

AirKnowledge Overview

National Air Quality Training Program
EPA Office of Air Quality Planning and Standards
December 6th, 2021

Program Structure

Past to future

AirKnowledge is a national air quality training program serving state, tribal, and local air agencies as well as other audiences.

Focus Areas:

- Learning Management System and website
- New curricula
- New Self-Instructional (SI) air quality training materials
- Deliver & develop instructor-led classes (in person and virtual)



Historic AirKnowledge Components

Classroom Training

- Classroom courses range from 1-3.5 days
 - Some classes are field-based
 - Most have large PPT slide decks – one course averages 1 slide per minute for 3 days!
- In a typical year we deliver 60+ trainings with roughly 2,000 completions/year
- NO virtual instruction prior to 2020

SI Training

- Potential to provide easier access to more students
- Historically students needed days/week to complete one course
- OAQPS developed technical information and needed contractors to create e-learning material
- Historically, we estimate roughly 2,000 completions /year

Developing AirKnowledge Curricula

- Air Pollution Basics
- Air Quality Modeling
- Air Quality Planning
- Air Toxics Rule Development and Implementation
- Ambient Air Monitoring
- Emissions Inventories
- Permitting
- Source Emissions Testing and Source Emissions Monitoring
- Curricula define what training AirKnowledge will, and will not, provide
- Allows us to create 3-year planning horizon for training development
 - Prioritize competing stakeholder training needs
 - Ability to coordinate SMEs time across partners – both internal & external to EPA
 - Facilitates a shift from historic model of course development to modularized, blended learning
- Assessing how best to incorporate Environmental Justice considerations across all curricula

Shifting Towards Blended Learning

- Different training delivery approaches have different strengths
 - SI -Easier access & good replacement for “turning slides”
 - Classroom – Class discussions & student-led activities
 - Virtual instruction – a “compromise” between SI & classroom
- Developing SI modules instead of longer SI courses
 - 1st step in creating blended learning
 - Provide trainings for new hires ASAP
 - Allows for customizable learning plans
- Increased our productivity from one course every 2 years → 14+ modules/year
- Over 6,000 completions in the first six months releasing new SI modules (vs 2,000/year for classroom)

Future Direction

- Continue to develop SI modules
- Starting to redesign classroom courses to blended learning model
 - Example: APTI 452 will be retired
 - This was originally 2 week in-person “Air Camp”
 - Became 3-day course that averages 1 slide/minute
 - We are finishing SI modules to deliver much of this information
 - New course will be BASC199, which will focus on projects and classroom discussion for more in-depth learning of these topics – also improve student connections
- Improve ability to deliver virtual instructor-led trainings (VILT)
 - 17 instructors with no previous VILT experience
 - Logistics managed by 6 regional MJOs with minimal previous VILT experience
 - Hosted through AirKnowledge LMS – a tool built for work we didn’t previously support
 - Courses designed for classroom, not VILT

Access to AirKnowledge Resources

- New AirKnowledge Learning Management System (LMS)
 - Replaces the old EPA Air Pollution Training Institute (APTI-Learn) LMS
 - Accessible to state, tribal, and local air agencies
 - To register, go to: <https://epaapti.csod.com/client/epaapti/default.aspx>
- Public Website <https://www3.epa.gov/ttn/apti/index.html>
 - Will eventually contain the same content as is housed on the LMS
 - Will not offer all the features an LMS provides (completion certificates, customized lesson plans, etc.)
 - Accessible to our other audiences:
 - The public
 - Academia
 - Communities
 - Industry
 - International audiences
 - EPA staff

Training Development Plan

Recent accomplishments and 3-year plan

New Training Materials (FY2020-2021)

Available now on our LMS and website!

Air Pollution Basics

Introduction to the National Ambient Air Quality Standards (NAAQS) (e-learning)

NAAQS Implementation (e-learning)

Area Designations Requirements

What is a SIP/TIP?

