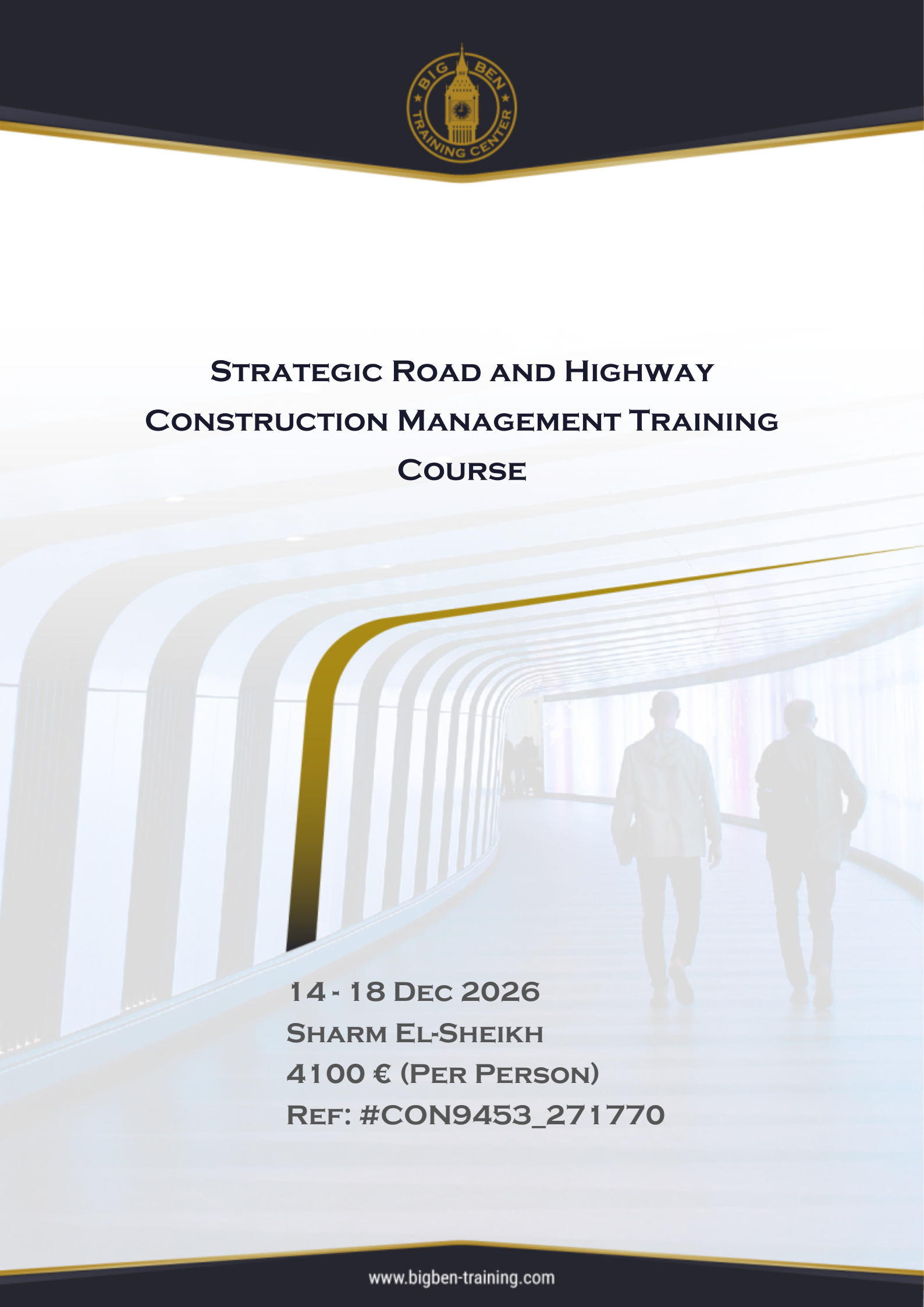
Strategic Road and Highway Construction Management Training Course



14 - 18 Dec 2026

Sharm El-Sheikh

4100 € (Per Person)

Ref: #CON9453_271770

Course Introduction / Overview:

The development of modern road and highway networks is a cornerstone of economic growth and societal connectivity. However, managing these large-scale infrastructure projects requires a sophisticated blend of technical expertise, strategic planning, and astute financial oversight. This course moves beyond the fundamentals of civil engineering to address the complex challenges of contemporary highway construction management. It provides a comprehensive framework for overseeing the entire project lifecycle, from initial feasibility studies and design to execution, quality control, and long-term maintenance. Drawing on principles outlined by leading experts like Dr. M. G. Lay in his seminal work, "Handbook of Road Technology," this program emphasizes a holistic approach. Participants will explore advanced construction techniques, sustainable materials, risk mitigation strategies, and effective contract administration. BIG BEN Training Center has designed this course to equip professionals with the skills needed to deliver complex road projects on time, within budget, and to the highest standards of safety and quality, ensuring the creation of durable and efficient transportation infrastructure for the future. This training is an essential investment for professionals aiming to lead in the dynamic field of road and highway construction.

Target Audience / This training course is suitable for:

- Civil Engineers and Site Engineers.
- Road and Highway Project Managers.
- Construction Managers and Superintendents.
- Government Officials in Public Works and Transportation Departments.
- Engineering Consultants and Designers.
- Quality Control and Assurance Managers.
- Contract and Procurement Specialists.
- Urban and Transportation Planners.
- Construction Project Schedulers and Cost Estimators.
- Senior Technicians and Site Supervisors.

