

Weather Station

Natural disasters that are related to weather causes loss in both lives and properties, but it can be detected and reported to avoid loss so design a weather station that measures temperature, humidity, wind speed and direction and record these readings for studying and send alert if any of the readings is abnormal.

Minimum requirements [25 marks]: you must put all things in a simple model/maquette.

1. Measure temperature and humidity [5 marks].
2. Measure wind speed and direction [5 marks].
3. Record all readings in a document [5 marks].
4. Send alert if any reading exceeds a certain threshold [5 marks].
5. Create a mobile/web application to review/control all above steps [5 marks].

Any innovation or creativity will be regarded and graded as bonus.

1. Hardware Components:

- **ESP32 Development Board:** To serve as the main controller.
- **Temperature and Humidity Sensor (e.g., DHT22):** To measure temperature and humidity.
- **Anemometer and Wind Vane:** For measuring wind speed and direction.
- **SD Card Module:** For recording readings.