



RedVector INDUSTRIAL Training Tracks

Delivered Online.
Proven on the Plant Floor.

RedVector
Leaders in Online Education & Training

THE QUEST FOR A SKILLED WORKFORCE

Today's industrial companies are being pressed to do more with less. Experienced workers are retiring faster than they can be replaced and retaining qualified employees is proving more difficult. To compensate for skills gaps, managers are relying on less-experienced employees to obtain more diverse skills. But that's where RedVector can help. RedVector Industrial Training Tracks teach and validate hands-on skills, helping you transfer knowledge and train your people more effectively.



TEACHING AND VALIDATING PRACTICAL SKILLS

RedVector Training Tracks combine the cost-effectiveness and on-demand availability of Web-delivered training with the assurance and skills validation that previously came only from instructor-led and on-the-job training.





A COMPLETE TRAINING SOLUTION

TRAINING TRACKS BENEFITS:

- Quickly identify employee knowledge gaps with competency evaluation tests
- Deliver plant operations, maintenance technician and control systems training anytime, anywhere
- Manage and track employee progress using our integrated learning management system
- Validate employees' skill sets through hands-on performance evaluations



Web-delivered training coupled with hands-on performance evaluations, all managed through a fully automated Learning Management System

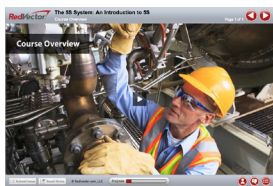


INSTRUCTION ONLINE SKILLS TRAINING

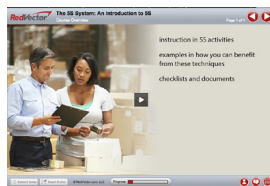
RedVector provides your employees with around-the-clock access to hundreds of maintenance, operations and control systems training courses.

The results of each course evaluation test will help you verify knowledge transfer as a pre-requisite for hands-on performance evaluations.

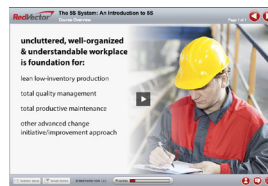
REMEDIALTION



Easy Navigation

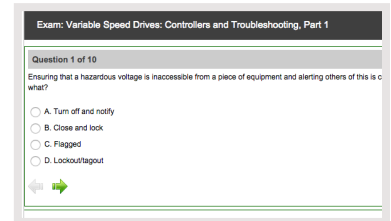


Topic Outline



Embedded Learning
Activity

POST-TEST



Multiple Choices

WEB-BASED TRAINING—Delivers consistent, self-paced, on-demand training while providing maximum scheduling flexibility for managers and employees— allowing your company to minimize downtime.

POST-TESTING—Assesses knowledge retention and comprehension while reinforcing key learning points.



DEMONSTRATION / EVALUATION HANDS-ON PERFORMANCE EVALUATION

Stay in tune with employee competency levels and ensure what employees learn online will translate into success at the plant or in the field. Study guides and our state-of-the-art task verification functionality makes it happen.

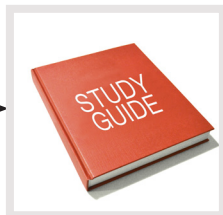
Assign
Evaluation Date

Study
Guide

Hands-on
Practice

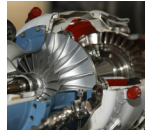
Hands-on
Evaluation

Skills
Verification



STUDY GUIDES—Ties hands-on performance objectives with specific learning objectives in the equivalent Web instruction to prepare employees to successfully demonstrate their skills in the performance evaluation.

HANDS-ON EVALUATIONS—tests your employees to a standard level of performance to ensure they have the ability to apply what they have learned.



TASKS VERIFICATIONS THE TRAINING TRACKS DIFFERENTIATOR

Upon completing an online course on foundational skills, Task Verification Materials are automatically assigned to further develop and verify more practical skills.

