Modules II.2317 / II.2417

Cybersecurity

Person in charge: Matthieu Manceny
Prerequisite: IR.1101 / IR.1201 Networks Fundamentals
Organization: Lectures and Tutorials
Evaluation: Exam, continuous assessment with presentations
ECTS: 5 credits

Context

The notion of security is a fundamental knowledge needed by all engineers. This transversal notion involves both hardware and software elements. Securing a system requires, above all, a methodology and a comprehensive understanding of the use cases of the system to secure, whether at the network level, information system level or application development.

Objectives

The purpose of this module is to introduce the basic concepts related to security at all levels: application level, system architecture level, network level, and hardware level with reliability concepts.

In terms of skills, this module aims to enable students to:

- Ensure the quality and the safety of a system
- Analyze and model a problem with constraints
- Evaluate technical solutions

Knowledge

This module enables students to develop the following concepts and skills.

- **Concepts**
  - Information systems security
  - Web application security
  - Network Security
  - Introduction to Cryptography
  - Reliability, performance and redundancy of equipment and service
  - Legal aspects and regulations

- **Know-How**
    - Best practices for web application programming
    - Identity management, authentication
    - Management of access rights
    - Encryption cryptography

Pedagogical Approach

Fundamentals are presented by operative. Practical sessions are also provided to work on real cases.