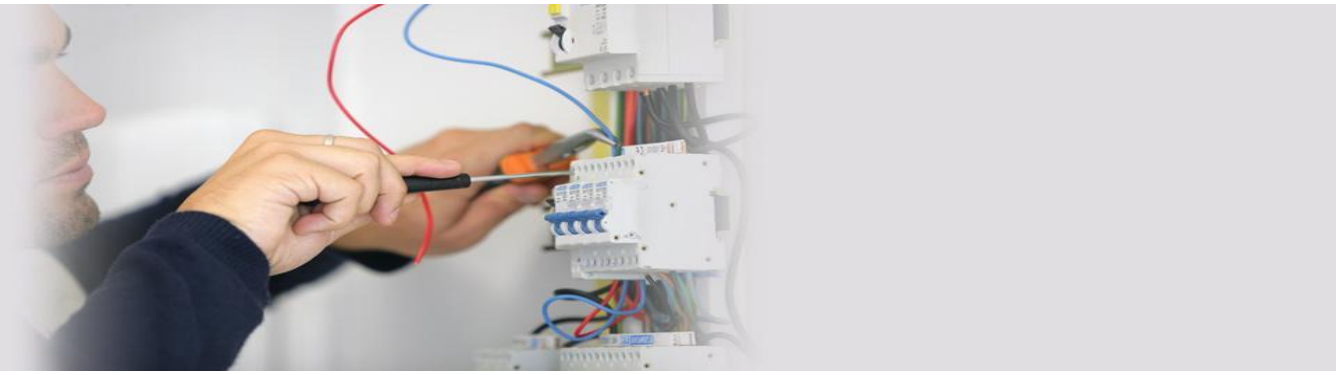
# Basic Electrical Maintenance

The course is designed around the Maintenance Fitter who requires electrical knowledge to fulfil a multi-skilling role within his company. The candidate does not require an electrical background, but it would be an obvious advantage



Duration

10 days

Part 1: Single Phase

Part 2: Three Phase

Assessment:

Certification:

NWTC

Course Content

The course is often ten day's duration, the first five days concentrating on Single Phase circuits, i.e. –

Several lighting circuits and socket circuits, taking into account the switching systems and the current rating of the cables involved

Testing for continuity and insulation of conductors using recognised test instruments

Connecting relays to operate in sequence by using standard interlocking techniques

The second half of the programme relates mainly to 3 Phase AC Induction Motors and the principal of operation, along with the methods of control. Also included is how to read circuit diagrams and the interface between Control and PLC units.

Training Objectives

1. To complete the course content

2. To enable the trainee to gain sound knowledge of electrical systems used within a production environment

3. To enable the learner to, contribute to plant maintenance using the skills and knowledge gained from the course.

4. To enable the company to contribute towards the trainee taking the first step on the ladder towards a recognised qualification at a later stage

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# Basic Electrical Maintenance

**Course Content**

1. Induction
2. Discuss 10 day programme
3. Legislation
4. Basic electrical principles
5. AC/DC generation & distribution
6. Single Phase supplies
7. Lighting circuits
8. Socket circuits
9. Use of meter for testing circuits
10. Practical use of relays
11. Transformer principals and practical application
12. Three Phase supplies
13. AC Induction Motors
14. Motor control circuits including:

DOL  Forward & Reverse

Remote & Star / Delta

15. Protective devices to include:

Fuses

Circuit breakers

RCD & overloads

16. Cables – current ratings
17. Safety switches and uses
18. PECs & proximity switches operation
19. Fault finding systems
20. How to read wiring

PRACTICAL WORK PROGRAMME WEEK 1

Single Phase Supplies

- 13 Amp plug / braided cable
- Lighting circuit using junction box
- Lighting circuit using loop-in system
- 2-way lighting circuits - 2-way plus intermediate
- 3-gang switching system
- 20 Amp radial circuit
- 32 Amp ring circuit
- 32 Amp ring circuit with spur
- Use of meters for testing continuity & insulation
- Operation of fluorescent fitting
- Coaxial cable with plug and socket
- Introduction to relays-sequence control

PRACTICAL WORK PROGRAMME WEEK 2

Three Phase Supplies

- Introduction to relays-sequence control
- 3 Phase motor control using DOL
- DOL with remote using crabtree starter
- DOL – forward and reverse
- DOL using square 'D' - DOL with remote using square 'D'
- Sequence motors using square 'D' auxiliary contact
- Wire up control panel
- Star/Delta starters
- Introduction to proximity detectors
- Use of multimeters
- Isolation

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