

Data analysis and visualization with Power BI

Lecturer: Maria Chiara Debernardi

Language

English

Course description and objectives

In today's data-driven world, understanding and visualizing data is essential for making informed decisions. Microsoft Power BI (PBI) is a powerful tool that empowers you to turn raw data into compelling stories.

PBI extends the capabilities of Excel for creating reports, offering a more visual approach, and minimizing the need for coding. You can gather data from multiple sources and create dynamic visualizations and dashboards with an intuitive interface.

Through a practical approach, students will learn how to set up a simple Business Intelligence system to extract insights from data using graphs, tables, and maps. The course will also introduce the relational model and DAX queries to create custom measures and KPIs.

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

- Set up a BI model (using data from various sources)
- Create and share interactive visualizations
- Apply advanced filtering techniques
- Choose the most suitable visualization types to convey different messages
- Create simple queries using DAX language

Audience

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

- those who want to understand the workings of BI dashboards and reports through a hands-on approach
- those looking to enhance their data analysis skills with a self-service BI tool like Microsoft Power BI
- 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

Registration:

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

You can only cancel your registration by Diary **no later** than the registration deadline for the course itself. No other ways of cancellation are allowed.

Registration will be confirmed a few days before the start of the course through a message posted 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: **blacklisting**

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 | Mon 04/11/2024 | 18.15 - 19.45 | InfoU01 |
| 2 | Tue 05/11/2024 | 18.15 - 19.45 | InfoU01 |
| 3 | Mon 11/11/2024 | 18.15 - 19.45 | InfoU01 |
| 4 | Tue 12/11/2024 | 18.15 - 19.45 | InfoU01 |
| 5 | Mon 18/11/2024 | 18.15 - 19.45 | InfoU01 |
| 6 | Tue 19/11/2024 | 18.15 - 19.45 | InfoU01 |
| 7 | Mon 25/11/2024 | 18.15 - 19.45 | InfoU01 |
| 8 | Tue 26/11/2024 | 18.15 - 19.45 | InfoU01 |

Syllabus of the course

| Lecture | Topics |
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| 1 | Introduction to Business Intelligence |
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- BI: what is it and why do we need it?
 - The elements of a BI system
 - PBI Desktop: overview
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| 2 | Data ingestion |
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- The ETL phase
 - Data Warehouse and Data Lake (*hints*)
 - Import data from various sources
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| 3 | The data model |
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- What is the relational model?
 - Fact vs Dimension tables
 - Merging vs appending
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| 4 | Exploring visualizations |
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- Standard graphs and tables
 - New variables: hierarchies and groups
 - Slicers and filters 1
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| 5 | Building a dynamic report |
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- Slicers and filters 2
 - Connecting pages in a report
 - Publish and share a report (Power BI app)
 - From report to dashboard
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| 6 | Intro to DAX language |
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- Data Analysis eXpression language
 - Calculated Column vs Measure
 - Creating a Custom Measure
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| 7 | Improving the reports - 1 |
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- Playing with maps: geo-maps, treemaps, heatmaps
 - Conditional formatting
 - Import and customize themes
 - Templates
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Lecture Topics

- 8 Improving the reports - 2**
- New visuals from AppSource Visuals
 - The Q&A feature
 - Using R and Python inside Power BI (*hints only*)
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Software

[Microsoft Power BI Desktop](#)

You can download it, using your Bocconi account, here: [microsoft/download](#)

Suggested bibliography

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

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 before the registration deadline.