HIGHER NITEC IN CIVIL & STRUCTURAL ENGINEERING DESIGN

CERTIFICATION

Credits required for certification:

Core Modules	:	52
Life Skills Modules	:	9
Elective Modules	:	4
Total	:	65

COURSE STRUCTURE

Module Title	Credits
CORE MODULES	
Engineering Graphics	6
Engineering Mathematics and Statics	8
Building Information Modelling	7
Building Structure and External Works	8
Reinforced Concrete Detailing and Design	8
Steel Structure Detailing and Design	7
Industry Attachment	8
ELECTIVES (COURSE SPECIFIC)	
Elementary Quantities	2
Model Making	2
Land 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

Core Modules

Engineering Graphics

On completion of the module, students should be able to produce technical sketches, engineering detailed drawings, 3D solid modelling, and assembly drawings in accordance with ISO standards.

Engineering Mathematics and Statics

On completion of the module, students should be able to apply knowledge of mathematics to solve engineering problems involving the use of algebra, indices, logarithms, trigonometry and basic statistics. Students would also be equipped with the fundamental knowledge of statics and be able to solve engineering problems involving equilibrium of bodies subjected to forces.

Building Information Modelling

On completion of the module, students should be able to create 3D models, extract information, perform taking-off from BIM model and produce BIM components.

Building Structures and External Works
On completion of the module, students should be able to produce foundation layout plans and schedules of footing and staircase, reinforced concrete drawings of floor, staircase and, structural components such as foundations, retaining walls and detailed drawings of external works such as drains, sewers, culverts, carriageway, drainage and sewerage systems.

Reinforced Concrete Detailing and Design
On completion of the module, students should be able to create 3D models using BIM, to draw structural drawings for piling, pile caps, reinforced concrete core walls, prepare column schedules and detailed drawings of reinforced concrete beams and slabs, precast concrete components and precast beam and slab drawings.

Steel Structure Detailing and Design
On completion of the module, students should be able to create 3D steel structure models using BIM software and to produce steel structure working drawings with detailed connections of steel members.

Industry Attachment
Students will undertake a 6-month industry attachment at the civil structural consultancy companies in the building and construction sector to complement and reinforce the skills and knowledge acquired at ITE and to develop competencies in other specialised areas.

Electives (Course Specific)

Elementary Quantities
On completion of the module, students should be able to calculate and prepare the bill of quantities for simple building work in accordance with Civil Engineering Standard Method of Measurement Code.

Model Making
On completion of the module, students should be able to construct a scaled model of a structural frame.

Land Surveying
On completion of the module, students should be able to perform simple levelling work, set out horizontal angles and calculate reduced levels from field bookings.

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