ITEC- 2024- 2025

Specialized Training Programme on Data Science & Analytics for Tanzania Participants

A.	Name of the Institute	Centre for Development of Advanced Computing, Mohali
B.	Name/Title of the Course	Specialized Training Programme in Data Science & Analytics for Tanzania Participants
C.	Proposed Dates and Duration of the Course in weeks/ months	29th Jan 2025- 11th Feb 2025 Duration: 2 week(s)
D.	Eligibility Criteria for Participants	
	1. Educational Qualification	Technical Graduate (Computer Science/ Electronics or equivalent) with working knowledge of computers.
	2. Work Experience	As per MEA guidelines
	3. Age Limit	As per MEA guidelines
	4. Target group (Level of participants and target ministry/department etc. may be identified)	Working Professional with basic knowledge of computer programming (any language)
E.	Aims & Objectives of the Course	• Introduce Python Programming concepts • Gain an insight on how python is used for data manipulation and visualization • Understand Python Libraries for Data Analysis

F.	Details / Content of the Course	Contents of the course includes:
		• Introduction to Data Analytics
		• Python Programming
		  ○ Python Basic Syntax, Data Types, Variables, Operators, Input/output, Strings
		  ○ Python data structure: Lists, Tuples, Dictionaries, Sets.
		  ○ Control Structures: If, If- else, Nested if-else, Looping, For, While, Nested loops, Uses of Break & Continue
		  ○ Functions and Modules
		  ○ OOPs Concepts, Exception Handling
		• Python Libraries for Data Analysis
		  ○ Mathematical Computing with Python (NumPy)
		  ○ Data Manipulation with Pandas
		  ○ Machine Learning with Scikit–Learn.
		  ○ Introduction to Data Visualization in Python (matplotlib)

		• Statistics
		  ○ Vector, Scalar, Matrix and operations on matrix
		  ○ Basics of Statistics - Measures of Central Tendencies and Variance
		  ○ Correlation, Outliers
		• Data Preparation & Visualization
		  ○ Data cleaning and transformation
		  ○ Various data plots using python libraries
		• Exploratory Data Analysis
		• Machine Learning Concepts
		  ○ Supervised and Unsupervised Learning
		• Case Studies

G.	Mode of Evaluation of Performance of the ITEC Participant	Written test