COURSE OUTLINE

METO-112

Meteorology Laboratory

1 Credit

Science Core Course

HOWARD COMMUNITY COLLEGE

Description

This course is a laboratory study of weather variables, atmospheric motion, precipitation and topics in modern weather science. In this course, students will acquire and interpret basic meteorological data, to study atmospheric phenomena. The construction and analysis of weather maps will be used with an emphasis on weather forecasting. Pre- or co-requisite: METO-111. (2 hours lab)

Statement on General Education and Liberal Learning

A liberal education prepares students to lead ethical, productive, and creative lives and to understand how the pursuit of lifelong learning and critical thinking fosters good citizenship. General education courses form the core of a liberal education within the higher education curriculum and provide a coherent intellectual experience for all students by introducing the fundamental concepts and methods of inquiry in the areas of mathematics, the physical and natural sciences, the social sciences, the arts and the humanities, and composition. This course is part of the general education core experience at Howard Community College.

Overall Course Objectives

Upon completion of this course, the student will be able to:

1. Interpret hourly weather observations.
2. Analyze data to determine the relationships between temperature, dew point and relative humidity, and factors that influence each.
3. Synthesize weather observations into weather maps.
4. Use a real-time weather database to assess the status of the weather at a given location.
5. Use a real-time weather database to study air mass history using temperature, dew point and relative humidity.
6. Use current data to assess and interpret the vertical structure of the atmosphere.
7. Interpret meteorological maps and charts to explain the current weather pattern.
8. Identify direction and calculate velocity of movement of high and low pressure systems, cold, warm and stationary fronts.
9. Prepare a weather forecast for a given area.
10. Examine evidence and draw conclusions about climate change.

Major Topics

I. Understanding Weather Maps
II. Solar and Terrestrial Radiation
III. Temperature
IV. Moisture and Atmospheric Stability
V. Condensation and Precipitation
VI. Air Pressure and Winds
VII. Circulation of the Atmosphere
VIII. Air Masses
IX. Weather Patterns
X. Weather Analysis and Forecasting
XI. Earth's Changing Climate

Course Requirements

Grading/exams: Grading procedures will be determined by the individual faculty member but will be calculated on the basis of quizzes, exams, projects, and lab reports.

Other Course Information

This course is a Science core course, Science elective, and an Arts and Science elective.