Training Course on Sustainable Aviation and Green Airport Operations

Professional Development Training Course Outline

Category	Aviation and Airport Management	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

The global aviation industry is at a critical juncture, facing immense pressure to decarbonize and embrace **sustainable practices**. As the world grapples with climate change and environmental degradation, the demand for **eco-friendly aviation** and **net-zero airports** is escalating. This comprehensive training course provides essential knowledge and practical strategies for aviation professionals to navigate this evolving landscape, fostering a deeper understanding of **sustainable aviation fuels (SAF)**, **carbon offsetting**, and **green airport infrastructure**. Participants will gain actionable insights to implement **environmental management systems** and drive the **decarbonization of air transport**, ensuring a resilient and responsible future for the sector.

Training Course on Sustainable Aviation and Green Airport Operations is designed to equip aviation and airport personnel with the expertise to champion **environmental stewardship** and **operational efficiency** within their organizations. Through a blend of theoretical foundations, real-world case studies, and interactive discussions, participants will explore innovative solutions for **reduced emissions**, **waste management**, **noise abatement**, and **biodiversity protection**. By focusing on **circular economy principles** and **renewable energy integration**, this course empowers professionals to contribute to the aviation industry's **2050 net-zero targets**, driving both ecological responsibility and long-term economic viability.

Programme Curriculum

Training Course on Sustainable Aviation and Green Airport Operations

Introduction

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Course Duration

10 days

Course Objectives

1. Understand the production, logistics, certification, and economic viability of various SAF pathways.
2. Gain practical knowledge for achieving and advancing through ACI's Airport Carbon Accreditation levels.
3. Explore design principles and technologies for energy-efficient buildings, smart terminals, and renewable energy integration.
4. Learn to establish, implement, maintain, and continually improve an EMS aligned with ISO 14001.
5. Formulate comprehensive roadmaps and initiatives for achieving carbon neutrality across airport and airline operations.
6. Implement best practices for waste reduction, recycling, circular economy models, and efficient water conservation.
7. Analyze noise sources and apply effective strategies for noise monitoring, abatement, and community engagement.
8. Understand local air quality challenges and deploy solutions for emissions reduction from ground support equipment and aircraft.
9. Develop strategies for protecting local ecosystems and enhancing biodiversity within airport boundaries.
10. Evaluate climate risks and implement adaptive measures to enhance airport resilience against extreme weather events.
11. Explore how data analytics, AI, and smart technologies can optimize resource consumption and environmental performance.
12. Understand funding mechanisms, green bonds, and incentives for sustainable aviation projects.
13. Build partnerships with airlines, ground handlers, regulatory bodies, and local communities for collective environmental action.

Organizational Benefits

- Position the organization as a leader in environmental responsibility, attracting eco-conscious travelers and investors.

- Identify and implement energy-saving measures, waste reduction strategies, and efficient resource management.
- Ensure adherence to evolving international and national environmental regulations and standards, minimizing legal risks.
- Reduce exposure to environmental liabilities, climate-related disruptions, and public scrutiny.
- Foster a culture of sustainability and empower employees to contribute to green initiatives.
- Differentiate the organization in a rapidly greening aviation market.
- Qualify for sustainable finance opportunities and grants.
- Build trust and support through proactive environmental stewardship and transparent communication.
- Drive technological adoption and process improvements for sustainable operations.

Target Audience

1. Airport Operations Managers and Staff
2. Airline Environmental and Sustainability Officers
3. Civil Aviation Authority Personnel
4. Ground Handling Service Providers
5. Airport Planning and Development Teams
6. Environmental Consultants in Aviation
7. Aviation Policy Makers and Regulators
8. Aircraft Maintenance and Engineering Professionals

Course Outline

Module 1: Introduction to Sustainable Aviation & Green Airports

- Defining sustainability in the aviation context: environmental, social, and economic pillars.
- Global aviation's environmental footprint: emissions, noise, waste, and local air quality.
- International and national regulatory frameworks for aviation sustainability (ICAO, EU ETS, CORSIA).
- The journey to net-zero: industry commitments and ambitious targets for 2050.
- Case Study: **Heathrow Airport's Sustainability Strategy** – An overview of their commitments and key performance indicators.

