Advanced Data Analytics and Performance Optimization for Airports Training Course



16 - 20 Nov 2026

Lisbon

4500 € (Per Person)

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Course Introduction / Overview:

In the complex and dynamic ecosystem of modern aviation, airports operate at the intersection of countless moving parts, from passenger flows and security screenings to baggage handling and aircraft logistics. Managing these processes effectively to enhance performance and ensure a seamless experience requires a new approach. This is where data analytics becomes an indispensable tool. BIG BEN Training Center is proud to offer this comprehensive training course, which delves into the strategic application of data analytics to revolutionize airport operations. Drawing from academic frameworks like those presented in Thomas Davenport's "Analytics at Work: Smarter Decisions, Better Results," this program moves beyond basic metrics to equip participants with the skills needed for sophisticated, data-driven decision-making. We will explore how real-time data analysis, predictive modeling, and business intelligence can optimize resource allocation, streamline operational workflows, and ultimately improve the airport's financial performance. This course is built to address the unique challenges of the aviation industry, helping professionals harness the power of data to anticipate demand, mitigate disruptions, and foster a truly efficient and resilient airport environment. By integrating proven methodologies and the latest technological insights, this training course offers a pathway to operational excellence.

Target Audience / This training course is suitable for:

- Airport operations managers and executives.
- Aviation planners and strategists.
- Data analysts and business intelligence specialists working in the aviation sector.
- Financial and commercial managers at airports.
- Safety and security officers.
- Ground handling and logistics supervisors.
- Regulatory and government agency professionals involved in aviation.

Target Sectors and Industries:

- Airports and airport authorities.
- Airlines and aviation companies.
- Air traffic control organizations.
- Government agencies, including civil aviation authorities and transportation departments.
- Consulting firms specializing in aviation and transportation.
- Ground handling and cargo logistics companies.

Target Organizations Departments:

- Operations and ground services departments.
- IT and business intelligence departments.
- Finance and revenue management departments.
- Security and safety departments.
- Strategic planning and commercial departments.
- Customer experience and passenger services departments.
- Maintenance and engineering departments.

Course Offerings:

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

- Apply data analytics to optimize airport resource allocation and scheduling.
- Use predictive modeling to forecast passenger traffic and operational demand.
- Identify and analyze key performance indicators (KPIs) for airport efficiency.
- Leverage business intelligence tools to generate actionable insights from complex datasets.
- Develop data-driven strategies for enhancing the passenger experience and service quality.
- Mitigate operational disruptions proactively using real-time data monitoring and analysis.
- Evaluate the financial impact of data-driven decisions on airport profitability.
- Implement a culture of continuous improvement through a data-centric approach.

Course Methodology:

This training course employs a highly interactive and practical methodology designed to immerse participants in real-world airport scenarios. Our approach focuses on hands-on application rather than just theory, ensuring participants can immediately utilize what they learn. We use real-world case studies from various global airports, allowing for the in-depth analysis of successful and unsuccessful data analytics implementations. Participants will work in teams to solve complex operational challenges, fostering collaborative problem-solving and peer learning. The program incorporates interactive sessions, group discussions, and exercises that simulate the process of gathering, cleaning, and analyzing airport data. Expert instructors from BIG BEN Training Center provide personalized feedback and guidance throughout the course, helping participants refine their analytical skills and apply them to their specific professional contexts. The training goes beyond software tutorials, emphasizing critical thinking and the strategic mindset needed to translate data insights into tangible business outcomes. By combining structured learning with practical application, this methodology ensures participants leave with the confidence and ability to drive change in their organizations.

Course Agenda (Course Units):

Unit One: Foundations of Airport Data Analytics

- Understanding the airport operational ecosystem.
- Introduction to data sources and types in aviation.
- Defining key performance indicators and metrics.
- The role of data in strategic decision-making.
- Establishing a data-driven culture.

Unit Two: Passenger Flow and Terminal Operations Analytics

- Analyzing passenger movements and queue times.
- Optimizing security screening and check-in processes.
- Forecasting passenger demand and resource needs.
- Enhancing retail and commercial revenue with data.
- Personalizing the passenger journey.

Unit Three: Airside and Ground Operations Optimization

- Using data to improve aircraft turnaround times.
- Analytics for gate and stand allocation.
- Optimizing baggage handling and logistics.
- Predictive maintenance for airside infrastructure.
- Managing flight delays and disruptions.

Unit Four: Airport Financial and Commercial Performance Analytics

- Connecting operational efficiency to financial outcomes.
- Analyzing aeronautical and non-aeronautical revenue streams.
- Predictive pricing and demand management.
- Cost reduction through data-driven insights.
- Benchmarking airport performance against industry standards.

Unit Five: Implementing a Data Analytics Framework

- Building a data governance and quality framework.
- Introduction to business intelligence tools and dashboards.
- Developing a roadmap for analytics maturity.
- Best practices for data security and privacy.
- Leading change and securing buy-in for data initiatives.

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 predictive analytics be used to create a resilient airport system that can anticipate and effectively respond to unforeseen events such as pandemics or environmental crises?

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

This course stands out because it provides a holistic, end-to-end perspective on leveraging data for airport performance, going beyond basic metrics. Instead of simply focusing on tools, it emphasizes the strategic application of data analytics to address the most pressing challenges faced by modern airports, such as operational bottlenecks, passenger experience, and financial viability. The curriculum is designed around a practical, problem-solving approach. It includes detailed, real-world case studies that challenge participants to think critically and apply their knowledge in a dynamic context, mirroring the complex decisions they face daily. The course methodology encourages collaboration and active learning, ensuring participants do not just absorb information but also develop the ability to translate data into actionable strategies. By focusing on both operational and commercial aspects, this program ensures that participants gain a comprehensive skill set, enabling them to drive meaningful, measurable improvements across all facets of airport management.