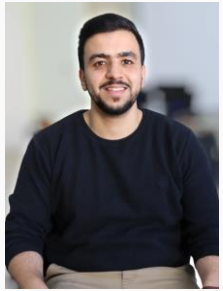
Data mining Syllabus

Sami Belkacem & Mohammed Brahimi

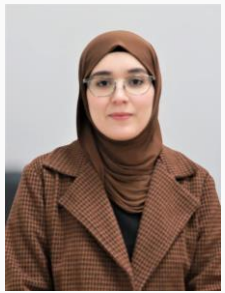
Data mining team

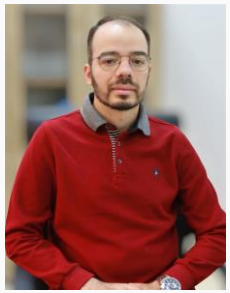
- Dr. Sami Belkacem
- **Lecture & lab instructor**



- Dr. Mohammed Brahimi
- **Lecture & lab instructor**

- Dr. Khadidja Chettah
- **Lab instructor**





- Dr. Seif Eddine Bouziane
- **Lab instructor**

Course description

*“The Data Mining module focuses on **pattern extraction** from **data**, the purpose is to equip students with the capabilities to **preprocess data**, **extract patterns**, and **validate them**.”*

Learning objectives

- Master Core Data Mining Concepts
  - Data preparation, association rules, clustering, anomaly detection, and classification...
- Apply Data Mining in Practice
  - Learn to develop and apply data mining techniques to real-world scenarios
- Enhance Analytical Thinking
  - Learn to use data to rationalize and improve decision-making.
- Prepare for Research and Application
  - Gain skills for research in data mining or applying techniques to various fields.

Prerequisites

- **Statistics**
  - Descriptive and inferential statistics.
- **Probability**
  - Master probability concepts.
- **Linear Algebra**
  - Familiarity with matrices and vectors.
- **Python Programming**
  - Key for practical implementation.

Course content (1)

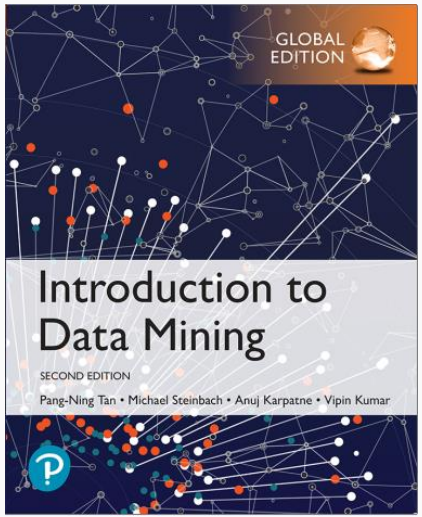
1. Introduction
2. Data (1)
3. Data (2)
4. Feature Extraction and Selection Method (1)
5. Feature Extraction and Selection Method (2)
6. Cluster Analysis (1)
7. Cluster Analysis (2)

Course content (2)

8	Association Analysis and Pattern Mining (1)
9	Association Analysis and Pattern Mining (2)
10	Anomaly Detection
11	Classification
12	False Discovery and Hypothesis Testing
13	Data Mining Use Cases (1)
14	Data Mining Use Cases (2)

Suggested Textbooks

The main textbook for this course is the Textbook (**1**),
The Textbooks (**2**) and (**3**) are optional and only serve as a supplement to enhance your understanding of the course material.



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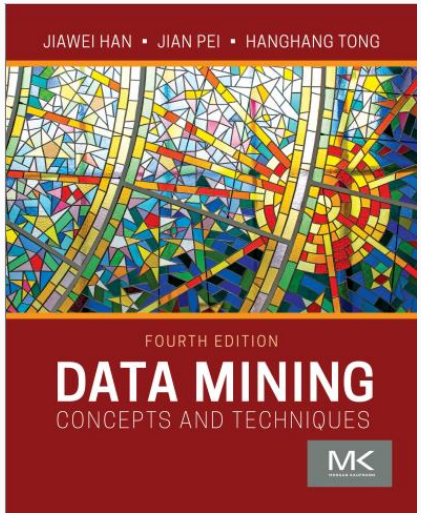

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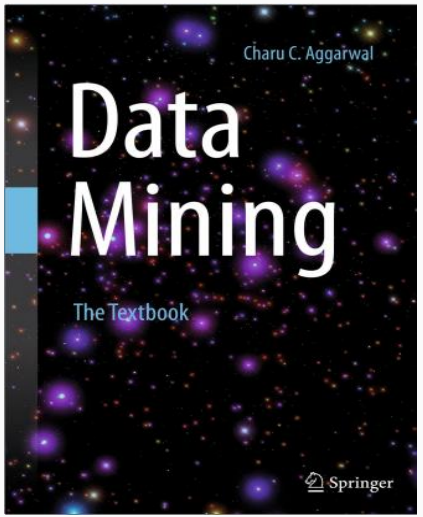

(3)

Assessment method & Grading policy

- Exam - 60%
- Continuous Evaluation - 40%
  - Midterm Exam - 6 points (**Week of midterms, November 11th**)
  - Data mining project - 6 points
  - Quizzes - 3 points
  - Instructor Appreciation - 3 points
  - Attendance - 2 points (maximum of 2 absences)

Assessment method & Grading policy

- Late Quizzes
  - **- 20%** penalty per day, up to 2 days
  - After 2 days, no points will be awarded

- Demonstration may be organized for the Data mining project

Attendance & Participation Policy

- Regular attendance is expected
- Participation in class discussions and group activities is much appreciated
- More than 3 absences without justification may result in disciplinary actions
- Unexcused lateness to class will not be accepted

Academic Honesty Policy

- All work must be original and completed to the best of ability
- **Plagiarism** and **cheating** will not be tolerated
- Appropriate disciplinary action will be taken for violations

"Education is not the filling of a pail, but the lighting of a fire."

سقراط – "التعليم هو إيقاد شعلة، وليس ملء وعاء"