Module 2: Aviation's Climate Impact & Decarbonization Pathways

- Understanding greenhouse gas (GHG) emissions from aviation: CO2, NOx, contrails.
- Technological advancements for decarbonization: improved aircraft design and engine efficiency.
- Operational measures for emissions reduction: optimized flight paths, continuous descent operations.
- Market-based measures: carbon offsetting and the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).
- Case Study: **Qantas's Net-Zero by 2050 Roadmap** – Examining their multi-faceted approach to decarbonization.

Module 3: Sustainable Aviation Fuels (SAF)

- SAF feedstocks: municipal waste, agricultural residues, used cooking oil, algae.
- SAF production pathways: HEFA, Alcohol-to-Jet (AtJ), Fischer-Tropsch (FT).
- Certification and sustainability criteria for SAF.
- Challenges and opportunities for scaling up SAF production and deployment.

- Case Study: **Finnair's Investment in SAF** – Exploring their partnerships and procurement strategies.

Module 4: Airport Environmental Management Systems (EMS)

- Introduction to ISO 14001: principles and implementation in an airport environment.
- Environmental policy development and legal compliance.
- Identifying environmental aspects and impacts.
- Setting environmental objectives and targets.
- Case Study: **Amsterdam Schiphol Airport's EMS Implementation** – How they integrated environmental considerations into core operations.

Module 5: Airport Carbon Management & Accreditation

- Measuring and reporting airport carbon emissions (Scope 1, 2, and 3).
- Airport Carbon Accreditation program: levels, requirements, and benefits.
- Developing a carbon management plan: reduction targets and initiatives.
- Carbon offsetting and insetting strategies for airports.
- Case Study: **Dallas/Fort Worth International Airport (DFW) achieving Carbon Neutrality** – Lessons learned from their accreditation journey.

Module 6: Energy Efficiency & Renewable Energy at Airports

- Energy auditing and performance monitoring in airport facilities.
- Technologies for energy efficiency: LED lighting, HVAC optimization, smart building management systems.
- Integration of renewable energy sources: solar PV, wind power, geothermal.
- Energy storage solutions and microgrids for airport resilience.
- Case Study: **Copenhagen Airport's Wind Turbine Project** – How they leverage renewable energy for airport power.

Module 7: Sustainable Airport Infrastructure & Design

- Green building principles: LEED and BREEAM certification for airport terminals and facilities.
- Sustainable materials and construction practices.
- Water conservation measures: rainwater harvesting, greywater recycling, efficient landscaping.
- Waste management infrastructure: sorting facilities, composting, energy from waste.
- Case Study: **Changi Airport Terminal 4's Sustainable Design Features** – Highlighting innovative green building elements.

Module 8: Airport Noise Management & Community Engagement

- Understanding aircraft noise sources and impacts on communities.
- Noise monitoring systems and noise contour mapping.
- Operational noise reduction strategies: continuous descent approaches, preferential runways.
- Community engagement and communication strategies for noise concerns.
- Case Study: **Zurich Airport's Balanced Approach to Noise Management** – How they address community concerns and implement mitigation measures.

Module 9: Airport Waste Management & Circular Economy

- Types of waste generated at airports: municipal solid waste, catering waste, hazardous waste.

- Waste reduction strategies: source reduction, reuse, recycling.
- Circular economy principles applied to airport operations: material flow, product lifecycle.
- Innovative waste-to-resource technologies.
- Case Study: **San Francisco International Airport's Zero Waste Initiative** – Best practices in airport waste diversion.

