

Academic Year: (2023 / 2024)

Review date: 11-06-2023

Department assigned to the subject: Telematic Engineering Department

Coordinating teacher: LARRABEITI LOPEZ, DAVID

Type: Electives ECTS Credits : 3.0

Year : 2 Semester : 1

OBJECTIVES**LEARNING RESULTS**

As a result of the learning the student will be able to:

- Configure secure transport protocols,
- Know the technologies to mitigate threats and protect data in networked systems.

DESCRIPTION OF CONTENTS: PROGRAMME

- the cybersecurity problem of CI4.0
- Cryptography concepts: definitions, security services, symmetric key and public/private key encryption. Authentication. Hashing.
- Secure end-to-end transport protocols
- Cybersecurity threats in CI4.0: malware types. Structure, components and attack vectors.
- Techniques and technologies for mitigating threats: attacks and counter-measurements. Firewalls, IDS and SIEMs.
- Data protection in networked systems: security in IP. IPsec. VPNs.
- Security in wireless communications.

LEARNING ACTIVITIES AND METHODOLOGY**LEARNING ACTIVITIES OF THE SYLLABUS REFERRED TO MATTERS**

- AF1 Theory class
- AF2 Practical classes
- AF4 Laboratory session
- AF5 Supervision sessions
- AF6 Group work
- AF7 Individual work by student
- AF8 Mid-term and final exam

Code activity	Num Hours	Class Hours	% estudiante
AF1	36	36	100
AF2	18	18	100
AF4	9	9	100
AF5	6	6	100
AF6	75	0	0
AF7	75	0	0
AF8	6	6	100
TOTAL MATTER	225	75	33%

TEACHING METHODOLOGIES RELATED TO MATTERS

- MD1 Class presentations supported by computing and audiovisual media, where the main matter concepts are developed and the bibliography to complement the students' learning is provided
- MD2 Critical lectures of texts recommended by the professor: articles, reports, manuals and research papers.
- MD3 Solving of practical use cases, problems, etc posed by the teacher to individuals or groups.
- MD4 Presentation and discussion in class, under the professor supervision of topics related to the matter, as well as several practical use cases.

ASSESSMENT SYSTEM

ASSESSMENT OF THE SYLLABUS LINKED TO MATTERS

SE1	Class participation
SE2	Individual or group works
SE3	Final exam

Assessment

Systems	minimal weight (%)	maximum weight (%)
SE1	0	20
SE2	20	40
SE3	40	60

% end-of-term-examination: 60

% of continuous assessment (assignments, laboratory, practicals...): 40

BASIC BIBLIOGRAPHY

- Aditya Gupta The IoT Hacker's Handbook: A Practical Guide to Hacking the Internet of Things, Apress, 2019
- William Stallings Cryptography and Network Security: Principles and Practice. , Prentice Hall, 2013