

# **ENR355 Assignments #3**

Due 2/3/26 9:00 pm

Task 1)

Finish up Thursday lab session, knows how to control a stepper motor (nema-17) with:

- 2 DC power source
- 1 Driver (Adafruit TMC2209 Stepper Motor Driver Breakout Board)
- 1 function generator

As proof-of-efforts, you are going to show me your WORKING set up by/on next Tuesday in class.

And I will ask you to explain the following questions:

- What do power sources do?
- What does this driver do?
- What does this function generator do?
- What controls the motor speed?

Task 2)

Based on the driver's data sheet, we need a square wave signal.

But Sam just found that a sine or a triangle wave also works.

**Self-teach yourself the mechanism of this control set-up,** and send me a one-page slide explaining how to use different waveform while achieving the same output (i.e. same motor function/performance).