



Governing Iowa's Public Universities

In accordance with [Board of Regents policy 3.20](#), the following required information is available below:

Fall 2026

I. Course title and number as designated in the institutional course catalog

EARTHSCI 3230 Air Quality, 01

II. A course description including learning objectives that students are expected to achieve by the end of the course

A. Course Description:

EARTHSCI 3230. Air Quality — 4 hrs.

Atmospheric pollution and pollutants; effect of air pollution on the atmosphere, health and welfare; regulation and public policy; atmospheric dispersion of air pollution; air pollution control; indoor air quality. Discussion, 4 periods.

Prerequisite(s): EARTHSCI 1200; junior standing. (Fall)

B. Course Level Learning Objectives:

Describe the composition and structure of the atmosphere.

Identify major gaseous and particulate air pollutants.

Distinguish between natural and anthropogenic sources of air pollution.

Explain the transport, dispersion, and deposition of air pollutants.

Assess the influence of meteorological conditions on air quality.

Evaluate the effects of air pollution on human health.

Assess the impacts of air pollution on ecosystems, materials, and visibility.

Explain the principles of air quality monitoring and emissions assessment.

Interpret air quality measurements and emissions data.

Explain major air quality regulations and management strategies.

Evaluate policy approaches for controlling air pollution.

Compare control technologies for mobile and stationary emission sources.

Assess strategies for improving indoor air quality.

Apply scientific principles to analyze air pollution problems.

Communicate air quality issues using scientific evidence.



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III. A general outline of the topics to be covered throughout the course:

1. Atmosphere
2. Atmospheric Pollution and Pollutants
3. Atmospheric Dispersion, Transport, and Deposition
4. Atmospheric Effects
5. Health Effects
6. Welfare Effect
7. Air Quality and Emissions Assessment
8. Regulation and Public Policy
9. Control of Motor Vehicle Emissions
10. Control of Emissions from Stationary Sources
11. Indoor Air Quality
12. Environmental Noise

IV. List of required textbooks, readings, and other materials necessary for the course

Air Quality, Sixth Edition, 2021, Wayne T. Davis, Joshua S. Fu, Thad Godish,
ISBN: 9780367860929

V. General description of the types of assessments used in the course (e.g., exams, papers, projects, experiential learning):

Reading, In-class practice, Discussions, 5 Homework Assignments, Midterm Exam, Final Exam