📚 Techno Billion AI Curriculum

Phase 1: Foundation of AI & Python (Week 1–2)

- 🔹 *Goal: Build strong fundamentals in Python and understand what powers AI.*

Modules:

- Introduction to Artificial Intelligence
- Python Programming Essentials
- Working with Data (Pandas, NumPy)
- Data Visualization (Matplotlib, Seaborn)
- Introduction to Git & Version Control
- Basics of APIs and JSON

✅ **Outcomes:** Be able to write clean Python scripts and manipulate data for AI tasks.

Phase 2: Machine Learning Core (Week 3–6)

- 🔹 *Goal: Understand ML algorithms and apply them to real datasets.*

Modules:

- Supervised & Unsupervised Learning
- Linear & Logistic Regression
- Decision Trees & Random Forests
- KNN, Naive Bayes, Clustering (K-Means)
- Model Evaluation (Accuracy, F1 Score, ROC)
- Scikit-learn Hands-on Projects

🛠️ **Mini Project:** Predict customer churn from telecom data.

✅ **Outcomes:** Ability to build, train, and evaluate machine learning models.

Phase 3: Deep Learning & Generative AI (Week 7–9)

- 🔹 *Goal: Learn to build intelligent systems using neural networks and LLMs.*

Modules:

- Introduction to Neural Networks
- Convolutional Neural Networks (CNNs)
- Recurrent Neural Networks (RNNs), LSTMs
- Transformers and Attention Mechanisms
- Introduction to Large Language Models (GPT, BERT)
- Prompt Engineering & OpenAI API Usage
- Fine-tuning Pretrained Models (Hugging Face)

🛠️ **Mini Project:** Build an AI that summarizes articles using OpenAI GPT.

✅ **Outcomes:** Implement deep learning and generative AI models for NLP tasks.

Phase 4: AI Deployment & Capstone (Week 10)

- 🔹 *Goal: Learn how to bring AI to life and showcase your skills.*

Modules:

- Streamlit & Gradio for AI App Interfaces
- Deploying AI Models on Cloud (Render, Vercel)
- Creating APIs with FastAPI
- Building AI Chatbots using LangChain
- Ethics & Responsible AI
- Portfolio & GitHub Optimization

🛠️ **Capstone Project:** Develop and deploy your own AI solution (choose from domains like finance, healthcare, or education).

✅ **Outcomes:** Complete AI product ready for your portfolio and job applications.

🚀 Bonus Modules

- Intro to Vector Databases (Pinecone, ChromaDB)
- Introduction to Agents & Autonomous AI Systems
- Real-world Case Studies: ChatGPT, Midjourney, DALL·E

🎓 Final Deliverables

- Capstone Project Presentation
- Certificate of Completion
- Personal AI Portfolio Site (optional)