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	Programme de Formation en Cybersécurité : Préparation à la Certification CompTIA Security+	Version : 01 Date : 20/02/2025	

Cybersecurity Training Program (CompTIA Security+ SY0-701)

Training Objectives

- Gain a thorough understanding of modern cybersecurity fundamentals and advanced practices.
- Effectively prepare for the CompTIA Security+ (SY0-701) certification through hands-on experience and theoretical knowledge.
- Develop skills to secure IT systems, networks, and data against evolving cyber threats.
- Master key cybersecurity domains, including risk management, governance, compliance, and security operations.
- Implement cutting-edge security solutions and strategies in alignment with industry trends.

Program Structure

Week 1: Introduction to Cybersecurity Fundamentals

- Understanding cybersecurity concepts and principles.
- Threat actors and attack vectors.
- CIA triad: Confidentiality, Integrity, and Availability.
- Real-world cyber incidents and case studies.
- Activity: Identifying security threats in an enterprise environment.

Week 2: Physical Security and Social Engineering

- Physical security controls and best practices.
- Social engineering tactics and mitigation.
- Access control models and authentication methods.
- Activity: Conducting a social engineering awareness workshop.

Académie des sciences M.A / Rue 14 janvier Près de Monoprix Kantaoui 4083 H. Sousse

GSM : +216 93 364 763

[Email: versatech@academiedessciences.com](mailto:versatech@academiedessciences.com)

N° d'enregistrement : 51-287-12 / MF : 1216736 NAM/000

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Week 3 : Malware and Data Protection

- Types of malware: viruses, worms, trojans, ransomware.
 - Endpoint protection solutions and best practices.
 - Data loss prevention (DLP) strategies.
 - Activity: Analyzing malware behavior using sandboxing tools.
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Week 4 : Cryptographic Solutions

- Introduction to cryptography: symmetric vs asymmetric encryption.
 - PKI, digital certificates, and SSL/TLS.
 - Key management and encryption algorithms.
 - Activity: Implementing encryption using OpenSSL.
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Week 5: Risk Management and Third-Party Vendor Risks

- Risk assessment frameworks (ISO 27005, NIST 800-30).
 - Identifying and mitigating third-party vendor risks.
 - Security governance and policy development.
 - Activity: Developing a risk management plan.
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Week 6 : Governance and Compliance

- Overview of regulatory frameworks: GDPR, HIPAA, PCI-DSS.
 - Security policies and audit processes.
 - Security controls and compliance reporting.
 - Activity: Conducting a compliance readiness assessment.
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Week 7 : Asset and Change Management

- Asset inventory and classification.
- Change management processes and risk mitigation.
- Incident handling during asset changes.

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- Activity: Implementing an asset management plan.

Week 8 : Audit Assessments

- Conducting internal and external security audits.
- Vulnerability assessment and penetration testing.
- Security documentation and reporting.
- Activity: Performing a security audit using industry tools.

Week 9 : Cyber Resilience and Redundancy

- Business continuity and disaster recovery planning.
- Incident response and cyber resilience strategies.
- Testing and improving business continuity plans.
- Activity: Designing a disaster recovery plan.

Week 10 : Security Architecture

- Secure system design principles.
- Defense-in-depth strategies.
- Zero Trust Architecture (ZTA) implementation.
- Activity: Creating a secure system architecture blueprint.

Week 11 : Security Infrastructure

- Network security fundamentals: firewalls, IDS/IPS, VPNs.
- Secure cloud infrastructure principles.
- Activity: Configuring firewall rules and VPNs.

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Week 12: Identity and Access Management Solutions

- Role-based access control (RBAC) and multi-factor authentication (MFA).
 - Privileged access management (PAM) best practices.
 - Identity federation and cloud IAM solutions.
 - Activity: Implementing IAM policies in a cloud environment.
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Week 13 : Vulnerabilities, Attacks, and Hardening

- Common attack vectors: MITM, DDoS, SQL injection.
 - Hardening techniques for operating systems and applications.
 - Activity: Performing penetration testing using Metasploit.
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Week 14 : Security Techniques and Practices

- Endpoint security best practices.
 - Secure coding practices and SDLC.
 - Cloud security considerations.
 - Activity: Implementing endpoint security measures.
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Week 15 : Vulnerability Management

- Scanning tools: Nmap, Nessus, OpenVAS.
 - Patch management strategies.
 - Reporting and remediation workflows.
 - Activity: Conducting a vulnerability scan and analysis.
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Week 16 : Incident Response and Monitoring

- Incident detection, analysis, and response strategies.
 - SIEM solutions and log management (Splunk, ELK).
 - Security monitoring and alerting.
 - Activity: Simulating an incident response scenario.
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Week 17 : Investigating an Incident

- Forensic analysis and evidence collection.
- Chain of custody and legal considerations.
- Activity: Investigating a simulated breach.

Week 18 : Automation and Orchestration

- Security automation using scripts and tools.
- SOAR (Security Orchestration, Automation, and Response) solutions.
- Activity: Automating security processes with Python.

Week 19 : Security Awareness and Training

- Building a cybersecurity culture in organizations.
- Awareness campaigns and training programs.
- Activity: Developing a security awareness training plan.

Week 20: Final Exam Preparation and Practical Exercises

- Practice exams covering all certification domains.
- Scenario-based exercises and practical assessments.
- Activity: Final Q&A and readiness assessment.

Teaching Methodology

- **Practical Learning:** Hands-on labs with real-world cybersecurity scenarios.
 - **Interactive Sessions:** Live demonstrations, case studies, and group discussions.
 - **Project-Based Approach:** Realistic cybersecurity challenges and teamwork.
 - **Exam Preparation:** Mock tests, quizzes, and review sessions.
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Training Duration

- 120 hours, available in :
 - 20 weeks.

Expected Outcomes

- Certification readiness for CompTIA Security+ (SY0-701).
- Strong operational cybersecurity skills for IT environments.
- Ability to implement and manage security solutions in real-world scenarios.

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