UCLouvain

lcomu2811

2026

Information visualisation and multimodal presentation

5.00 credits	30.0 h	Q2

Teacher(s)	Kieffer Suzanne ;
Language :	French
Place of the course	Louvain-la-Neuve
Main themes	· Visual perception · Representation (encoding of values, of relations) · Presentation (visualization techniques) and interaction · Design principles (Gestalt, Bertin, color theory) · Dashboards and visual analytics
Learning outcomes	**At the end of this learning unit, the student is able to :** 1. Describe data visualizations in terms of data type, data representation, presentation and interaction technique, and user task ; 2. Explain the different stages involved in the development of interactive visualizations by illustrating each step through its typical results (e.g. deliverables) ; 3. Apply Information Visualization principles and techniques to design and develop an interactive visualization of a large data set ; 4. Evaluate a visualization using criteria and propose improvements.
Evaluation methods	Assessment is based on **continuous evaluation with no final exam**. • If the cohort has fewer than 35 students: 40% individual knowledge tests, 60% individual assignments (project). • If the cohort has 35 students or more: 40% individual knowledge tests, 30% group assignments (project), 30% individual assignments (project). • In the September session, an individual assignment is required, adapted to the elements that were failed. The use of **artificial intelligence (AI) tools** must comply with the guidelines established by the ESPO faculty. Their use is authorized as support for writing (e.g., text improvement, translation) and information retrieval. The instructor supervises other permitted uses in submitted work (e.g., idea exploration, brainstorming, generation of images or text).
Teaching methods	The course is delivered **entirely online via Microsoft Teams**. • **Teams/Moodle articulation:** Moodle is the reference platform. All resources, official instructions, and assessments are centralized there. Teams complements this setup as a space for quick reminders, questions, and real-time communication. Documents and instructions are never duplicated on Teams. Exceptionally, a piece of work may be submitted on Teams, mainly to ensure that every student is properly enrolled and active on the platform. • **Flipped classroom:** At the beginning of the semester, students complete interactive H5P exercises on Moodle independently to acquire the theoretical foundations. The synchronous sessions on Teams are then dedicated to Q&A and consolidation exercises, aimed at verifying and strengthening their understanding of the material. • **Project:** The remainder of the semester is devoted to the project, in which students use Tableau to clean a dataset and design an interactive visualization (dashboard with brushing).
Content	Visual perception Processing, representation and presentation of data Interaction with data Design principles Trends: dashboards and visual analytics
Inline resources	Moodle: description of the learning setup, H5P exercises, slides, bibliographic resources, instructions/assessment rubrics, tests, assignments, workshops with peer evaluation

	Web links: explanatory videos, websites, online software Tableau software (https://www.tableau.com/): online tutorials, creation of an academic license using the UCLouvain email address
Bibliography	Bateman, S., Mandryk, R. L., Gutwin, C., Genest, A., McDine, D., & Brooks, C. (2010, April). Useful junk?: the effects of visual embellishment on comprehension and memorability of charts. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (pp. 2573-2582). ACM. Bertin, J. (1983). Semiology of graphics; diagrams networks maps (No. 04; QA90, B7.). Cairo, A. (2015). Graphics lies, misleading visuals. In New Challenges for Data Design (pp. 103-116). Springer, London. Heer, J., Bostock, M., & Ogievetsky, V. (2010). A tour through the visualization zoo. Commun. Acm, 53(6), 59-67. Fox, W. Statistiques sociales. Traduction et adaptation de la troisième édition américaine par Louis Imbeau, De Boeck, 1999. Spence, R. Information Visualization: Design for Interaction. 2007. Tufte, E. The visual display of quantitative information, 2nd edition. Graphics Press. 2001. Ware, C. Information Visualization, 3rd Edition, Perception for Design. Morgan Kaufmann. 2012.
Other infos	All relevant information regarding these modalities and the progress of the activities (calendar, detailed instructions, evaluation criteria, etc.) are presented during the first course and are available on Moodle. Some resources (e.g. bibliographic resources, slides, explanatory videos) are in English.
Faculty or entity in charge	COMU

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Communication	CORP2M	5		🔍
Master [120] in Information and Communication Science and Technology	STIC2M	5		🔍
Master [60] in Information and Communication	COMU2M1	5		🔍