FULL CURRICULUM · 2026

Gen AI

Learn to build the technology everyone is talking about — and turn it into a career.

Every module, every lesson — the complete syllabus, end to end.

42	302	8	₹32,000
MODULES	LESSONS	MONTHS	FULL PROGRAMME

What this course covers

1 Level 1 · Beginner

How to Learn from this Course · Introduction · Deep Dive In python (Optional)

2 months · **13** modules · **133** lessons · **₹7,500**

2 Level 2 · Intermediate

Fundamentals for Training Deep Learning Model · Improving Performance of Model · ANN Project Implementation

3 months · **13** modules · **93** lessons · **₹10,000**

3 Level 3 · Advanced

Important Components and Modules in Langchain · Building Basic LLM Application using LCEL · End to End Q and A ChatBot Gen AI App

3 months · **16** modules · **76** lessons · **₹14,500**

The whole journey

This is the complete syllabus for Gen AI — 42 modules and 302 lessons, in the order you will learn them. The level markers show how far each stage carries you, but the curriculum runs as one continuous path from the first lesson to the last.

1

LEVEL 1

Beginner

How to Learn from this Course · Introduction · Deep Dive In python (Optional)

2 months · **13** modules · **133** lessons · **₹7,500**

1. How to Learn from this Course

1 lessons

- How to Learn from this Course

2. Introduction

2 lessons

- Generative AI Introduction
- Generative AI End to End Flowchart Roadmap

3. Deep Dive In python (Optional)

28 lessons

- Python Getting Started
- Python Introduction
- Variables and print & input functions
- Data Types
- Operators in python
- Data Structures and List
- List Mutability and List Slicing
- List Methods and List Comprehension
- Tuples in Python
- Dictionary in Data Structure
- Sets in Data Structures
- Conditional Statements
- Looping Statements_for loop
- looping Statements While loop and loop control statements
- Functions Overview
- Functions Definition intro
- Functions examples
- Functions Recursive and Variable Arguments
- Functions Questions
- Lambda Functions
- Map Functions
- Filter Function
- File Handling Introduction
- File Handling Questions
- OS Library
- Modules and Packages
- Important Libraries
- Exception Handling

4. Object Oriented Programming

8 lessons

- Object Oriented Programming Introduction
- Object Oriented Programming Concepts
- Inheritance in OOPs
- Polymorphism in OOPs
- Encapsulation in OOPs
- Abstraction in OOPs
- Magic Methods
- Operator Overloading

5. Streamlit in Python

1 lessons

- Streamlit in Python

6. Numpy

4 lessons

- Numpy Overview
- Numpy Important Formulas
- Mathematical Operations in Numpy
- Numpy Statistical Functions and Other Important Concepts

7. Pandas

9 lessons

- Pandas Introduction
- Getting Started with Series
- Mathematical Functions in Series and indexing in Series
- Getting Started with Real World Datasets in Series
- DataFrame Introduction
- Python Functionalities in Series and Plotting Graphs
- Creating dataframe and Attributes and Functions in DataFrame
- Important Functions and Fetching Specific Records and Columns From DataFrame
- Performing Analysis Through Filtering Data & Adding New Columns and Discussing Other Important Functions

8. Matplotlib

8 lessons

- Matplotlib Overview and Installation
- Getting Started with Practically working with Matplotlib
- Deep Dive into Line Plot
- Scatter Plot
- Getting Started with Bar Plot
- Horizontal,Multiple and Stacked Bars
- Histogram
- Pie Chart and Changing Styles

9. Seaborn

7 lessons

- Seaborn Overview
- Relational Plot Introduction
- Lineplot Other Examples and Scatter and Facet Plot
- Distribution Plots as histplot,kdeplot,rugplot
- Bivariate Histogram & KDE plots and Matrix Plots
- Categorical Plots
- Regression Plots and Multi Plots

