

## HIGHER NITEC IN TECHNOLOGY – DATA ENGINEERING

Course Code: HT2DE / Plan Code: HT2DE

### COURSE OBJECTIVE

This course equips students with the skills and knowledge to extract data, perform data cleansing, data processing, data visualization and manage database.

### COURSE STRUCTURE

#### Core/Specialisation Modules

S/N	Module Details	Module Code	Module Objectives
<b>MSC: Data Science Programming Fundamentals</b>			
C1	<b>Programming Essentials</b> 20 (T) 40 (P) Credits 3 Prerequisite: Nil	IT43002FP	On completion of the module, students should be able to apply fundamental programming concepts and computational thinking for basic programs.
		Equivalent Code Nil	
C2	<b>Data Science Programming</b> 15 (T) 45 (P) Credits 3 Prerequisite: Nil	DE43002FP	On completion of the module, students should be able to apply techniques to explore, collect, analyse, transform, and leverage data. These involve preparation by processing varying amounts of data from different sources based on business requirements.
		Equivalent Code Nil	
<b>MSC: Database Concepts &amp; Extraction</b>			
C3	<b>Database Concepts</b> 20 (T) 40 (P) Credits 3 Prerequisite: Nil	DE43001FP	On completion of the module, students should be able to create database objects and edit data in tables. Students will be able to query data that utilise relational database concepts.
		Equivalent Code DE4001FP	
C4	<b>Data Extraction &amp; Analytics</b> 25 (T) 35 (P) Credits 3 Prerequisite: Nil	DE43004FP	On completion of the module, students should be able to apply data extraction of data sets from various data sources, including data explorations and analytics.
		Equivalent Code Nil	
<b>MSC: Data Visualisation &amp; Reporting</b>			
C5	<b>Data Storytelling</b> 15 (T) 45 (P) Credits 3 Prerequisite: Nil	DE53001FP	On completion of the module, students should be able to design data reports, deploy storyboards and present their insights through data storytelling.
		Equivalent Code Nil	
C6	<b>Dynamic Dashboard Development</b> 15 (T) 45 (P) Credits 3 Prerequisite: Nil	DE53003FP	On completion of the module, students should be able to implement contemporary techniques, dynamic dashboard to present patterns and trends from data in a strategic manner for targeted audience.
		Equivalent Code Nil	
<b>MSC: Data Processing for Machine Learning</b>			
C7	<b>Data Preparation for Machine Learning</b> 15 (T) 45 (P) Credits 3 Prerequisite: Nil	DE53002FP	On completion of the module, students should be able to apply techniques to explore, collect, analyse, transform, and leverage data. This involves preparation by processing varying amount of data from different sources based on business requirements.
		Equivalent Code Nil	
C8	<b>Predictive Data Modelling</b> 15 (T) 45 (P) Credits 3 Prerequisite: Nil	DE53004FP	On completion of the module, students should be able to generate data insights through machine learning algorithms, computational and statistical data modelling and data visualisation.
		Equivalent Code Nil	

Abbreviations: T - Theory, P - Practical, MSC - Modular Skills Certificate

### CREDITS FOR CERTIFICATION

Total of 24 credits from successful completion of 8 Core/Specialisation modules.

Applicants who do not meet the entry requirements for Core/Specialisation modules will need to complete 12 credits from 4 Foundation modules before taking Core/Specialisation modules.

### Foundation Modules

S/N	Module Details	Module Code	Module Objectives
F1	<b>Coding for AI</b> 20 (T) 40 (P) Credits 3 Prerequisite: Nil	AI33001FP	On completion of the module, students should be able to experience the concepts of AI through no to low coding methods. Students will create basic program logic and AI model through fun and engaging project.
		Equivalent Code Nil	
F2	<b>Fundamentals of Data</b> 10 (T) 50 (P) Credits 3 Prerequisite: Nil	DE33001FP	On completion of the module, students should be able to import data from external sources, perform basic data manipulation and present simple visualisation of the data.
		Equivalent Code Nil	
F3	<b>Introduction to UI/UX</b> 10 (T) 50 (P) Credits 3 Prerequisite: Nil	IT33002FP	On completion of the module, students should be able to apply User Interface (UI) and User Experience (UX) development process to produce low-fidelity and high-fidelity wireframes and prototypes for websites and mobile apps.
		Equivalent Code Nil	
F4	<b>Web Development Essentials</b> 10 (T) 50 (P) Credits 3 Prerequisite: Nil	IT33003FP	On completion of the module, students should be able to develop web pages using HTML and CSS.
		Equivalent Code Nil	

Abbreviations: T - Theory, P - Practical

### VENUE

ITE College West

Note:

- 1) The training schedule of lessons is subject to change.
- 2) Depending on the demand, not all the modules in the CET *Higher Nitec* in Technology courses will be offered in each intake. Where the modules are offered and there is insufficient enrolment, the classes will be cancelled and a full refund will be given to the affected students.