

Earth Space and Atmospheric Sciences 1110

Introduction to Meteorology

Professor Paul L. Sirvatka

Description: A first look at various aspects of meteorology, including solar radiation, global circulation, environmental issues, winds, stability, precipitation processes, weather systems, and severe weather. Basic physical principles, meteorological terminology, societal impacts, and weather analysis will be explored.

Prerequisite: Math 0481 with a grade of C or better or a qualifying score on the Math Placement Exam or concurrent enrollment in a math course greater than Math 1108. Verification of exam scores or report cards must be presented within three class periods or the student will be withdrawn administratively.

Phone/Office: Office: (630) 942-2118 M149B
Lab: (630) 942-2590 M149
E-mail: sirvatka@weather.cod.edu; sirvatka@cdnet.cod.edu
Homepage: <http://weather.cod.edu/student.html>

Office Hours: MWF 8:30 - 10:00, TuTh 8:30 - 9:30, MWTh 3:30 – 4:30, W 9:00 – 9:30
I will also be available at other times. Please try to set up an appointment if you wish to see me at any time. Please feel free to contact me with questions using email as well.

Text: Meteorology – Understanding the Atmosphere, Ackerman and Knox, 2003.

Additional Materials: #2 pencils for tests and good colored pencils (at least red, blue, yellow and green) are required *daily*. Calculators are not allowed on tests or quizzes but may be used during class and you are encouraged to bring one. A three-ring notebook is also required to assist in maintaining sufficient organization.

Attendance: Attendance is extremely important. Much of the material is covered only in class. It is expected that you will attend all classes. Contact the instructor as soon as possible in the event of an unavoidable absence. Labs and quizzes cannot be made up. Only in exceptional circumstances can tests be given at a time other than the announced date. Exceptions must be pre-arranged. A missed test is a zero.

Grading:

Labs, quizzes and homework assignments	~ 25%
Unit exams	~ 50%
Cumulative final exam	~ 25%

Grades will be curved based upon expected results and class participation and attitude. Generally speaking, the grades will be as follows:

A – 84%; B – 73%; C – 62%; D – 50%; F < 50%

All work must be completed. An incomplete will be given only in an exceptional circumstance. It is the student's responsibility to withdraw from the course due to non-attendance. Failure to withdraw will result in an "F". Late assignments will be penalized to a maximum credit of 50% at the discretion of the instructor. Students wishing to take this course on a pass/fail basis must earn a grade of a "C" or higher to receive a "Satisfactory" for the course. In order to fulfill the general education requirements a letter grade must be received.

Course Objectives:

Upon successful completion of this course the student should be able to do the following:

1. Define layers and constituents of the atmosphere
2. Summarize basic laws of physics and thermodynamics
3. Describe various moisture parameters
4. Classify cloud genre and describe cloud and precipitation formation
5. Explain thunderstorm formation and stability analysis
6. Summarize radiation laws and their applications
7. Discuss earth-sun relationships and their influence on weather and climate
8. Differentiate between global warming and the greenhouse effect
9. Interpret and summarize physical models for describing winds, including geostrophic, gradient, and surface flow
10. Classify types of fronts and air masses
11. Form generalizations about extra-tropical cyclone formation and evolution including sensible weather resulting from their attendant fronts
12. Define severe thunderstorms and tropical storms and plan safety responses to various weather hazards

Expectations:

The student is expected to attend all classes, participate fully in classroom discussions and cooperate in learning experiences with other classmates. The expected workload is two hours of work for every hour of time spent in class. This will vary from week to week with some weeks having more work required and other weeks having less.

Final Exam:

A cumulative final exam will be given. See <http://www.cod.edu/schedule/> for a listing of the final schedule.