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 (an interesting application field as it is one of the worst possible cases)
  • New Vulnerabilities
  • New Attacks
  • New Solutions
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/securityteam/publications.php (updated list)