Advanced GSE Fleet Management and Maintenance Training Course



19 - 23 Oct 2026

Barcelona

5900 € (Per Person)

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Course Introduction / Overview:

Effective management and maintenance of Ground Support Equipment (GSE) are critical pillars of safe, efficient, and punctual airport operations. This comprehensive training course provides an in-depth exploration of the entire GSE lifecycle, from strategic procurement and fleet planning to advanced maintenance techniques and end-of-life disposal. The curriculum is designed to address the complex challenges faced by modern aviation professionals, including rising operational costs, stringent safety regulations, and the push towards sustainable practices like the adoption of electric GSE (eGSE). As discussed in works like "Airport Systems: Planning, Design, and Management" by Richard de Neufville, integrating operational assets like GSE into the broader airport ecosystem is key to achieving systemic efficiency. This program, offered by BIG BEN Training Center, moves beyond theoretical knowledge to equip participants with practical skills in optimizing fleet utilization, implementing robust predictive maintenance programs, and leveraging data from GSE telematics to make informed decisions. Participants will gain a holistic understanding of how to manage a diverse and technologically evolving GSE fleet to enhance operational reliability, ensure compliance, and drive financial performance within their ground handling operations.

Target Audience / This training course is suitable for:

- GSE Fleet Managers.
- Airport Operations Managers.
- Ground Handling Supervisors.
- Aviation Maintenance Planners and Schedulers.
- Airline Station Managers.
- Ramp Operations Team Leaders.
- Procurement and Logistics Specialists in Aviation.
- Safety and Compliance Officers.
- MRO (Maintenance, Repair, and Overhaul) Managers.

Target Sectors and Industries:

- Commercial Airlines.
- Airport Authorities and Operators.
- Ground Handling and FBO Service Providers.
- Air Cargo and Logistics Companies.
- Military Aviation and Defense Contractors.
- GSE Manufacturing and Leasing Companies.
- Governmental bodies and Civil Aviation Authorities.

Target Organizations Departments:

- Ground Operations.
- Maintenance and Engineering.
- Fleet Management.
- Ramp Services.
- Procurement and Supply Chain.
- Corporate Safety and Quality Assurance.
- Finance and Asset Management.

Course Offerings:

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

- Develop and implement comprehensive GSE preventive and predictive maintenance programs.
- Analyze fleet data to optimize utilization, reduce downtime, and control operational costs.
- Master the principles of GSE lifecycle cost analysis for effective procurement and replacement decisions.
- Implement robust safety protocols and ensure compliance with IATA and local aviation regulations.
- Evaluate the operational and financial impact of introducing new technologies like eGSE and telematics.
- Formulate strategic plans for fleet sizing, allocation, and scheduling.
- Enhance spare parts inventory management and supply chain logistics for GSE maintenance.
- Lead continuous improvement initiatives within the ground support operations department.

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 real-world context. We move beyond traditional lectures to foster a dynamic learning environment built on a foundation of expert-led instruction, collaborative problem-solving, and hands-on application. The course heavily utilizes case studies from leading international airports and ground handling agents, allowing participants to analyze complex scenarios related to GSE maintenance failures, fleet optimization challenges, and eGSE implementation projects. Group discussions and workshops encourage the sharing of experiences and best practices, creating a rich peer-to-peer learning network. Interactive sessions, practical exercises on budgeting and lifecycle cost analysis, and simulations of operational scheduling will be used to reinforce key concepts. Our approach ensures that every participant leaves with not just theoretical knowledge, but also the confidence and practical skills to drive tangible improvements in their GSE fleet management and maintenance operations.

Course Agenda (Course Units):

Unit One: Fundamentals of Ground Support Equipment Management

- Introduction to Ground Support Equipment (GSE) and its role in aviation.
- Classification and types of motorized and non-motorized GSE.
- The operational impact of GSE on aircraft turnaround times.
- Key stakeholders in the GSE management ecosystem.
- Overview of the regulatory framework including IATA Airport Handling Manual (AHM).
- Principles of GSE operational safety and ramp discipline.
- Introduction to GSE fleet management principles.

Unit Two: Strategic GSE Maintenance Planning

- Preventive vs. predictive vs. corrective maintenance strategies.
- Developing a robust preventive maintenance (PM) program.
- Introduction to Reliability-Centered Maintenance (RCM) for critical GSE.
- Techniques for maintenance scheduling and resource allocation.
- Effective management of GSE spare parts and inventory.
- Training and certification standards for GSE maintenance technicians.
- Utilizing Computerized Maintenance Management Systems (CMMS).

Unit three: Fleet Operations and Performance Optimization

- Techniques for right-sizing the GSE fleet.
- Measuring and improving GSE utilization and availability rates.
- The role of GSE telematics in tracking assets and operator behavior.
- Using data analytics to identify operational inefficiencies.
- Strategies for minimizing fuel consumption and operational costs.
- Managing GSE on the ramp to ensure safety and efficiency.
- Developing and monitoring Key Performance Indicators (KPIs) for the GSE fleet.

Unit Four: Financial and Procurement Management of GSE

- Understanding the total cost of ownership (TCO) and lifecycle costing.
- Financial analysis for GSE procurement: buys vs. lease decisions.
- Developing a business case for new GSE investments.
- The GSE procurement process and supplier negotiation.
- Managing supplier relationships and service level agreements (SLAs).
- Creating and managing the GSE operational and capital budgets.
- Strategies for the refurbishment and disposal of aging equipment.

Unit Five: Future Trends, Sustainability, and Safety in GSE

- The transition to electric Ground Support Equipment (eGSE).
- Challenges and opportunities of managing a mixed (diesel and electric) fleet.
- Introduction to autonomous GSE and its potential impact.
- Digitalization and the Internet of Things (IoT) in GSE management.
- Implementing a Safety Management System (SMS) for ground operations.
- Environmental regulations and sustainable ground handling practices.
- Principles of continuous improvement and lean management in GSE operations.

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:

Considering the high capital investment and operational costs of GSE, how can airports and ground handlers create a collaborative model for fleet sharing to improve efficiency and sustainability without compromising operational integrity or competitive advantage?

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

This course distinguishes itself by offering a holistic and strategic perspective on Ground Support Equipment, integrating the technical aspects of maintenance with the financial and operational dimensions of fleet management. Unlike programs that focus narrowly on either maintenance or operations, our curriculum builds a comprehensive skill set, enabling participants to make decisions that optimize the entire GSE lifecycle. We place a significant emphasis on forward-looking topics that are shaping the future of ground handling, including the strategic transition to eGSE, the implementation of telematics and data analytics for performance optimization, and the integration of Safety Management Systems (SMS) specific to ground operations. The learning is rooted in practical application, using real-world case studies that explore complex trade-offs between cost, safety, and efficiency. This approach moves beyond standard procedures to cultivate critical thinking, preparing leaders to not only manage current fleets but also to strategically plan for the technological and sustainable advancements that will define the next generation of airport ground services.