

**Course Name:** SCADA Concepts

**Course Overview:**

Supervisory Control and Data Acquisition (SCADA) can be confusing because it is not a specific technology, but a term that describes a family of products and applications. SCADA finds its home in many utility based networks, mass transit systems and automated services where human monitoring is not feasible. This course is designed as an overview of SCADA with the ability to be catered to specific manufacturers, equipment and standards. Training will be delivered by one of our experienced instructors within a traditional classroom environment with the ability to perform field work when available.

**Course Length:** 2 days

**Who should attend?**

- Field Service Technicians
- Field Engineers
- Managers/ Field Supervisors
- Design Engineers
- Electricians
- Managers or Supervisors

**You will learn:**

- The background of SCADA and progression to modern standards.
- The basic building blocks to a standard SCADA system
- Implementation of SCADA systems
- Identification and selection of components for a SCADA system
- Utilization of safe practices with SCADA systems
- How to effectively operate and monitor SCADA systems
- How to monitor a SCADA system for alarms and errors as well as polling and traffic
- Effective troubleshooting and maintenance

**Prerequisites:** None

**Course Fees:**

- 2-day course at a TESSCO Location \$950 per person
- 2-day course at your location \$6,000 for up to 10 attendees

**Customizable Course:** Yes

**Course Content:**

SCADA Overview

- Overview
- History of SCADA
- Example Applications
- Industry Trends

#### SCADA Operations

- Data acquisition
- Networked data communication
- Data presentation
- Control

#### SCADA Components & Equipment

- Sensors
- Remote Telemetry Units (RTU)
  - Features
  - Mounting
  - Back Up
- SCADA Communication Units
  - Human Machine Interface, HMI
- Masters and Polling
- SCADA Radios

#### SCADA Connections

- Backhaul
  - Serial Connections
  - Analog
  - DDS (56K, 64K...)
  - T1 and FT1
  - Basic RF
  - Spread Spectrum

#### Communication Network

- Network Basics
- Terminology
- Testing Practices

#### SCADA Installation and Maintenance

- Powering a site
- Validating the physical connections
- Connection to Remote Sites
- Configuration and Options
- Software and GUI
- Testing Procedures

#### Test Equipment

- Transport
- RF
- Protocol Analyzers
- Built-in testing capabilities
- Customized software packages

Hands-On Lab Activities

Best Practices for SCADA Security