

## COMP 4710 – Introduction to Data Mining

**Calendar Description:** Introduction to data mining concepts and their applications.

**Prerequisite:** COMP 3380 or consent of department.

### Outline

- 1) Review: Database concepts and usage (1 week)
- 2) Discovery of frequent patterns (2 weeks)
- 3) Formation of interesting rules (2 weeks)
- 4) Analysis of sequential data and time series (2 weeks)
- 5) Clustering and unsupervised learning (2 weeks)
- 6) Classification and supervised learning (2 weeks)
- 7) Detection of anomalies (2 weeks)
- 8) Other topics (if time permits):
  - Incremental mining; mining of data streams; mining of uncertain data; data visualization and visual analytics; real-life applications of data mining; brief introduction to distributed data mining, parallel data mining, and machine learning

**Text:** Han & Kamber, *Data Mining: Concepts and Techniques*, Morgan Kaufmann, 2006

Tan et al., *Introduction to Data Mining*, Addison-Wesley, 2006

**Optional References:** Hand et al., *Principles of Data Mining*, MIT Press, 2001

Maimon & Rokach (eds.), *Data Mining and Knowledge Discovery Handbook*, Springer, 2010

Witten & Frank, *Data Mining: Practical Machine Learning Tools and Techniques*,

Morgan Kaufmann, 2005