Timeline and Roles for SIP/TIP Submittal

Controlling Air Pollution (e-learning)

Types of Air Pollutants (e-learning)

What are Criteria Pollutants

What are Air Toxics?

What are Greenhouse Gases?

Sources of Air Pollution (e-learning)

History of Air Pollution Control Legislation (e-learning)

Structure and Key Provisions of the Clean Air Act (e-learning)

New Source Review (e-learning)

Air Quality Modeling

Air Pollution Dispersion Models: The AERMOD Modeling System (classroom)

Ambient Air Monitoring

Quality Assurance for Air Pollution Measurement Systems (e-learning)

Introduction to Ambient Air Toxics Monitoring (e-learning)

What are Air Toxics?

What are the Sources of Air Toxics?

Ambient Air Toxics Monitoring: How is it Different from Ambient Criteria Pollutant Monitoring?

Why Monitor Ambient Air Toxics?

Basic Considerations for Development of an Ambient Air Monitoring Network

EPA's Air Toxics Monitoring Program

Measurement of Air Toxics at the National Air Toxics Trends Stations (NATTS) Network

Air Toxics

What are the Sources of Air Toxics? (e-learning)

Permitting

Setting Enforceable Potential to Emit Limits in New Source Review Permits (e-learning)

Source Emissions Testing and Source Emissions Monitoring

Introduction to Continuous Monitoring Systems (one day classroom)

Continuous Monitoring Systems (multi-day classroom)

Topics In Development Plan: FY 2022

Air Pollution Basics Curriculum

Air Pollution Basics Overview course (blended learning)

Clean Air Act Successes module

What are Greenhouse Gases? module

Health and Environmental Effects of Criteria Pollutants module

Health and Environmental Effects of Air Toxics module

Title V Program module

What is an Emissions Inventory? module

Purposes and Types of Emissions Inventories module

Basic Principles of Source Testing and Source Monitoring module

Air Quality Planning Curriculum

Components of Attainment SIPs/TIPs course

Area Designations course

Exceptional Events course

Ambient Air Monitoring Curriculum

Ambient Air Toxics Monitoring: How is it Different from Ambient Criteria Pollutant Monitoring? module

Why Monitor Ambient Air Toxics? module

Basic Considerations for Development of an Ambient Air Monitoring Network module

EPA's Air Toxics Monitoring Program module

Measurement of Air Toxics at the National Air Toxics Trends Stations (NATTS) Network module

Permitting Curriculum

NSR: Control Cost Analysis course

RESERVED: Coordinate EPA review of up to 2 MJO-developed products

Topics In Development Plan: FY 2023

Air Pollution Basics Curriculum

Air Pollution Basics Overview course (for virtual delivery)
Environmental Justice and Permitting course
Transport and Fate of Air Pollutants module
Ambient Air Quality Monitoring module
National Emissions Inventory Overview module

Air Toxics

Risk Communication course
Stationary Source Control Technologies: Cyclones module
Stationary Source Control Technologies: Fabric Filters (Baghouses) module

Emissions Inventories Curriculum

Key Sources of Data Needed to Build Emissions Inventories module
Emissions Inventory Development module
Development of the NEI module

Permitting Curriculum

Foundational NSR course
NSR: PSD Applicability course
NSR: Plantwide Applicability Limits course

Source Emissions Testing and Source Emissions Monitoring Curriculum

Stack Testing: Statutory and Regulatory Provisions module
Stack Testing: Methods module

RESERVED: Coordinate EPA review of up to 4 MJO-developed products

Topics In Development Plan: FY 2024

Air Pollution Basics Curriculum

Risk Assessment Process module
Working With Tribes course
Clean Air Act Air Toxics Regulatory Program module

Air Quality Planning Curriculum

Redesignation Process and Maintenance Plans course

Emissions Inventories Curriculum

NEI Data Terminology and Data Summaries module
Methods for Accessing NEI Data module

