**COURSE : Cloud and Mobile**

NB: The name is the truncated version of “Cloud and Mobile/Edge Cloud”, so the course name could also be “Cloud and MEC”

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**COURSE BACKGROUND -** Basic ICT, basic networking, basic Database knowledge

**LEARNING OBJECTIVES -** 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.

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

**EXAM –** Group projects + written test with closed answers / synthetic answers

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

**TEACHING MATERIAL -** Lecture slides will be provided during the course, along with supplementary ad-hoc material (links to web pages or web tutorials, scientific works) complementing the slides.

**SUGGESTED TEXTBOOK**

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 READINGS/TEXTBOOKS**

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