

NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY NAS 125 - METEOROLOGY (4 CR.)

Course Description

Presents a non-technical survey of fundamentals of meteorology. Focuses on the effects of weather and climate on humans and their activities. Serves for endorsement or recertification of earth science teachers. Lecture 3 hours. Recitation and laboratory 2 hours. Total 5 hours per week.

General Course Purpose

This course serves as a one-semester laboratory science course for non-science majors and as a science elective for science majors. Students are exposed to the sciences of chemistry and physics as they relate to the study of the atmosphere and the hydrosphere of the earth. Students will gain insights into forces that drive the global weather, the interaction of the atmosphere and hydrosphere, and the effects of weather and climate on humankind.

This course in conjunction with NAS 130 - Elements of Astronomy may fulfill the requirement as a one-year lab science course for non-science majors.

Course Prerequisites/Corequisites

None.

Course Objectives

- identify the components that make up the earth's atmosphere
- outline and discuss the physical principles involved in the energy engine that drives the dynamic atmosphere
- identify and discuss the atmospheric conditions that produce thunderstorms, tornadoes, hurricanes, air pollution, and climatic changes
- apply climatic data to weather forecasting
- identify and describe the tools used by the meteorologist in weather forecasting

Major Topics to be Included

- The Earth's atmosphere
- Heating and cooling of the atmosphere
- Humidity, condensation, and clouds
- Cloud development and precipitation
- Winds and air pressure
- Atmospheric circulation
- Air masses and storms
- Weather forecasting
- Thunderstorms, tornadoes, and hurricanes
- Air pollution
- Climate change
- Global climate
- Atmospheric optics
- Laboratory work dealing with topics in atmospheric physics and chemistry

EXTRA TOPICS (Optional)

As available, the course may be supplemented with field trips, guest speakers, Internet assignments and discussions of current topics.