Anno Accademico 2017/2018

INFORMATION SECURITY

Enrollment year	2016/2017
Academic year	2017/2018
Regulations	DM270
Academic discipline	ING-INF/05 (DATA PROCESSING SYSTEMS)
Department	DEPARTMENT OF ELECTRICAL,COMPUTER AND BIOMEDICAL ENGINEERING
Course	COMPUTER ENGINEERING
Curriculum	Services Engineering
Year of study	2°
Period	1st semester (02/10/2017 - 19/01/2018)
ECTS	6
Lesson hours	45 lesson hours
Language	English
Activity type	WRITTEN AND ORAL TEST
Teacher	BARILI ANTONIO (titolare) - 6 ECTS
Prerequisites	Good knowledge of operating systems, networking and data base technologies.
Learning outcomes	Knowledge of information security techniques. Ability to assess the security level of some common software systems and to design improvement actions.
Course contents	Introduction Security vs. Safety. Physical security. Information security: privacy, avaliability, integrity, authenticity. Information security threats and countermeasures. Basic Information Theory and Cryptography Introduction to information theory and cryptography. Historical developement. Symmetric and asymmetric ciphers. Hashing functions

and MACs. Pseudo-Random Number Generators. Digital certificates. Cryptanalysis.

Digital Signature
Digital documents and digital signatures. Creation, preservation and validation of digital documents. Digital documents as court evidence. Public key infrastructures. Italian and EU laws concerning digital signatures.

Copyright Protection
Introduction to copyright law. Software and database protection. Audio, video and picture protection. Digital rights management (DRM). Watermarking and steganography.

Communication Protection
Information communication and diffusion. Synchronous and asynchronous communication. E-mail. The Web as an information diffusion media. Communication privacy protection. Threats to the freedom and privacy of communications and countermeasures. Phishing.

Systems and Networks Protection
Access control: authentication, authorization and accounting. Physical and logical information protection. Networks protection. Firewalls. Threats to systems and communication networks. Malware.

Incident Response e Digital Forensics
Incident detection and response. System audit and log analysis. Intrusion Detection Systems. Introduction to digital forensics.

Teaching methods	Lectures (hours/year in lecture theatre): 45 Practical class (hours/year in lecture theatre): 0 Practicals / Workshops (hours/year in lecture theatre): 0
Reccomended or required readings	Lecture notes and online references provided by the instructor.
Assessment methods	Written test.
Further information	Written test.
Sustainable development goals - Agenda 2030	$lbl_legenda_sviluppo_sostenibile