Module Synopsis

Specialist Diploma in Power System Operation & Protection (NSPSO)

PDC 1:	Post-Diploma Certificate in Power Distribution & Protection	(120 hours)

1.	ET1616	Advanced Power Transmission & Distribution	(60 hours)

This module provides students with the knowledge related to the design and roles of electrical power transmission and distribution. It covers the principle of operation of various types of busbar arrangements, network configurations and high voltage equipment including cables, reactive power and voltage compensation devices, over- voltage and voltage transient in power systems and the concept of insulation co-ordination for high voltage equipment. This module also includes smart metering and smart grid and application of computer software packages to carry out electrical design and drafting.

2.	ET1611	Power System Protection	(60 hours)

This module covers the fundamental principles of relay operation and shows how they are applied to the protection of specific system elements. Over-current, directional, differential, pilot and distance protective relays will be described. Calculation of relay settings for the different types of relays will be explained. Also included are the fundamental application principles, special requirements of the various system elements, application practices, and methods of testing and commissioning protective schemes.

PDC 2:	Post-Diploma Certificate in Electrical Services & Power System Analysis	(120 hours)

1.	ET1610	Computer Methods for Power System Analysis	(60 hours)

This module enables students to learn techniques and algorithms for the formulation of network matrices for power system analysis such as power system fault studies for symmetrical and unsymmetrical faults, load flow studies and transient stability analysis. Emphasis is on the application of computer methods for solution of these problems. Interpretation and use of results to specify circuit breaker ratings and relaying systems, methods of reinforcing and improving system security and stability will be included.

2.	ET1617	Electrical Services Design	(60 hours)

This module aims to provide students with an in-depth understanding and design methodology of the various electrical building services. In particular, the module will cover the design, specifications and selection of electrical installation, lighting system, lightning protection system, and KNX system. Relevant Acts and Regulations, e.g. SS638, SS555 and others governing the design of these various electrical services will also be discussed in detailed in the module.