

## HIGHER NITEC IN ELECTRICAL ENGINEERING (3 YEARS)

### CERTIFICATION

Credits required for certification:

Sector Foundation Modules	: 18
Cluster Core Modules	: 27
Specialisation Modules	: 12
Internship Programme Modules	: 12
Life Skills Modules	: 10
Cross-Disciplinary Core Modules	: 9
Electives	: 8
<hr/> Total	<hr/> : 96

### COURSE STRUCTURE

Module Title	Credits
<b>SECTOR FOUNDATION MODULES</b>	
Workplace Safety, Health & Environment	3
Data & Digital Essentials	3
Electrical Fundamentals	3
Sustainable Engineering	3
IoT for Engineering	3
Green Building Technology	3
<b>CLUSTER CORE MODULES</b>	
Residential Electrical Installation	3
Electrical Design & Drafting	3
Electrical Principles	3
Electrical Motor & Control	3
Electrical Switchboard	3
Commercial Electrical Installation	3
Electrical Machine & Drive	3
Power Distribution System	3
Solar Photovoltaic System	3
<b>SPECIALISATION MODULES</b>	
<b>Power &amp; Control</b>	
Solar Photovoltaic Design	3
Sustainable Energy System	3
Intelligent Building System	3
Instrumentation & Control System	3
<b>OR</b>	
<b>Lighting &amp; Sound</b>	
Sound System	3
Lighting System	3
Visual System	3
Show Organisation	3
<b>INTERNSHIP PROGRAMME MODULES</b>	
Internship Programme 1	4

Module Title	Credits
Internship Programme 2	8
<b>ELECTIVES (GENERAL) AND LIFE SKILLS MODULES</b>	
For details, click <a href="#">here</a>	

*Note: The offer of Cross-Disciplinary Core (CDC) modules and electives is subject to the training schedule of respective ITE Colleges. Students are advised to check with their Class Advisors on the availability of the CDC and elective modules they intend to pursue.*

## MODULE OBJECTIVES

### Sector Foundation Modules

#### Workplace Safety, Health & Environment

On completion of the module, students should be able to apply Workplace Safety and Health (WSH) policies, Environmental Management System procedures and practices in the planning, preparation and execution of work activities to ensure a safe and reliable workplace environment.

#### Data & Digital Essentials

On completion of the module, students should be able to prepare data for analysis, use online tools for collaborative work and maintain information security when online.

#### Electrical Fundamentals

On completion of the module, students should be able to interpret circuit schematic and board layout, perform DC circuit connection and in-circuit measurement.

#### Sustainable Engineering

On completion of the module, students should be able to determine key contributors to environmental changes and the challenges involved in implementing sustainable initiatives, and propose effective strategies to promote sustainability and address environmental challenges across various industries.

#### IoT for Engineering

On completion of the module, students should be able to set up an IoT, configure the controller to transmit sensor's collected data wirelessly to an IoT platform.

#### Green Building Technology

On completion of the module, students should be able to interpret and determine green building features and performance; and to develop best practices for sustainable buildings in accordance with BCA Green Mark Framework.

### Cluster Core Modules

#### Residential Electrical Installation

On completion of the module, students should be able to install, maintain, inspect and test electrical installation in residential and office premises.

#### Electrical Design & Drafting

On completion of the module, students should be able to design electrical installation and prepare electrical drawing of electrical installation.

#### Electrical Principles

On completion of the module, students should be able to troubleshoot DC and AC circuits.

#### Electrical Motor & Control

On completion of the module, students should be able to maintain DC and AC motors as well as maintain motor control circuit and equipment.

#### Electrical Switchboard

On completion of the module, students should be able to maintain electrical switchboard circuit and equipment, manage electrical power monitoring system and perform predictive and condition-based maintenance for electrical system.

### Commercial Electrical Installation

On completion of this module, students should be able to manage, inspect and test commercial electrical installation, maintain temporary electrical supply system as well as manage smart monitored emergency lighting and fire alarm system.

### Electrical Machine & Drive

On completion of the module, students should be able to maintain transformer installation, electrical motor and drive system installation as well as select electrical motor for application.

### Power Distribution System

On completion of the module, students should be able to manage electrical standby supply system, electrical power factor improvement system and maintain electricity distribution system.

### Solar Photovoltaic System

On completion of the module, students should be able to install and maintain solar photovoltaic system.

## Specialisation Modules

### Power & Control

#### Solar Photovoltaic Design

On completion of this module, students should be able to design and troubleshoot solar photovoltaic system.

#### Sustainable Energy System

On completion of the module, students should be able to manage electric vehicle supply equipment and maintain energy storage system.

#### Intelligent Building System

On completion of the module, students should be able to program PLC and smart relays as well as install intelligent building control system and smart home control system.

#### Instrumentation & Control System

On completion of the module, students should be able to maintain instrumentation and control system as well as smart instruments.

### Lighting & Sound

#### Sound System

On completion of the module, students should be able to setup, test and maintain sound equipment and systems used in MICE, entertainment and performing arts industry.

#### Lighting System

On completion of the module, students should be able to execute lighting design, setup, test and maintain lighting equipment and systems used in MICE, entertainment and performing arts industry.

#### Visual System

On completion of the module, students should be able to setup, test and maintain visual media equipment and systems used in MICE, entertainment and performing arts industry.

#### Show Organisation

On completion of the module, students should be able to prepare electrical and technical documentations, inspect, maintain and operate on-site equipment to execute event.

### Electives (General) and Life Skills Modules

For details, click [here](#).