Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
IT 518	Cloud Computing Technologies	1	4	0	0	3	8

Prerequisites	
Admission Requirements	

Language of Instruction	English
Course Type	Compulsory
Course Level	Masters Degree
Objective	The aim of this course is to introduce students to current cloud computing technology with its components. It is aimed to provide a high level of insight by doing both theoretical and practical studies on the relevant components in the course.
Content	Week 1: Introduction to cloud computing, definitions, technological foundations. Week 2: Cloud Computing Service Models (IaaS, PaaS, SaaS and XaaS) Week 3: Data centers: Installation, cost, management software. Cloud Computing Service Providers. IaC (Infrastructure as Code) approach 4th week: Virtualization techniques and their applications in the context of cloud computing. Virtual machine approach. Week 5: Container Technology (Container). Comparative evaluation with the virtual machine. Week 6: Container Management and Orchestration. Current approaches. Week 7: Midterm Exam 8. Week: Microservice Architecture and its application in Cloud Computing infrastructure Week 9: On-Prem and Hybrid cloud computing solutions Week 10: Case Analysis: Usage of large-scale software working with PaaS approach in industry, real world examples. Week 11: Artificial Intelligence Services - (AIaaS)
References	Erl, Thomas, Ricardo Puttini, and Zaigham Mahmood. Cloud computing: concepts, technology, & architecture. Pearson Education, 2013.

Theory Topics

Week	Weekly Contents
1	Introduction to cloud computing, definitions, technological foundations.
2	Cloud Computing Service Models (IaaS, PaaS, SaaS and XaaS)
3	Data centers: Installation, cost, management software. Cloud Computing Service Providers. IaC (Infrastructure as Code) approach
4	Virtualization techniques and their applications in the context of cloud computing. Virtual machine approach.
5	Container Technology (Container). Comparative evaluation with the virtual machine.
6	Container Management and Orchestration. Current approaches.
7	Midterm Exam
8	Microservice Architecture and its application in Cloud Computing infrastructure
9	On-Prem and Hybrid cloud computing solutions
10	Case Analysis: Usage of large-scale software working with PaaS approach in industry, real world examples.
11	Artificial Intelligence Services - (AIaaS)