

Network Security



- Teacher(s) name: F.Baiardi f.baiardi@unipi.it,
- Semester: 2
- Exam mode: (written test/seminar/project/integrated project) + oral test
- Pre-requisites: OS, network protocols, ...
- Area: System Design and Architecture

Syllabus – Network Security



- Part 1 of the course: the fundamental notions and tools to assess (evaluate) and manage (improve when required) the security of an ICT infrastructure
- Risk Assessment and Management of ICT Systems
 - Vulnerabilities
 - Attacks
 - Countermeasures
 - Tools for Automating Assessment & Management

Syllabus – Network Security



Part 2 of the course: Cloud computing and the security of Cloud Architecture and Applications

- Cloud Computing
 - Economic Reasons
 - Deployment Models
 - Service Models
 - Cloud Security
 - New Vulnerabilities
 - New Attacks
 - New Solutions
- (an interesting application field
as it is one of the worst possible cases)

Available Thesis



- Tools to model an ICT architecture
- Tools to automate attacks and penetration (strong relations with AI)
 - Worms
 - Malware
- Tools to automate countermeasure selection (AI and optimization theory)
 - Braess Paradox
- Vulnerability assessment of smart metering (Internet of Things)
- <http://pages.di.unipi.it/tonelli/baiardi/tesi.html>
- <http://pages.di.unipi.it/tonelli/securityteam/publications.php> (updated list)