

Data analysis and visualization with Power BI

Lecturer: Maria Chiara Debernardi

Language

English

Course description and objectives

In modern organizations, the ability to transform data into clear and useful information is a key component of data-driven decision-making. This hands-on introductory course presents Microsoft Power BI as a self-service Business Intelligence tool for preparing data, building data models, creating interactive reports, and sharing analytical results.

Students will work through the main stages of a Power BI reporting workflow: connecting to and preparing data with Power Query, organizing data into a basic data model, creating fundamental DAX measures, and designing interactive reports using appropriate visualizations, filters, navigation elements, and formatting techniques. The course also introduces basic time-based analysis and the use of Power BI Service for publishing and sharing reports.

Through guided exercises and business-oriented examples, students will learn how to translate business questions into clear and well-structured Power BI reports. The emphasis is on practical skills, sound data-modeling principles, and effective data visualization rather than advanced DAX programming or enterprise-level Power BI administration.

At the end of the course, participants will be able to:

- explain the main components of a Business Intelligence workflow and the role of Power BI
- import, clean, and combine data from common sources using Power Query
- build a basic data model using fact and dimension tables and appropriate relationships
- create basic DAX measures to support business analysis
- design interactive Power BI reports using appropriate visualizations, filters, navigation, and formatting techniques
- perform simple time-based analyses and interpret results in relation to business questions
- publish a Power BI report and understand the basic options available for sharing it through Power BI Service

Audience

This course is open to all Bocconi students. It is particularly suited for:

- those who want to understand BI reporting through a practical approach
- those looking to enhance their data analysis skills with a self-service BI tool
- those who want to develop valuable skills for future job opportunities in data analytics and Business Intelligence

Prerequisites

No prior coding experience, nor knowledge of Power BI or Power Query is assumed. A good knowledge of Microsoft Excel is recommended. Having successfully completed the curricular exam in Computer Science (30424), or an equivalent course, is a significant advantage.

Guidelines

You can sign up for the course only through the yoU@B student Diary, in the "**sign-up for various activities**" box (please note: this box appears only when registrations open. It will not be visible before then).

Cancellations must also be submitted through the Diary **by the registration deadline**.

No other cancellation methods will be accepted.

Registration will be confirmed a few days before the course starts via a message in the yoU@B student Diary.

Attendance:

- Attendance of **75% or more** lessons: obtainment of the **Open Badge**
- Attendance of **less than 25%** lessons: **Exclusion List**

Duration

16 academic hours

Teaching Mode

This course will be only taught in person. Distance mode will not be provided.

Calendar

Lecture	Date	Time	Room
1	Fri 30/10/2026	14:45 – 16:15	InfoU01
2	Fri 30/10/2026	16:30 – 18:00	InfoU01
3	Fri 06/11/2026	14:45 – 16:15	InfoU01
4	Fri 06/11/2026	16:30 – 18:00	InfoU01
5	Fri 13/11/2026	14:45 – 16:15	InfoU01
6	Fri 13/11/2026	16:30 – 18:00	InfoU01
7	Fri 27/11/2026	14:45 – 16:15	InfoU01
8	Fri 27/11/2026	16:30 – 18:00	InfoU01

Syllabus of the course

Lecture	Topics
1	Introduction to Business Intelligence and Power BI - What Business Intelligence is and why organizations use it - From business questions to data-driven insights - Main components of a BI system - Overview of the Power BI ecosystem - Introduction to Power BI Desktop and its main views
2	Data ingestion and preparation - The ETL process: extract, transform, and load - Data warehouses and data lakes: basic concepts only - Connecting Power BI to common data sources - Basic data transformations with Power Query - Data types, missing values, renaming, filtering, and basic data cleaning <i>Recap exercise</i>

Lecture	Topics
3	Building the data model - From tables to a data model - Fact tables and dimension tables - Introduction to the star schema - Creating relationships between tables - Cardinality and filter direction
4	Exploring data through visualizations - Choosing appropriate visuals and basic visualization principles - Creating and formatting standard Power BI visuals - Hierarchies and groups - Slicers and filters <i>Recap exercise</i>
5	Introduction to DAX - Data Analysis Expressions (DAX): how is it different from Excel? - Calculated columns vs. measures - Creating basic measures - Introduction to row context and filter context - Using measures to answer business questions
6	Building and refining a dynamic report - Combining data with merge and append operations when required - Effective report design and data storytelling: basic principles - Managing visual interactions and cross-filtering (drill-through) - Introduction to time intelligence: comparing results across time periods - Connecting analytical results to business questions <i>Recap exercise</i>
7	Enhancing interactive reports - Conditional formatting - Map-based visualizations - Sparklines - Connecting report pages: buttons and page navigation - Themes and consistent report formatting

Lecture	Topics
8	Completing and sharing a Power BI report - Using templates - Additional visuals and selected Power BI capabilities - Introduction to publishing and sharing reports - From Power BI Desktop to Power BI Service - Resources for continuing to develop Power BI skills <i>Recap exercise</i>

Suggested bibliography

Materials will be provided by the instructor during the course and will be accessible on Blackboard.

Software

[Microsoft Power BI Desktop](#)

Available seats

This activity is limited to **110** participants. Registration cannot be carried out once this number has been reached or after closing the registration period.

Please remember that you may unsubscribe from ITEC courses only through the yoU@B Diary and only before the registration deadline.