



TECH SHASHANK PVT LTD

**DIPLOMA IN ARTIFICIAL INTELLIGENCE
& MACHINE LEARNING**

COMPUTER AND INFORMATION
Course Code: COM – 1306



NCVRT

**ARTIFICIAL
INTELLIGENCE**



NATIONAL COUNCIL OF VOCATIONAL AND RESEARCH TRAINING NEWDELHI-110058

Advanced Curriculum with Hands on Experience

Course title	Diploma In Artificial Intelligence
Course code	COM – 1306
Medium	English
Qualification	10 th Pass
Duration	Six Months

MARK ALLOTMENT	
Theory	300 Marks
Practical	200 Marks
Internal	100 Marks
Total Marks	600 Marks
Passing Marks	40/100

Diploma In Artificial Intelligence	
Paper I	Artificial Intelligence
Paper II	Machine Learning
Paper III	Data Mining And Business Intelligence

Diploma in Artificial Intelligence, Machine Learning & Data Mining

Certification: NCVRT Diploma

Mode: Theory + Practical + Projects

Month 1 – Python Programming for AI

Topics

- Introduction to Artificial Intelligence
- AI vs Machine Learning vs Data Science
- Python Installation / Google Colab
- Python Basics
- Variables & Data Types
- Lists, Tuples, Dictionaries
- Conditional Statements
- Loops
- Functions

Libraries Introduction

- NumPy
- Pandas

Practical

- Calculator Program
- Student Marks Analysis
- Dataset Loading & Exploration

Mini Project

Excel Sales Dashboard

Tools

- Python
- Google Colab / Jupyter Notebook

Month 2 – Data Analysis + Basic Statistics + Excel

Topics

Data Analysis

- Data Types in Data Science
- Data Cleaning
- Handling Missing Data
- Data Preprocessing
- Pandas Data Analysis

Basic Statistics (for ML)

- Mean, Median, Mode
- Variance & Standard Deviation
- Data Distribution
- Correlation
- Basic Probability

Excel Data Analysis

- Pivot Table
- Pivot Charts
- Data Filtering
- Conditional Formatting
- Data Sorting

Practical

- Sales Data Analysis
- Student Attendance Analysis
- Data Visualization

Mini Project

Excel Sales Dashboard

Tools

Python

Excel

Tableau Public

Month 3 – Machine Learning Fundamentals

Topics

- Introduction to Machine Learning
- Types of Machine Learning

Supervised	Unsupervised	Reinforcement
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- ML Workflow
- Training vs Testing Data
- Feature Engineering

Algorithms

- Linear Regression
- Logistic Regression
- Decision Tree
- K-Nearest Neighbors (KNN)

Library

Scikit-learn

Practical

- House Price Prediction
- Student Performance Prediction

Month 4 – Data Mining Techniques

Topics

- Introduction to Data Mining
- Data Mining Process
- Classification
- Clustering
- Association Rules

Algorithms

- K-Means Clustering
- Apriori Algorithm
- Decision Tree

Tools Practical

- RapidMiner
- Orange Data Mining Tool

Mini Project

Customer Segmentation System

Example

Grouping customers based on buying behaviour.

Month 5 – Advanced Machine Learning + AI Applications

Topics

- Model Evaluation
- Accuracy
- Precision & Recall
- Confusion Matrix
- Overfitting vs Underfitting
- Cross Validation
- Introduction to Deep Learning
- Difference between Machine Learning and Deep Learning
- Artificial Neural Networks (ANN)
- Structure of Neural Network (Input Layer, Hidden Layer, Output Layer)
- Activation Functions – Sigmoid, ReLU, Softmax
- Forward Propagation and Backpropagation (Basic Concept)
- Loss Function and Gradient Descent
- Introduction to TensorFlow
- Introduction to PyTorch
- Deep Learning Workflow

AI Applications

- Chatbots
- Recommendation Systems
- Image Recognition
- NLP Basics

Practical

Understanding Neural Network Model

Training a Simple Neural Network using TensorFlow

Basic Image Classification Example

Movie Recommendation System

Mini Project

Handwritten Digit Recognition Model

Email Spam Detection Model

Tools

Python

TensorFlow

PyTorch

Google Colab

Scikit-learn

Month 6 – Capstone Project + Industry Applications

Topics

- AI Project Development
- Dataset Selection
- Model Training
- Model Deployment Basics
- AI Ethics & Responsible AI

Final Major Project (Choose One)

