

3.0 credits	30.0 h	2q
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Teacher(s) :	Verleysen Michel ; Dupont Pierre (coordinator) ;
Language :	Anglais
Place of the course	Louvain-la-Neuve
Inline resources:	<a href="http://icampus.uclouvain.be/claroline/course/index.php?cid=lingi2379">http://icampus.uclouvain.be/claroline/course/index.php?cid=lingi2379</a>
Prerequisites :	having passed at least one of the following courses: -- INGI2262 Machine Learning -- ELEC2870 Artificial neural networks -- SINF2275 Data mining and decision making
Main themes :	Themes are chosen in the domain of machine learning
Aims :	-- To study in groups current issues in machine learning, pattern recognition or data analysis -- To summarize a technical or scientific paper of the domain, convey it to colleagues, and discuss it with a critical viewpoint <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>
Evaluation methods :	The evaluation focuses on the quality of the presentations made "by each student in front of to other participants in the seminar. The overall grade consists of: - 50% on the educational quality of the presentation - 50% on the accuracy of the scientific content of the presentation In the second session, the evaluation is 100% on a written report to the teacher the first day of the examination session.
Teaching methods :	The course is organised as a seminar where student meet regularly to present and discuss recent scientific papers. Les séminaires pourront être présentés en anglais ou en français par les étudiants.
Content :	Illustrative examples: -- Semi-supervised learning methods -- Structured data mining (graphs, trees, sequences, etc.) -- Kernel methods for classification and regression -- Variable selection methods -- Hidden Markov models and their applications -- Boosting and bagging algorithms -- Automata induction techniques
Bibliography :	Scientific articles in Machine Learning, supplemented by one or the other textbooks depending on the choice of students's topics. Examples: -- Statistics for High-Dimensional Data: Methods, Theory and Applications, Bühlmann and van Geer, Springer, 2011. -- Nonlinear Dimensionality Reduction, Lee and Verleysen, Springer, 2007. -- Computational Methods of Feature Selection, Liu and Motoda, Chapman & mp; Hall / CRC, 2008.
Cycle and year of study :	<a href="#">&gt; Master [120] in Computer Science and Engineering</a> <a href="#">&gt; Master [120] in Computer Science</a>

Faculty or entity in charge:	INFO
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