Task Verification Materials include the following for each course:

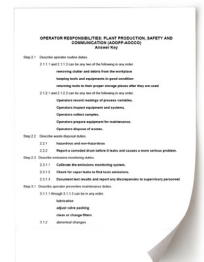
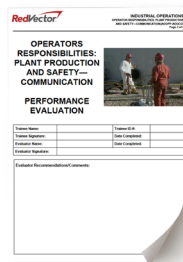
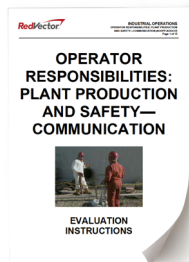
Study
Guide

Evaluation
Instructions

Performance
Evaluation

Answer
Sheet

Answer
Key



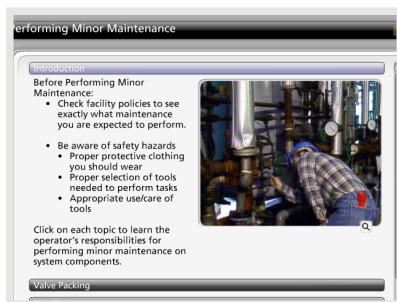
Task Verification Data/Results are conveniently entered, tracked and reported via the RedVector Learning Management System.



REDVECTOR INDUSTRIAL TRAINING TRACKS

Deliver fundamental to intermediate knowledge of how to inspect, diagnose, repair, service, and install electro-mechanical equipment and automated manufacturing equipment. Three RedVector Libraries include 70 Training Tracks that bundle 169 online courses with 169 corresponding hands-on performance evaluations or Task Verifications*.

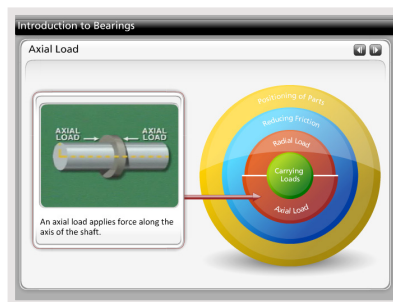
OPERATIONS



30 TRACKS

- 75 Online Courses
- 75 Task Verifications

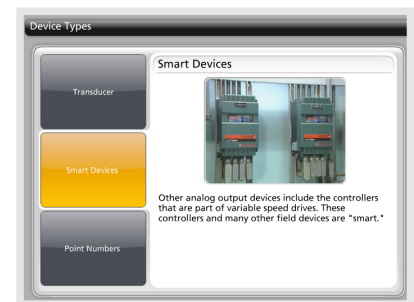
MAINTENANCE



22 TRACKS

- 50 Online Courses
- 50 Task Verifications

CONTROLS



18 TRACKS

- 44 Online Courses
- 44 Task Verifications

*Individual task verification materials available as a stand-alone offering.

