lcomu2811

2020

Due to the COVID-19 crisis, the information below is subject to change, in particular that concerning the teaching mode (presential, distance or in a comodal or hybrid format).

5 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
Aims	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. - - - - *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".*
Evaluation methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** Formative assessment (there is therefore no certification exam at the end of the term) according to three modes: exercises and knowledge tests, individual assignments and group assignments. Each mode accounts for 33.33% of the final grade. The validation of the credits associated with this course requires the successful completion in each mode. Second session: personalized individual assignment to be delivered on the first day of the session.
Teaching methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** The instructional approach is blended teaching, which alternates remote online teaching via Microsoft Teams and face-to-face classroom teaching. The distribution between distance and face-to-face is adapted according to the evolution of the health situation. For example, it is possible to switch from one in two face-to-face sessions ("yellow scenario") to one in three face-to-face sessions ("orange scenario"), and vice versa. In addition, some sessions are replaced by independent work activities carried out individually (e.g. following tutorials or encoding a sheet in a database) or in groups (e.g. creating an interactive data visualization). The teaching methods are flipped classroom and project-based teaching: • Flipped classroom: students study the material at home and then meet their teacher and peers in a classroom to ask questions and get additional help or to work with their peers; • Project-based teaching: students develop a project by combining online learning 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	Aims
Master [60] in Information and Communication	COMU2M1	5		🔍
Master [120] in Information and Communication Science and Technology	STIC2M	5		🔍
Master [120] in Communication	CORP2M	5		🔍