Faculty of Applied Sciences

INGI2347   System security

[30h+15h exercises] 4 credits

This course is taught in the 2nd semester

Teacher(s):   Olivier Bonaventure (coord.), Baudouin Le Charlier, Jean-Jacques Quisquater, Peter Van Roy
Language: French
Level: Second cycle

Aims

-To specify, design, realise and exploit secure and reliable distributed systems.

Main themes

- Threads affecting the reliability and the security of computing systems, and in particular distributed systems
- Paradigms to improve the reliability of distributed systems and applications
- Basic knowledge of cryptography and applications to authentication and secret exchange of information
- Distributed management of secrets (passwords, secret keys, public keys)
- Identification of threads agains applications
- Models of definition of access rights : multilevel, multilateral, role-based models, ...
- Principles and properties of secure protocols such as ssh, IPSec, TLS and security techniques such firewalls and intrusion detection systems
- Definition of security policies
- Case study : E-commerce

Content and teaching methods

see "Main themes"

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

- Prerequisite :
(1) Ability to write computer programs
(2) Basic course on operating systems such as INGI2114
(3) Basic course on computer networking such as INGI2141
- References :
(1) Anderson, R. Security engineering, Wiley, 2001
(2) Kaufman C., Perlman, R., Speciner M. Network Security 2nd edition, Prentice Hall, 2002
(3) Stallings, W. Cryptography & Network Security, Prentice Hall, 1999

Other credits in programs

INFO22	Deuxième année du programme conduisant au grade d'ingénieur civil informaticien	(4 credits)
INFO23	Troisième année du programme conduisant au grade d'ingénieur civil informaticien	(4 credits)