

# ENV 117 - METEOROLOGY & CLIMATOLOGY

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## Course Description

Designed to acquaint the student with the science and art of weather analysis, this course includes studies of the basic properties of gases, organization and composition of the atmosphere, basic energy flow, and general weather phenomena that result. Global climates are also investigated. The laboratory portion presents the function and effect of selected physical processes, and includes the use of weather instruments and weather maps. Group 1 lab course.

## Credit Hours

4

## Contact Hours

5

## Lecture Hours

3

## Required Prerequisites

MTH 23

## Corequisites

ENV 117L

## Recommended Prerequisites or Skills Competencies

ENG 111

## General Education Outcomes supported by this course

Quantitative Reasoning

## Course Learning Outcomes

### Knowledge:

- Demonstrate knowledge of and describe the numerous physical processes responsible for weather found on our planet.
- Describe characteristics of global climates including location.
- Essential knowledge gained will include; Earth- Sun relationships, energy flow, atmospheric structure/composition, controls of air temperature, atmospheric moisture, air pressure/winds, and storm systems.

### Application:

- Calculate sun angles and solar energy received.
- Interpret weather maps (both surface and upper-air) and weather data.
- Use basic weather instruments.
- Construct and interpret isopleths (for upper-air charts), isotherms, and isobars.
- Determine weather information based on data.

### Integration:

- Apply math skills to course content emphasizing quantitative reasoning.

### Human Dimension:

- Work collaboratively to determine the function and effect of selected physical processes in lab.

### Caring - Civic Learning:

- Acquire a greater appreciation of the atmosphere surrounding them.
- Apply the content of the course to the real world.
- Care more deeply about their physical surroundings and the delicate balance needed to maintain our planets ecosystems.

### Learning How to Learn:

- Describe natural events such as lake effect snow, tornadoes, hurricanes, and winter storms.
- Identify sources of information needed to access weather related data.