UCLouvain

bcomu2115

2024

Data processing and the semantic web

5.00 credits	45.0 h	Q1

Language :	French
Place of the course	Bruxelles Saint-Louis
Learning outcomes	**At the end of this learning unit, the student is able to :** **Compétence 1. Develop communication strategies which integrate the various aspects of digital culture.** 1.1 Critically analyse the communication of an organisation, taking into account its sector of activity and its social, cultural, technological, economic, political and legal context. 1.3. Design, implement and distribute innovative, sustainable and inclusive communication mechanisms within the organisation's digital ecosystem. 1.4. Ensure that the legal, ethical and deontological nature of the organisation's communication practices is respected; take into account its human, economic and technical resources and constraints in establishing any communication strategy. **Compétence 2. Know and orchestrate the technical, creative and marketing aspects of digital projects in organisational communication.** 2.1. Know the main principles of the architecture, operation and security of computer and socio-digital networks of an organisation, as well as the main computer technologies. 2.2. Know the tools, methods and aesthetic principles of the scripting, writing, editing and gamification of digital content. 2.3. Know the characteristics, opportunities and constraints of the different digital channels; integrate them in a logical way in a communication plan. 2.4. Know the techniques and methods for optimising the referencing, reputation and running of online communities. 2.5. Master the main techniques and methods of data collection, storage, processing and visualisation. 2.6. Combine 'online' and 'offline' communication modes in any communication strategy in an optimal manner. **Compétence 4. Mobilise and produce knowledge in communication strategy and digital culture in a substantiated and methodical manner, as part of a critical reflection or research project.** 4.2. Based on multidisciplinary knowledge, develop a critical and substantiated reflection on digital technologies and their human and societal issues. 4.4. Report on research and its results in a clear, coherent and structured manner, both in writing and orally, in accordance with the requirements of academic communication. 4.5. Based on research findings, make recommendations for an organisation's communication strategy and/or design new communication mechanisms or practices.
Evaluation methods	*First session:* Assessment is progressive and includes three complementary tests: • a mid-course knowledge test (30%) on a set of concepts previously concepts previously communicated and presented in the course material (modality: out-of-session written exam), • an individual practical task (20%) involving the brief presentation of two practical data-processing cases, drawing on the concepts concepts assimilated (modality: submission of an out-of-session report), • group practical work (50%) using collaborative tools and tools as well as the concepts assimilated, involving the in-depth analysis analysis and presentation of a practical data processing case (modality: submission of a joint report). All 3 tests must be submitted. Incomplete, sloppy and/or unproofread work will be rejected. Any work not submitted or submitted late without official justification official justification (e.g. certificate), is considered as not submitted, which de facto results in failure of the entire UE. *Second session :* In the second session, the examination takes the form of a classic theory exam based on the material based on the material included in the course material.

Teaching methods	Teaching methods include : • lectures, • homework assignments, • intermediate assessment (theory), • individual work (imposed report structure), • group work (imposed report structure). The Moodle platform provides access to : • course material (PDF), • articles that must be read, • recommended resources, • a formative test (preparation for MCQs), • assignment repositories.
Content	The "Strategies for processing data on the Internet" course develops five themes: Fundamental Internet technologies : • network protocols (summary), • the concept of cloud computing, • Web languages (HTML, JSON, XML...), • the concept of the Semantic Web; How search engines work, including : • the concept of the indexer, • search engine architecture, • advanced search operators, • complex search strategies, • search engine optimization (SEO); How generative AI works, including : • ChatGPT features, • academic uses and misuses of generative AIs, • professional uses of generative AIs; Online commercial communication tools: • tracking (particularly on the Web), • targeted advertising, • performance analysis; Newsbot" case studies, including : • the architecture of this type of system, • use of OpenAI APIs (GPT), • search engine optimization, • limitations of the technologies used, • impacts on business models. The operation of search engines and the technologies used in targeted advertising are systematically linked to basic Internet and Web technologies. The course material consists of five modules: • course presentation, • the operation of research motors, • generative AIs, • targeted advertising, • newsbot" case study. This support is complemented by additional modules, the content of which is outside the scope of the course.

Bibliography	• Allary, J., & Balusseau, V. (2018). La publicité à l'heure de la data: Ad tech et programmatique expliqués par des experts. Dunod. • Cardon, D. (2019). Culture numérique (Vol. 5). Paris: Presses de sciences Po. • Mesguich, V., & Thomas, A. (2013). Net recherche 2013: surveiller le web et trouver l'information utile. De Boeck. • Viseur, R. (2023). Éthique du dropshipping SEO à l'ère des IA génératives. Management & Datascience. • Viseur, R. (2021). Du tracking, des contre-mesures et de leur efficacité dans la publicité ciblée. Revue ouverte d'ingénierie des systèmes d'information, 2(1). Voir la bibliographie complète intégrée au support de cours sur Moodle.
Faculty or entity in charge	ESPB

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Communication Strategy and Digital Culture (shift schedule)	COMB2M	5		
Attestation de réussite : accession au niveau A pour les fonctionnaires fédéraux	ACNA7FC	5		