




5.00 credits

30.0 h

Q1

|                             |  |
|-----------------------------|--|
| Teacher(s)                  | Ait El Cadi Abdessamad (compensates Meskens Nadine) ;Meskens Nadine ;  |
| Language :                  | French   |
| Place of the course         | Mons   |
| Prerequisites               | Statistics   |
| Main themes                 | <ul style="list-style-type: none"> <li>• Introduction to Data Mining</li> <li>• Knowledge discovery process</li> <li>• Decision tree : algorithms CART and ID3</li> <li>• Cross-validation, bootstrap</li> <li>• Tree pruning</li> <li>• Bagging, boosting, arcing</li> <li>• Random forest</li> <li>• ROC curves</li> <li>• Market basket analysis</li> <li>• Neural network</li> <li>• Cluster analysis : Hierarchical methods, K-means</li> <li>• Rough sets</li> <li>• Trends in data mining</li> <li>• Software : TANAGRA et SAS enterprise Miner</li> <li>• Applications</li> </ul>  |
| Learning outcomes           | <p><b>At the end of this learning unit, the student is able to :</b></p> <p>At the end of this learning unit, the student is able to:</p> <ul style="list-style-type: none"> <li>• Extract knowledge contained in large volumes of data from real data and using data mining software such as SAS enterprise Miner and TANAGRA;</li> <li>1 • Interpret the results provided by such software;</li> <li>• Describe the principles of supervised and unsupervised learning methods seen in the course;</li> <li>• Use the appropriate methods to deal with a given problem;</li> <li>• Read and understand research articles related to a management problem and using data mining methods.</li> </ul> |
| Teaching methods            | <ul style="list-style-type: none"> <li>• Lectures</li> <li>• Course-related exercises</li> <li>• Use of software</li> <li>• Case studies</li> </ul>  |
| Bibliography                | <ul style="list-style-type: none"> <li>• HAN J., KAMBER M. (2006), Data mining: concepts and techniques, 2nd ed. Morgan Kaufmann.</li> <li>• TUFFERY S. (2007), Data Mining et statistique décisionnelle : l'intelligence dans les bases de données, Technip.</li> </ul>   |
| Faculty or entity in charge | CLSM   |

| <b>Programmes containing this learning unit (UE)</b>   |         |         |              |   |
|--|---------|---------|--------------|---|
| Program title  | Acronym | Credits | Prerequisite | Learning outcomes   |
| Master [120] : Business Engineering                    | INGE2M  | 5       |              |  |
| Master [120] : Business Engineering                    | INGM2M  | 5       |              |  |
| Master [120] in Management (with work-linked-training) | GESA2M  | 5       |              |  |