Strategic Airport Planning and Master Plan Development Training Course



19 - 23 Oct 2026

Cape town

4600 € (Per Person)

Ref: #AVI3538_270346

Course Introduction / Overview:

This comprehensive training course provides an in-depth exploration of the critical processes involved in airport strategic planning and master plan development. In an era of rapid technological advancement and evolving global travel patterns, a forward-thinking airport master plan is no longer just a regulatory requirement but a vital strategic tool for ensuring long-term viability, sustainability, and competitiveness. This program, offered by BIG BEN Training Center, is meticulously designed to equip participants with the skills to navigate the complexities of airport development, from initial forecasting to final implementation. Drawing on principles outlined by leading academics like Dr. Richard de Neufville in his seminal work, "Airport Systems: Planning, Design, and Management," the course delves into every facet of the planning cycle. Participants will learn to balance technical requirements, such as airside and landside design, with crucial financial, environmental, and social considerations. We move beyond theoretical knowledge to provide practical, actionable insights that enable the creation of resilient, efficient, and future-ready airport infrastructures that serve as economic engines for their communities. This course is the definitive guide for professionals seeking to master the art and science of shaping the airports of tomorrow.

Target Audience / This training course is suitable for:

- Airport Planners and Managers.
- Aviation Consultants and Analysts.
- Civil Aviation Authority Officials.
- Government and Municipal Planners.
- Airport Engineering and Operations Staff.
- Project Managers in Aviation Infrastructure.
- Finance and Investment Professionals in the Aviation Sector.
- Urban and Regional Planners.
- Architects and Civil Engineers specializing in transportation.

Target Sectors and Industries:

- Aviation and Aerospace.
- Transportation and Logistics.
- Engineering and Construction.
- Management Consulting.
- Real Estate and Infrastructure Development.
- Governmental agencies and regulatory bodies.
- Financial and Investment Services.
- Tourism and Hospitality.

Target Organizations Departments:

- Strategic Planning and Development.
- Airport Operations.
- Engineering and Infrastructure.
- Finance and Capital Planning.
- Environmental Compliance and Sustainability.
- Government and Community Relations.
- Commercial and Business Development.
- Project Management Office.

Course Offerings:

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

- Develop a comprehensive airport master plan from conception to implementation.
- Conduct accurate aviation demand forecasting and airport capacity analysis.
- Integrate international regulatory standards from ICAO and FAA into planning.
- Design efficient airside and landside facilities, including terminals and runways.
- Formulate robust financial plans and explore funding models for airport development.
- Execute thorough environmental impact assessments and sustainability strategies.
- Manage stakeholder engagement and community relations effectively.
- Evaluate and incorporate emerging technologies for smart airport development.
- Align airport strategic goals with regional economic development objectives.

Course Methodology:

The training methodology at BIG BEN Training Center is designed to be highly interactive, practical, and engaging, ensuring that participants can immediately apply their learning in a professional context. This course utilizes a blended learning approach that combines expert-led presentations with hands-on, collaborative exercises. We will explore detailed case studies of major international airport master plans, dissecting their successes and challenges to draw valuable lessons. Group workshops will require participants to work in teams to solve complex planning scenarios, fostering critical thinking and problem-solving skills. Interactive sessions, Q&A panels, and peer-to-peer discussions are integrated throughout the five days to encourage knowledge sharing and diverse perspectives. Participants will engage in simulation exercises that model key stages of the master planning process, from demand forecasting to financial feasibility analysis. Our expert instructors provide continuous feedback and guidance, creating a supportive learning environment where complex concepts are made accessible and applicable to real-world airport development challenges. The focus is on building practical competency, not just theoretical understanding.

Course Agenda (Course Units):

Unit One Foundations of Airport Strategic Planning

- Introduction to Airport Master Planning.
- The Role of the Airport in the Global Transportation Network.
- Regulatory Frameworks: ICAO, IATA, and National Authorities.
- The Strategic Planning Process and its Objectives.
- Key Stakeholders and Their Roles in Airport Development.
- Linking the Master Plan to Business and Regional Economic Goals.
- Historical Evolution of Airport Planning and Design.

Unit Two Demand Forecasting and Capacity Analysis

- Methods of Aviation Demand Forecasting.
- Passenger, Cargo, and Aircraft Movement Projections.
- Airfield and Runway System Capacity Assessment.
- Terminal Building Capacity and Level of Service (LoS) Analysis.
- Ground Access and Curb-side Capacity Evaluation.
- Fleet Mix Analysis and its Impact on Infrastructure.
- Introduction to Simulation and Modeling Tools for Capacity Planning.

Unit three Airport Master Plan Components: Airside and Landside

- Airside Planning: Runway, Taxiway, and Apron Design Principles.
- Airspace Planning and Obstacle Limitation Surfaces (OLS).
- Landside Planning: Terminal Area and Building Concepts.
- Passenger Processing and Baggage Handling Systems.
- Ground Transportation Systems and Intermodal Connectivity.
- Airport Support Facilities and Utility Infrastructure Planning.
- Developing the Airport Layout Plan (ALP).

Unit Four Financial, Environmental, and Social Planning

- Airport Financial Planning and Economic Feasibility.
- Capital Improvement Programming and Funding Sources.
- Non-Aeronautical Revenue Development Strategies.
- Environmental Impact Assessment (EIA) Process.
- Noise Abatement Procedures and Community Impact Mitigation.
- Sustainable Airport Design and Green Initiatives.
- Land Use Planning and Airport Zoning Regulations.

Unit Five Implementation, Future Trends, and the Smart Airport

- Phasing and Implementation Strategy for the Master Plan.
- Project Management for Airport Expansion Projects.
- The Role of Technology and Innovation in Airport Design.
- Developing a Smart Airport and Digital Transformation Strategy.
- The Aerotropolis and Airport City Concepts.
- Future-Proofing Airports for Resilience and Adaptability.
- Final Project: Presenting a Draft Master Plan Concept.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

How can airport master plans be designed to be resilient and adaptable to unforeseen global disruptions, such as pandemics or rapid technological shifts?

What unique qualities does this course offer compared to other courses?

This course distinguishes itself by adopting a holistic, strategic management perspective on airport planning, moving beyond the purely technical aspects of design and compliance. While other programs may focus narrowly on engineering specifications or regulatory checklists, our curriculum integrates these essential elements with high-level business strategy, financial viability, and long-term sustainability. We place a strong emphasis on the airport as a complex economic ecosystem and a catalyst for regional growth. The curriculum is enriched with contemporary case studies from globally recognized airports, providing participants with practical insights into how leading aviation hubs navigate challenges like capacity constraints, environmental pressures, and digital disruption. Furthermore, the course dedicates significant time to future trends, exploring the concepts of the 'smart airport,' the 'aerotropolis,' and the integration of new technologies. This forward-looking approach ensures that participants are not just learning to plan for today's needs but are equipped to envision, design, and manage the resilient and adaptable airports of the future, making them strategic leaders in the aviation industry.