# CE3101 Lab 7: OpAmps

**Objectives**

- Explore basic OpAmp characteristics

**Prelab**

|  | student check off |
|---|---|
| - Checkout an Analog Discovery 2 kit from the Tech Center | ☐ |
| - Checkout needed components from the Tech Center | ☐ |

**Assignment**

Part 1: Voltage Follower

    a) Simulation: Simulate the Part1 circuit in MultiSim.

        1) Verify the basic operation using a 1KHz, 1V sine wave input

        2) Measure the output saturation voltage (+ and -) by increasing the amplitude of the input until the output saturates

        3) Determine the slew rate using a 2V sine wave input by increasing the frequency until the output starts to slew

        4) Measure the gain-BW product doing an AC sweep of the input

        5) Verify the 3dB frequency using a 20mV sine wave input and a transient simulation

                ☐

    b) Implementation: Build the Part1 circuit and measure items 1,2,3, 4, and 5 on the real part. (use the network analyzer for part 4)    ☐

Part 2: Inverting Amplifier

    a) Repeat all of the part 1a simulations using the Part2 circuit (be sure to scale the input voltages for parts 1,2,3)    ☐

    b) Repeat all of the part 1b measurements using the Part2 circuit (use the network analyzer for part 4)    ☐

**Check Off**

- Demo and document part 1    50%
- Demo and document part 2    50%

**<span style="color:red">Demo (in-person or via Teams chat) and Report (in the box) due by 4:00 pm Wednesday of the week following the lab.</span>**