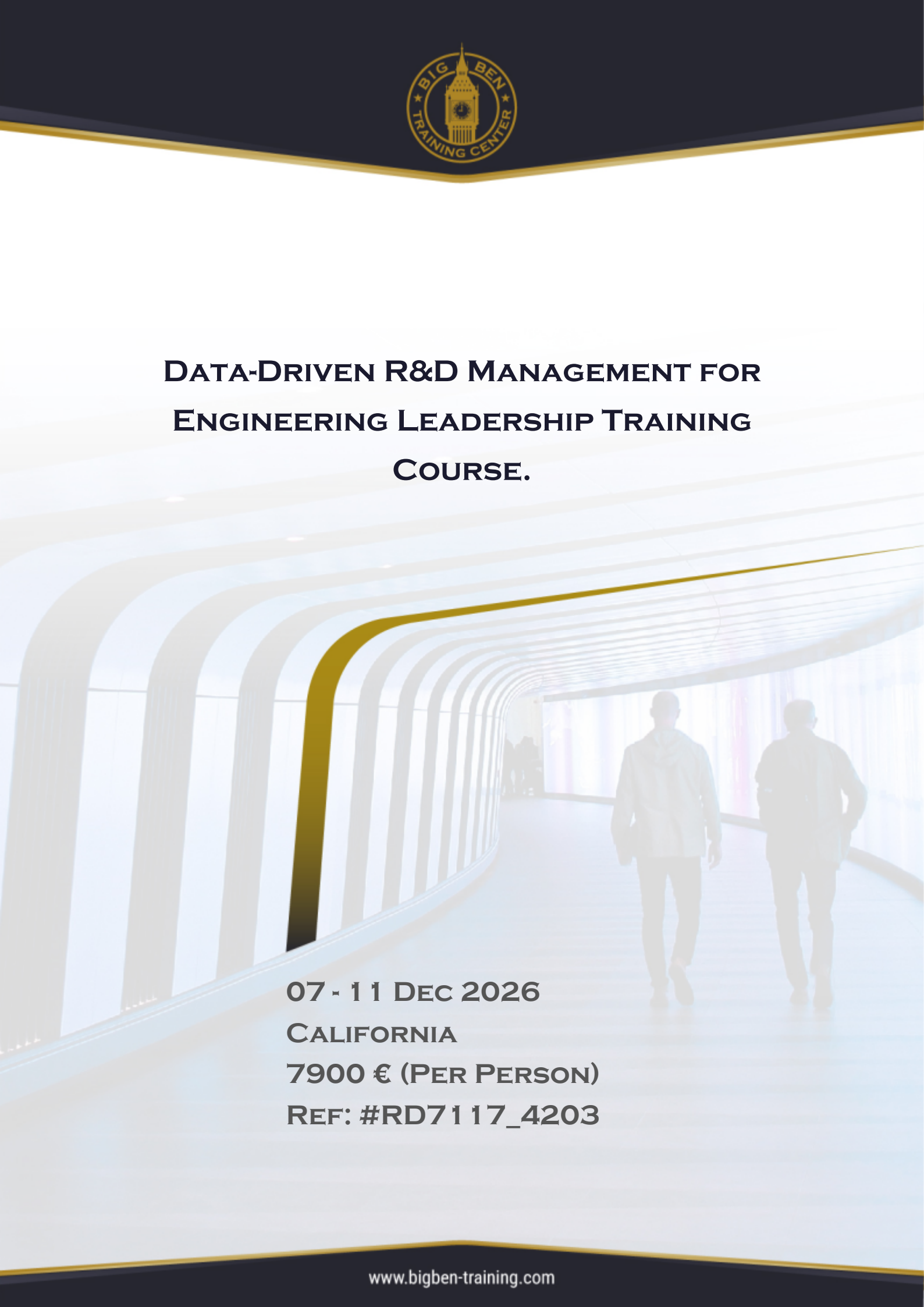
Data-Driven R&D Management for Engineering Leadership Training Course.



