Course Name : Distributed Systems and Cloud Computing							
Course Code	**Course Type**	**Regular Semester**	**Lecture (hours/week)**	**Seminar (hours/week)**	**Lab. (hours/week)**	**Credits**	**ECTS**
CMP 408	B	Spring	3.00	1.00	0.00	3.50	6.00

Lecturer	Artur Koci, PhD
Assistant	Klevis Topi, Msc
Course language	Albanian
Course level	Master
Description	This course covers the systems architecture and enabling technologies of parallel and distributed computing systems and their innovative applications. We cover scalable multiprocessor systems, clusters of computers, P2P networks, computational Grids, virtual machines, virtual clusters, Internet Clouds, Internet of Things (IoT) and social networks. Case studies include Sequoia, Tianhe-1A, TeraGrids, XEN, Google AppEngine, Amazon EC2 and S3, NASA and CERN clouds, BitTorrent, Facebook, Twitter, MapReduce, Hadoop, VMWare Tools, and some cloud and IoT projects, etc.
Objectives	In the end of this course, the student must receive the core concepts of the distributed systems and cloud computing. Must have the knowledge regarding the design and implementation of the parallel processors, parallel computing, grid computing, and clusters. The student must have the capabilities to build a virtual machine and virtual clusters. To have the core concepts about cloud computing and Internet of Things-IoT and datacenters
Core Concepts	Parallel Processors Parallel Computing Grid Computing Clusters Cloud Computing Virtual machine Virtual Cluster Hadoop Amazon Web Service

Course Outline

Week	Topic
1	Distributed Systems and Cloud Technologies
2	Distributed Systems and Cloud Technologies
3	Server Clusters and Supercomputers
4	Server Clusters and Supercomputers
5	Virtual Clusters and Virtualization
6	Virtual Clusters and Virtualization
7	Virtual Clusters and Virtualization
8	Midterm
9	Cloud Platform Architecture over Virtualized Datacenters
10	Cloud Platform Architecture over Virtualized Datacenters
11	Service Oriented Architecture for Distributed Computing
12	Cloud Platform Architecture over Virtualized Data Centers
13	Cloud Programming and Software Environments
14	Grids, P2P, and the Future Internet
15	Ubiquitous Clouds and The Internet of Things

16	Final Exam
Prerequisites	The student must attend the course at a minimum rate of 75%.
Literature	• Hwang, Kai Dongarra, Jack Fox, Geoffrey C- Distributed and cloud computing: from parallel processing to the internet of things
References	• Kai Hwang, Min Chen - Big-Data Analytics for Cloud, IoT and Cognitive Computing

Course Evaluation

In-term Studies	Quantity	Percentage
Midterms	1	20
Quizzes	0	0
Projects	1	20
Term Projects	0	0
Laboratory	0	0
Class Participation	1	10
Total in-term evaluation percent		**50**
Final exam percent		**50**
Total		**100**

ECTS Workload (Based on Student Workload)

Activities	Quantity	Duration (hours)	Total (hours)
Course duration (Including the exam week: 16x Total hours of the course)	16	4	64
Study hours outside the classroom (Preparation, Practice, etc.)	14	3	42
Duties	1	19	19
Midterms	1	10	10
Final Exam	1	15	15
Other	0	0	0
Total Work Load			**150**
Total Work Load / 25 (hours)			**6.00**
ECTS			**6.00**