**Data Mining and Visualization**

**Overview**

|  |  |
| --- | --- |
| Level | 3 (Semester 6) |
| Duration | 4 weeks |
| Lectures | 10x40 minutes/week for 2 weeks |
| Practicals/tutorials | 5x2 hours/week for 3 weeks |

**Learning Outcomes**

* Students will understand, and be able to use, basic data mining and visualization concepts, techniques and software tools
* Students will be able to analyse complex datasets by applying data pre-processing, exploration, clustering and classification, time series analysis, and many other techniques
* Students will be able to manipulate, format, prepare, and clean data sets prior to analysis
* Students will be able to design appropriate visualization solutions for different applications, scenarios, and audiences.

**Syllabus**

* Data Mining: basic statistics, advanced data analysis techniques such as trend detectors, pattern detectors, qualitative models, basic data mining techniques such as classification and clustering.
* Visualization: information visualization (basic concepts and advanced techniques); supporting user variation (abillties, knowledge, preferences);
* Applications to real world problems: for example, medical decision support, supporting analysis of genome data, text analysis