UCLouvain

linma2472

2019

Algorithms in data science

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 + 22.5 h	Q1

Teacher(s)	Blondel Vincent ;Delvenne Jean-Charles (coordinator) ;Krings Gautier (compensates Blondel Vincent) ;
Language :	English
Place of the course	Louvain-la-Neuve
Main themes	The course explores questions, mainly of an algorithmic nature, regarding the challenges offered by the emergence of Big Data.
Aims	Learning outcomes : • AA1 : 1,2,3 • AA3 : 1,3 • AA4 : 1 • AA5 : 1,2,3, 5,6 More specifically, at the end of the course the student will be able to : 1 • read a general or specialized literature on a specific cutting-edge theme of discrete mathematics, and summarize the key messages and results • explain those messages to their peers in a clear and precise way • solve mathematical problems in application to those results • identify the possible caveats of those results and criticize the exposition chosen by the references • relate the concepts encountered in the literature to concepts covered in other course, despite different notations or viewpoints The mathematical objectives can change from year to year. - - - - *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.** Oral and written presentation of theory and/or real data analysis during the term. Written exam, or oral exam with written preparation.
Teaching methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** In part ex cathedra lectures, and in part projects with written and/or oral reports.
Content	The course contents may vary from one year to another and can tackle various algorithmic questions related to storage, broadcast or analysis of massive datasets (Big Data). E.g., plagiarism detection, web pages ranking, frequent patterns detection, social networks analysis, parallel computing and storage, principles of peer-to-peer networks, etc.
Inline resources	http://moodleucl.uclouvain.be/course/view.php?id=7875
Bibliography	Variable.
Faculty or entity in charge	MAP

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Agricultural Bioengineering	BIRA2M	5		
Master [120] in Data Science : Statistic	DATS2M	5		
Master [120] in Mathematical Engineering	MAP2M	5		
Master [120] in Computer Science and Engineering	INFO2M	5		
Master [120] in Computer Science	SINF2M	5		
Master [120] in Data Science Engineering	DATE2M	5		
Master [120] in Data Science: Information Technology	DATI2M	5		
Master [120] in Mathematics	MATH2M	5		
Master [120] in Statistic: General	STAT2M	5		
Master [120] in Environmental Bioengineering	BIRE2M	5		