



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
- **Cluster** analysis, unsupervised learning
- **Classification** techniques, supervised learning
- Seminar about current trends in Data Science
- **Practice** with a data mining tool and **Exam**



Course schedule

- Mon, Jan 9, 2023 14:30-17:30 – 8D
 - Introduction to the course, Datamining pipeline and Preprocessing
- Thu, Jan 12, 2023 16:00-19:00 – 4C
 - Association Rules: Introduction, Algorithms and Performance metrics
- Thu, Jan 19, 2023 10:00-13:00 – 15
 - Classification: Introduction and Algorithms
- Mon, Jan 23, 2023 10:00-13:00 – 10D
 - Classification: Algorithms, Validation and Performance metrics
- Thu, Jan 26, 2023 10:00-13:00 – 15
 - Clustering: Introduction, Algorithms and Performance metrics
- Mon, Jan 30, 2023 10:00-13:00 – 7
 - Seminar on: Big Data and Advanced Machine Learning techniques
- Tue, Jan 31, 2023 9:00-11:00 - LABINF
 - Hands on the data with RapidMiner/Orange and Exam

Please visit the web page for updates:

https://dbdmq.polito.it/dbdmq_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

LABINF access

- Please make sure you have an **account** on the LABINF PCs before the last lecture (Lab practice).
- It is **NOT** the account you use to log in to the PCs in the other LAIB labs.
- You can register an account at [LABINF](#) every day from **2pm** to **3pm**.
 - Student card and Certification of Enrolment are required
 - Specify that you are enrolled in the “Data mining: concepts and algorithms” course
 - Check the [Labinf website](#) for details