

HIGHER NITEC IN FACILITIES MANAGEMENT & ENGINEERING (4 YEARS) WITH ENHANCED FOUNDATION PROGRAMME

CERTIFICATION

Credits required for certification:

Enhanced Foundation Modules	:	24 (All credits not counted for graduation)
Sector Foundation Modules	:	18
Cluster Core Modules	:	6
Specialisation Modules	:	33
Life Skills Modules	:	6
Cross Disciplinary Core Modules	:	9
Elective Modules	:	8
Total	:	96

COURSE STRUCTURE

Module Title	Credits
ENHANCED FOUNDATION MODULES	
Fundamentals of Mechanical Services and 3D Printing	3
Fundamentals of Electrical Services	3
Fundamentals of Plumbing Services	3
Introduction to Building Facade Inspection and Drone Operations	3
Fundamentals of Refrigeration and Air Conditioning Maintenance	3
Basics of Infographic Design	3
Introduction to Smart Building	3
Basics of Sustainability Practices	3
SECTOR FOUNDATION MODULES	
Workplace Safety, Health & Environment	3
Data & Digital Essentials	3
Electrical Fundamentals	3
IoT for Engineering	3
Sustainable Engineering	3
Green Building Technology	3
CLUSTER CORE MODULES	
Integrated Digital Delivery	3
Technical Drawing	3
SPECIALISATION MODULES	
Commercial Air Conditioning and Mechanical Ventilation Systems	3
Electrical Systems	3
Sanitary and Drainage Systems	3

Module Title	Credits
Fire Detection and Protection Systems	3
Plumbing Systems	3
Estate Management and Coordination	3
Integrated Smart Facilities Management	3
Building Systems and Services Supervision	3
Building Information Modelling	3
Residential Air Conditioning Systems	3
Energy Audit and Management	3
INTERNSHIP PROGRAMME	
Internship 1	4
Internship 2	8
ELECTIVES (COURSE SPECIFIC)	
Water Efficiency Management	2
Presentations Through Infographic Design	2
Technical Communication & Documentation	2
Construction Technology	2
3D Printing	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.

Nitec in Facility Technology (Landscaping Services) or Nitec in Facility Technology (Vertical Transportation) graduates with minimum GPA of 3.0 and had completed "Air-Conditioning and Building Management System" and "Building Fire-Fighting and Protection Systems" elective modules can apply to progress directly to second year of study in Higher Nitec in Facility Management course.

MODULE OBJECTIVES

Enhanced Foundation Modules

Fundamentals of Mechanical Services & 3D Printing

On completion of the module, students should be able to produce technical drawings, fabricate 3D prototypes and perform safety and housekeeping for safe work practices in mechanical services.

Fundamentals of Electrical Services

On completion of the module, students should be able to produce electrical circuit diagrams and perform installation of conduits, trunkings, lighting and power circuits in electrical services. They should be able to perform safety and housekeeping for safe work practices in electrical services.

Fundamentals of Plumbing Services

On completion of the module, students should be able to assemble fixtures in plumbing services and produce piping diagrams. They should be able to perform safety and housekeeping for safe work practices in plumbing services.

Introduction to Building Facade Inspection & Drone Operations

On completion of the module, students should be able to conduct façade inspections to detect defects with drone technology according to the regulations governing its use. They should be able to operate drone flight manoeuvre according to field requirements effectively.

Fundamentals of Refrigeration & Air Conditioning Maintenance

On completion of this module, students should be able to differentiate types of refrigerant and their emissions to the environment and perform system functionality checks and preventive maintenance of air conditioning system.

Basics of Infographic Design

On completion of the module, students should be able to create appealing infographics for content design, gather data and information and apply design principles with the use of infographics effectively.

Introduction to Smart Building

On completion of this module, students should be able to perform installation of basic home automation system to enhance the intelligence and functionality of smart buildings. They should be able to apply basic concept of BMS to determine causes of fault in control systems.

Basics of Sustainability Practices

On completion of this module, students should be able to collate carbon footprints for sustainable business practices. They should be able to conduct activities for climate change, waste management system and energy saving activities effectively.

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.

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.

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.

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

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.

Technical Drawing

On completion of the module, students should be able to produce technical sketches, engineering drawings to support construction, operations and maintenance of buildings in accordance to International Standard Organisation (ISO) and Code of Practice (CP).

Specialisation Modules

Commercial Air Conditioning and Mechanical Ventilation Systems

On completion of the module, students should be able to implement operational principle of commercial air conditioning systems and carry out inspections, commissioning and maintenance for air conditioning systems and mechanical ventilation systems in the buildings.

Electrical Systems

On completion of the module, students should be able to interpret electrical circuit diagrams, conduct continuity and insulation resistance tests. They should be able to conduct first line maintenance and coordinate maintenance of Extra Low Voltage system as well as the power and lighting circuits.

Sanitary and Drainage Systems

On completion of the module, students should be able to repair sanitary piping systems, replace piping fittings, sanitary fixtures, clear pipe and drain chokes.

Fire Detection and Protection Systems

On completion of the module, students should be able to interpret building mechanical system plan, inspect fire alarm system, riser system (dry and wet), private hydrant system, automated sprinkler system, emergency voice communication systems and fire suppression system. They should be able to conduct first line maintenance and coordinate maintenance of fire detection and protection systems.

Plumbing Systems

On completion of the module, students should be able to repair potable water supply piping system, replace piping fittings and inspect water pump and control systems.

Estate Management and Coordination

On completion of the module, students should be able to interpret building contract administration terms, supervise works for pest control, landscaping, cleaning services and handing & taking over of job tasks.

Integrated Smart Facilities Management

On completion of this module, participants will be able to interpret and implement diverse control systems within Building Management Systems (BMS), execute system health assessments for primary and secondary subsystems, implement control strategies of Smart Facilities Management (FM) to correct common faults, compile and oversee BMS-related system reports.

Building Systems and Services Supervision

On completion of the module, students should be able to maintain fittings, fixtures and inspect painting works related to building. Students should be able to supervise swimming pool maintenance, monitor lift and escalator maintenance and electronic car park system. In addition, students should be able to interpret and understand service report related to the above-mentioned works and systems.

Building Information Modelling

On completion of this module, students should be able to interpret two-dimensional architectural layout drawings, generate three-dimensional modelling, retrieve relevant information on building services systems using BIM software and apply effective modelling with visualization techniques.

Residential Air Conditioning Systems

On completion of the module, students should be able to carry out the installation, commissioning and maintenance of residential air conditioning systems and refrigeration system.

Energy Audit and Management

On completion of this module, students should be able to carry out on-site energy audits using suitable measuring instruments and tools and propose corrective actions to enhance energy utilization within buildings.

Internship 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 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)

Water Efficiency Management

On completion of this module, students should be equipped with the knowledge and skills needed to conduct water audit and employ measures to enhance water efficiency, thereby reducing water consumption in buildings.

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.

Construction Technology

On completion of the module, students should be able to identify construction processes and technologies in building development.

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.

Electives (General) and Life Skills Modules

For details, click [here](#).