

# Introduction to Electronics

## Overview:

This programme is designed for organisations or individuals looking to gain skills in the fundamentals of electronic theory and practice.

## Aims and Objectives:

- To provide an understanding of electrical fundamentals
- To provide a understanding of components and circuits
- To provide basic assembly skills
- To provide skills in electronic fault finding.

## Who should attend:

Those involved in the practical application of electronics who want to understand the underlying theories. Development is also provided in the areas of soldering and fault finding.

## Duration:

24 hours (Daytime or evening)

## Outline:

### 1) Electrical Fundamentals

- The function of the basic parts of an electrical circuit
- Relationship between current, voltage and resistance (Ohm's Law)
- Calculation of current, voltage and resistance in a network consisting of resistors in series
- Calculation of current voltage and resistance in a network consisting of resistors in parallel

### 2) Circuits

- Layout and conventions of circuit diagrams
- Circuit symbols (wiring, switches, indicators, bells/buzzers, fuses, terminals, resistors, capacitors, diodes, transistors, amplifiers, integrated circuits)

### 3) Components (attributes and physical appearance)

- Resistors, colour codes, tolerance power rating and power calculations, typical failures
- Capacitors, non-polarized, polarized, electrolytic, tantalum, voltage rating, tolerance, typical failures
- Diodes, rectifiers and LED's , typical failures
- Transistors (bipolar and FET), typical failures
- Relays and triacs, typical failures

### 4) Basic Soldering Skills and Practice

### 5) Fault finding techniques (system level)

- Use of a multimeter in hot and cold checks
- Types of system - linear, divergent, convergent and feedback
- General procedure for fault finding in different systems
- General procedure for dealing with catastrophic failure
- General procedure for dealing with multiple faults

## Key Contact:

For further information or to arrange an appointment, contact:

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## How to Book:

Contact Tracey Reid, Commercial Development Officer,  
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