Course Code Semester Theory Practice Lab Credit ECTS Course Name IT 518 Cloud Computing Technologies 1 4 3 8 Prerequisites Admission Requirements Language of Instruction English Course Type Compulsory Course Level Masters Degree The aim of this course is to introduce students to current cloud computing technology with its components. It is Objective aimed to provide a high level of insight by doing both theoretical and practical studies on the relevant components in the course. 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 Week 5: Container Technology (Container). Comparative evaluation with the virtual machine. Content 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 - (AlaaS)

Theory Topics

References

Weekly Contents

Pearson Education, 2013.

- 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

Erl, Thomas, Ricardo Puttini, and Zaigham Mahmood. Cloud computing: concepts, technology, & architecture.

- 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)