Airport Navigation Systems 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 Navigation Systems are the backbone of modern aviation, enabling safe, efficient, and reliable aircraft operations in increasingly complex airspace environments. Airport Navigation Systems Training Course provides participants with practical knowledge of advanced navigation technologies, Performance-Based Navigation (PBN), satellite navigation, Instrument Landing Systems (ILS), Ground-Based Augmentation Systems (GBAS), Area Navigation (RNAV), Required Navigation Performance (RNP), surveillance integration, and digital air traffic management. The course integrates global aviation standards, ICAO recommendations, aviation safety management, cybersecurity awareness, and smart airport innovations to strengthen operational excellence and regulatory compliance.

Participants will explore navigation system design, installation principles, maintenance strategies, performance monitoring, risk assessment, automation, digital transformation, predictive maintenance, and future aviation technologies supporting NextGen and SESAR initiatives. Through real-world examples, international case studies, and practical learning activities, the program equips aviation professionals with the competencies required to optimize airport navigation infrastructure, improve operational resilience, enhance flight safety, support sustainable aviation, and deliver world-class airport performance.

Programme Curriculum

Airport Navigation Systems Training Course

Introduction

Airport Navigation Systems are the backbone of modern aviation, enabling safe, efficient, and reliable aircraft operations in increasingly complex airspace environments. Airport Navigation Systems Training Course provides participants with practical knowledge of advanced navigation technologies, Performance-Based Navigation (PBN), satellite navigation, Instrument Landing Systems (ILS), Ground-Based Augmentation

Systems (GBAS), Area Navigation (RNAV), Required Navigation Performance (RNP), surveillance integration, and digital air traffic management. The course integrates global aviation standards, ICAO recommendations, aviation safety management, cybersecurity awareness, and smart airport innovations to strengthen operational excellence and regulatory compliance.

Participants will explore navigation system design, installation principles, maintenance strategies, performance monitoring, risk assessment, automation, digital transformation, predictive maintenance, and future aviation technologies supporting NextGen and SESAR initiatives. Through real-world examples, international case studies, and practical learning activities, the program equips aviation professionals with the competencies required to optimize airport navigation infrastructure, improve operational resilience, enhance flight safety, support sustainable aviation, and deliver world-class airport performance.

Course Objectives

By the end of this course, participants will be able to:

1. Understand modern airport navigation system architecture.
2. Apply ICAO navigation standards and regulatory compliance.
3. Evaluate satellite-based navigation technologies.
4. Improve aviation safety through advanced navigation solutions.
5. Optimize Performance-Based Navigation implementation.
6. Analyze Instrument Landing System operations.
7. Enhance navigation system reliability and resilience.
8. Implement predictive maintenance strategies.
9. Strengthen cybersecurity for navigation infrastructure.
10. Improve operational efficiency using digital aviation technologies.
11. Assess navigation system risks and mitigation strategies.
12. Integrate navigation systems with air traffic management.
13. Support smart airport transformation through innovative navigation technologies.

Organizational Benefits

- Improved aviation safety performance.
- Increased navigation system reliability.
- Enhanced operational efficiency.
- Better regulatory compliance.
- Reduced operational disruptions.
- Stronger cybersecurity resilience.
- Improved decision-making through digital technologies.
- Lower maintenance costs.
- Increased airport capacity.
- Enhanced passenger confidence and service quality.

Target Audiences

- Airport Operations Managers
- Air Traffic Controllers

- Airport Engineers
- Aviation Safety Officers
- CNS Engineers and Technicians
- Aviation Regulators
- Airport Maintenance Personnel
- Airline Operations Managers

Course Duration: 5 days

Course Modules

Module 1: Fundamentals of Airport Navigation Systems

- Principles of airport navigation systems
- Navigation system components
- ICAO navigation framework
- Airport navigation infrastructure
- Navigation safety requirements
- Global Case Study: Heathrow Airport navigation modernization

Module 2: Satellite Navigation Technologies

- Global Navigation Satellite Systems (GNSS)
- GPS applications in aviation
- GBAS and SBAS technologies
- Performance-Based Navigation concepts
- Navigation accuracy and integrity
- Global Case Study: Sydney Airport GBAS implementation

Module 3: Instrument Landing and Precision Approaches

- Instrument Landing System (ILS)
- Category I, II and III operations
- Approach lighting integration
- Precision approach procedures
- Navigation during adverse weather
- Global Case Study: Frankfurt Airport CAT III operations

Module 4: Air Traffic Management Integration

- Navigation and ATM coordination
- Surveillance integration
- Communication and navigation interfaces

- Flight procedure optimization
- Digital airspace management
- Global Case Study: EUROCONTROL integrated navigation systems

Module 5: Navigation System Maintenance and Reliability

- Preventive maintenance planning
- Predictive maintenance technologies
- Fault diagnosis techniques
- Performance monitoring
- Equipment lifecycle management
- Global Case Study: Singapore Changi predictive maintenance program

Module 6: Safety, Security and Risk Management

- Navigation safety management
- Risk assessment methodologies
- Aviation cybersecurity
- Emergency response procedures
- Regulatory compliance audits
- Global Case Study: FAA navigation safety improvement initiatives

Module 7: Smart Airport Navigation Technologies

- Artificial Intelligence applications
- Automation in navigation systems
- Digital airport transformation
- Remote monitoring technologies
- Future navigation innovations
- Global Case Study: Incheon International Airport smart navigation systems

Module 8: Emerging Trends and Future Developments

- NextGen navigation technologies
- SESAR modernization initiatives
- Sustainable aviation navigation
- Advanced decision support systems
- Future airport navigation strategies
- Global Case Study: Dubai International Airport digital navigation transformation

Training Methodology

- Interactive expert-led presentations
- Practical demonstrations of navigation technologies
- Hands-on equipment familiarization
- Group discussions and collaborative learning
- Scenario-based aviation simulations
- International airport case study analysis
- Problem-solving workshops
- Risk assessment exercises
- Participant 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

Start Date	End Date	Location	Price
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