Module 10: Local Air Quality Management at Airports

- Sources of local air pollutants: aircraft engines, ground support equipment, vehicles.
- Monitoring and modeling air quality around airports.
- Strategies for reducing local air emissions: electric ground support equipment (eGSE), alternative fuels for vehicles.
- Health impacts of air pollution and mitigation measures.
- Case Study: **Los Angeles International Airport (LAX) Air Quality Programs** – Their efforts to improve local air quality.

Module 11: Biodiversity Protection & Land Use Management

- Airport impacts on biodiversity: habitat fragmentation, wildlife strikes.
- Strategies for biodiversity conservation: habitat restoration, wildlife management plans.
- Sustainable land use planning around airports.
- Greenspaces and ecological corridors within airport boundaries.
- Case Study: **Frankfurt Airport's Biodiversity Initiatives** – Their programs for ecological compensation and habitat management.

Module 12: Climate Change Adaptation & Resilience for Airports

- Assessing climate change risks for airports: sea-level rise, extreme weather, temperature changes.
- Developing adaptation strategies: infrastructure hardening, flood protection, diversified energy sources.
- Emergency preparedness and response for climate-related events.
- Integrating climate resilience into airport master planning.
- Case Study: **New York JFK Airport's Resilience Projects** – How they are preparing for future climate impacts.

Module 13: Digitalization & Innovation for Sustainable Operations

- Leveraging data analytics and AI for optimized resource consumption and emissions tracking.
- Smart airport technologies: IoT sensors, digital twins for predictive maintenance.
- Automation and robotics in ground operations for efficiency gains.
- Emerging technologies: electric and hydrogen aircraft, Advanced Air Mobility (AAM).
- Case Study: **Dubai International Airport's Digital Transformation for Sustainability** – Utilizing technology for environmental performance.

Module 14: Green Finance, Reporting & Communication

- Accessing green finance mechanisms: green bonds, sustainability-linked loans.
- ESG (Environmental, Social, Governance) reporting and disclosure frameworks.
- Stakeholder engagement and effective communication of sustainability efforts.
- Building a business case for sustainable investments.
- Case Study: **ACI's Guide to Green Bonds for Airports** – Practical examples of green financing in the sector.

Module 15: Future Trends & Collaborative Action

- The role of policy and regulation in driving aviation sustainability.
- Industry partnerships and collaborations: ICAO, ACI, IATA, airlines, manufacturers.
- Public perception and consumer demand for sustainable travel.
- The path forward: innovation, policy shifts, and collective responsibility.
- Case Study: **Airbus's ZEROe Concept Aircraft** – Envisioning the future of hydrogen-powered aviation.

Training Methodology

This training course will employ a blended learning approach to maximize engagement and knowledge retention. Methodologies include:

- **Interactive Lectures & Presentations:** Core concepts delivered with visual aids and real-world examples.
- **Case Study Analysis:** In-depth examination of successful sustainable aviation and green airport initiatives worldwide, fostering critical thinking and problem-solving.
- **Group Discussions & Brainstorming Sessions:** Facilitating peer learning and sharing of best practices.
- **Practical Exercises & Workshops:** Hands-on application of concepts, such as carbon footprint calculation or EMS mapping.
- **Expert Guest Speakers:** Industry leaders sharing their experiences and insights.
- **Videos & Multimedia:** Enhancing understanding of complex topics.
- **Q&A Sessions:** Addressing specific participant queries and fostering a dynamic learning environment.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.com **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
07 Sep 2026	18 Sep 2026	Physical	$3,000
14 Sep 2026	25 Sep 2026	Physical	$3,000
21 Sep 2026	02 Oct 2026	Physical	$3,000
28 Sep 2026	09 Oct 2026	Physical	$3,000
05 Oct 2026	16 Oct 2026	Physical	$3,000
12 Oct 2026	23 Oct 2026	Physical	$3,000
19 Oct 2026	30 Oct 2026	Physical	$3,000
26 Oct 2026	06 Nov 2026	Physical	$3,000

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