10. Why Data Science Knowledge For Being An AI Engineer

1 lessons

- Why Data Science Knowledge For Being an AI Engineer

11. Machine Learning

40 lessons

- What is Artificial Intelligence and Machine Learning
- AI vs ML vs NLP vs DL vs GenAI
- Types of machine Learning
- Tensors in Machine Learning
- Machine Learning Development Life Cycle
- Building an Demo Machine Learning Model 1
- Building an Demo Machine Learning Model 2
- Building an Demo Machine Learning Model 3
- Framing The Business Problem To ML Problem
- Data Gathering using csv
- Json,SQL Data Gathering & Role in Agentic AI & AI App Development
- Data Gathering using APIs for AI Apps,Agents,RAGs Development
- Data Gathering Using API and Publishing on Kaggle(Mini Project)
- Data Cleaning in ML,AI Data Management,Fine Tuning AI Models & NLP
- Automated data Cleaning and importance while building Langchain Applications
- Automated Data-Cleaning
- Exploratory Data Analysis Steps
- Exploratory Data Analysis(Feature Engineering)
- Feature Engineering
- Feature Encoding
- One Hot Encoder
- Column Transformer
- Feature Scaling - Standardization & Normalization
- ML PipeLine
- Machine Learning Algorithm- Linear Regression
- Logistic Regression
- Naive Bayes
- K Nearest Neighbors (KNN)
- Metrics in Regression - RMSE, MAE, MSE
- Overfitting, Underfitting , Variance & Bias
- Classification Metrics Accuracy , Precision , Recall
- Support Vector Machine
- Decision Tree Algorithm
- Train vs Validation vs Test Data & Cross Validation
- Bagging vs Boosting & Random Forest Bagging Algorithm
- Unsupervised Machine Learning
- K Means Clustering
- Heirarichal Clustering
- DBSCAN Clustering
- Anomaly Detection

12. Natural Language Processing

20 lessons

- Natural Language Processing Introduction
- NLP Pipeline Overview
- NLP Daily Tasks , Approach for it And Challenges in it
- NLP Pipeline Initial Steps
- Feature Engineering and Modelling For Rule Based vs Generative AI Chatbots with Deployment in Further Pipeline
- Recommendation System Project Overview
- Getting Started with Project
- Preprocessing in Recommendation System
- NLP Vectorization and Building the Recommendation System
- Launching Recommendation System as a Website
- Connecting to GitHub and Deployment in Render
- Basic Text Cleaning in NLP
- Advance Text Cleaning in NLP
- Basic Text Preprocessing in NLP
- Text Vectorization Overview
- One Hot Encoding and Bag of Words in Text Vectorization
- N - Grams and TFIDF Text Vectorization
- Word2Vec Vector Embedding Overview
- Types of Word2Vec Techniques and Neural Networks Overview
- Training our own Word2Vec Model on our personal Data

13. Deep Learning

4 lessons

- Introduction To Deep Learning
- Working of Deep Learning and ML vs DL
- Perceptron in Deep Learning
- Multi Layered Perceptron

2

LEVEL 2

Intermediate

Fundamentals for Training Deep Learning Model · Improving Performance of Model · ANN Project Implementation

3 months · **13** modules · **93** lessons · **₹10,000**

14. Fundamentals for Training Deep Learning Model

10 lessons

- Requirements for Building Deep Learning Model
- What is Loss Function and Training of GPT like networks
- Regression Loss and Binary Cross Entropy
- GPT Model Training Loss and Multi classification loss
- Backpropogation in Neural Network and use in Training Chatgpt
- Backpropogation Step by Step process
- What is Gradient Descent
- Types of Gradient descent and batch size in Neural Network
- What is Vanishing Gradient Problem in Neural Network
- Vanishing Gradient Reason and How to Identify and Handle

15. Improving Performance of Model

11 lessons

- How to Improve Performance of Model
- Early Stopping and Data Scaling
- Dropout Layers in Neural Network
- Regularization in Neural Network
- Batch Normalization in Neural Network
- Batch Normalizaion Indepth and How used in Gen AI Model
- What is Activation Function
- Types of Activation Function in DL and Gen AI Models
- Optimizers in Neural Network
- Adagrad Optimizer
- RMSProp and Adam Optimizer and Optimizers used for GenAI Models

