

Information Security & Cyber Security & Artificial Intelligence (AI)





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Introduction

The course provides delegates with a high-level understanding of how to protect an organization from cyber-attacks and provides an overview of the threats facing organizations and the basics of Information Security techniques and controls to help protect against those threats. You will gain a global perspective of the challenges of designing a secure system, touching on all the cyber roles needed to provide a cohesive security solution. Through the lecture, you will learn about current threat trends across the Internet and their impact on organizational security. You will review standard cybersecurity terminology and compliance requirements, examine sample exploits, and gain hands-on experience mitigating controls.

Training Objectives of Information Security & Cyber Security

- Understand the cyber threats and vulnerabilities in organisations
- Understand the basic Information Security techniques and controls to protect organsations from cyber attacks
- Understand the basics of an Information Security Management System ISMS
- Explore different data protection principles
- Explore social engineering threats, methods, and techniques
- Examine software vulnerabilities and security solutions for reducing the risk of exploitation
- Identify physical security controls and the relationship between physical and IT security

Course Outlines

Day 1

Cybersecurity Awareness

- What is security?
- Confidentiality, integrity, and availability
- Security baselining
- Security concerns: Humans
- Types of threats
- Security controls
- What is hacking?
- Risk management

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• Data in motion vs. data at rest

Network Discovery

- Networking review
- Discovery, footprinting, and scanning
- Common vulnerabilities and exposures
- Security policies
- Vulnerabilities.

Day 2

Security Architecture

- Security architecture
- Network devices
- Network zones
- Network segmentation
- Network Address Translation
- Network Access Control.

Data Security

- Cryptography
- Principles of permissions
- Steganography
- Module review

Day 3

Identity Management

- What is identity management?
- Personally identifiable information
- Authentication factors
- Directory services
- Password policies
- Cracking passwords
- Password assessment tools
- Password managers
- Group accounts
- Service accounts
- Federated identities
- Identity as a Service
- Module review

Network Hardening

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- Limiting remote admin access
- Administrative access
- Simple Network Management Protocol
- Network segmentation
- Limiting physical access
- Establishing secure access
- Network devices Fundamental device
- protection summary
- Traffic filtering best practices.

Day 4

Software Security

- Software engineering
- · Security guidelines
- Software vulnerabilities
- Environment Monitoring
- Monitoring/logging benefits.
- Metrics

Physical Security

- What is physical security?
- Defense in depth
- Types of physical security controls
- Device security
- Human security
- Security policies
- Equipment tracking
- Module review

Day 5

Incident Response

- Disaster types
- Incident investigation tips
- Business continuity planning
- Disaster recovery plan
- Forensic incident response
- Module review

Trends in Cybersecurity

- Cybersecurity design constraints
- Cyber driving forces
- How connected are you?

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- How reliant on connectivity are you?
- Identity management
- Cybersecurity standards.
- Cybersecurity training.

Day 6

- Introduction to artificial intelligence.
- Types of artificial intelligence, its applications, uses and objectives
- Ways to solve problems by research using different strategies

Day 7

Search algorithms and machine learning, such as:

- Blind algorithms.
- Playing algorithms against the computer.
- Supervised learning algorithms.

Day 8

- How expert systems based on knowledge and rules work.
- Adapt your skills to work with artificial intelligence.
- Describe the origins and emergence of artificial intelligence

Day 9

- The relationship between artificial intelligence and automation.
- Apply artificial intelligence to your field.
- Identify key shifts in the workplace affected by AI.

Day 10

- Evaluate the impact of shifts in the workplace on roles and responsibilities.
- Determine how the relationship between artificial intelligence and humans has changed.
- Determine the future skills needed to work and interact with artificial intelligence.
- Develop an action plan to adapt your skills for the future.



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