UCL Université catholique de Louvain

LINGI2145

2015-2016

Cloud Computing

5.0 credits	30.0 h + 15.0 h	1q

Teacher(s) :	Canini Marco ;
Language :	Anglais
Place of the course	Louvain-la-Neuve
Inline resources:	> https://moodleucl.uclouvain.be/course/view.php?id=9880
Main themes :	-- Architectural principles of cloud computing -- Scalability of cloud services (storage, computing, ...) -- Building blocks for cloud services -- Large scale computations in cloud environments -- Programming models for cloud services -- Providing scalable web services from the cloud
Aims :	Given the learning outcomes of the "Master in Computer Science and Engineering" program, this course contributes to the development, acquisition and evaluation of the following learning outcomes: -- INFO1.1-3 -- INFO2.2-3, INFO2.5 -- INFO5.2, INFO5.4-5 -- INFO6.1, INFO6.3, INFO6.4 Given the learning outcomes of the "Master [120] in Computer Science" program, this course contributes to the development, acquisition and evaluation of the following learning outcomes: -- SINF1.M1 -- SINF2.2-3, SINF2.5 -- SINF5.2, SINF5.4-5 -- SINF6.1, SINF6.3, SINF6.4 Students having completed this course successfully will be able to -- explain the goals, benefits and models of cloud computing, providing practical examples -- describe the main components of cloud computing -- design and conceive cloud services which operate reliably at scale -- explain how storage and virtualization are used in the cloud and apply this in practice -- apply the fundamental principles of multi-tier web applications and services in a cloud environment -- tackle big data computation problems (e.g., through the Map Reduce computing paradigm) *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 :	-- Final exam 55% -- Projects 35% -- Online quizzes 10% Some projects and quizzes may involve mandatory peer-review. For the second examination session, an alternate project will carried out, and more practical aspects will be asked in the exam: -- Final exam 70% -- Project 30%
Teaching methods :	-- Short lectures -- Scientific readings -- Quizzes (about readings, labs and lectures) -- Practical lab sessions -- Projects -- Learning by peer-reviewing
Content :	This course focuses on the issues and programming models related to cloud computing environments and distributed data processing technologies: data partitioning, storage schemes, stream processing, and "mostly shared-nothing" parallel algorithms.' ' Architectural principles of cloud computing ' ' Anatomy of cloud applications ' ' Scalable web applications ' ' Cloud data storage ' ' Large scale computations in cloud environments (e.g., Big Data, Map Reduce, Spark, ...) ' ' Containerization ' ' Serverless architectures ' ' This course mainly takes an hands-on approach to handle these topics. '
Other infos :	Recommended background: -- Computer networks (LINGI 1341) -- Have a good understanding of computational complexity (LSINF 1121)
Faculty or entity in charge:	INFO

Programmes / formations proposant cette unité d'enseignement (UE)				
Intitulé du programme	Sigle	Credits	Prerequis	Acquis d'apprentissage
Master [120] in Computer Science and Engineering	INFO2M	5	-	
Master [120] in Computer Science	SINF2M	5	-	