
TRAINING COURSE

T154 Fundamentals of cyber security

A four day course to learn the fundamentals of cyber security for Industrial Automation Controls Systems (IACS)



T154 Fundamentals of cyber security

The aim of this course is to learn the fundamental principles for cyber security in the context of the management, technical, specification, design, operation and maintenance requirements of Industrial Automation Controls Systems (IACS). Course attendance is open to all interested parties and achieving the threshold mark for the examination will result in the candidate receiving a 'TÜV Rheinland fundamentals of cyber security' confirmation letter.

Learning objectives

Upon completion of this course, the participants should be able to:

- Describe the principles of security and cyber security management and the key features of Industry standards and technical reports
- Understand the fundamentals of industrial communication networks and relevant technology
- Understand the requirements for communication protocols, routing and segmentation
- Appreciate the key requirements for countermeasures, design, operations & maintenance regarding cyber security lifecycle phases, roles and responsibilities
- Understand the requirements for organisational security, business impact, planning and recovery in terms of policy, procedures, guidelines and competency requirements
- Understand the requirements for proper inspection, operation, maintenance and modification of installed cyber security measures as required by the safety & security standards

Participant profile

This training is targeted to engineers, managers, consultants and specialists who require a general introduction & awareness to the relevant industry cyber security requirements standards and the networking technology and communication principles from within the following process industry user groups:

- Asset owner / end user
- Engineering contractors / EPCs
- Power and automation system integrator's
- Service providers
- Product manufacturers

The course is particularly useful for those managers and engineers who may be directly or indirectly, involved in executing projects and/or operating and maintaining such IACS requirements covering the entire security and cyber security lifecycle, with a particular focus on physical and cyber security technical lifecycle management.

Course type

This is an instructor-led course with classroom discussions regarding the implementation of cyber security in the context of relevant industry standards and technical implementation requirements. On completion of the course, delegates can sit the examination and for those that are successful, a "TÜV Rheinland CySec Confirmation Letter" will be issued.

Topics covered:

- Background on cyber security standards and industry guidance
- Network fundamentals and associated technology
- TCP / IP fundamentals, routing and segmentation
- Technical security authentication and encryption
- Organisational security and lifecycle management
- Employee awareness and security goals
- Technical countermeasures and implementation
- Formal examination

How to order

Please contact ABB University as listed below for either attendance at any open course being planned in your region or if you would like to run a training course specific to your organisation.

For on-site training, a fixed price training proposal will be issued to you for your approval to proceed.

ABB University

<https://new.abb.com/service/abb-university>
ABB University Course Code - T154

Course outline

Day 1

Course overview

Introduction

Cyber security standards and industry guidance

Information security management systems

- Policies
- Guidelines
- Risk assessment
- Defense in depth
- Process

Asset management, employee awareness and security goals

Day 2

Network fundamentals

- Ethernet
- Fibre optics
- Network structures
- Storage media

TCP/IP fundamentals

- ISO/OSI layer model
 - IP address and subnetmask
 - Routing and segmentation
 - Protocol architecture TCP/IP
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Day 3

Technical security, authentication and encryption

- Firewalls
- Passwords and authentication
- Digital signatures
- Network planning

Organisational security

- Change management
 - Patch management
 - Disaster recovery and backup
 - Handling of portable media
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Day 4

Examination

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