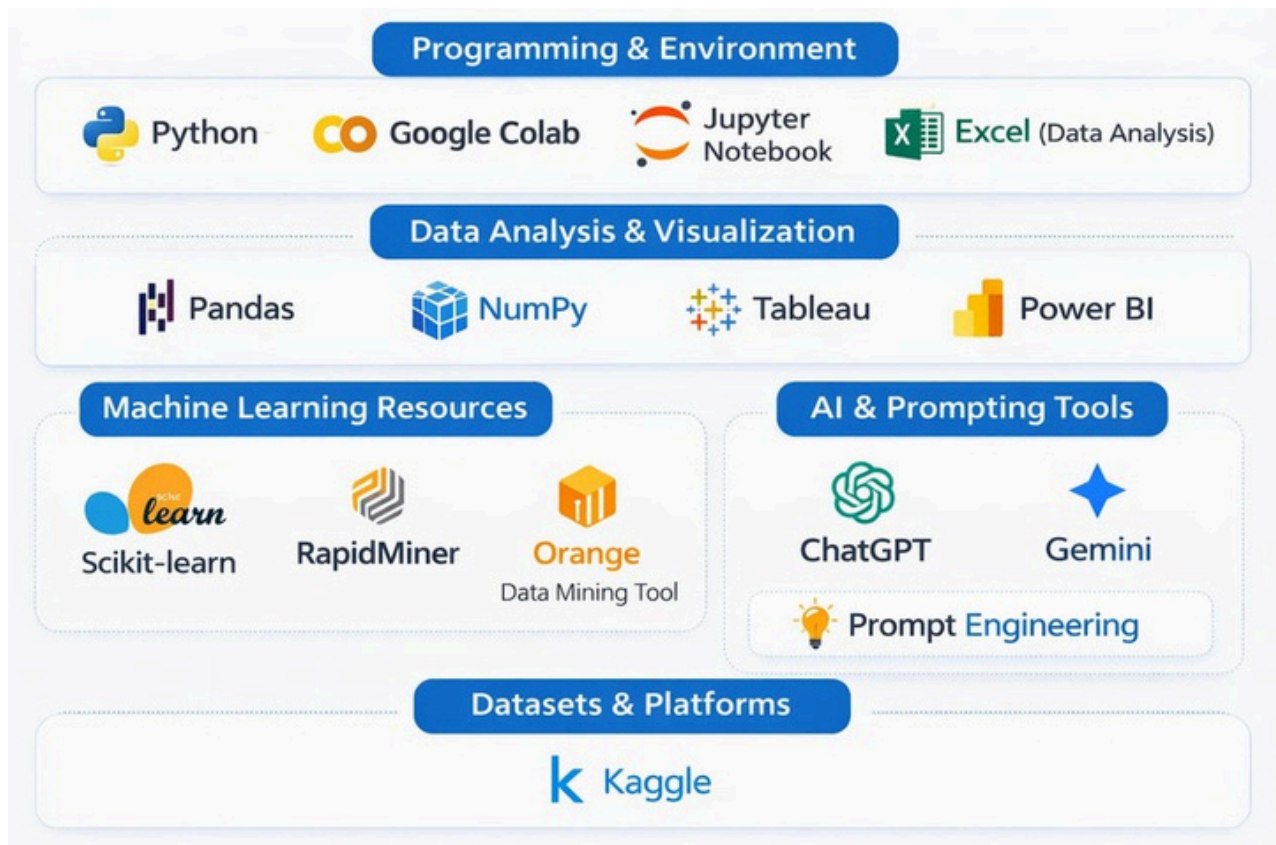
AI Chatbot for Institute Website
Student Performance Prediction System
Customer Purchase Prediction
Movie Recommendation System
Fraud Detection Model
Social Media Sentiment Analysis

Tools

- Python
- Tableau / Power BI
- Google Colab
- Kaggle Datasets

Additional Skills

- GitHub Basics
- Kaggle Dataset Practice
- Prompt Engineering
- AI Tools (ChatGPT, Gemini)



Current Industry Trends

15 LPA

Average salary
for Machine Learning
Engineers in India (2025)

Source: Glassdoor

36.08%

CAGR of global
Machine Learning
market till 2030

Source: Statista

50%

Increase in search
volume for 'Data Science
and Machine Learning'
since 2020

Source: Exploding Topics

74%

Annual increase in
growth of AI and
Machine Learning jobs
since 2020

Source: Careerist

\$503.4B

Size of global
machine learning market
by 2030

Source: Statista

Career Opportunities After this Diploma

- AI Intern
- Machine Learning Intern
- Junior Data Scientist
- Data Analyst
- Junior Data Analyst
- Python Developer (AI Projects)
- AI Developer (Entry Level)
- Machine Learning Engineer (Trainee)
- Data Mining Analyst
- Business Data Analyst
- Freelancing Opportunities

Industries Where Students Can Work

- IT & Software Companies
- Data Analytics Companies
- E-commerce Companies
- Banking & Finance Sector
- Digital Marketing Agencies
- Startups & Tech Companies
- Research & Development Projects

 Aptitude Training	 Resume Building	 LinkedIn Profile Evaluation	 Interview Question Bank
 1:1 Mock Interview Calls	 Hands-on Technical Learning	 Soft Skill Training	 GD/Interview Prep