



13X011: Data Mining Syllabus – Spring 2026

Course General

The course meets:

- Tuesdays 8.15–10.00 a.m. (Bat A/316-318)
- Tuesdays 10.15–12.00 p.m. (Bat A/314-322)

The course also meets asynchronously (on Moodle): [13X011]

Teaching Staff

- *Course Instructor:* Prof. Roland Bouffanais
Office hours: By appointment (roland.bouffanais@unige.ch)
- *Teaching Assistant:* Mr. Arthur Rondeau
Office hours: By appointment (arthur.rondeau@unige.ch)

Course Description

This course provides a comprehensive introduction to the fundamental concepts, techniques, and applications of data mining. Students will explore key data mining principles, including data preprocessing, classification, clustering, association rule mining, and anomaly detection. The course covers both theoretical foundations and practical applications, equipping students with the skills to analyze large datasets and extract meaningful patterns.

Through hands-on exercises, case studies, and projects, students will learn how to apply data mining techniques using real-world datasets and tools. Ethical considerations, challenges, and recent advancements in the field will also be discussed. By the end of the course, students will be able to leverage data mining methods to support decision-making and knowledge discovery in various domains.

Topics covered:

- Introductory concepts about data mining
- Knowing your data
- Data preprocessing
- Mining frequent patterns, associations and correlations
- Classification: basic and advanced concepts
- Cluster analysis: basic and advanced concepts
- Outlier detection
- Outlook

Assessments & Grading Components

- Tutorials (a.k.a. TP; 15%): continuous assessment of the tutorial sessions;
- Quizzes (20%): Four 20-min quizzes held during lectures;
- Final exam (65%): oral exam (randomly selected topic with 20-min preparation followed by a 20-min interrogation)

– Total: 100%

Academic Integrity

Students are expected to be familiar with and adhere to the following policy about academic integrity at the University of Geneva [[here](#)]

Recommended Reading

Data Mining: Concepts and Techniques, by J. Han, J. Pei. & H. Tong, Morgan Kaufmann Publishers In, 4th Edition, 2022.