

5 credits

30.0 h

Q1

Teacher(s)	Fouss François ;
Language :	English
Place of the course	Mons
Main themes	<p>Nowadays, data are everywhere. For most organizations, potentially every area of its business, as well as every relationship related to its business, can now be quantified and recorded. Such amount of data led to the emergence of powerful methods for storing, processing, querying, and extracting useful information/knowledge from these data. This course will be focused on methods for data understanding, design, management, preparation, modeling, querying, and visualization, as a global means for the organization of making better decisions. As a central element in data analytics, modeling and methodology will play an important role in this course, including, e.g., data design for business intelligence analytics, predictive modeling, or fitting statistical models to data.</p>
Aims	<p><i>The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".</i></p>
Teaching methods	Classical courses and case studies.
Content	<p>The scope of the course is broad and the instructor will certainly not be able to cover all of the material concerning data analytics in business. Depending of his background, interests and experience, he will focus on some specific techniques or skim through a broad range of methods.</p> <p>Potential covered topics are (but not limited to): database design for data analytics, business intelligence techniques, dimensionality reduction for data visualization, extracting recurrent patterns from data, cluster analysis, predictive modeling (supervised classification and regression methods), modeling relationships by latent variable techniques, data analysis algorithms scaling to big data, etc. All these techniques must be illustrated through business applications.</p>
Bibliography	<p>Sources potentielles :</p> <p>Provost & Fawcett (2013) 'Data science for business'. O'Reilly.</p> <p>Sherman (2014) 'Business intelligence guidebook: from data integration to analytics'. Morgan Kaufmann.</p> <p>Efrain, Sharda & Delen (2010) 'Decision support and business intelligence Systems'. Pearson.</p> <p>Leskovec, Rajaraman & Ullman (2014) 'Mining of massive datasets, 2nd ed'. Cambridge University Press.</p> <p>Kelleher, Mac Namee & D'Arcy (2015) 'Fundamentals of machine learning for predictive data analytics. MIT Press.</p> <p>Hastie, Tibshirani & Friedman (2009), "The elements of statistical learning, 2nd ed". Springer-Verlag.</p> <p>Izenman (2008), 'Modern multivariate statistical techniques: regression, classification, and manifold learning. Springer.</p> <p>Bellanger & Tomassone (2014), "Exploration de données et méthodes statistiques : data analysis & data mining avec le Logiciel R". Ellipses.</p>
Faculty or entity in charge	CLSM

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Business Engineering	INGM2M	5		