Air Pollution Control Engineering Training Course

Professional Development Training Course Outline

Category	General Training	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Air Pollution Control Engineering has become a critical discipline in achieving sustainable industrial development, environmental compliance, and net-zero emissions goals. With increasing regulatory requirements, industries worldwide are investing in advanced air quality management systems, emission monitoring technologies, carbon reduction strategies, and clean energy solutions. Air Pollution Control Engineering Training Course provides comprehensive knowledge of air pollution sources, atmospheric dispersion, emission control technologies, environmental regulations, and innovative pollution mitigation practices that support ESG objectives and climate action initiatives.

The course is designed to equip engineers, environmental professionals, plant operators, sustainability managers, and regulatory personnel with practical skills in industrial emission control, air quality monitoring, carbon capture technologies, stack emission analysis, environmental impact assessment, and Industry 4.0-enabled environmental management systems. Through real-world case studies, hands-on exercises, and industry best practices, participants will gain expertise in designing, operating, optimizing, and auditing air pollution control systems across diverse industrial sectors.

Programme Curriculum

Air Pollution Control Engineering Training Course

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Course Duration

5 days

Course Objectives

1. Understand advanced concepts of Air Quality Management and Environmental Sustainability.
2. Analyze industrial emission sources using Emission Inventory Management techniques.
3. Evaluate Ambient Air Quality Monitoring Systems (AAQMS) and sensor technologies.
4. Design and optimize Particulate Matter Control Technologies.
5. Apply Industrial Emission Reduction Strategies for regulatory compliance.
6. Implement Continuous Emission Monitoring Systems (CEMS).
7. Assess Carbon Capture, Utilization and Storage (CCUS) technologies.
8. Conduct Atmospheric Dispersion Modeling using modern software tools.
9. Perform Environmental Impact Assessment (EIA) for industrial projects.
10. Develop Net-Zero Emission Roadmaps and sustainability plans.
11. Apply ESG Reporting Frameworks and environmental performance indicators.
12. Integrate IoT-based Environmental Monitoring and smart pollution control solutions.
13. Conduct Environmental Compliance Audits and risk assessments.

Target Audience

1. Environmental Engineers
2. Chemical Engineers
3. Mechanical Engineers
4. Process Engineers
5. Sustainability Managers
6. Environmental Consultants
7. Plant Operations and Maintenance Professionals
8. Government Regulatory and Compliance Officers

Course Modules

Module 1: Fundamentals of Air Pollution Engineering

- Air pollution concepts and terminology
- Types and classification of air pollutants
- Sources of industrial and urban emissions
- Health and environmental impacts
- Global air quality challenges
- **Case Study:** Analysis of urban air pollution management initiatives in major metropolitan cities.

Module 2: Air Quality Monitoring and Assessment

- Ambient air quality monitoring techniques
- Air sampling methodologies
- Continuous Emission Monitoring Systems (CEMS)
- Data acquisition and interpretation
- Air quality indices and reporting
- **Case Study:** Smart city air quality monitoring implementation using IoT sensors.

Module 3: Industrial Emission Sources and Characterization

- Combustion-generated pollutants
- Process industry emissions
- Fugitive emission assessment
- Emission inventory preparation
- Source apportionment techniques
- **Case Study:** Emission characterization in a cement manufacturing plant.

Module 4: Particulate Matter Control Technologies

- Cyclone separators
- Baghouse filtration systems
- Electrostatic precipitators (ESP)
- Wet scrubbers
- Performance evaluation and optimization
- **Case Study:** ESP efficiency improvement in a coal-fired power plant.

Module 5: Gaseous Pollutant Control Systems

- Sulfur dioxide (SO?) control
- Nitrogen oxide (NOx) reduction technologies
- Volatile Organic Compound (VOC) control
- Adsorption and absorption systems
- Catalytic oxidation processes
- **Case Study:** VOC reduction program in a petrochemical facility.

Module 6: Atmospheric Dispersion Modeling and Environmental Impact Assessment

- Meteorological fundamentals
- Dispersion modeling principles
- Gaussian plume models
- Risk assessment methodologies
- Environmental Impact Assessment procedures
- **Case Study:** Dispersion modeling for an industrial development project.

Module 7: Carbon Management and Sustainable Emission Reduction

- Carbon footprint assessment
- Net-zero emission strategies
- Carbon Capture, Utilization and Storage (CCUS)
- Decarbonization technologies
- ESG and sustainability frameworks
- **Case Study:** Carbon reduction roadmap for a manufacturing industry.

Module 8: Regulatory Compliance, Auditing and Emerging Technologies

- National and international air quality regulations
- Environmental compliance auditing
- ISO 14001 environmental management systems
- AI and machine learning in emission management
- Future trends in pollution control engineering
- **Case Study:** Environmental compliance audit of a large industrial complex.

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com