

In view of the health context linked to the spread of the coronavirus, the methods of organisation and evaluation of the learning units could be adapted in different situations; these possible new methods have been - or will be - communicated by the teachers to the students.

5 credits	30.0 h + 30.0 h	Q2
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This learning unit is not being organized during this academic year.

Language :	English
Place of the course	Louvain-la-Neuve
Prerequisites	This course assumes the student already masters the discrete mathematical skills targeted by the course LINFO1114 <i>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.</i>
Main themes	<ul style="list-style-type: none"> • Graphs (basic concepts, paths and connectivity) • Applications of graphs, for example, to model social networks (links, homophilia, closing) • Discrete structures on the Internet: graphs and properties of graphs, giant components, strong and weak links, triadic closure, structural equilibrium, equilibrium theorem, web structure, PageRank, power laws, the long tail • Introduction to game theory
Aims	<p>Given the learning outcomes of the "Bachelor in Engineering" program, this course contributes to the development, acquisition and evaluation of the following learning outcomes:</p> <ul style="list-style-type: none"> • S1.I1, S1.G1 • S2.2 <p>Students completing successfully this course will be able to</p> <ol style="list-style-type: none"> 1 identify and precisely define the basic concepts of graphs and trees by providing contextualized examples that highlight them. explain various methods of traversing graphs model various real-world problems encountered in computer science using the appropriate forms of graphs and trees, for example social networks and the Web explain the main concepts of game theory (the type of game, the type of strategy of the agents) with the help of appropriate examples define and interpret concepts with precision avoid misinterpretations and detect reasoning errors <p>-----</p> <p><i>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".</i></p>
Bibliography	David Easley and Jon Kleinberg, Networks, Crowds and Markets: Reasoning About a Highly Connected World, Cambridge University Press, 2010.
Faculty or entity in charge	INFO

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Bachelor in Computer Science	SINF1BA	5	LINFO1114	