lsinc1201 *2023*	Interaction and Visualization Techniques

5.00 credits	30.0 h + 30.0 h	Q1

⊗ **This learning unit is not open to incoming exchange students!**

Language :	French
Place of the course	Charleroi
Prerequisites	*The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.*
Main themes	In recent decades, computer systems have taken a central place in society. Formerly present but not very visible to most of the population, almost all citizens now use them daily in their private and professional lives. Therefore, the question of how to develop these systems so that they are effective, efficient, and pleasant to use becomes essential. The course aims to provide students with concrete knowledge and tools that will enable them to undertake every aspect of the development of such systems, in particular information visualization systems. The course covers techniques for creating effective, efficient, and user-friendly systems, with a particular emphasis on information visualization systems. More specifically, it covers the following aspects: • Human-Computer Interface, Usability, and User Experience concepts • User experience design cycle (requirements analysis, design, prototyping, evaluation) and techniques associated with each step of the cycle • Methodology for creating interactive visualizations • Design of deceptive visualizations • Advanced topics (visualization techniques applied to life sciences, etc.)
Learning outcomes	**At the end of this learning unit, the student is able to :** Explain human-computer interaction, usability and user experience Understand how to integrate the support of these notions within the framework of the development of a computer system . Analyze user needs and model them Know design and prototyping techniques for creating interfaces Choose and use interface evaluation methods
Evaluation methods	The course grade is based on the following elements • A group work consisting in developing an information visualization system according to the user experience centered approach covered in the course (intermediate report: 15%, final report: 30%, presentation and Q&A exchange: 15%) • An individual oral exam on the concepts covered in the course and their application to real-life cases (40%)
Teaching methods	The course consists of 2 hours per week of ex-cathedra lectures during which the theoretical concepts will be discussed and illustrated by examples, and 2 hours of practical work dedicated to the implementation of the theoretical concepts through exercises and the realization of a group project.
Bibliography	Le contenu du cours est basé sur des articles scientifiques dont les références seront communiquées à l'issue de chaque séance, ainsi que sur les ouvrages suivants : • Hartson, R., & Pyla, P. S. (2012). The UX Book: Process and guidelines for ensuring a quality user experience. Elsevier. • Munzner, T. (2014). Visualization analysis and design. CRC press. • Lallemand, C., & Gronier, G. (2018). Méthodes de design UX. Éditions Eyrolles.
Faculty or entity in charge	SINC

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Computer Science	SINC1BA	5	LSINC1101	🔍