

## 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 against 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 as 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

#### Programmes in which this activity is taught

**INFO2** Ingénieur civil informaticien

**Other credits in programs**

<b>ELEC23</b>	Troisième année du programme conduisant au grade d'ingénieur civil électricien	(4 credits)
<b>FSA3DS/IN</b>	Diplôme d'études spécialisées en sciences appliquées (informatique)	(4 credits)
<b>INFO22</b>	Deuxième année du programme conduisant au grade d'ingénieur civil informaticien	(4 credits)
<b>INFO23</b>	Troisième année du programme conduisant au grade d'ingénieur civil informaticien	(4 credits)
<b>LINF22</b>	Deuxième licence en informatique	(4 credits)
<b>LINF22/GN</b>	Deuxième licence en informatique (informatique générale)	(4 credits)
<b>LINF22/GS</b>	Deuxième licence en informatique (informatique de gestion)	(4 credits)