[MNB001] INFRASTRUCTURE AND NETWORK SECURITY

GENERAL INFORMATION

Studies	MASTER DEGREE IN DATA ANALYSIS, CYBERSECURITY AND CLOUD COMPUTING			**Subject**	Cybersecurity
Semester	1	**Course**	1	**Mention / Field of specialisation**	
Character	COMPULSORY				
Plan	2019	**Modality**	Adapted Face-to-face	**Language**	ENGLISH
Credits	6	**Hours/week**	0	**Total hours**	64 class hours + 86 non-class hours = **150 total hours**

PROFESSORS

GARITANO GARITANO, IÑAKI

ITURBE URRETXA, MIKEL

REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
(No specific previous subjects required)	Able to install and manage both physical and virtual servers in a network infrastructure. Able to install and manage the GNU/Linux operating system and services on this operating system. Able to install and manage a network of both physical and virtual computers.

SKILLS

VERIFICA SKILLS

SPECIFIC

MNCE06 - Recognising the main computer threats and vulnerabilities and designing, developing and implementing existing security countermeasures at the level of infrastructures and networks to address them.

CROSS

MNCTR1 - Ability to work in multidisciplinary teams and in a multilingual environment (Basque/Spanish/English) and to communicate, both orally and in writing, knowledge, procedures, results and ideas related to the life cycle of the data, cybersecurity, and development and operations.

BASIC

M_CB7 - To know how to apply the acquired knowledge and competencies and the ability to solve problems in new or unfamiliar contexts within wider (or multidisciplinary) environments related to their field of study

M_CB9 - To share knowledge, conclusions and their rationale with specialised and lay audiences in a clear, unambiguous manner

CONTENTS

1. Introduction
2. Cryptography
3. Node Security
4. Network Security
    1. Network Protocol Security
    2. Firewalls
    3. VPNs
    4. User identification
5. Attack detection
    1. Signature-based detection
    2. Anomaly detection systems
    3. Attack response
    4. Intrusion/Anomaly detection in industrial environments
    5. SIEM and log analysis

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Subject notes Moodle Platform	http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_lnk.pl?grupo=MASTERDATUANALISIA11&ejecuta=20&