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

Data Science for Business (5MI1005)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Master en développement international des affaires	**Cours: 4 ph**	**Voir ci-dessous**	6
Master en finance	**Cours: 4 ph**	**Voir ci-dessous**	6
Master in General Management	**Cours: 4 ph**	**Voir ci-dessous**	6
Master of Science en innovation	**Cours: 4 ph**	**Voir ci-dessous**	6

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

Période d'enseignement:

- Semestre Automne

Equipe enseignante

Cotofrei Paul
Information management institute, A.L. Breguet 2, 2000 Neuchâtel
Phone: 032 718 1378
e-mail:paul.cotofrei@unine.ch

Contenu

The course introduces a set of fundamental concepts or principles that underlie techniques for extracting useful knowledge from data. These concepts serve as the foundation for many well-known algorithms of data mining. Moreover, these concepts underlie the analysis of data-centered business problems, the creation and evaluation of data science solutions, and the evaluation of general data science strategies and proposals. The fundamental principles are illustrated using canonical data-mining tasks: classification, regression, similarity matching, clustering, co-occurence grouping, link prediction. The main topics covered in the course are predictive modelling, fitting model to data, overfitting, visualizing model performance, evidence and probabilities. Practical application are illustrated using RapidMiner environment, which is a graphical user interface (GUI)-based data mining tool.

Forme de l'évaluation

- Project : 40% of final grade (team work).
- Case Study : 10% of final grade (paper presentation, team work)
- Written exam (2 hours) during winter session: 50% of final grade.
- Resit: individual written exam (2 hours) during autumn session: 100% of final grade.
- Allowed documents during exams: 2 pages A4 with personal annotations
- Connected devices are not permitted during the exams. In case of violation of this rule, the students are in a situation of fraud and the unauthorized items will be removed. The exam could be deemed as failed.

Documentation

- "Data Science for Business" by Provost & Fawcett. (2013) Publisher: O'Reilly Media;
- "Predictive analytics and data mining: concepts and practice with RapidMiner" by Kotu, V., & Deshpande, B. (2014). . Morgan Kaufmann
- "Machine Learning for Business Analytics - Concepts, Techniques, and Applications", by Shmueli, G & Bruce, P. & Deokar, A. & and Patel, N. (2023), Wiley

Pré-requis

Forme de l'enseignement

Cours ex-cathedra (2 hours) and practical exercises (individual or by groups) (2 hours). The time allowed to each teaching component may vary according to the lecture's topic.
The use of a personal computer for applied exercises in RapidMiner is strongly recommended.

Objectifs d'apprentissage

URLs	1) https://moodle.unine.ch/course/view.php?id=8545

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

Data Science for Business (5MI1005)

Au terme de la formation l'étudiant-e doit être capable de :

- Compare different model fit measures for assessing models
- Define the role and purpose of quantitative techniques in effective management
- Recognise the different types of relationships and patterns extracted from data
- Explain the implications of data science approach for a business environment
- Criticise the advantages and disadvantages of different data science methods
- Discuss the implications of data science approach for a business environment
- Assimilate the computational thinking to improve programming skills
- Illustrate concrete applications of data mining methods based on published case studies
- Develop the ability to build and assess data-based models

Compétences transférables

- Develop hands-on, pro forma modelling skills using Excel
- Apply knowledge to new situations
- Design projects
- Discuss complex issues and interactions

URLs	1) https://moodle.unine.ch/course/view.php?id=8545