DTC-TEL-521 Architecture of Network Services

SEMESTER: Spring

CREDITS: 6 ECTS (4 hrs. per week. 2h Theory + 2h Lab)

LANGUAGE: Spanish

DEGREES: **1**-MIT

Course overview

This course introduces the key features of Cloud Computing, basic concepts of virtualization and data centers. In addition, it investigates cloud computing models and architectures. Students will learn about several computing models and technologies: XaaS, performance and systems issues, capacity planning, disaster recovery, hypervisor CPU and memory management, massive storage, etc.

Prerequisites

Generic notions on communication networks (LAN). Generic notions on the TCP/IP architecture.

Course contents

Theory:

1. Introduction to Cloud Computing.
2. Data Center. Performance and efficiency. Cost structure. Certifications.
3. Virtualization.
4. Cloud Computing: cloudconomy.
5. Cloud Computing: IaaS and PaaS solutions.
6. Introduction to the Big Data.

Laboratory:

Units 3-6 described previously have at least two associated lab practices in 2 hours sessions.

Textbook

- The Datacenter as a Computer: An Introduction to the Design of Warehouse-Scale Machines. Luiz André Barrroso.
- Cloud Computing: Concepts, Technology & Architecture. Thomas Erl. Prentice Hall.

This document is a brief outline of the course and does not replace the official program of study

- Architecting the Cloud: Design Decisions for Cloud Computing Service Models (SaaS, PaaS, and IaaS). *Michael J. Kavis. Wiley.*
- The Definitive Guide to the Xen Hypervisor. David Chisnall. Prentice Hall Open Source Software Development Series

Grading

- Final exam accounts for 50% of the final grade.
- Continuous evaluation and mid-term exam account for 15%. Of the grade
- Lab reports account for 35% of the grade.