

ADVANCED AI TRACK

Data Science Course Syllabus

Data Science Course in Nagpur

Nine months from Python foundations through machine learning, deep learning, NLP, computer vision and Generative AI/LLMs, taught through models you build and deploy, plus a month of corporate grooming. Classroom, online and weekend batches in Nagpur.

DURATION

9 months

FEE

₹89,999

MODE

Classroom / Online / Weekend

LEVEL

Intermediate

MODULES

8

TOPICS

40

TOOLS

24

PROJECTS

4

PREREQUISITES

Comfort with school-level mathematics helps. Python is taught from scratch.

LANGUAGE

English, with Hindi and Marathi explanation on request

CERTIFICATION

TECHTONIC LAB completion certificate, plus guidance on vendor certification

COURSE CODE

TL-DS-001

₹89,999 all-inclusive · 3 instalments

TOOL STACK

Everything you will touch

Named in full — a syllabus that says only “BI tools” is hiding something.

Python NumPy pandas Git MySQL Excel Power BI Tableau Matplotlib Seaborn Plotly SciPy
scikit-learn XGBoost TensorFlow Keras OpenCV Transformers OpenAI API LangChain Flask FastAPI
Streamlit Docker

MODULE BY MODULE

The whole thing, in order

Modules run in this sequence deliberately — each one assumes the last.

01 Python, NumPy and Pandas

□ Months 1–2

TOPICS

- ✓ Python fundamentals, data structures, OOP and file handling
- ✓ Exception handling, modules and packages
- ✓ NumPy arrays, broadcasting and linear algebra
- ✓ pandas — DataFrames, cleaning, GroupBy, merge and join
- ✓ Version control with Git and GitHub

TOOLS

Python NumPy pandas Git

YOU FINISH WITH

A reusable data-loading and cleaning module of your own

02 SQL, Excel, BI and visualisation

□ Month 3

TOPICS

- ✓ SQL — joins, subqueries, CTEs, window functions, stored procedures, views and triggers
- ✓ Data modelling and normalisation
- ✓ Advanced Excel — lookups, PivotTables, dashboards, Power Query, Power Pivot, VBA and macros
- ✓ Power BI & Tableau — data modelling, DAX, interactive dashboards and KPI storytelling
- ✓ Matplotlib, Seaborn and Plotly — statistical and interactive visualisations

TOOLS

MySQL Excel Power BI Tableau
Matplotlib Seaborn Plotly

YOU FINISH WITH

An interactive dashboard combining SQL-sourced data, a Power BI report and Python plots

03 Statistics and mathematics

□ Month 4 (first half)

TOPICS

- ✓ Descriptive and inferential statistics, probability and sampling
- ✓ Hypothesis testing — T-test, ANOVA, Chi-square
- ✓ Correlation and covariance
- ✓ Linear algebra, matrices and vectors
- ✓ Calculus basics, gradient descent and optimisation

TOOLS

Python SciPy

YOU FINISH WITH

A written statistical analysis with stated assumptions and limits

04 EDA and machine learning

□ Months 4–5

TOPICS

- ✓ Data profiling, outlier detection and feature engineering
- ✓ Supervised learning — linear & logistic regression, KNN, Naive Bayes, decision trees, random forest, SVM, XGBoost
- ✓ Unsupervised learning — K-Means, hierarchical, DBSCAN, PCA and association rules
- ✓ Model evaluation — accuracy, precision, recall, F1, ROC-AUC
- ✓ Cross-validation and hyperparameter tuning

TOOLS

scikit-learn XGBoost Python

YOU FINISH WITH

A tuned, cross-validated classifier with an honest error analysis

05 Deep learning

□ Month 6

TOPICS

- ✓ Neural networks and the perceptron
- ✓ ANN, CNN, RNN and LSTM
- ✓ TensorFlow and Keras
- ✓ Transfer learning
- ✓ Image classification

TOOLS

TensorFlow

Keras

Python

YOU FINISH WITH

An image classifier trained and evaluated end to end

06 NLP and computer vision

□ Month 7

TOPICS

- ✓ Text processing, tokenisation, stemming and lemmatisation
- ✓ Sentiment analysis and text classification
- ✓ Word embeddings, transformers and BERT basics
- ✓ Image processing with OpenCV
- ✓ Object detection and face recognition

TOOLS

OpenCV

Transformers

Python

YOU FINISH WITH

A sentiment-analysis model and an OpenCV vision task

07 Generative AI and LLMs

□ Month 8

TOPICS

- ✓ Introduction to AI, GenAI, ChatGPT and prompt engineering
- ✓ Large Language Models and the OpenAI APIs
- ✓ LangChain and Retrieval-Augmented Generation (RAG)
- ✓ AI agents and AI automation
- ✓ Building a GenAI application

TOOLS

OpenAI API

LangChain

Python

YOU FINISH WITH

A RAG-based application over your own document set

08 Deployment, capstone and corporate grooming

□ Month 9

TOPICS

- ✓ Model deployment — Flask, FastAPI, Streamlit and REST APIs
- ✓ Docker basics and an introduction to MLOps
- ✓ Cloud fundamentals (AWS / Azure) and ML services overview
- ✓ End-to-end industry capstone project
- ✓ Resume, LinkedIn, GitHub portfolio, mock interviews and grooming

TOOLS

Flask

FastAPI

Streamlit

Docker

YOU FINISH WITH

A deployed model behind a working endpoint, defended in review

PORTFOLIO**The projects you leave with**

Documented, reviewed and defended out loud — the part of the syllabus that gets you interviews.

Demand forecasting model

Forecast weekly demand for a retail category, then explain honestly where the model breaks and what it would cost the business.

TOOLS Python, scikit-learn, pandas

DATASET Public retail sales history

Credit-risk classifier

Build and tune a classifier, then work through the class-imbalance and fairness problems that make this a hard problem rather than a tutorial.

TOOLS scikit-learn, XGBoost

DATASET Public lending dataset

Sentiment analysis and NLP

Process real text, build a classifier and interpret it, using embeddings and transformer basics rather than a bag-of-words toy.

TOOLS Transformers, Python

DATASET Public review corpus

Deployed GenAI capstone

Take a model or a RAG application all the way to a running endpoint with a simple interface, so you can demonstrate it live in an interview.

TOOLS LangChain, FastAPI, Docker

DATASET Your own choice from earlier projects

WHERE IT LEADS

Roles & indicative salaries

ROLE	ENTRY (PER YEAR)	MID-LEVEL (PER YEAR)
Junior Data Scientist	₹4.0L – ₹6.5L	₹9L – ₹15L
Machine Learning Engineer	₹4.5L – ₹7L	₹10L – ₹18L
Data Analyst (advanced)	₹3.5L – ₹5L	₹7L – ₹11L
AI / GenAI Engineer	₹5L – ₹8L	₹12L – ₹22L

Compare this syllabus against anyone in Nagpur.

Classroom, online & weekend batches · individual project reviews · placement preparation included.

+91 87660 69947 · admin@techtoniccorporate.com · techtoniccorporate.com

Book a free consultation