M4CPD THE FUTURE OF WORK IS PEOPLE

M4CPD

Electrical Systems Introduction for Advanced Manufacturing

Contents

Programme Award

Award Title	Electrical Principles
Award Code	6N2049
Award Body	QQI
Award Level	Level 6

Programme Aim

The aim of this programme is to give the learners an understanding of the theory and practice of creating and troubleshooting electrical circuits.

It deals with fundamental electrical principles such as Electrical Safety, Electrical Circuit laws, DC Circuits, AC Circuits. It will introduce learners to electrical components such as resistors, inductors, capacitors, transformers etc., and their respective roles in electrical circuits. It also covers test equipment used to diagnose electrical faults.

Programme Delivery Mode

The delivery mode of the programme as laid out in this document is 5 x 8-hour days. This can be delivered in a single week or split as one day a week over 5 weeks.

Learner effort hours breakdown

Instructor lead learning hours	40
Self-Directed learning hours	110

Target Learner Profile

M4CPD Electrical Systems Introduction for Advanced Manufacturing is targeted at employees that are working in industry and are looking to upskill in the electrical field.
Learners do not need any previous knowledge of electrical systems to complete this course.

Pre-requisites

There is no pre-requisite course for this programme.

Programme Learning Objectives

Programme Learning Outcomes	LO 1. Understand Electrical System Safe lock-out procedures. LO 2. Describe the characteristics of conductors and insulators and the underlying atomic structure that govern these characteristics. LO 3. Describe the units and characteristics of electrical circuits and the laws that govern their relationship to each other. LO 4. Describe the behaviour of various electrical components including capacitor, inductors, transformers, and the laws that govern their behaviour. LO 5. Outline the functioning of electrical circuits under direct current and alternating current conditions. LO 6. Describe the consumption of power in electrical circuits, and the factors that affect it LO 7. Calculate the values of various characteristics given sufficient information. LO 8. Construct basic electrical circuits. LO 9. Use electrical test meters to diagnose and resolve problems with the functioning of electrical circuits. LO 10. Demonstrate an ability to read and draw circuit diagrams. LO 11. Resolve circuit malfunctions, applying a systematic, logical and analytical approach. LO 12. Interpret test results

Certification Details

Certification:	**QQI Level 6**	
Assessment	**Percentage**	**Assessment Description**
Project	30%	Learners will be required to complete a project in relation to building and analysing basic electrical circuits. The project will be carried out over the duration of the course.
Practical Exam	30%	The practical exam is a timed exam, learners will be required to demonstrate the ability to troubleshoot an electrical circuit
Theory Exam	40%	The theory exam is a written exam where learners will be examined on a broad spectrum of the course objectives

Assessment Map

Learning objective	Theory Exam	Practical Exam	Project
LO 1	x		
LO 2	x		
LO 3	x		x
LO 4	x		x
LO 5	x		x
LO 6	x		
LO 7	x	x	x
LO 8		x	x
LO 9		x	x
LO 10		x	x
LO 11		x	
LO 12		x	