German University in Cairo

Advanced Mechatronics (MCTR903)

Milestone 1

Milestone Requirements:

1. Team Assembly:

- The project team consists of **3-5** members, **cross** tutorials allowed.
- Note that registration will **not** be counted in case of less than 3-memberregistration and as a result, the project selection will be automatically neglected.
- Students not assigned to teams by the deadline of registration will be **randomly** clustered into groups and randomly assigned to project.
- **No change** to the project teams (interchange to another team or exchange ofproject) will be accepted under any circumstances.

2. Hardware:

- Each Team shall purchase a Raspberry Pi embedded processor. (MinimumModel is 3 B+).

3. Programming

- Follow Lab 0 to work with Raspberry Pi.

4. Project Overview

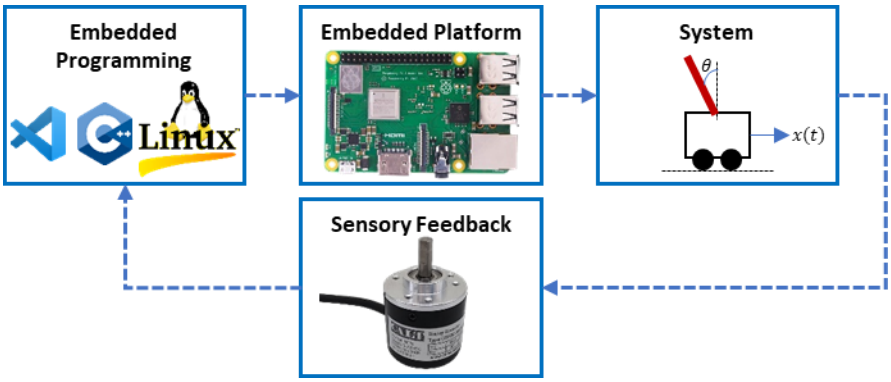

Figure 1 Closed-Loop System

- Each team shall be able to model a **non-linear** system, simulate it and check its response using MATLAB(Simulink) then utilize non-linear control methods to generate a closed-loop-response on the system.
- In addition, each team shall implement the closed-loop system on hardware as shown in Figure 1.

5. Report

- Each team shall submit a report (PDF) in an IEEE paper format containing an abstract of your idea with an overview of system.
- IEEE paper templates.
    i. Latex: https://www.overleaf.com/latex/templates/ieee-conference-template/grfzhhncsfqn
    ii. Word: https://www.ieee.org/content/dam/ieee-org/ieee/web/org/conferences/Conference-template-A4.doc

6. Submission

- Link**:** https://forms.gle/Mr6Nm93rjwcYN7WB9
- Deadline: **1st of October 2023 (5:00 PM)**