

KOENIG SOLUTIONS • COURSE OUTLINE

OT Cybersecurity: SCADA/DCS & IEC 62443

Learn to secure SCADA and DCS environments against cyber threats using IEC 62443 and other OT security standards.

5 Days

DURATION

32

TOPICS

COURSE OVERVIEW

This course provides a comprehensive exploration of OT (Operational Technology) cybersecurity in the context of Industrial Control Systems (ICS), SCADA (Supervisory Control and Data Acquisition), and Distributed Control Systems (DCS). Participants gain knowledge of SCADA fundamentals, DCS configuration, ICS/SCADA security models, governance frameworks, vulnerability management, and risk mitigation strategies. The program emphasizes both foundational and advanced security principles, aligned with international standards, to ensure protection of critical infrastructure and industrial operations.

WHO THIS COURSE IS FOR

This course is designed for:

IT Security Professionals and Analysts

ICS/SCADA and DCS Engineers

Cybersecurity Consultants in OT/ICS domains

Network Security Administrators

Process Control, Automation & Instrumentation Engineers

Incident Responders and Forensic Analysts

Risk Management and Compliance Officers

Industrial Network Specialists and System Integrators

Government and Defense Personnel focused on critical infrastructure

Plant Managers and Operations Managers in manufacturing or utilities

R&D and Technical Consultants in industrial cybersecurity

PREREQUISITES

Participants should have a fundamental understanding of:

- Process control principles
- Industrial control systems (ICS), PLCs, and sensors
- Basic networking and IT security concepts

What You Will Learn

By the end of this course, participants will be able to:

- Understand and apply ICS/SCADA and DCS security models
- Identify vulnerabilities and apply risk management techniques
- Configure, operate, and secure SCADA/DCS systems against cyber threats
- Apply international standards such as ISO 27001, IEC 62443, NERC CIP, and NIST SP 800-82
- Implement governance, risk, and compliance frameworks in OT environments
- Detect, respond to, and mitigate security incidents in SCADA/DCS infrastructures
- Leverage modern OT security strategies including IDS/IPS, bridging the air gap, and IoT/cloud integration

COURSE SYLLABUS

32 Topics

DAY 1 Fundamentals of SCADA & DCS

TOPICS

- Introduction to SCADA Systems
- SCADA Architecture & Functions
- Data Acquisition, Communication & Visualization
- Comparison of PLC, SCADA, and DCS
- Applications of SCADA and DCS

DAY 2 ICS/SCADA Security Models & Networking

TOPICS

- IT Security Model vs ICS/SCADA Security Model
- TCP/IP Fundamentals & ICS Protocols (Modbus, Profibus, Fieldbus)
- DCS Networking & Communication Standards
- Redundancy Concepts in DCS
- Human-Machine Interface (HMI) Security

TOPICS

- Hacking Methodologies in ICS/SCADA Environments
- Intelligence Gathering, Footprinting, Scanning & Exploitation
- Vulnerability Assessment Challenges in OT
- Zero-Day Vulnerabilities & Exploit Lifecycle
- ICS/SCADA Vulnerability Databases & CVEs
- Risk Management & Case Studies

TOPICS

- ISO 27001 & ICS/SCADA Frameworks
- ISA99 / IEC 62443 (Industrial Automation & Control Security)
- NERC CIP (North American Electric Reliability Corporation)
- NIST SP 800-82 (Guide to ICS Security)
- CFATS (Chemical Facility Anti-Terrorism Standards)
- Governance Models for ICS & DCS Security
- Security Policies, Roles & Responsibilities
- Risk Mitigation for Legacy Systems

TOPICS

- **Bridging the Air Gap:** Options & Challenges
- Security Guards, Data Diodes & Next-Gen Firewalls
- IDS/IPS in ICS Environments (NIDS, HIDS, NNIDS)
- Incident Detection & Response
- Alarm Management & Logging for Security Monitoring
- Advanced Control Methods in DCS (Feedforward, Cascade, SPC)
- **Latest Trends:** IoT & Cloud Integration for OT Security
- Case-based Hands-on Exercises & Final Review

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

FLEXIBLE DELIVERY

Learn the Way That Suits You

Classroom Training

Live Online Classes (ILO)

Fly-Me-A-Trainer (FMAT)

Flexi (Self-Paced)

1-on-1 Training

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✉ info@koenig-solutions.com