THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Air Pollution

CBE 5771

Credit Hours:
3.00 - 3.00

Course Levels:
Undergraduate (1000-5000 level)
Graduate (5000-8000 level)

Course Components:
Lecture

Course Description:
Introduction to principal aspects of air pollution, including engineering control of stationary sources, atmospheric chemistry, aerosol behavior, transport and dispersion modeling.

Prerequisites and Co-requisites:
Prereq: Sr or Grad standing, or permission of instructor.

Course Goals / Objectives:
- Understand what constitutes an air pollutant, the sources of air pollutants, and how air pollutants are classified and regulated
- Learn about aerosol mechanics and particulate control devices
- Develop familiarity with air pollution meteorology and modeling
- Learn about combustion and the impact this process has on air quality as well as larger scale issues like acid rain and global warming
- Learn about devices and strategies to control gaseous air pollutants
- Develop familiarity with basic atmospheric chemistry

Course Topics:

- Overview; Criteria pollutants and Air Quality Standards; Regulations; Sampling
- Meteorology; Atmospheric structure and stability; Dispersion models
- Steady state and Transient Box model
- Gaussian dispersion
- General Air Pollution issues; Combustion Fundamentals
- Particulate matter; Size distributions; Particulate control devices
- Gaseous pollutant control
- Tropospheric Ozone; Acid Rain
- Stratospheric Ozone; Global warming
- Contemporary issues in air pollution

Designation:

Elective