ENGAGE.EU Certificate

Joint Programme in Digital Transformation

Data Strategy

Course Syllabus

Lecturers: Maria Isabel Bellot and Francesc Taxonera

24-25 April & 8-9 May 2026

Course Abstract

This course offers a comprehensive view on **Data Strategy**, designed to equip students with the knowledge and skills needed to harness data as a key driver of organizational success. Aimed at last-year Bachelor's and Master's students, they will focus on critical aspects of data management, including governance, architecture, and analytics, while also examining the role of emerging technologies such as artificial intelligence (AI) and the Internet of Things (IoT).

Emphasizing real-world application, the course highlights how data can be leveraged to enhance decision-making, foster innovation, and create a competitive advantage. Students will engage in case studies and projects that reflect real-world challenges, developing the ability to craft and implement data strategies that align with organizational goals.

By integrating technical skills with strategic thinking, the course prepares students to meet the demands of the modern data-driven landscape. Additionally, key professional competencies such as ethical decision-making, communication, and problem-solving are embedded throughout, ensuring students are ready to lead and innovate in their careers.

Learning Objectives

Upon completion of this course, the students should be able to:

- Understand key components of data strategy, including governance, architecture, and analytics.
- Apply data-driven strategic thinking to analyze businesses, assess industry contexts, and develop strategies for competitive advantage.
- Conduct comprehensive strategic analyses across various industries and competitive scenarios.
- Design and implement data management processes, ensuring data quality, security, and compliance.
- Leverage data insights to inform and guide strategic business decisions.
- Analyze the impact of emerging technologies, such as AI, machine learning, and IoT, on modern data strategies.
- Synthesize and apply knowledge from multiple business disciplines to demonstrate the different connections between business functions.
- Communicate analysis results effectively, providing relevant and actionable recommendations for real-world business challenges.

Evaluation and Grading

The course will utilize a combination of lectures and case-based discussions, drawing on real-world examples to help students apply the knowledge they acquire.

Participants' grade will be composed of:

- **30% Team Project:** In teams, students will develop and present a comprehensive **data strategy** for a designated company, focusing on key elements such as **data governance, architecture, and analytics**. The project will require teams to analyze the company's current data landscape, identify opportunities for improvement, and propose a strategic plan for data management and utilization. Emphasis will be placed on aligning the strategy with the company's business objectives and ensuring scalability. Teams will deliver both a written report and a formal presentation, showcasing their findings and recommendations.
- **30% Individual Paper:** Students will write a 1,000-word essay that explores a specific aspect or perspective covered in class sessions of data strategy and its influence on digital transformation. This assignment will require students to critically analyze how key components of data management—such as governance, data architecture, or emerging technologies like AI—impact business processes and competitive positioning. Students will build on the concepts covered in the course sessions and are encouraged to incorporate real-world examples or use cases to support their arguments and foster a deeper understanding of how data strategies drive innovation and efficiency in organizations.
- **40% Class Engagement**: Students are expected to engage in class discussions, collaborate on case studies, and contribute meaningfully to group activities. Participation includes asking insightful questions, offering thoughtful feedback, and sharing relevant experiences. This engagement will not only deepen students' understanding of the material but also enhance their **critical thinking** and **communication skills**, preparing them for real-world business challenges where collaboration and active involvement are essential.

Sessions

FIRST SESSION: 24 April 2026, 12 PM – 6 PM

Topic 1: Introduction to Data Strategy

- **Overview of Data Strategy**:
  - Definition and significance in today's business landscape.
  - Role in enabling digital transformation across industries.
  - **Real-Life Case**: *Examine how Netflix leverages data strategy for content recommendations and user engagement.*
- **Aligning Data Strategy with Business Goals**:
  - Frameworks for aligning data initiatives with organizational objectives.

- Discussion on stakeholder engagement and the importance of cross-departmental collaboration.
- **Group Activity**: *Identify potential misalignments in a provided case study of a company's data strategy.*

Topic 2: Key Elements of Data Strategy

- **Core Components**:
  - Overview of governance, architecture, and analytics.
  - Importance of these elements in building a robust data strategy.
  - **Case Study**: *Analyze the data strategy of Procter & Gamble (P&G) and its impact on marketing and product development.*
- **Discussion and Q&A**:
  - Open floor for questions and discussions on challenges faced in implementing data strategies.

SECOND SESSION: 25 April 2026, 9 AM – 4 PM

Topic 3: Data Governance and Ethics

- **Best Practices in Data Governance Frameworks**:
  - Key principles of effective data governance (accountability, alignment, quality and sustainability).
  - Tools and frameworks for governance implementation (e.g., DAMA-DMBOK) and modern approches.
  - **Real-Life Case**: "Analyze through use cases why a data governance program is necessary in an organization."
- **Addressing Data Privacy, Security, and Ethical Concerns**:
  - Discussion on ethical dilemmas in data usage.
  - Strategies for ensuring compliance with data protection laws.
  - **Group Discussion**: *Analyze some well-known data breach cases and the effects they had, both economically and reputationally.*

Topic 4: Data-Driven Decision Making

- **Utilizing Analytics for Business Intelligence**:
  - Techniques for data analysis (descriptive, diagnostic, predictive).
  - **Real-Life Case**: Explore how Target uses data analytics for customer insights and inventory management.
- **Introduction to AI and Machine Learning in Data Strategy**:
  - Basic concepts of AI and machine learning.
  - Case examples of AI applications in different industries and segments of the value chain.

