Credits: 3 credits

Textbook, title, author, and year: Class notes and selected papers posted in Canvas


Specific Course Information

Catalog Description: Most practical information systems are distributed systems. This comes from the ubiquitous use of the Internet, the need to provide access to corporate information for distributed employees and customers, and to adapt to application needs. This course considers the security issues of such systems together with possible solutions. We use UML and patterns to describe architectures. We discuss security in new types of systems such as web services, cloud computing, IoT, blockchain, wireless, and cyber-physical systems. We present a systematic methodology to build secure distributed systems.

Prerequisites: An introductory course on Computer Security. Background on web-based systems. Knowledge of UML is useful.

Specific goals for the course: Analyze current topics on distributed system security, including new architectures.

Understand the modus operandi of attacks and their countermeasures. Understand the importance of system architecture on security.

Learn to use patterns and apply a methodology to build secure systems
Learn how to write papers and theses.

Brief list of topics to be covered:

4. Methodologies for building secure distributed applications. Secure Solution Frames. UMLSec, SecUML, Secure Tropos. Assignment 1
11. Software development for clouds and IoT. DevOps, SecOps, secure microservices.