16. ANN Project Implementation

13 lessons

- Getting Started with Building ANN Classification Model
- Data Preprocessing and Cleaning For ANN Model
- Feature Encoding,Scaling and Train-Test split
- ANN Implementation in Model Building
- Prediction using ANN Model
- Using Encoder and Model File for Prediction
- Creating Streamlit UI for the Application
- Deployment of Application in Cloud
- Regression Problem using ANN
- Hyperparameter Tuning using KerasTuner
- Hyperparameter Tuning for Nodes Number in Hidden Layers
- Deciding Optimal Number of Hidden Layers with Tuning
- Hyperparameter Tuning For deciding Optimal Hidden Layers,Nodes,Optimizer

17. Pretraining and Transfer Learning in Gen AI Models

4 lessons

- Pre Trained Models
- Pre Training For Gen AI Apps in Industry
- Transfer Learning in Neural Network
- How Transfer Learning is Performed in Industry

18. Simple RNN Indepth Intuition

10 lessons

- Why RNNs are Needed
- Problem with ANN for solving Sequential Data Problem
- What is Recurrent Neural Network
- Forward Propogation in RNN with Architecture
- Types of RNN - Many To One
- Other Types of RNN for Gen AI Applications
- Backpropogation in RNN
- Backpropogating Through Time
- Problems with RNN
- Problem of Vanishing Gradient of Long Term in RNNs

19. Deep Learning Project with Simple RNN

8 lessons

- Getting Started with RNN Project
- Traditional Embedding Generation Techniques
- Embedding Layer for capturing Context Info
- RNN Project Initial Steps
- Training Simple RNN without Embedding Layer
- Training with Embedding Layer in Simple RNN
- Creating Streamlit UI for the App
- Pushing Larger File in Github and Deployment

20. LSTM and GRU Indepth Intuition

5 lessons

- From RNN to LSTM
- Different Memory Types in LSTM
- Gates in LSTM
- GRU Introduction
- Working of GRU

21. LSTM Next Word Prediction Project (Large Language Model)

6 lessons

- Overview of Project Task
- Getting Started with Project
- Tokenization and Text Prep for Modelling
- Creating Model for Next Word Prediction
- Streamlit UI For App
- Predicting Through Model and Pushing Code in Github with Deployment

22. BIDirectional RNN Indepth Intuition

2 lessons

- Introduction to BiDirectional RNN
- Working of BiDirectional RNN

23. Transformers and ChatGPT Evolution

14 lessons

- How LLMs work Introduction
- TikTokenizer and Tokenization in Transformers
- OpenAI and HuggingFace for Embeddings in Transformer
- Positional Encoding and Self Attention in Transformer
- Multi Head Attention and Encoder Other Layers
- Decoder Working in Transformer and HuggingFace Model For Predictions
- History of LLMs
- Encoder Decoder For Seq to Seq Data
- Attention Mechanism
- Transformers in the Lifecycle
- Transfer Learning with Transformers
- Transfer Learning with Language Modelling Task
- LLMs from OpenAI and Google
- ChatGPT from LLMs

24. Introduction To Gen AI and LLM Models

6 lessons

- AI vs ML vs DL vs GenAI
- How Transformers were Introduced for OpenAI Chatgpt Model
- OpenAI Chatgpt Model Training Initial Steps
- OpenAI Chatgpt Training Final RLHF Step
- Evolution of Large Language Models
- ALL LLM Models Analysis

25. Introduction To Langchain For Generative AI

2 lessons

- Getting Started with Langchain
- Why Langchain and Its Benefits

26. Getting Started with Langchain and OpenAI

2 lessons

- Langchain Website Overview with Langsmith , Langraph and Langserve
- Getting Started with OpenAI LLM

3

LEVEL 3

Advanced

Important Components and Modules in Langchain · Building Basic LLM Application using LCEL · End to End Q and A ChatBot Gen AI App

