

COURSE TITLE: Basic Electrical Theory**COURSE REFERENCE:** 401.1**DURATION:** 14 hours (Recommended Minimum Duration)

COURSE AIMS This course aims to provide employees working within the Highway Electrical Sector with the knowledge and key skills to facilitate the understanding of fundamental electrical principles, and the application within day-to-day activities.

PREREQUISITES: In order to gain maximum benefit and learning outcomes from this course there are a number of training modules, which are required before attending. A complete list of pre-course requirements is shown in the Contents.

ASSESSMENT: A summative assessment will follow the completion of this course or group of courses.

OBJECTIVES: On completion of the course learners will:

- * State how electricity works
- * Explain the difference between AC and DC circuits
- * Define current, voltage, resistance, power, common conductors and common terms
- * State and use Ohms Law.
- * Define parallel and series circuits
- * State & use Power calculations
- * Identify a limited range of common electrical components and their functions.
- * State typical earthing arrangements and bonding.
- * Read basic electrical circuit diagrams

COURSE TOPICS:

- * Electrical Theory.
- * Electrical Components and functions
- * Circuit protection and basic discrimination
- * Transformers, Batteries
- * Earthing and Bonding.
- * Power Distribution Circuits.
- * Electrical Safety.

PRACTICAL: To enable maximum learning and benefit from this course, there will a number of exercises. These may be both interactive and demonstrative to enhance the learning experience.