U.S. Environmental Protection Agency (EPA) Training Resource (AirKnowledge)

https://airknowledge.gov/index.html

What is AirKnowledge?

AirKnowledge is a partnership training program in the U.S. Environmental Protection Agency's (EPA's) Office of Air Quality Planning and Standards (OAQPS). AirKnowledge develops training material focused on the Clean Air Act program areas managed by OAQPS. The AirKnowledge website is a central, modern, "go-to" resource for building training knowledge, skills, and capacity for air quality professionals and individuals who want to learn more about how air pollution affects our world. This website is intended for use by the public and EPA staff.

AirKnowledge's mission is to offer technically accurate training content to air quality professionals and the public on a core set of air quality topics. The training materials on this website are arranged by eight curricula (subject areas): a foundational Air Pollution Basics curriculum and seven curricula that relate to particular job functions within air quality agencies. These seven curricula include air quality modeling, air quality planning, air toxics rule development and implementation, ambient air monitoring, emissions inventories, permitting, and source emissions testing and source emissions monitoring. To browse the curricula, select "eLearning" or "Classroom Course Materials" on the navigation bar on the AirKnowledge website.

For air quality professionals interested in developing training content, the AirKnowledge website also provides resources to help anyone seeking to develop their own training content. Examples of these resources include training guides, tools, and background information. The resources currently posted on the website provide information on the selection of training delivery formats. It consists of a background information document, a presentation and a webinar recording of the presentation.

New Training Materials Now Available!

[EMIS denotes the Emissions Inventories curriculum]

- Course entitled EMIS101-SI: Fundamentals of Emissions Inventories
- Stationary Source Control Technologies: Fabric Filters (Baghouses) module

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EMIS101-SI: Fundamentals of Emissions Inventories
https://airknowledge.gov/SI/EMIS101-SI.html

Foundational-level course: After completion of the course, learners will be able to explain the fundamental aspects of Emissions Inventories.

The course is comprised of four modules:

Module 1: What is an Emissions Inventory?

- After completion of this module, learners will be able to explain the basic aspects of an air emissions inventory. Specifically, learners will be able to:
    - Define an air emissions inventory
    - Identify the elements that constitute an emissions inventory
    - Describe the types of pollutants found in inventories
    - Describe how pollutants are represented in inventories
    - Describe the sources found in inventories
    - Explain the geographic components of an emissions inventory
    - Explain the temporal components of an emissions inventory
    - Explain the emissions components of an emissions inventory

Module 2: Purposes and Types of Emissions Inventories

- After completion of this module, learners will be able to explain the purposes and types of air emissions inventories, including the three primary inventories that the Environmental Protection Agency (EPA) develops. Specifically, learners will be able to:
    - Explain the purpose of emissions inventories
    - Explain the key uses of emissions inventories
    - Describe how different types of emissions inventories can meet different needs
    - Describe the three national emissions inventories that the EPA develops
    - Explain how the three national emissions inventories differ

Module 3: Developing Air Emissions Inventories

- After completion of this module, learners will be able to describe the approaches, methods and tools/data used for building emissions inventories. Specifically, learners will be able to:
    - Explain how existing inventories and other resources contribute to emissions inventory development
    - Identify the key considerations in developing a workplan for emissions inventory building
    - Define activity data
    - Identify examples of activity data
    - Describe general approaches for data collection for emissions inventory development
    - Describe data collection processes used for point sources
    - Describe data collection processes used for nonpoint sources
    - Identify examples of data collected for other types of sources (mobile, fires and biogenic)
    - Identify the methods used for estimating emissions
    - Describe the considerations for choosing a method for estimating emissions
    - Explain why documentation is important when developing an emissions inventory
    - Explain the types of information included in documenting an emissions inventory
    - Explain how quality assurance relates to emissions inventories
    - Describe some basic aspects of a quality assurance program

Module 4: National Emissions Inventory

- After completion of this module, learners will be able to explain the key aspects of the National Emissions Inventory (NEI). Specifically, learners will be able to:
    - Define the NEI
    - Explain the general concepts of the NEI
    - Explain the purposes and key goals of the NEI
    - Explain the uses of the NEI
    - Define the key inventory elements provided by the NEI
    - Describe each of the key inventory elements as they pertain to the NEI
    - Identify the three primary methods used to categorize emissions sources in the NEI
    - Describe how each of the three methods organize emissions source data within the NEI
    - Describe generally how the NEI is created
    - Explain the process and timeline for NEI development

Fabric Filters (Baghouses) Module

https://airknowledge.gov/Mod/Fabric_Filters(Baghouses)/Web/index.html#/

Foundational-level module: After completion of this module, learners will be able to explain fabric filter (baghouse) design and operation.

Specifically, learners will be able to:

- Define fabric filter (baghouse)
- Describe the ways particles from a stationary source are captured by a fabric filter
- List the components of a filter
- Explain different filtration designs
- Describe the different housing styles of fabric filters
- Define the different types of gas inlets of fabric filters
- Identify the remaining components of a fabric filter
- List some common fabric filter materials
- Describe the attributes of filters that are affected by fabric weave
- Identify some treatments for fabrics used in fabric filters
- Identify the main causes of fabric filter (bag) failures
- Define common metrics that are tested to ensure bag performance
- Describe the different frequencies of cleaning
- List the most common types of bag cleaning
- Compare and contrast different bag cleaning methods
- Explain three fabric filter design variables: pressure drop, air-to-cloth ratio, filter drag, and collection efficiency
- Compare different fabric filters based on their design variables
- Describe key steps in installing a baghouse
- Describe baghouse start up and shutdown procedures
- Identify commonly monitored measurables for baghouses
- List typical recordkeeping requirements specific to baghouses
- Identify which fabric filter media are commonly used today
- Identify which fabric filter cleaning techniques are popular today