HIGHER NITEC IN INTEGRATED MECHANICAL & ELECTRICAL DESIGN (2 YEARS)

CERTIFICATION

Credits required for certification:

Sector Foundation Modules	:	3
Cluster Core Modules	:	15
Specialisation Modules	:	21
Internship Programme	:	8
Life Skills Modules	:	9
Cross-Disciplinary Modules		6
Elective Modules	:	6
Total	:	68

COURSE STRUCTURE

Module Title	Credits
SECTOR FOUNDATION MODULES	
Sustainable Engineering	3
CLUSTER CORE MODULES	
Integrated Digital Delivery	3
Building Drawing and Design Specifications	3
Design for Manufacturing and Assembly	3
Building Information Modelling Application	3
BIM Management	3
SPECIALISATION MODULES	
Building Mechanical & Electrical Services	3
Electrical Systems Design I	3
Plumbing, Sanitary, Drainage and Gas Systems Design	3
Air Conditioning and Mechanical Ventilation Systems Design I	3
Electrical Systems Design II	3
Fire Protection Systems Design	3
Air Conditioning and Mechanical Ventilation Systems Design II	3
INTERNSHIP PROGRAMME MODULES	
Internship Programme	8
ELECTIVES (COURSE SPECIFIC)	
Presentations Through Infographic Design	2
Technical Communication & Documentation	2
3D Printing	2
Engineering Surveying	2
ELECTIVES (GENERAL) AND LIFE SKILLS MODULES	
For details, click here	

Note: The offer of 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 elective modules they intend to pursue.

MODULE OBJECTIVES

Sector Foundation Modules

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.

Cluster Core Modules

Integrated Digital Delivery
On completion of this module, students should be able to identify key processes and implement the Integrated Digital Delivery (IDD) technologies across projects and building life-cycle in accordance with local standard

Building Drawing & Design Specifications
On completion of the module, students should be able to produce assembly drawings of building components and create CAD layering in accordance with the industry standards.

Design for Manufacturing and Assembly
On completion of the module, students should be able to prepare typical drawings and installation schedules for DfMA projects.

Building Information Modelling Application
On completion of the module, students should be able to create BIM components' details and BIM model of building.

BIM Management
On completion of the module, students should be able to produce execution plan, perform 4D BIM schedule, cost estimation of BIM model and clash detection using BIM tools.

Specialisation Modules

Building Mechanical & Electrical Services
On completion of the module, student should be able to perform mechanical, electrical, plumbing and sanitary services for buildings in accordance to standard code of practice and government regulations.

Electrical Systems Design I
On completion of the module, student should be able to perform electrical drafting and design for building in accordance to the standard codes of practice and government regulations.

Plumbing, Sanitary, Drainage and Gas Systems Design
On completion of the module, students should be able to perform design of plumbing, sanitary, drainage and gas systems in accordance to the standard codes of practice and government regulations.

Air Conditioning and Mechanical Ventilation Systems I
On completion of the module, students should be able to estimate the cooling load, perform design of chilled water air conditioning system for non-residential units, prepare layout and schematic drawings for the air conditioning systems in accordance to standard code of practice and government regulations.

Electrical Systems Design II
On completion of the module, student should be able to perform electrical drafting and design for non-residential building.

Fire Protection Systems Design
On completion of the module, students should be able to perform design of fire protection and fighting systems in accordance to the standard codes of practice and government regulations.

Air Conditioning and Mechanical Ventilation Systems II
On completion of the module, students should be able to estimate the cooling load of a non-residential building, create 3D models and perform air-conditioning and mechanical ventilation design, prepare ducting, piping layouts and schematic drawings in accordance to the standard codes of practice, government regulations and sustainability measures.

Internship Programme 1
On completion of the module, students should be able to integrate and apply the skills and knowledge acquired at ITE College, and further develop competencies at the workplace.

Internship Programme 2
On completion of the module, students should be able to integrate and apply the skills and knowledge acquired at ITE College, and further develop competencies at the workplace.

Electives (Course Specific)

Presentations Through Infographic Design
On completion of the module, students should be able to communicate their presentation information more effectively through colours, visuals and infographics.

Technical Communication and Documentation
On completion of the module, students should be able to apply both oral and written communication skills in technical documentation, presentation and determine relevant technical documentation for the purpose of workplace submissions.

3D Printing
On completion of the module, students will gain a comprehensive understanding of 3D printing technology and its applications, enabling them to contribute effectively in various professional fields where 3D printing is utilized.

Engineering Surveying
On completion of this module, students should be able to perform levelling run and traversing network for topographical survey of site features such as site boundary, road kerbs, manholes, inspection chambers and footings.

Electives (General) and Life Skills Modules
For details, click here.