

Specialized Training Programme on Data Science and Analytics
Duration: 2 weeks (17 February, 2025 to 28 February, 2025)

Course Content

Week 1:

- 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)

Week 2:

- 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