

CE 174 – Introduction of Meteorology and the Atmospheric Environment

Elective

2007 Catalog Data: CE 174: **Introduction of Meteorology and the Atmospheric Environment** 3. Introduction to meteorology, the atmospheric processes, weather, air pollution, and environmental topics

Prerequisites: none

Textbook: Lutgens and Tarbuck, The Atmosphere, 9th edition, 2005

Course Objectives:

1. To understand the basic principles of meteorology
2. To understand the basic sources and sinks of chemical air pollution and its interaction with weather
3. To understand the physical basis of climate change and climate warming
4. To be able to use a weather map and make basic weather predictions
5. To understand the heating and cooling of the atmosphere and how that affects clouds and weather

Topics:

1. Introduction to the atmosphere
2. Energy and heating of the atmosphere and earth's surface
3. Temperature, moisture and atmospheric stability
4. Condensation and precipitation
5. Air pressure and winds
6. Circulation of the atmosphere
7. Air masses and weather patterns
8. Thunderstorms and tornadoes
9. Weather forecasting
10. Optical phenomenon
11. Air pollution
12. Climate change

Class Schedule: Three fifty-minute sessions per week

Contribution of Course to meeting the Professional Component: this is an elective typically taken by nonmajors

Course Outcomes: This course is contributing toward the following educational outcomes. The table below offers details by outcome.

Outcome	Role of CE 174
(4) ability to think logically, critically and creatively	The atmosphere is a complicated system and a basic logical understanding of the Basic physical principles of meteorology is required. Critical thinking is essential to understanding.
(9) The ability to communicate effectively in written, oral, and graphical forms	The students were required to make presentation on weather once/month to the class and to explain physically what was happening in the atmosphere. A term paper was required of all students
(11) knowledge of contemporary issues	The class addressed in detail climate change and atmospheric warming and Its consequences

Prepared by: George H Mount, June 2007