

## HIGHER NITEC IN CIVIL & STRUCTURAL ENGINEERING DESIGN (2 YEARS)

### CERTIFICATION

Credits required for certification:

Sector Foundation Module	: 3
Cluster Core	: 15
Specialisation Modules	: 21
Internship Programme	: 8
LifeSkills Modules	: 9
Cross-Disciplinary Core Modules	: 6
Electives	: 6
Total	: 68

### COURSE STRUCTURE

Module Title	Credits
<b>SECTOR FOUNDATION MODULE</b>	
Sustainable Engineering	3
<b>CLUSTER CORE MODULES</b>	
Integrated Digital Delivery	3
Design for Manufacturing & Assembly	3
Building Information Modelling Application	3
Building Drawing & Design Specifications	3
BIM Management	3
<b>SPECIALISATION MODULES</b>	
Construction Technology & Administration	3
Reinforced Concrete Detailing & Design I	3
External Works	3
Steel Structure Design	3
Road Construction	3
Prefabrication Technology	3
Reinforced Concrete Detailing & Design II	3
<b>INTERNSHIP PROGRAMME MODULE</b>	
Internship Programme	8
<b>ELECTIVES (GENERAL) AND LIFE SKILLS MODULES</b>	
For details, click <a href="#">here</a>	

*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 Module

#### 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 the module, students should be able to identify key processes and implement Integrated Digital Delivery (IDD) technologies across projects and building life-cycle in accordance with BCA 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 with International Standard Organisation (ISO) and Code of Practice (CP).

#### Design for Manufacturing & 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.

#### 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.

#### 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

#### Construction Technology & Administration

On completion of the module, students should be able to interpret construction drawing and apply construction processes and technologies for project undertaken.

#### Reinforced Concrete Detailing & Design I

On completion of the module, students should be able to prepare schedules, detailed drawings of reinforced concrete structures such as slabs, beams, using computer-aided drafting software.

#### External Works

On completion of the module, students should be able to produce civil engineering drawings such as drainage and sewerage systems.

#### Steel Structure Design

On completion of the module, students should be able to produce steel structure drawings with detailed connections of steel members.

#### Road Construction

On completion of the module, students should be able to prepare detailed civil engineering drawings such as roads, culverts and carriageway.

### Prefabrication Technology

On completion of the module, students should be able to produce drawings and connections details of precast concrete components.

### Reinforced Concrete Detailing & Design II

On completion of the module, students should be able to produce details of reinforced concrete staircase, core walls and retaining walls.

### Internship Programme Module

#### Internship Programme

Students will undergo a 6-month internship with architectural design and building and construction companies where they will apply and integrate the technical, social and methodological competencies in carrying out related industry projects.

### Electives (General) and Life Skills Modules

For details, click [here](#).