

# WORK-STUDY DIPLOMA IN IOT & DATA ENGINEERING

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## MODULE OBJECTIVES

### Electronics & Electrical Principles

On completion of the module, trainees should be able to manage operations and performance for equipment and products. They should also be able to manage equipment and product failures by implementing Electrostatic Discharge (ESD) Control measures and evaluating performance metrics.

### IoT Devices & Networking

On completion of the module, trainees should be able to manage IoT network and connectivity by programming and deploying IoT devices, configuring IoT network connectivity and monitoring IoT data transmission for quality IoT data communication.

### IoT System Design & Programming

On completion of the module, trainees should be able to manage IoT system design by designing IoT integrated system, programming IoT system, simulating system design and optimising system performance through collected data.

### Cyber Security for IoT Networks

On completion of the module, trainees should be able to implement IoT and network security measures by configuring and maintaining IoT and network security.

### Cloud Computing

On completion of the module, trainees should be able to propose, configure and monitor cloud services. They should also be able to set up and configure virtual infrastructure, as well as perform backup and recovery.

### Data Engineering

On completion of the module, trainees should be able to manage dataset by streamlining data ingestion, cleansing and transforming data blobs and streams. They should also be able to create and query databases, as well as wrangle data to run pipelines.

### Data Analysis & Visualisation

On completion of the module, trainees should be able to extract and transform data into useful information, as well as create visual elements, to aid in business decision-making. They should also be able to manage projects through collaboration and teamwork.

### IoT System & Business Applications

On completion of the module, trainees should be able to deploy and integrate IoT applications to existing factory system, record and transfer data to monitor important processes, in order to provide new insights, boost efficiency and productivity, and allow companies to make more informed decisions based on data collected and business applications.

### **Company Project**

On completion of the module, trainees should have applied their acquired competencies in an authentic project that would value-add to the company.

### **On-the-Job Training**

On completion of the module, trainees should be able to apply the skills and knowledge acquired at ITE College and workplace to take on the full job scope, including supervisory function where appropriate, at the company.