Target Sectors and Industries:

- Heavy Civil and Infrastructure Construction.
- Engineering Consulting and Design Services.
- Government and Public Sector Agencies (e.g., Ministries of Transport, Public Works).
- Transportation and Logistics.
- Urban Planning and Development.
- Materials and Equipment Manufacturing and Supply.
- Real Estate and Land Development.

Target Organizations Departments:

- Project Management Office (PMO).
- Engineering and Design.
- Construction and Site Operations.
- Contracts and Procurement.
- Quality Assurance and Quality Control (QA/QC).
- Planning and Scheduling.
- Finance and Budgeting.
- Health, Safety, and Environment (HSE).
- Infrastructure and Asset Management.

Course Offerings:

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

- Develop comprehensive project plans for large-scale road and highway projects.
- Analyze advanced pavement designs and modern construction materials.
- Implement effective quality control and safety management systems on site.
- Master contract administration and financial control for infrastructure projects.
- Evaluate and mitigate potential risks throughout the project lifecycle.
- Manage heavy construction equipment and logistics for optimal efficiency.
- Integrate sustainable practices and new technologies into road construction.
- Oversee project scheduling, cost estimation, and resource allocation effectively.

Course Methodology:

This training course employs a dynamic and interactive learning methodology designed to bridge theory with real-world application. At BIG BEN Training Center, we believe in active participation as the key to effective learning. The program is structured around a series of expert-led presentations that cover the core principles of strategic road and highway construction management. These sessions are enriched with detailed case studies of major international infrastructure projects, allowing participants to analyze successes and challenges in a practical context. Interactive group discussions and problem-solving exercises will encourage collaborative learning and the exchange of professional experiences. Participants will engage in practical workshops focusing on critical skills such as risk assessment, cost estimation, and project scheduling. The methodology emphasizes a hands-on approach, ensuring that attendees not only understand the concepts but can also apply them directly to their work environments. Continuous feedback and Q&A sessions with the instructor will provide personalized guidance and clarify complex topics, creating a robust and comprehensive learning experience.

Course Agenda (Course Units):

Unit One: Strategic Project Planning and Lifecycle Management

- Introduction to Highway Project Management.
- The Project Lifecycle for Infrastructure Projects.
- Feasibility Studies and Environmental Impact Assessments.
- Stakeholder Management and Communication Planning.
- Developing the Project Scope and Work Breakdown Structure (WBS).
- Advanced Surveying and Site Investigation Techniques.
- Regulatory Frameworks and Permitting Processes.

Unit Two: Advanced Pavement Design and Material Technology

- Principles of Modern Pavement Design (Flexible and Rigid).
- Geotechnical Engineering for Road Foundations and Earthworks.
- Advanced Compaction Techniques and Soil Stabilization.
- Innovations in Asphalt and Concrete Technology.
- Selection and Testing of Sustainable Construction Materials.
- Designing Effective Road Drainage Systems.
- Geosynthetics in Road Construction.

Unit Three: Construction Operations and Site Management

- Effective Construction Site Layout and Logistics.
- Management of Heavy Construction Equipment and Fleet.
- Implementing Robust Health, Safety, and Environment (HSE) Plans.
- Traffic Management Strategies During Construction.
- Supervision and Coordination of On-site Activities.
- Quality Control and Assurance in Road Construction.
- Productivity Measurement and Improvement on Site.

Unit Four: Contract, Cost, and Risk Management

- Types of Construction Contracts and Tendering Processes.
- Contract Administration and Management.
- Comprehensive Cost Estimation and Budgeting.
- Project Cost Control and Earned Value Management (EVM).
- Identifying and Assessing Project Risks.
- Developing Risk Mitigation and Contingency Plans.
- Managing Claims and Dispute Resolution.

Unit Five: Modern Technologies, Sustainability, and Maintenance

- Introduction to Building Information Modeling (BIM) for Infrastructure.
- Use of Drones, GPS, and GIS in Highway Construction.
- Sustainable Construction Practices and Green Highways.
- Pavement Management Systems (PMS).
- Highway Maintenance and Rehabilitation Strategies.
- Introduction to Smart Highways and Intelligent Transportation Systems (ITS).
- Future Trends and Innovations in Road Construction.

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 project managers balance the immediate pressures of budget and schedule with the long-term imperatives of sustainable design and climate resilience in highway construction?

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

This course distinguishes itself by adopting a strategic, 360-degree perspective on road and highway construction, moving beyond purely technical execution. While many programs focus solely on engineering principles, this training integrates critical management disciplines, including advanced financial control, comprehensive risk mitigation, and sophisticated contract administration. It is designed for the modern leader who must navigate not only the physical construction site but also the complex web of stakeholders, regulations, and financial constraints. A key differentiator is the forward-looking curriculum, which dedicates significant attention to emerging trends such as Building Information Modeling (BIM) for infrastructure, sustainable "green highway" practices, and the advent of smart highway technology. Rather than just teaching established methods, the course prepares participants for the future of the industry. The methodology, centered on real-world international case studies and interactive problem-solving sessions, ensures that the learning is practical, applicable, and directly relevant to the challenges professionals face in today's competitive construction landscape. It builds strategic thinkers, not just technical supervisors.