



# CYBERIUM ARENA

— SIMULATOR —



## SYLLABUS

# NETWORK RESEARCH

### MAIN FEATURES

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#### Labs

The labs hold questions and tasks to support the training.



#### Book

The coursebooks accompany the lecturers and students alike in cybersecurity studies.



#### Scenarios

Provide participants possible situations from cybersecurity or cyberterrorism to solve.



#### Project

Trainees must complete a practical built-in project, produce defense and assault tools.



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## Description

The Network Research program is aimed at the basic worlds of information security with the help of Linux and familiarity with various attacks in the worlds of security. The course sets the groundwork for later specialization in cyber forensics, advanced cyber defense, and penetration testing.

## MODULES

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### Module 1: Introduction to Linux

#### Virtualization

- Introduction to Virtualization
- About Linux Distro
- Installing Linux
- Working with VMWare
- Bridged vs. NAT

#### Working with Linux

- Linux Directories
- Linux Users
- Packages
- File Manipulation Commands
- Text and File Manipulation Technics
- Writing Linux Scripts

### Module 2: Networking

#### Protocols and Services

- TCP/IP and OSI Model
- Network Routing Basics
- DNS
- DHCP
- ARP

- Remote Connection Protocols

#### Wireshark – Diving into Packets

- Non-Secure and Secure Packets
- Filtering and Parsing
- Extracting Objects

### Module 3: Intro to Network Forensics

#### Network Analysis

- Network Miner
- Advanced Wireshark
- OS-Fingerprinting
- Detecting Suspicious Traffic
- Filter Packets from Live Network
- Filter Packet from PCAP File
- Traffic Statistics
- File-Carving
- Parsing Traffic Logs

### Module 4: Cyber Security

#### Cyber Security Vectors

- Anti-Viruses
- DoS and DDoS
- CNC Servers and Botnets
- Steganography

#### Network Attacks

- Scanning Methods
- MiTM
- ARP Poisoning
- DHCP Starvation
- LLMNR Attacks
- Offline Password Brute-Force
- Working with Responder

#### Cyber Attack Practice

- Payloads: Reverse vs. Bind