



## Data mining concepts and techniques

# Introduction to the PhD course

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# Course content

- Introduction to **Data Science**
- **Data preparation** for Data Mining
- Association **rules**, itemset mining
- **Classification** techniques, supervised learning
- **Cluster** analysis, unsupervised learning
- Seminar about current trends in Data Science
- **Practice** with a data mining tool and **Exam**



# Course schedule

- Mon, Feb 9, 2026 09:00 – 13:00 1M
  - Introduction to the course, Datamining pipeline and Preprocessing
- Mon, Feb 16, 2026 09:30 – 13:30 Sala Ciminiera
  - Association Rules: Introduction, Algorithms and Performance metrics
  - Classification: Introduction
- Mon, Feb 25, 2026 08:30 – 12:30 Sala Ciminiera
  - Classification: Algorithms, Validation, Performance metrics
  - Clustering: introduction
- Mon, Mar 02, 2026 10:00 – 14:00 Sala Ciminiera
  - Clustering: Algorithms, Performance metrics
  - Deep learning introduction
- Fri, Mar 04, 2026 14:30 – 18:80 LABINF
  - Hands on the data with RapidMiner/Python, and Exam

Please visit the web page for updates:

[https://dbdmg.polito.it/dbdmg\\_web/index.php/2021/11/17/data-mining-concepts-and-algorithms/](https://dbdmg.polito.it/dbdmg_web/index.php/2021/11/17/data-mining-concepts-and-algorithms/)

- Practice with a machine learning tool
  - Exploiting data mining **algorithms**
  - To analyze a **real dataset**
  - **Fill a report** with your results and send it via **email**
- Oral part about (**optional**) – required to pass with Merit
  - The applied algorithms
  - The data mining results
  - Data science solutions seen during the course
- The exam is performed soon after the last lecture
  - A dataset will be assigned to each of you
  - You will exploit different data mining algorithms to analyze the dataset
  - Fill the exam report with your results
  - Take the oral part

## ➤ Reference books

- Tan, Steinbach, Kumar, *Introduction to data mining*, Pearson, 2006
- Han, Kamber, *Data mining: concepts and techniques*, Morgan Kaufmann, 2006