OPERATIONS

1 **Operator Responsibilities:** Plant Production & Safety

Industrial Math: Basic Operations 1

Operator Responsibilities: Introduction

Operator Responsibilities: Trends, Maintenance, & Emergencies

Industrial Math: Basic Operations 2

2 **Industrial Math:** Formulas, Graphs & Trends

Industrial Math: Algebra

3 **Plant Science:** Solids & Liquids

Plant Science: Gases & Flowing Liquids

Plant Science: Basic Principles

Plant Science: Forces & Machines

Plant Science: Basic Electrical Principles

Plant Science: Basic Electrical Circuits

4 **Plant Science:** Heat

Plant Science: Heat Transfer

Plant Science: Fluid Systems

Plant Science: Process Dynamics & Measurement

5 **Equipment Lubrication:** Lubricants & Bearings

Equipment Lubrication: Using Lubricants

Equipment Drive Components: Gear, Belt & Chain Drives

Equipment Drive Components: Couplings

6 **Diagrams:** Basic Diagrams & Symbols 1

Diagrams: Basic Diagrams & Symbols 2

Diagrams: Flow & Electrical

Diagrams: Piping & Instrumentation

7 **Process Sampling:** Obtaining Samples

Process Sampling: Testing Samples

8 **Statistical Process Control:** Introduction

Statistical Process Control: Basic Control Charts

Statistical Process Control: Process Variations

9 **Valves:** Basic Types & Operation 1

Valves: Basic Types & Operation 2

Valves: Introduction to Actuators

Valves: Electrical & Hydraulic Actuators

10 **Piping & Auxiliaries:** Basic Components & Functions

Piping & Auxiliaries: System Components & Operation

Material H&ling: Tank Trucks

11 **Pumps:** Basic Types & Operation

Pumps: Performance & Inspection

Pumps: Fundamentals of Centrifugal Types

Pumps: Operation of Centrifugal Types

Pumps: Reciprocating Positive Displacement Types

Pumps: Rotary Positive Displacement Types

12 **Compressors:** Introduction

Compressors: Positive Displacement

Compressors: Centrifugal & Axial

Pumps: Operation of Centrifugal & Axial Types

13 **Chemistry:** Basic Principles 1

Chemistry: Basic Principles 2

Chemistry: Material Balancing

Chemistry: Reaction Rates

14 **Electrical Equipment:** Electrical Production & Distribution

Electrical Equipment: Transformers, Breakers & Switches

Electrical Equipment: AC & DC Motors

Electrical Equipment: Motor Controllers & Operation

15 **I & C:** Measurement of Pressure & Temperature

I & C: Measurement of Level & Flow

I & C: Measurement of Concentration

I & C: Measurement of Density, Clarity & Moisture

16 **I & C:** Introduction to Process Control

I & C: Introduction to Control & Data Systems

I & C: The Human: Machine Interface

I & C: Automatic Process Control 1

I & C: Automatic Process Control 2

17 **Distillation:** Basic Principles

Distillation: Basic System Components & Operation

Distillation: System Startup & Shutdown

Distillation: Operating Problems

Distillation: Towers, Reboilers & Condensers

Distillation: Control Systems

18 **Heat Exchangers:** Introduction

Heat Exchangers: Operation of Shell & Tube Types

Heat Exchangers: Cooling Towers

Heat Exchangers: Condensers & Reboilers

19 **Furnaces:** Introduction

Furnaces: Startup & Shutdown

Furnaces: Operating Conditions

20 **Boilers:** Basic Principles

Boilers: Combustion, Water & Steam

21 **Power Plant Operation:** Basic Principles

Power Plant Operation: Safety & Pollution Control

Power Plant Systems: Power & Energy

Power Plant Systems: Power Generation

22 **Power Plant Boilers:** Water & Steam

Power Plant Boilers: Startup & Shutdown & Combustion & Operation

Power Plant Boilers: Combustion & Operation

Power Plant Boilers: Normal Operations

Power Plant Boilers: Abnormal Conditions & Emergencies

23 **Power Plant Systems:** Steam Cycle & Steam Systems

Power Plant Systems: Steam Systems

Power Plant Turbines: Steam Flow

Power Plant Turbines: Bearings & Operation

24 **Power Plant Protection:** Fundamentals

Power Plant Protection: Boiler & Turbine Protection

Power Plant Protection: Integrated Systems

Power Plant Systems: Condenser & Circulating Water

Power Plant Systems: Condensate & Feedwater Systems

25 **Refrigeration Systems:** Basic Concepts

Refrigeration Systems: Operation

26 **Environmental Protection:** Air Pollution

Environmental Protection: Water Pollution & Waste Disposal

27 **Water Treatment:** Water for Plant Systems 1

Water Treatment: Water for Plant Systems 2

28 **Water Treatment:** Wastewater 1

Water Treatment: Wastewater 2

29 **Troubleshooting:** Basic Concepts

