

Data Science and Machine Learning using Python

Eligibility: 10+2 pass and Knowledge of any Programming language

Duration: 4 weeks/40 Hours (2 hrs a Day, 5 days a week)

Day 1	Introduction <ul style="list-style-type: none"> • Conceptual introduction to computer Programming • Python- Introduction, History, installation • Various development environments for Python, the concept of data types, variables, assignments, immutable variables • Numerical types, arithmetic operators and expressions, comments
Day2	Programming Constructs <ul style="list-style-type: none"> • Strings , List/Arrays, Functions and Printing • String Methods, Concatenation, formatting Strings • Numbers- Numeric Operations, Functions Conditions and loops – if/else, while, for • Nested for loops • Functions • Pass, break, continue
Day 3	Data Structures <ul style="list-style-type: none"> • Lists, Tuples and basic list operators, replacing, inserting, removing an element searching and sorting lists • Dictionaries • dictionary literals, adding and removing keys, accessing and replacing values; traversing dictionaries
Day 4	Functions <ul style="list-style-type: none"> • Function Basic • Function Scop • Function Arguments
Day 5	Inheritance through Classes <ul style="list-style-type: none"> • Class Coding Basics • Class Coding Details • Designing with Classes & Advanced Class Topics
Day 6-7	NumPy <ul style="list-style-type: none"> • Array types • Computation on NumPy Arrays – Universal functions • Aggregations: Min, Max, etc. • Computation on Arrays: broadcasting • Fancy indexing, sorting arrays • Structured Data, using csv files.
Day 8-9	Pandas <ul style="list-style-type: none"> • Introduction, Pandas objects • Data indexing and selection • Combining Datasets- Merge and join • Importing Data from various sources (csv, txt, excel, access etc)

Day 10	Matplotlib <ul style="list-style-type: none"> • Visualization with Matplotlib • Simple line plots, scatter plots • Multiple subplots • Displaying graph.
Day 10-12	Machine Learning <ul style="list-style-type: none"> • Introduction, Categories, Role/Future Scope • Introducing Scikit-learn • Hyperparameters and Model Validation • Feature Engineering • Linear Regression, Vector Machine
Day 13-14	Machine Learning <ul style="list-style-type: none"> • Decision Tree • k-means clustering • Multi Class Classification-Logistic Regression, k Nearest Neighbor • Decision Trees and Random Forests
Day 15	Introduction to TensorFlow & Keras
Day 16-18	Introduction to Neural Network <ul style="list-style-type: none"> • Artificial Neural Network (ANN) Vs. Biological NN • Concepts of ANN, Activation Functions • Feed Forward Propagation & Backward Propagation Network, Loss Functions, Gradient Analysis • Convolutional NN (CNN)
Day 19-20	Application of ANN <ul style="list-style-type: none"> • Text Processing • Image Recognition & Classification

Admission Process:

- Online Registration form at : <http://www.empanelment.nielit.in/>

Course Fee :

- ₹ 2000/- + GST** to be paid online at the time of Registration

Training Strategy:

- Mode of Training is Instructor-led live Online
- Interactive Query session.
- Soft copy of study material, Training PPT's & Projects Code
- Training certificate on completion will be provided.

Prerequisite:

- Attendees must have a computer system/ Laptop with latest configuration with internet connection

GST** Current rate is 18%

NIELIT Delhi Centre, 2nd Floor, Parsvnath Metromall, Inderlok Metro Station, Inderlok, Delhi-110052