Airport Airfield Design Training Course

Professional Development Training Course Outline

Category	Aviation and Airport Management	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Airport Airfield Design is a strategic engineering discipline that ensures airports operate with maximum safety, efficiency, sustainability, and regulatory compliance. As global aviation continues to expand, modern airfield infrastructure requires innovative planning, smart airport technologies, resilient pavement systems, optimized runway and taxiway layouts, advanced airfield lighting, and ICAO and FAA compliant design standards. Airport Airfield Design Training Course equips professionals with the knowledge and practical skills required to design, evaluate, upgrade, and manage airfield infrastructure that supports increasing aircraft movements while enhancing operational performance, environmental sustainability, and passenger safety.

The course combines international best practices, digital engineering tools, aviation risk management, airport master planning, GIS applications, BIM integration, sustainable infrastructure development, and performance-based airport design methodologies. Participants will explore the complete airfield design lifecycle, from planning and feasibility studies to construction, maintenance, and modernization through practical case studies from leading international airports. The programme emphasizes innovation, resilience, operational excellence, and compliance with global aviation standards.

Programme Curriculum

Airport Airfield Design Training Course

Introduction

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Course Objectives

Upon completion of this course, participants will be able to:

1. Apply ICAO and FAA airfield design standards.
2. Design efficient runway and taxiway systems.
3. Develop sustainable airport infrastructure solutions.
4. Evaluate airfield pavement engineering requirements.
5. Integrate GIS and BIM into airport design.
6. Conduct aviation safety and risk assessments.
7. Design modern airfield lighting systems.
8. Optimize airport capacity and operational efficiency.
9. Develop obstacle limitation and protection strategies.
10. Plan environmentally sustainable airport expansion projects.
11. Implement smart airport infrastructure technologies.
12. Improve airfield resilience through performance-based engineering.
13. Analyze global airport design case studies for best practices.

Organizational Benefits

- Improved regulatory compliance with ICAO and FAA standards.
- Enhanced operational safety and efficiency.
- Better infrastructure investment decisions.
- Reduced lifecycle maintenance costs.
- Increased airport capacity utilization.
- Improved environmental sustainability.
- Stronger risk management capabilities.
- Enhanced project planning and execution.
- Improved stakeholder collaboration.
- Increased organizational competitiveness.

Target Audience

- Airport Engineers
- Civil Engineers
- Airport Planners

- Aviation Consultants
- Airport Operations Managers
- Infrastructure Project Managers
- Aviation Regulators
- Airport Development Professionals

Course Duration: 5 days

Course Modules

Module 1: Airfield Design Fundamentals

- Principles of airport airfield design
- ICAO Annex 14 requirements
- FAA airport design standards
- Airport reference codes
- Airfield functional components
- **Global Case Study:** Singapore Changi Airport airfield planning

Module 2: Runway and Taxiway Design

- Runway orientation and configuration
- Taxiway geometry optimization
- Aircraft movement analysis
- Separation standards
- Capacity planning techniques
- **Global Case Study:** Heathrow Airport runway optimization

Module 3: Airport Pavement Engineering

- Flexible pavement design
- Rigid pavement systems
- Pavement evaluation methods
- Drainage design principles
- Pavement maintenance planning
- **Global Case Study:** Dubai International Airport pavement rehabilitation

Module 4: Airfield Lighting and Navigation Systems

- Airfield lighting design
- Visual navigation aids
- Instrument landing systems
- Electrical infrastructure planning

- Lighting maintenance strategies
- **Global Case Study:** Amsterdam Schiphol lighting modernization

Module 5: Safety, Risk and Environmental Planning

- Safety management systems
- Obstacle limitation surfaces
- Wildlife hazard mitigation
- Environmental impact assessment
- Climate resilience strategies
- **Global Case Study:** Oslo Airport sustainable expansion

Module 6: Airport Master Planning

- Airport master planning process
- Capacity forecasting
- Land use planning
- Future expansion strategies
- Stakeholder coordination
- **Global Case Study:** Istanbul Airport master development

Module 7: Digital Airfield Design Technologies

- Building Information Modeling (BIM)
- Geographic Information Systems (GIS)
- Digital twin applications
- Drone surveying technologies
- Smart airport innovations
- **Global Case Study:** Hong Kong International Airport digital transformation

Module 8: Construction, Maintenance and Future Trends

- Airfield construction management
- Quality assurance practices
- Maintenance planning
- Asset lifecycle management
- Emerging airport technologies
- **Global Case Study:** Denver International Airport modernization programme

Training Methodology

- Interactive expert-led presentations
- Practical engineering workshops
- Airport design software demonstrations
- Group discussions and collaborative learning
- Real-world global case study analysis
- Design exercises and simulations
- Risk assessment activities
- Question-and-answer sessions
- Knowledge assessments
- Action planning for workplace implementation

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

Start Date	End Date	Location	Price
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

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