

SCI 222 Meteorology Project I

Purpose

Demonstrate your understanding of meteorological quantities, their measurement, and their display.

What it is

Your project is a formal way to demonstrate that you understand the content covered in Unit I of the course. It should thoroughly fulfill at least one of the unit objectives.

Unit I objectives

1. Define the meteorological variables temperature, pressure, wind, and precipitation. Describe their relationships, units of measurement, and important values.
2. Identify and describe measuring devices for the meteorological quantities, including direct and remote sensors.
3. Interpret the station model display.
4. Interpret surface maps to identify values of meteorological variables and to identify air masses and ascertain their characteristics.
5. Interpret upper-level maps and explain the usefulness of the 850, 500, and 300 hPa surface maps.
6. Identify the information returned by radar and satellite observations and what it tells about the atmosphere.

Possible projects

These are some ideas for a project. You are free to suggest others. I will approve of projects that demonstrate your mastery of the required unit objectives.

- Interpret a recent surface map, showing air masses, their characteristics, and their motion.
- Report on the history of measurement of a meteorological variable (wind, temperature, pressure, humidity, precipitation, clouds) and the development of measuring methods and devices
- Record weather observations from a station of your choosing for a week and create complete station model displays for key times to communicate the weather story over that period
- Display and interpret 800, 500, and 350 hPa contour maps for a region of interest at one time and explain the vertical and horizontal movements of the air masses.
- Report on a specific meteorological satellite, its sensors, and its outputs.
- Make a poster describing important meteorological variables and how they affect us.
- Make a pamphlet describing radiosonde observations and how they help us understand the weather.

Graded Components

Sign up: Select a project. Describe succinctly what form your project will take, and which unit objective(s) it will cover.

Check-in: Give an overview of your project in more detail than your sign-up. Depending on the nature of your project, this may be a rough draft, or a conference with the instructor. You will be notified after your sign-up.

Final Draft: The completed project.

Dates and Deadlines

Jan 27	Project assigned
Feb 2	Sign-ups
Feb 9	Work day
Feb 9	Check-ins due
Feb 16	Project due

Scoring

Sign-up (4 points)

Tell me what you have in mind.

Feedback on the sign-up will include specifying the nature of the required check-in and a rubric for the specific project.

+2	Identifies the form of the project.
+1	Identifies the unit objective(s) addressed.
+1	Describes how the project will demonstrate mastery of the objective(s).

Check-in (6 points)

Show the progress made toward the project and clarify expectations.

+2	Provides evidence that the project will satisfy the objective(s).
+4	Demonstrate that the project is fully planned.

Final Project (40 points)

A more detailed rubric specific to your project will be provided after sign-up.

+10	Neat, creative, and visually appealing.
+20	Objectives are covered completely and correctly.
+5	Sources are properly cited, evaluated, and acknowledged.
+5	Organized and easily understandable.