ATMOSPHERIC SCIENCE (ATSC)

ATSC 110 Meteorology (4 credits)
Elements of the atmosphere will be covered including basic concepts of meteorology and those processes that affect the global atmospheric circulation. Laboratory exercises will supplement course materials and will provide hands on learning opportunities in measuring atmospheric parameters and the instrumentation needed to make these measurements.

ATSC 240 Meteorological Instrumentation (4 credits)
A study of the theory, design, and accuracy of instrumentation for the measurement of temperature, pressure, humidity, wind, and radiation. In addition, topics such as radar, and the use of aircraft and balloons as instrument platforms are also discussed. Labratory required.
Prerequisite/s: MATH 102

ATSC 520 Atmospheric Chemistry (3 credits)
Composition of clean and polluted air. Sources and sinks of atmospheric gases and aerosols. The role of atmospheric chemistry in global environmental issues such as acid rain, visibility reduction, climatic change, oxidant enhancement, etc.
Prerequisite/s: ATSC 210, or CHEM 115, or CHEM 121

ATSC 528 Atmospheric Data Analysis (3 credits)
Introduction to techniques used in the analysis of meteorological data and methods for interpreting their effects: polynomial fitting, method of successive corrections, statistical methods, variational techniques, model initialization, data assimilation, and filter design.
Prerequisite/s: ENS 240

ATSC 535 Measurement Systems (3 credits)
An advanced course in meteorological measurement systems, including coverage of performance characteristics of sensors, calibration standards, measuring devices, the effects of making measurements in the atmospheric environment, meteorological measurement systems, and digital data logging and processing.

ATSC 565 Air Quality (4 credits)
An in-depth introduction to important areas within the air quality field. Topics covered include the physical and chemical nature of air pollutants; their sources, control, and transport through the atmosphere; their interaction with other atmospheric constituents; their removal through cloud processes, fallout and wet deposition; their effects on visibility, human health, ecosystems, and global climate. Methods related to the measurements of atmospheric pollutants, air quality modeling, and air quality forecasting are discussed.
Prerequisite/s: CHEM 115, or CHEM 121