



## About CAAQES

The **Center for Agricultural Air Quality Engineering and Science** at Texas A&M University is a research and extension group of air quality faculty and staff in the Department of Biological and Agricultural Engineering and at Texas AgriLife Research and Extension in College Station and Amarillo, Texas.

CAAQES faculty have conducted research into the measurement, modeling, and reduction of emissions from agricultural operations all over the United States and was recently awarded the award for research excellence from the Texas Commission on Environmental Quality.



## CAAQES Air Quality Short Courses

As a result of decades of air quality research and instruction, CAAQES is able to offer multiple air quality short courses, each tailored to meet the needs of air quality engineers and professionals desiring to refresh their engineering skills or to update their knowledge on current trends in air quality. Topics range from the regulatory process to the engineering calculations required for permitting and design.

CAAQES courses are fee-based and taught by faculty and air quality experts at Texas A&M University and are suitable for continuing education credits. Courses may be customized on request.

These short courses are challenging, yet are well received by students who appreciate the skillful and quality instruction provided.

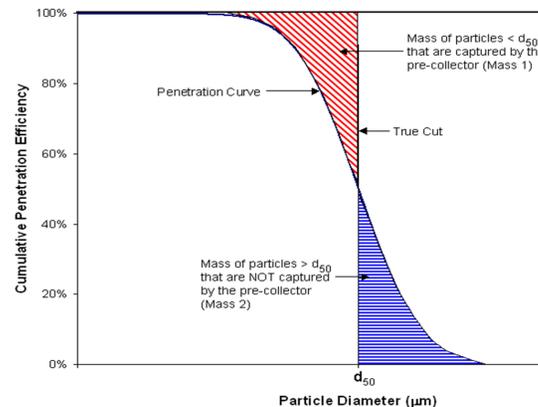
Course critique comments:

“Whether you have an engineering background or not, this course is informative.”

“The permits I put together have more meaning because the background calculations are apparent.”

“Confidence builder with math and unit conversions.”

“ I had no idea PM was such a big deal.”



# Air Quality

# Short Courses



**Center for  
Agricultural  
Air  
Quality  
Engineering &  
Science**

Contact us: (979) 845-3659

[www.caaqes.tamu.edu](http://www.caaqes.tamu.edu)

# CAAQES SHORT COURSES

## Air Quality Engineering 3 Days

Our signature course. In-depth instruction for engineers and air quality professionals to re-fresh engineering skills, practice calculations, and update knowledge for air pollution control and regulation. Includes several practical application exercises and case studies.

Features:

- Air Pollution Regulatory Process. Background on Clean Air Act Amendments and latest updates to NAAQS, NSPS and more.
- Advanced Science and Engineering. Advanced instruction on calculations involving air density, psychrometrics, and unit operations.
- Sampling Equipment and Protocols. Particulate matter samplers, Gravimetric and TEOM. Capabilities and limitations. Research findings on sampler performance. Protocols for measuring and modeling fugitive emissions from large ground level area sources.
- Particulate Matter characteristics. Protocol for determining particle size distribution of PM samples. Differences in urban and rural PM. Particle size ranges of rural PM. Abatement strategies
- Gasses, Odors, and RVOCs. Calculation of SO<sub>x</sub> and NO<sub>x</sub> emissions. RVOC emission factors for feedyards and dairies. Measuring emissions of gasses and RVOCs.
- Greenhouse gas (GHG) emissions. Emissions inventory including carbon dioxide and methane emissions from industrial and rural sources. Impact of proposed GHG regulation.
- Current Events and Issues. Panel discussion with instructors on air quality and regulatory trends.

## Air Quality Technical 2 Days

Our most popular course. Provides technical instruction for non-engineers to refresh basic required skills, learn calculations, and update knowledge for air pollution control and regulation. Includes several practical application exercises.

Features:

- Air Pollution Regulatory Process. Background on Clean Air Act Amendments and latest updates to NAAQS, NSPS and more.
- General Science and Engineering. Instruction on calculations involving air density, psychrometrics, and unit operations.
- Sampling Equipment. Particulate matter samplers, Gravimetric and TEOM. Capabilities and limitations. Research findings on sampler performance.
- Particulate Matter characteristics. Protocol for determining particle size distribution of PM samples. Differences in urban and rural PM.
- Gasses and RVOCs. Calculation of SO<sub>x</sub> and NO<sub>x</sub> emissions. RVOC emission factors for feedyards and dairies.
- Current Events and Issues. Panel discussion with instructors on greenhouse gas emissions, air quality and regulatory trends.



## Air Pollution Regulatory Process 1 Day

A focused, in depth review of the road to air pollution regulation, agency evolution, and the way ahead.

Features:

- Background
- Clean Air Act Amendments
- EPA and States roles and responsibilities
- Title V Operating Permits
- Prevention of Significant Deterioration (PSD)
- NAAQS and NSPS
- Greenhouse Gas Regulation
- Current Events and Issues

## Air Quality Fundamentals 1 Day

Provides basic instruction associated with air quality regulations. Designed as an introductory course for those new to the air quality field.

Features:

- Air Pollution Regulatory Process. History of Clean Air Act Amendments and formation of EPA.
- Basic Science and Engineering. Introduction to air density, psychrometrics, and unit operations.
- Criteria pollutants. Overview of PM, SO<sub>x</sub>, NO<sub>x</sub>, Ozone NAAQS and formation of each.
- Measurement techniques. Familiarization of PM samplers and limitations.
- Current Events and Issues. Challenges facing air quality and regulation.