07 - 11 Dec 2026

California

7900 € (Per Person)

Ref: #RD7117_4203

Course Introduction / Overview:

In today's complex engineering and technology landscape, making informed R&D decisions based on data, not just intuition, is essential for staying competitive. This training course is designed to provide R&D managers and engineering leaders with the skills to use data analytics to guide their innovation strategy. It goes beyond technical engineering skills to focus on the business and analytical side of research and development, including data collection, statistical analysis, and performance measurement. We will explore how to use data to prioritize projects, forecast outcomes, and optimize resource allocation to accelerate the product development lifecycle. The curriculum is informed by the foundational work of global academics like Michael E. Porter, whose models on competitive strategy and value chain analysis are highly applicable to modern R&D management. This program provides a clear blueprint for transforming R&D into a data-driven powerhouse that delivers predictable results and a strong return on investment. BIG BEN Training Center is committed to empowering engineering leaders to make smarter decisions that drive innovation and organizational growth.

Target Audience / This training course is suitable for:

- R&D managers and directors.
- Engineering team leads and supervisors.
- Data analysts in a technical field.
- Product development managers.
- Technical project managers.
- Senior engineers transitioning to management.
- Strategic planners in tech-focused companies.

Target Sectors and Industries:

- Aerospace and defense.
- Automotive and manufacturing.
- Telecommunications and electronics.
- Energy and utilities.
- Software and robotics.
- Biotechnology and medical devices.
- Government and public sector R&D agencies.

Target Organizations Departments:

- Research and Development (R&D).
- Engineering.
- Product development.
- Corporate strategy and planning.
- Data and analytics.
- Quality assurance.
- Operations.

Course Offerings:

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

- Apply data analytics to the R&D decision-making process.
- Develop and use key performance indicators (KPIs) to measure R&D effectiveness.
- Conduct a data-driven portfolio analysis.
- Use statistical models to forecast project outcomes and risks.
- Optimize resource allocation based on data.
- Implement a system for collecting and managing R&D data.
- Translate data insights into clear business recommendations.
- Lead a data-driven culture within an R&D team.

Course Methodology:

This training course uses a highly practical and case-based methodology to ensure participants gain actionable, data-driven skills. The program incorporates detailed case studies of leading engineering firms that have successfully used data to accelerate their R&D efforts. We will use interactive workshops and data analysis exercises to practice critical skills like building a data dashboard, interpreting statistical results, and presenting data-backed findings to senior leadership. The course includes a hands-on group project where participants will work together to analyze a fictional R&D portfolio and make data-driven recommendations for future investment. BIG BEN Training Center believes that hands-on training is essential for mastering the art of data-driven management. Our expert facilitators will guide discussions and provide personalized feedback, ensuring that participants leave with the confidence and practical experience needed to lead their teams with a strategic, analytical mindset.

Course Agenda (Course Units):

Unit One: The Role of Data in R&D

- The shift to data-driven decision-making.
- Defining key R&D metrics and KPIs.
- Collecting and managing R&D data.
- Introduction to data visualization tools.
- The strategic value of R&D data.

Unit Two: R&D Portfolio and Resource Optimization

- Using data to prioritize R&D projects.
- Analyzing project risk and potential return.
- Optimizing resource allocation with data models.
- Balancing the innovation portfolio.
- Forecasting R&D outcomes.

Unit Three: Data-Driven Project Management

- Using data to monitor project progress.
- Identifying and mitigating project risks.
- Predictive analytics for project timelines.
- Performance measurement and team productivity.
- Lessons from failed data-driven projects.

Unit Four: Statistical Analysis and Reporting

- Basic statistical concepts for R&D.
- Interpreting data and drawing conclusions.
- Communicating data insights to stakeholders.
- Creating compelling reports and presentations.
- Building a data-driven narrative.

Unit Five: Building a Data-Driven Culture

- The human element of data-driven decisions.
- Training and empowering R&D teams.
- Fostering a culture of accountability.
- Integrating data into the daily workflow.
- Developing a personal data leadership roadmap.

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 an R&D manager balance the need for data-driven, analytical rigor with the need to foster the kind of creativity and risk-taking that often leads to breakthrough innovations?

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

This training course is a highly specialized program that focuses on the unique and critical intersection of engineering, R&D, and data analytics. This sets it apart from generic data science or management courses. Our curriculum is tailored to address the specific challenges faced by engineering leaders, providing them with the tools to move beyond intuition-based decisions to a more rigorous, data-driven approach. We go beyond theoretical frameworks to provide a practical, hands-on learning experience through realistic case studies and interactive exercises. The course distinguishes itself by emphasizing not only the technical skills needed to analyze data but also the leadership and cultural acumen required to successfully implement a data-driven mindset across a technical organization. By focusing on both the analytical and the human aspects of R&D management, this program provides an invaluable skill set that is essential for any professional committed to a high-performing and innovative engineering team.