Permitting Curriculum

Foundational Title V course
NSR: Project Aggregation course
NSR: BACT course
Title V Permitting: Advanced Topics for Permit Writers course

Air Toxics Curriculum

Air Toxics Risk Assessment course
Stationary Source Control Technologies: Electrostatic Precipitators module
Stationary Source Control Technologies: Oxidation Processes module

Source Emissions Testing and Source Emissions Monitoring Curriculum

Stack Testing: Navigating EPA Resources module
Stack Testing: Audits and Review module

RESERVED: Coordinate EPA review of up to 5 MJO-developed products

Creating A Playlist

A fancy term for an individual learning plan

On Saturday
Learner Home
View Your Transcript
Instructor Led Training Calendar

First go to 'My Training,' then go to 'Learner Home.'

26 Hours
0 Badges

Your Subjects Edit
Air Pollution Basics

Your Playlists
0 Created 0 Followers 0 Followed
Create New Playlist

What would you like to learn today?
Search for learning

Continue Learning

Ambient Air Monitoring
Permitting
Source Emissions Testing and Source
Air Pollution Basics

Create New Playlist

Open Curriculum Open Curriculum Open Curriculum Open Curriculum

Transcript View

| | | |
|----------|----------|------------------------|
| 2 | 0 | 161 |
| PAST DUE | DUE SOON | ASSIGNED / NO DUE DATE |

PAST DUE

NACT 334 Pre Test
Not Activated 221 days past due

NACT 334 Post Test
Pending Prior Training 189 days past due





ASSIGNED / NO DUE DATE

Ambient Air Monitoring
In Progress

Open Curriculum

Permitting

Most Popular

| | | | |
|---|--|---|---|
|  <p>Curriculum AMBM104-SI: Introduction to</p> <p>...</p> |  <p>Curriculum BASC101-SI: Introduction to A</p> <p>...</p> |  <p>Curriculum BASC104-SI: Controlling Air</p> <p>...</p> |  <p>Curriculum BASC124-SI: Air Pollution Control</p> <p>...</p> |
|---|--|---|---|

- Open Curriculum
- Assign
- Edit Training
- Save for Later
- Add to Playlist

Click on the three dots at the bottom of the course you'd like to add to the playlist. Click 'Add to Playlist'



3 Completions
26 Hours
0 Badges

Hi Justin! What would you like to learn today?

Your Subjects Edit

Air Pollution Basics

Your Playlists


0 Created 0 Followers 0 Followed

[Create New Playlist](#)

Transcript View


2 PAST DUE 0 DUE SOON 161 ASSIGNED / NO DUE DATE

Continue Learning



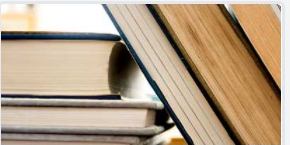
Curriculum
Ambient Air Monitoring
In Progress

Open Curriculum




Curriculum
Permitting
In Progress

Open Curriculum



Curriculum
Source Emissions Testing and Sourc
In Progress

Open Curriculum




Curriculum
Air Pollution Basics
In Progress

Open Curriculum

Learners could also click, 'Create New Playlist'

javascript:void(0);

 3 Completions
26 Hours
0 Badges

Hi Justin! What would you like to learn today?

Search for learning

Continue Learning

Create New Playlist

Playlist Name*

Cancel Create

Your Subjects Edit

Air Pollution Basics

Your Playlists

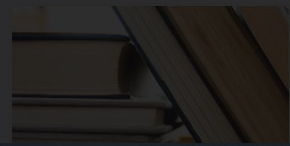
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Transcript View

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Saved for Later



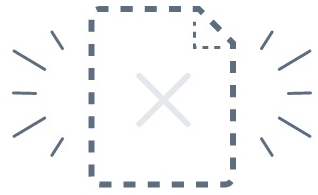
Playlist



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Your playlist is empty!

Search the catalog or paste a link to add content.



Thank You!

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