

## **Meteorology 2270 – Assignment #10**

### **Due: 12/05/2025**

**Problem:** We would like to analyze data from one of the new Iowa State University soil moisture network stations. These sites provide an extensive range of observations at hourly intervals. We want to do some simple calculations using the data and make a couple of plots.

**Assignment:** Using examples in class as a template as an example, write a Python script that will read the data from the soil moisture network station and plot the data.

In particular, use the tools available in the Python packages discussed in class to:

1. Find the average 2-m air temperature (TAir) and the average 4", 12", 24", and 50" soil temperatures (TSoil, T12, T24, T50, respectively),
2. Find the variability (standard deviation) of these values,
3. Find the total observed rainfall (Rain\_mm\_Tot) over the times provided,
4. Make a simple plot of at least one of the variables.

You will be expected to **use at least** the following packages:

1. NumPy
2. Pandas
3. matplotlib