1. Device Management

1.5 Systems Testing & Evaluation

1. Describe the type of testing tools and procedures in IoT and industrial control systems.
2. Explain what’s meant by a test-plan, requirements and specifications.
3. Demonstrate understanding of how test-plans can be used and implemented.
4. Describe the testing results of diverse IoT implementations.
5. Make recommendations based on testing results.

System Testing & Evaluation

IoT environments can be fluid and experience continuing change. These changes require highly dependable systems that need to be tested and evaluated on a regular basis. Testing would include evaluating the proper installation and configuration. Systems should also be tested and evaluated to analyze operations during failures and under peak loads. Testing and evaluation may also include the creation of system and device baselines and tracking utilization rates.

The testing and evaluation process also requires the IoT security technician to perform basic research and collect data including mean time between failure (MTBF) and mean time to repair (MTTR). System testing and evaluation also involves the use of advanced evaluation and testing tools.
1.5 DEVICE MANAGEMENT – SYSTEMS TESTING AND EVALUATION

Curriculum Resources

Videos
- YouTube.com – Security Testing Fundamentals
- YouTube.com – Cisco Enhance Your IoT Security
- Youtube.com Swimming with sharks - security in the internet of things; Joshua Corman at TEDxNaperville

Web Links
- Configuration Management: Best Practices White Paper
- SANS Institute InfoSec Reading Room, Secure Configuration Management Demystified
- NIST Special Publication 800-82 Section 6.2

Textbooks
- NIST Special Publication 800-12
  An Introduction to Computer Security: the NIST Handbook
- NIST Special Publication 800-14
  Generally Accepted Principles and Practices for Secure Information Technology Systems

Assessment Resources

Labs
- Assignment 3A – SWOT Analysis Worksheet
- Assignment 3B – Risk Analysis Worksheet
- Assignment 5A – Physical Audit Worksheet
- Assignment 6A – Controls List

Quizzes/Exams
- CSSIA CISSP Course
  Security Operations – Chapter Exam
- Quizlet.com
  Security Compliance and Operational Security Threats & Vulnerabilities - Explaining Penetration Testing vs Vulnerability Scanning

Existing Course Cross Reference

Cisco Networking Academy Courses
- IT Essentials
- Introduction to IoT
- NDG Linux Essentials
- CCNA Security

Cisco Partner Courses
- ICS and SCADA Security (CSSIA.ORG)
- CISSP (CSSIA.ORG)

Non-Cisco Partner Courses
- Internet of Things - Innovation Labs
- Introduction to the Internet of Things and Embedded Systems - Coursera