Data analysis and visualization with Power BI

Lecturer: Maria Chiara Debernardi

Language

English

Course description and objectives

In the contemporary business landscape, data literacy and visualization skills have become fundamental competencies for strategic decision-making. This course introduces Microsoft Power BI as a comprehensive Business Intelligence platform, enabling students to transform complex datasets into actionable business insights through advanced visualization and analytical capabilities.
The program adopts a hands-on approach, guiding students through the complete BI development lifecycle: from data acquisition and modeling to report creation and organizational deployment. Students will master both technical proficiency and strategic thinking, learning to design data solutions that drive business value while adhering to industry best practices and governance standards.
Through practical case studies and real-world business scenarios, participants will develop expertise in data modeling, DAX programming, and visualization design principles. The course emphasizes not only technical execution but also the critical ability to communicate data-driven insights effectively to diverse stakeholder audiences.

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

- Design and implement comprehensive data models integrating multiple data sources
- Apply advanced filtering and analytics techniques for dynamic reporting
- Create compelling data narratives using appropriate visualization methodologies
- Develop DAX expressions for custom measures
- Deploy and manage Power BI reports

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** of class hours: obtainment of the **Open Badge**
- Attendance of **less than 25%** of class hours: **exclusion list**

Duration

16 hours

Teaching Mode

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

Calendar

Lecture	Date	Time	Room
1	Wed 17/09/2025	18.15 - 19.45	InfoAS04
2	Thu 18/09/2025	18.15 - 19.45	InfoAS04
3	Wed 24/09/2025	18.15 - 19.45	InfoAS04

4	Thu 25/09/2025	18.15 - 19.45	InfoAS04
5	Wed 01/10/2025	18.15 - 19.45	InfoAS04
6	Thu 02/10/2025	18.15 - 19.45	InfoAS04
7	Wed 08/10/2025	18.15 - 19.45	InfoAS04
8	Thu 09/10/2025	18.15 - 19.45	InfoAS04

Syllabus of the course

Lecture	Topics
1	**Introduction to Business Intelligence** - BI: what is it and why do we need it? - The elements of a BI system - PBI Desktop: overview
2	**Data ingestion** - The ETL phase - Data Warehouse and Data Lake (*hints*) - Import data from various sources
3	**The data model** - What is the relational model? - Fact *vs* Dimension tables - Merging *vs* appending
4	**Exploring visualizations** - Standard graphs and tables - New variables: hierarchies and groups - Slicers and filters: the basics
5	**Building a dynamic report** - Advanced slicers - Connecting pages in a report - Publish and share a report (Power BI app) - From report to dashboard

Lecture	Topics
6	**Intro to DAX language** - Data Analysis eXpression language: help in using it - Calculated Column *vs* Measure - Creating a Custom Measure - Time intelligence
7	**Improving the reports - 1** - Playing with maps: geo-maps, treemaps, heatmaps - Conditional formatting - Import and customize themes - Templates
8	**Improving the reports - 2** - New visuals from AppSource Visuals - The Q&A feature - Sparklines - Using R and Python inside Power BI (*hints only*)

Suggested bibliography

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

Software

Microsoft Power BI Desktop
You can download it, using your Bocconi account, here: microsoft/download

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.