Troubleshooting: Process Examples

30 **On the Job Training:** Preparation

On the Job Training: Implementation & Evaluation

MAINTENANCE

- 1 Safety:** Chemical Health Hazards
Rigging: Ladder and Scaffolds
Tools: Introduction to Hand Tools
Tools: Precision Measurement Instruments
- 2 Tools:** Introduction to Power Tools
Electrical Maintenance: Fasteners
Lubrication: Basics
Electrical Wiring: Splices and Terminations
- 3 Rigging:** Overview
Rigging: Basic Lifting
Rigging: Heavy Lifting
- 4 Welding:** Oxy-fuel Gas Welding
- 5 Welding:** Arc Welding
- 6 Electrical Theory:** Basic Electricity Review - Part 1
Electrical Maintenance: Basic Electrical Test Equipment – Part 1
- 7 Electrical Theory:** Basic Electricity Review — Part 2
Electrical Maintenance: Basic Electrical Test Equipment – Part 2
- 8 Electrical Theory:** AC Circuits
Electrical Maintenance: Basic Electrical Test Equipment – Part 3
Electrical Maintenance: Digital and Analog Oscilloscopes
- 9 Electric Motors:** DC Motors
- 10 Electric Motors:** Three Phase
- 11 Electric Motors:** Motor Branch Circuit Protection
Electrical Wiring: Cables and Conductors
Electrical Wiring: Conduit Installation
- 12 Electric Motors:** AC Motor Controller 2
Electrical Maintenance: Troubleshooting Electrical Circuits
- 13 Bearings:** Rolling Contact
Bearings: Sliding Surface
- 14 Seals:** Gaskets and Packing
Seals: Mechanical
- 15 Shaft Alignment:** Rim and Face
Shaft Alignment: Reverse Dial and Laser
- 16 Gears:** Overhauls
- 17 Pipes and Valves:** Pipes and Pipe Fittings
Pipes and Valves: Valve Types and Operation
Pipes and Valves: Safety Valves
Pipes and Valves: Steam Traps
- 18 Pipes and Valves:** Valve Maintenance
Pipes and Valves: Motor Operators
Diagrams: Industrial Process Systems
- 19 Pumps:** Positive Displacement
Pumps: Centrifugal Pump Basics and Troubleshooting
Pumps: Centrifugal Pump Overhaul
- 20 Hydraulics:** Principles and Circuits
Hydraulics: Fluid and Reservoirs
Hydraulics: Pumps—Actuators
Hydraulics: Valves 1
Hydraulics: Valves 2
Hydraulics: Diagrams
- 21 Hydraulics:** Component Inspection and Replacement
Hydraulics: Troubleshooting
Hydraulics: Routine Maintenance
- 22 Vibration Analysis:** Introduction

CONTROLS

- 1 **Core:** Introduction to Process Control
Core: Principles of Control
Core: The Human-Machine Interface
Core: Introduction to Control and Data Systems
- 2 **Continuous Process:** Principles
Continuous Process: Pneumatic Controls
- 3 **Core:** Basic Electrical Test Equipment
Core: Principles of Calibration
Core: Digital and Analog Oscilloscopes
- 4 **Continuous Process:** Field Devices—Temperature, Pressure, and Weight
Continuous Process: Field Devices—Level and Flow
Continuous Process: Field Devices—Analytical
- 5 **Continuous Process:** Field Devices—Analog Configuration
Continuous Process: Field Devices—Using Field Communicators
Continuous Process: Field Devices—Configuring with a Laptop PC
- 6 **Continuous Process:** Single Loop Control
Continuous Process: Multiple Loop Control
Continuous Process: Smart Controllers
- 7 **Continuous Process:** Troubleshooting Loops
Continuous Process: Tuning Loops
- 8 **PLCs:** Architecture, Types and Networks
PLCs: I/O Communication
PLCs: Installing and Maintaining
- 9 **PLCs:** Numerics
PLCs: Ladder Logic and Symbology
- 10 **PLCs:** Introduction to Programming
PLCs: Programming Common Functions
PLCs: Program Entry, Testing, and Modification
- 11 **PLCs:** HMIs and Troubleshooting
PLCs: Troubleshooting Hardware
PLCs: Troubleshooting Software and Networks
- 12 **Variable Speed Drives:** Introduction to VSDs
Variable Speed Drives: Programming Controllers
- 13 **Variable Speed Drives:** Applications
Variable Speed Drives: System Integration
- 14 **Variable Speed Drives:** Controllers and Troubleshooting
Variable Speed Drives: System Troubleshooting
- 15 **Continuous Process:** Introduction to Distributed Control Systems
Continuous Process: Field Devices—Digital Configuration with DCSs
- 16 **Continuous Process:** Troubleshooting DCS I/Os—Procedures
Continuous Process: Troubleshooting DCS I/Os—Practices
- 17 **Networks:** Introduction
Networks: Setting Up and Troubleshooting
- 18 **Networks:** Fiber Optic Systems



SUMMARY

Put RedVector's Industrial Training Tracks to work for your organization. With web-delivered training and hands-on performance evaluations all managed through a fully automated LMS, employee learning translates into success on the plant floor.

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