COURSE: <u>Cloud and Mobile/Edge Cloud</u>

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WEB PAGE:

COURSE DESCRIPTION
The course introduces the fundamental concepts of Cloud Computing, describing the different service models (PaaS, SaaS, IaaS) and the different deployment options (public, private, hybrid). Examples of public cloud infrastructures are described with hands-on practice. The open source OpenStack platform is presented (with hands-on practice) as an example of private cloud. Finally, the concepts of Mobile Edge Computing / Fog Computing are shortly introduced

LEARNING OUTCOMES
- ✓ Understanding of fundamental concepts of Cloud Computing
- ✓ Hand-on experience on the main public cloud infrastructures

METHODOLOGY
The course combines both frontal lectures as well as laboratory activities.

ASSESSMENT
Written test with closed answers / synthetic answers (60%) – Laboratory project (40%)

OUTLINE
- ➢ Cloud Computing: definition and fundamental concepts.
  1. Enablers for Cloud Computing: virtualization and data centers.
  2. Cloud Computing service models: Infrastructure as a Service (IaaS), Platform as a Service (PaaS), Software as a Service (SaaS).
  3. Cloud deployment models: public cloud, private cloud, hybrid cloud. Service Level Agreements for cloud computing services.
- ➢ Cloud Infrasctructures.
  1. Public cloud infrastructures with hands-on examples: Amazon Web Services
  2. Public cloud infrastructures with hands-on examples: Microsoft Azure
  3. A private cloud platform with hands-on example (OpenStack).
- ➢ A short introduction to Fog Computing / Mobile Edge Computing concepts

TEXTBOOKS
J. Hurwitz, M. Kaufman, F. Halper, "Cloud Services for Dummies, IBM Limited Edition", John Wiley & Sons, Inc - http://www.ibm.com/cloud-computing/files/cloud-for-dummies.pdf

ADDITIONAL SUGGESTED READING

Michael J. Kavis, "Architecting the Cloud: Design Decisions for Cloud Computing Service Models (SaaS, PaaS, and IaaS)", Wiley

J. Hurwitz, M. Kaufman, F. Halper, "Hybrid Cloud for Dummies, (IBM Limited Edition)", John Wiley & Sons, Inc. - http://www.slideshare.net/muzafferyontem/hybrid-cloud-for-dummies-by-ibm