HIGHER NITEC IN RAPID TRANSIT ENGINEERING (3 YEARS)

CERTIFICATION

Credits required for certification:

Sector Foundation Modules	:	24
Specialisation Modules	:	33
Internship Programmes	:	12
Life Skills Modules	:	10
Cross-Disciplinary Core Modules	:	9
Electives	:	8
Total	:	96

COURSE STRUCTURE

Module Title	Credits
SECTOR FOUNDATION MODULES	
Workplace Safety, Health & Environment	3
Data & Digital Essentials	3
Electrical Fundamentals	3
IoT for Engineering	3
Sustainable Engineering	3
Engineering Drawing	3
Mechanical Fundamentals	3
Coding Essentials	3
SPECIALISATION MODULES	
Rapid Transit Engineering Fundamentals	3
Rapid Transit Electrical Systems	3
Permanent Way	3
Rolling Stock Systems (Undercarriage)	3
Rolling Stock Systems (Saloon)	3
Signalling Equipment	3
Rapid Transit Workshop Equipment	3
Signalling Systems	3
Rapid Transit Communication Systems (Operational)	3
Rapid Transit Communication Systems (Passenger)	3
Track Electrification Systems	3
INTERNSHIP PROGRAMMES	
Internship Programme 1	4
Internship Programme 2	8
ELECTIVES (GENERAL) AND LIFE SKILLS MODULES	

Module Title	Credits
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

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.

Engineering Drawing
On completion of the module, students should be able to interpret and create engineering drawings in accordance with ISO standards.

Mechanical Fundamentals
On completion of the module, students should be able to measure and fabricate mechanical components for assembly.

Coding Essentials
On completion of the module, students should be able to perform basic coding to solve general problems as well as develop programmable board-based engineering applications.

Specialisation Modules

Rapid Transit Engineering Fundamentals
On completion of the module, students should be able to perform servicing on rapid transit engineering components in accordance with rail industry standards and in compliance to rail safety and regulatory guidelines.

Rapid Transit Electrical Systems
On completion of the module, students should be able to perform maintenance on electrical circuits and motor control systems in accordance with the relevant codes of practice and rail industry standards and regulatory compliance.

Permanent Way
On completion of the module, students should be able to perform maintenance on rail tracks and permanent way components in accordance with rail industry standards and in compliance with rail safety and regulatory guidelines.

Rolling Stock Systems (Undercarriage)
On completion of the module, students should be able to perform maintenance on rolling stock undercarriage systems and equipment in accordance with rail industry standards and in compliance with rail safety and regulatory guidelines.

Rolling Stock Systems (Saloon)
On completion of the module, students should be able to perform maintenance on rolling stock saloon systems and equipment in accordance with rail industry standards and in compliance to rail safety and regulatory guidelines.

Signalling Equipment
On completion of the module, students should be able to perform maintenance on rapid transit trackside signalling equipment in accordance with rail industry standards and in compliance with rail safety and regulatory guidelines.

Rapid Transit Workshop Equipment
On completion of the module, students should be able to operate workshop tools and equipment, interpret different types of fastening and rail safety protocol in accordance with rail industry standards and in compliance to rail safety and regulatory guidelines

Signalling Systems
On completion of the module, students should be able to perform maintenance on rapid transit signalling systems in accordance with rail industry standards and in compliance with rail safety and regulatory guidelines.

Rapid Transit Communication Systems (Operational)
On completion of the module, students should be able to perform maintenance on rapid transit operational communication systems and equipment in accordance with rail industry standards and in compliance with rail safety and regulatory guidelines.

Rapid Transit Communication Systems (Passenger)
On completion of the module, students should be able to perform maintenance on rapid transit passenger communication systems and equipment in accordance with rail industry standards and in compliance with rail safety and regulatory guidelines.

Track Electrification Systems
On completion of the module, students should be able to perform maintenance on rapid transit track electrification systems in accordance with rail industry standards and in compliance with rail safety and regulatory guidelines

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