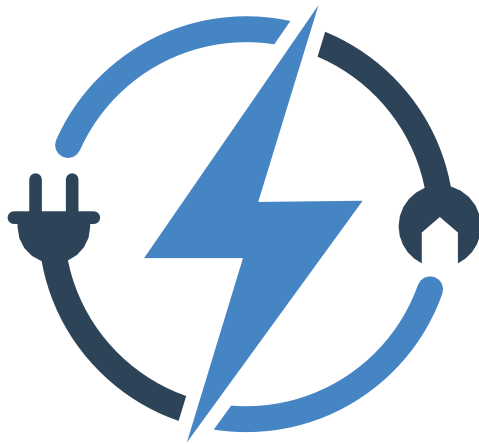




T-shore
Education

Learning Scenario Manual



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Erasmus+

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Module:

Basic Electrical Skills

Learning scenario:

**Electrical Introduction
for Operators**



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Note This is a fictive generic equipment checklist intended for training purposes and therefore may vary from the equipment checklist provided by a company. It is important that a technician always read and fill checklist carefully prior to any task.

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1 List of equipment

Table 1. List of equipment

Tool name	Model / Version	Quantity
Multimeter (AC/DC functions)	-	1
Relay components and breadboards	-	1
Power supply units (for low-voltage circuits)	-	1
Personal Protective Equipment (insulated gloves, helmets, visors, safety glasses)	-	1
Locking equipment, access restriction signage	-	1
Voltage testers, multimeters, phase testers	-	1

2 Instruction

This manual is designed to guide instructors through the **first phase of the Electrically Skilled Person training program**. It covers three foundational modules in basic electrical engineering, focusing on **DC and AC theory, electrical measurement, and safety practices** in accordance with **EN 50110-1**, the **Executive Order on Strong Currents**, and the **Working Environment Act**.

Participants will acquire essential knowledge of **personal responsibility, roles, authorisations, and risk assessment** procedures. Emphasis is placed on identifying and mitigating electrical hazards such as **electric shock, electric arcs, and burns**, with integrated training on the correct use of **PPE, barriers, warning signage, and measuring instruments**.

2.1 Inspection preparation

Objective: To ensure learning quality, safety compliance, and structured progression during the foundational modules.

Week 1: Basic DC Electrical Learning (3 days)

Inspection Focus:

- Correct use of personal protective equipment (PPE)
- Safe use and reading of multimeters (DC voltage, current, resistance)

- Introduction to Ohm's Law and basic relay circuits
- Initial practical task performance

Responsible: Lead instructor + safety representative

Documentation: Checklist + photo evidence of basic setups and measurements

Week 2: Electrical Introduction for Operators I (5 days)

Inspection Focus:

- DC circuit calculations and measurements
- Understanding and demonstration of magnetic principles
- Construction of small relay control circuits
- Assessment of safety practices

Responsible: Technical instructor

Documentation: Measurement logs + review of circuit diagrams

Week 3: Basic AC Learning (3 days)

Inspection Focus:

- AC measurement using multimeters (voltage, current)
- Understanding and explanation of transformers and rectifiers
- Relay logic circuits (start/stop, timers)
- Assessment of diagrams and personal safety procedures

Responsible: Electrical systems instructor

Documentation: Lab results, training participant feedback forms

Ongoing Inspections (Throughout Weeks 1–3)

- Daily attendance tracking
- Progressive documentation checks (logs, diagrams, calculations)
- Training participant feedback at the end of each week
- Review of safety behavior and technical communication

2.2 Setup for education

2.2.1 Projects and Practice Components

DC Practical Exercises:

- Building and measuring basic circuits
- Setting up and testing relay control systems

- Tool and safety demonstrations

AC Practical Exercises:

- Testing transformers and rectifiers
- Diagnosing start/stop relay circuits using multimeters

2.2.2 Safety Emphasis Throughout

- Introduction to the **5 electrical safety rules**
- Daily PPE and tool safety checks
- Restricted and supervised access to **live** and **de-energised** working zones
- Documentation: safety procedure checklists, risk assessment templates
- Scenario-based emergency drills (e.g. accidental voltage exposure, PPE failure)
- First aid equipment and emergency stop systems in training zones

2.2.3 Training Environment and Infrastructure

- Classroom with AV equipment, whiteboard, and e-learning platform access
- Electrical workshop with divided zones for live and non-live activities
- Mobile simulator trolleys for field-relevant practice
- Storage and control areas for PPE and calibrated measuring tools
- Wi-Fi network and digital learning materials (e.g. video guides, test tools)



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