vitc Vester Industrial training center

WORKSHOPS & SPECIALIZED TRAINING
IN INDUSTRIAL ENGINEERING

Cybersecurity for industrial environments and Critical Infrastructures

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Cybersecurity for industrial environments and Critical Infrastructures

Cybersecurity training and consulting aimed to all levels of the organization: awareness, analysis, implementation, evaluation, and actions monitoring.

Learn the basics notions, attack types, anti-intrusion systems application and IT security control and diode firewalls.

General description

Three-day workshop designed with the aim of learning the general concepts of Cybersecurity at Industrial Environments and Critical Infrastructures, as well as its most important aspects and the basic protection against attacks.

The workshop includes a theoretical part, followed by a practical part. At the end of the training, the student will be provided with free software with all the test tools used during the three days training.

At the end of the course, the student will have the theoretical and practical knowledge to:

- Evaluate threats and audit their monitoring and control systems.
- Obtain a list of critical points and their direct relationship with the applied countermeasures.
- Protect the most critical points of the installation and know what to do with the least critical ones.
- Install and / or configure protection equipment with physical access.

General objective

- Anti-intrusion systems application, computer security control and equipment firewall.
- Provide a general overview of the most important concepts associated with industrial cybersecurity.
- Analyze the main vulnerabilities and threats that may be experienced at industrial environments.
- Know the different types of hacker attacks that can be carried out on an OT network or a critical infrastructure.
- Describe the main countermeasures that can be included to fortify industrial networks and protocols.
- Provide recommendations and practical advice to strengthen the company's industrial systems and networks.
- Introduce the main standards and/or the current and future laws regarding the implementation of said countermeasures.

Aimed at

This workshop is designed to train technicians and engineers involved in the protection of critical industrial systems and the security measures implementation for PLC / SCADA / MES environments.

It is mainly aimed at technical personnel involved in the design of architectures, installation, configuration, maintenance and supervision projects commissioning and / or remote-control systems automation.

Workshop characteristics

- **Mode:** Online with supervised practices as complement to the theory.
- **Methodology:** Keynote lectures and practical workshops.
- **Participants:** A minimum amount of 5 and a maximum amount of 12.

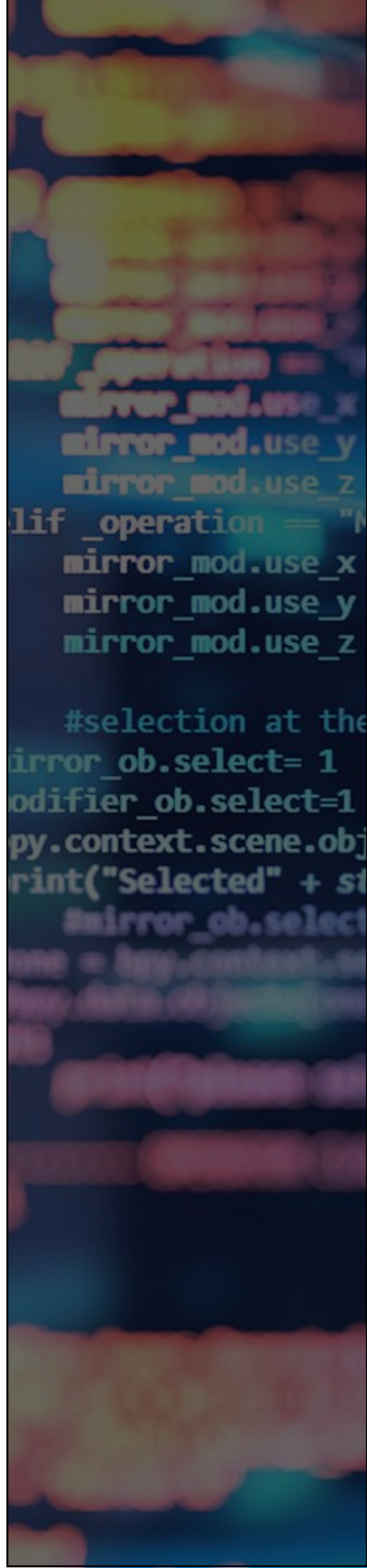
Workshop obsevations

Any topic or sub-topic of the workshop can be expanded and detailed in a second session tailored specially for the client. So, the basic workshop can be supplemented with successive trainings if need it.

Material included

- Manual and exercise guide in digital format.
- Access to the virtual classroom.
- Digital diploma of successful completion by VITC.

*All the necessary material will be sent by email before the first day of the workshop.



Workshop schedule

Day 1

Introduction to computer security:

What is hacking?
Information security properties: confidentiality, integrity / non- repudiation, and availability

Networking Basics:

How does a switch works?
What protocols are industrial networks based on?
Why is Ethernet vulnerable?

Authentication and authorization:

Risk, threat, vulnerability (+ CVSS), Exploit and Zero Day
Main differences between IT Security and Cybersecurity in industrial environments
* Practice

Attacks and Malware:

Types of attacks:
According to the actions of the attacker: assets and liabilities
According to the location of the attacker: internal and external
* Practice

Attack stages I:

Recognition
Information gathering

Attack stages II:

Scanning
Exploitation

Workshop schedule

Day 2

Attack stages II:
Maintain Access
Cover the tracks
* Practice

Safety Audits I:
Types: White Box, Gray Box and Black Box
Limitations: time, scope, allowed tests and knowledge
Reporting
Auditing from the Internet
Auditing from the internal network

Safety Audits II:
Work on equipment
Interviews with the organization members
* Practice

Industrial networks safety I:
Security in wired networks:
Wired networks basic concepts
Sniffers: TCPDump, WireShark
Physical security: Port Security

Industrial networks safety II:
DHCP Security: DHCP Snooping
RSTP Security: BPDU Guard, Root Guard
MiTM: IP Source Guard
VPNs

Workshop schedule

Day 3

Countermeasures and protection I:
Defence and protection technologies
Perimeter defence architecture

Countermeasures and protection II:
Management and protection decalogue. Physical security
Firewalls, IDS, IPS and SIEMs

Disaster Recovery Plan:
My nightmare became real... now what?

Cryptography I:
Symmetric: DES, AES, RC4
Asymmetric: RSA, GPG, IKE, SSL

Cryptography II:
Hashes: MD5, SH
Password cracking: brute force, hash tables and rainbow tables

Workshop information

Training duration:

3 days

Format:

Online

Face to face

Private

Language:

English

Spanish

Contact:

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