

5.00 credits

30.0 h + 30.0 h

Q1

Teacher(s)	Lee John ;
Language :	English > French-friendly
Place of the course	Louvain-la-Neuve
Main themes	Visualisation of information, data, tasks, tools, perception, visualizing tabular and spatial data, graphs and trees, links with machine learning, interaction, multiple views.
Learning outcomes	At the end of this learning unit, the student is able to : With respect to the AA referring system defined for the Master in Data Science Engineering the course contributes to the development, mastery and assessment of the following skills : • DATA 1.2 • DATA 2.1, 2.2, 2.3, 2.4, 2.5 • DATA 5.1, 5.2, 5.3, 5.4, 5.5 At the end of the course, students will be able to : • understand perceptive and cognitive processes behind visualisation; • relate tasks and visualisation tools; • categorize data types; • analyze an existing visualisation; • design an appropriate visualization; • validate visualisations; • implement visualisation tools.
Evaluation methods	Oral examination with preparation time. Interrogation on the course material and about the project realization. The examination grade is split into 10/20 for the course and 10/20 for the project. A project report must be handed in as a condition to take the exam.
Teaching methods	Lectures in classroom, practical sessions on computers, project as homework plus Q&A sessions.
Content	• What and why information visualisation? • Data abstraction: types of data and of datasets • Which visualisation for which task? • Validating visualisations • Display and ocular perception • Visualisation channels (colour, size, shape, angle, ...) • Tabular data: lists, matrices, tensors • Spatial data: scalar, vector and tensor fields • Networks and trees • Link between machine learning and visualisation: clustering, dimensionality reduction, graph embedding • Interactive visualisation • Multiple views • Advanced topics in visualisation
Inline resources	Moodle page of the course: https://moodle.uclouvain.be/course/view.php?id=3502
Bibliography	Visualization analysis & Design, Tamara Munzner, CRC Press, 2015.
Faculty or entity in charge	DACS

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Data Science : Statistic	DATS2M	5		
Master [120] in Computer Science and Engineering	INFO2M	5		
Master [120] in Computer Science	SINF2M	5		
Master [120] in Mathematical Engineering	MAP2M	5		
Master [120] in Data Science Engineering	DATE2M	5		
Master [120] in Data Science: Information Technology	DATI2M	5		