- **Interactive Demo**: *Brief demonstration of a machine learning model for predictive analytics.*

THIRD SESSION: 8 May 2026, 12 PM – 6 PM

Topic 5: Data Architecture

- **Designing Scalable Data Infrastructure**:
  - Key principles of data architecture and its components (data lakes, warehouses).
  - Considerations for scalability and performance optimization.
- **Managing Structured and Unstructured Data**:
  - Differences between structured and unstructured data.
  - Techniques for data integration and management.
  - **Demonstration**: T*ools for managing unstructured data (e.g., Apache Hadoop).*

Topic 6: Advanced Analytics

- **Predictive and Prescriptive Analytics**:
  - Understanding the difference and applications of both types of analytics.
  - Tools and techniques for implementing advanced analytics.
  - **Group Activity:** Real-Life Case - IBM Watson in healthcare.
- **AI Applications in Transforming Data into Actionable Insights**:
  - Discussion on natural language processing (NLP) and its applications in data analysis.
  - **Demonstration**: From code generation to application building (*Firebase*)
  - **Group Activity**: Use of LLMs.

FOURTH SESSION: 9 May 2026, 9 AM – 4 PM

Topic 7: Implementing Data Strategies

- **Creating a Data-Driven Culture**:
  - Strategies for fostering a data-centric organizational culture.
  - Aligning people, processes, and technology for successful data strategy implementation.
  - **Real-Life Case**: Review how Spotify promotes a data-driven culture among teams.
- **Group Project Presentations**:
  - Teams present their group projects on a proposed data strategy for a chosen company, focusing on governance, architecture, and analytics.

- **Feedback Session**: *Constructive feedback from peers and instructors.*

Topic 8: Emerging Trends in Data Strategy

- **The Role of IoT and Edge Computing**:
  - Overview of IoT technologies and their implications for data strategies.
  - Discussion on edge computing and its benefits for real-time data processing.
  - **Real-Life Case**: *Analyze how General Electric uses IoT data for predictive maintenance in industrial settings.*
- **Future Trends and Innovations in Data Strategies**:
  - Exploration of upcoming trends (e.g., quantum computing, enhanced data privacy measures).
  - Discussion on the future landscape of data strategy and the evolving role of data professionals.
  - **Wrap-Up Discussion**: *Open forum for participants to share insights gained and their perspectives on the future of data strategy.*

Readings

Mandatory Readings:

DalleMule, L., & Davenport, T. H. (2017). *What's Your Data Strategy?*.
Offers frameworks for aligning data management with business strategies.

Davenport, T. H., & Bean, R. (2019). *Data Strategy: How to Profit from Big Data, Analytics, and the Internet of Things*.
Outlines strategies for leveraging data as a strategic asset in business.

Kelleher, J., & Tierney, B. (2018). *Data Science*.
Covers key concepts and methodologies in data science for business insights.

Provost, F., & Fawcett, T. (2013). *Data Science for Business*.
Explains how data analysis influences business strategies and decision-making.

Complementary Readings:

Chen, H., Chiang, R. H. L., & Storey, V. C. (2012). *Business Intelligence and Analytics:*
Explores how business intelligence can harness big data for strategic insights.

Marr, B. (2020). *Data Strategy: How to Profit from a World of Big Data, Analytics, and IoT.*
Examines practical implications of data strategies for innovation and competitiveness.

McAfee, A., & Brynjolfsson, E. (2012). *Big Data: The Management Revolution*.
Highlights how big data is reshaping management practices and decision-making.

McKinsey Global Institute (2016). *Big Data: The Next Frontier for Innovation.*

Discusses big data's potential for driving innovation across industries.

Schmarzo, B. (2016). *Big Data MBA: Driving Business Strategies with Data Science*. Connects big data applications to business performance improvement.

About the Lecturers

Maria Isabel Bellot (mariaisabel.bellot@ext.salle.url.edu) currently serves as the Coordinator of the Master's in Technological Management and Director of the Master's in Digital Transformation at La Salle-URL. She also teaches in the areas of Digital Transformation and Technological Innovation across various master's programs, including those focused on Supply Chain Management. Her academic background includes an International Master's in Business Administration and a Master's in Project Management.

Francesc Taxonera (francesc.taxonera@ext.salle.url.edu). He currently works as an independent consultant specializing in Data Architecture, Data Governance, and Artificial Intelligence, while also serving as a professor in these fields. With over 35 years of experience in information systems, he began his career as a developer, systems technician, and technical project manager. For the past 20 years, he has worked as an architect (Account Technical Leader) for major clients in the public sector and banking. Throughout his career, he has been part of IBM or its subsidiaries, contributing his expertise to numerous projects related to data processing or system integration. He holds a degree in Telecommunications Engineering from UPC, an International Master's in Business Management from URL, and is a Master Certified Architect certified by The Open Group.