lcomu2811

2023

Visualisation de l'information et présentation multimodale

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	Continuous assessment without examination in June in three modes: knowledge tests (40% of final grade), asynchronous individual work (40% of final grade), and group work in session (20% of final grade). In September, custom-made individual assignment to be handed in on the first day of the session.
Teaching methods	The pedagogical approach is blended teaching, which alternates face-to-face classroom teaching with online distance learning via Microsoft Teams. Teaching methods include flipped classroom and project-based learning: • Flipped classroom: students study or complete an assignment at home and then meet with teachers and peers in a classroom to ask questions, get extra help or work in groups; • Project-based learning: students develop a project by combining online learning (e.g. watching tutorials or completing assignments) and face-to-face meetings.
Content	Visual perception Processing, representation and presentation of data Interaction with data Design principles Trends: dashboards and visual analytics
Inline resources	Moodle (asynchronous): course slides, bibliographic resources, calendar, models and rubrics, H5P exercises, tests, assignments, workshops with peer assessment, group choice, Q&A forum Microsoft Teams (live): calendar, meetings, documents, discussion, lecture notes Web links: how-to videos, websites, online software Tableau software (https://www.tableau.com/) : online tutorials, academic license with 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		🔍