1) Design, and test the following sequence using **FluidSim** electro-pneumatic elements. Bring the printed sequence along with the timing diagram on the assessment day.
2) Assemble, and Commission the said sequence using **hardwired** elements on 24th March during the scheduled 60 minute time duration. You will be asked questions about your submission during this 60 minute.

Circuit requirements:

$$\left[C+, \begin{pmatrix} A+ \\ 4\ bar \end{pmatrix}, 2s, (B+, B-)^4, 3s, \begin{pmatrix} A- \\ C- \end{pmatrix}\right]$$

1. Supply pressure is to be limited to 5 bars.
2. Cylinder A and C are double acting cylinders, and cylinder B is a single acting cylinder.
3. The sequence is to be initiated by a latching normally open push button switch.
4. Use appropriate solenoid actuated direction control valves as necessary.
5. Use an electrical counter and a timer to complete the sequence.
6. Cylinder B should be starved and take 2 s to extend.
7. Use appropriate sensors and/or proximity switches as required. If you use reed switches, these must be passed through a relay before they can be connected.

Submission requirements (Single zip file FirstName_Number.zip):

1. Include FluidSim (.ct) file, along with the timing diagram.
2. Provide a PDF file which includes:
   - a diagram for FluidSim circuit, including the timing diagram.
3. Provide link to a maximum of 3-minute video clip of your hardwired solution on YouTube, as an unlisted video. (by **23rd March 2017, 6 pm**)
4. Sharing software/hardwired solutions/files will be treated as plagiarism and will be reported to the Academic Registry for investigation, potentially leading to failure of the module and hence preventing you from graduating.