

Corso per Laura Magistrale
Ing. Informatica e delle Telecomunicazioni,
A.A. 2015/16, 2nd Semester, 9 Credits

Computer Network Management

4hrs. lecture + 1 hr. lab +1 hr. project/week;

Prerequisites: Wired and wireless computer network architectures and protocols, Java and eventual Python programming, team project experience

Exam: written exam 90 min. (admission to the exam is completion of all labs, projects and home assignments).

Instructors: *Prof. Dr.-Ing. Alexandru Soceanu, Munich University of Applied Sciences, Dpt. Comp. Sci. and Math., E-Mail: Soceanu@cs.hm.edu, Tel: +49 172 86 33 281, Dr. Federico Filira, E-Mail: filira@dei.unipd.it*

Network Management is becoming more and more important to Government, state owned institutions and commercial organizations to run their IT networks in an efficient, cost effective and secure manner. The emerging multimedia applications, such as VoIP, IPTV and wireless communications technologies make network management all the more important.

The Computer Network Management course provides the theory and the practical skills necessary to understand and apply methods and tools for maintaining a computer network in operation. It offers in-depth study of emerging network management issues such as: network monitoring, network controlling, network security and programming network management applications.

The course will cover **major network management standards** as they apply to data services within WAN, LAN and Personal Area Networks (SNMPv2&v3, NETCONF, IEEE 11073-20601, MIBII, RMON1&2, MDIB), ASN.1 language used for representing MIBs and management protocols, network management methods and management tools (commercial and open source), industry best practices, and case studies. **Software Defined Networks (SDN) architecture**, its associated OpenFlow protocol, adjunct services offered by the network security tools like Snort, Firewalls and IPS for **protecting the network security** will be also introduced.

Hands on labs based on a virtual network management lab located in Germany (Demo-Link=> <http://comserver.hs-regensburg.de/pmcio>; Login: Name=guest, PW=guest) will be accompanying the face to face lectures during the entire semester. **Projects** will be assigned to student groups to stimulate team work and innovative solutions on real network security management problems.