- Faculté des sciences économiques
- www.unine.ch/seco

Data mining (5MI1005)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Master en développement international des affaires	**Cours: 4 ph**	**écrit: 2 h**	6
Master en sciences économiques, orientation politique économique	**Cours: 4 ph**	**écrit: 2 h**	6
Master en systèmes d'information	**Cours: 4 ph**	**écrit: 2 h**	6

ph=période hebdomadaire, pg=période globale, j=jour, dj=demi-jour, h=heure, min=minute

Période d'enseignement:

- Semestre Automne

Equipe enseignante:

Stoffel Kilian, professor
Institut du management de l'information,
A.L.Breguet 2, 2000 Neuchâtel
+ 41 32 718 1376, kilian.stoffel@unine.ch

Jabbari Simin, assistante doctorante
Institut du management de l'information,
A.L.Breguet 2, 2000 Neuchâtel
+ 41 032 718 15 65, simin.jabbari@unine.ch

Sohaila Baset , assistante doctorante
Institut du management de l'information,
A.-L.Breguet 2, 2000 Neuchâtel
+ 41 032 718 13 84, sohaila.baset@unine.ch

Objectifs:

A student attaining this course should be able to:
- understand the importance of data mining in the Business Intelligence
- identify the business problems for which a data mining approach is appropriate
- select, explore and transform data to bring the information to the surface
- build and assess data mining models (decision trees, neural networks, association rules,..)
- evaluate and measure the results of the model deployment

Contenu:

The course starts with an overview of data mining concepts and of the benefits of applying data mining techniques for the analytic customer relationship management. The virtuous cycle of data mining (from business problem to action, based on information mined from data) and the data mining methodology (from rough data to meaningful knowledge, by building and deploying appropriate models) are described in-depth. Then the accent is put on the data preparation: select, explore, fix the problems, transform, create the training, validation and testing set. In the last part of the course, the most known data mining techniques are deeply analysed: decision trees (representation, construction algorithm, split criterion, pruning, rule extraction), neural networks (main principles, unit description, training set construction, back propagation, results interpretations, self-organizing maps) and association rules (market basket analysis, types of association rules, support and confidence of a rule, Apriori algorithm, dissociation rules).

Forme de l'évaluation:

2-hour written exam during the last week of the semester (60%) and project (40%)
Catch-up exam: 2-hour written exam during the autumn session(100%)