3 months · **16** modules · **76** lessons · **₹14,500**

27. Important Components and Modules in Langchain

21 lessons

- Langchain Important Components - Models
- Langchain Components- Prompts
- Langchain Components- Chains and Indexes
- Langchain Components- Memory and Agents
- Introduction To Document Loaders
- Text Loaders in Document Loaders
- PDF Loaders in Document Loaders
- DirectoryLoader in Document Loaders
- Text Splitters in Langchain
- WebBaseLoader and CSVLoader in DocumentLoaders
- Length based Text Splitter in Text Splitter
- Text Structure Based Text Splitter
- Document Structure and Semantic Meaning based Text Splitting
- Introduction To Embedding Models
- OpenAI and HuggingFace Embedding Models
- Document SImilarity Seach Application with OpenAI Embeddings
- Ollama Embeddings Model
- Getting Started with Vector Stores
- Vector Stores vs Vector Database and ChromaDB Introduction
- FAISS Vector Store
- Working with ChromaDB

28. Getting Started with OpenAI and OLLAMA and Creating RAG

7 lessons

- Getting Started with Retrievers
- Wikipedia Retriever & Vector Store Retriever
- Maximal Marginal Relevance Retriever
- Multi Query & Contextual Compression Retriever
- What is RAG (Shifting From Fine Tuning To RAG)
- YouTube Content Chatbot(RAG Application)
- Simple ChatBot App with Ollama Model and Tracking using Langsmith

29. Building Basic LLM Application using LCEL

12 lessons

- What is Prompting and Prompt Templates
- Messages and ChatPromptTemplate
- Structured Output From LLM and Pydantic
- Creating Schema Response using Pydantic
- Output Parsers in Langchain and StrOutputParser
- Json and Pydantic Output Parser
- Chains in Langchain
- Parallel and Conditional Chains
- What are Runnables and LCEL
- Working With Groq API
- Creating APIs for App using FastAPI
- Serving Groq App using FastAPI

30. Building Chatbots with Conversation History using Langchain

4 lessons

- Building ChatBots with Message History
- Messages Placeholder
- Trimming Chat History
- Q & A RAG Chatbot with Message History

31. Conversational Q & A ChatBot with Message History

1 lessons

- Q & A RAG Chatbot with Message History

32. End to End Q and A ChatBot Gen AI App

3 lessons

- Setup of Project with Environment and Keys
- Creating The OpenAI Application
- Creating Ollama Open Source Model

33. RAG Document Q&A with GROQ API and LLAMA3

2 lessons

- Getting Started with ChatGroq RAG Application
- Creating the End to End Groq Application

34. Conversational Q & A Chat with PDF ChatBot with Message History

2 lessons

- Getting Started with Application
- Creating The Application

35. AI Agents and Search Engine with Langchain Tools

7 lessons

- Tools in AI Agents and Built In Tools
- Creating Custom Tools and Toolkit
- Tool Binding For Tool Calling
- Tool Calling and Tool Execution
- What is an AI Agent
- Creating an AI Agent
- Working of an React AI Agent

36. Chat with SQL DB with Langchain SQL Toolkit and Agenttype

4 lessons

- Storing Data in Sqlite Database
- Connecting To SQL Database and Overview of Agentic App
- Creating Langchain Database Engine
- Connecting SQL Agent with Database

37. Text Summarization with Langchain

3 lessons

- Text Summarization Using Langchain Prompt Template
- Stuff Summarization Chain
- Map Reduce and Refine Summarization Chain

38. Text To Math Problem Solver

2 lessons

- Getting Started with Text to Math App
- Creating Agent and Session State For App

39. Huggingface and Langchain Integration

2 lessons

- Getting Started with HuggingFace Models and Working with it
- Working with Chat prompt template with Huggingface

40. PDF Query RAG with Langchain and AstraDB

2 lessons

- Getting Started with Astra DB using DataStax
- Creating RAG App with Astra DB

41. Working with CodeLlama with Ollama

2 lessons

- Getting Started with Working with Codellama
- Creating the CodeLlama Application

42. Deployment of Gen AI Apps

2 lessons

- Deployment in Streamlit Cloud
- Deployment in Huggingface Space

Certificates & what comes next

You receive a certificate at the end of every level you finish. Join for a single level or the full programme — the choice is yours. Learners who stand out may be invited to work on live client projects as interns; these places are merit-based, limited, and depend on projects being available.