

In accordance with [Board of Regents policy 3.20](#), the following required information is available below:

## **Fall 2026**

### **I. Course title and number as designated in the institutional course catalog**

EARTHSCI 1210 Elements of Weather Laboratory, 01

### **II. A course description including learning objectives that students are expected to achieve by the end of the course**

#### **A. Course Description:**

EARTHSCI 1210. Elements of Weather Laboratory — 1 hr.  
Fundamentals of meteorological observation, use of basic meteorological instruments, and applications of maps and charts to understanding forecasts. Student Learning Outcomes include Critical Thinking and Scientific Reasoning. Lab, 2 periods. Prerequisite(s) or corequisite(s): EARTHSCI 1200. (Fall, Spring, Summer)

#### **B. Course Level Learning Objectives:**

Understand the vertical thermal structure of the atmosphere  
Construct and interpret an isothermal map  
Describe the annual cycle of air temperature  
Describe the differences between dew point temperature and relative humidity  
Identify types of clouds  
Describe the differences between wintry precipitation types  
List and describe the forces that act on the atmosphere to produce or modify winds  
Identifying fronts  
Interpret a weather map  
Describe basics methods used to produce a weather forecast

### **III. A general outline of the topics to be covered throughout the course:**

1. Introduction to the Atmosphere
2. Heating Earth's Surface and Atmosphere



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3. Temperature
4. Moisture and Atmospheric Stability
5. Forms of Condensation and Precipitation
6. Air Pressure and Winds
7. Circulation of the Atmosphere
8. Air Masses
9. Midlatitude Cyclones
10. Thunderstorms and Tornadoes
11. Hurricanes
12. Weather Analysis and Forecasting
13. Air Pollution
14. Optical Phenomena of the Atmosphere

**IV. List of required textbooks, readings, and other materials necessary for the course**

The Atmosphere: An Introduction to Meteorology, Frederick Lutgens and Edward Tarbuck, 14th Edition, Pearson. 978-0134758589

**V. General description of the types of assessments used in the course (e.g., exams, papers, projects, experiential learning):**

Reading, In-class practice, Discussions, 10 Lab Assignments