

Generative AI Course Structure

Duration – 70 Hours (4 Months)



Module 1: AI Foundations & Python for AI (10 Hours)

- **Core Concepts:** Transitioning from traditional Machine Learning to Deep Learning and Generative AI.
- **Technical Setup:** Basic Python workflows, including NumPy and Pandas for data handling.
- **Neural Networks:** Brief overview of the transformer architecture and how Large Language Models (LLMs) differ from standard predictive models.

Module 2: Mastering Large Language Models (LLMs) (10 Hours)

- **LLM Mechanisms:** Exploring models like GPT-4, Llama 3 (2026 versions), and Google Gemini.
- **Prompt Engineering:** Advanced techniques including few-shot prompting, Chain of Thought (CoT), and ethical prompt design.
- **Fine-Tuning:** Understanding when and how to fine-tune a model versus using it "out of the box".

Module 3: Retrieval-Augmented Generation (RAG) & Vector Databases (10 Hours)

- **RAG Architecture:** Building systems that connect LLMs to private data sources to reduce hallucinations.
- **Vector Storage:** Hands-on labs with tools like Pinecone or Weaviate for storing and retrieving high-dimensional data embeddings.



Module 4: Multimodal AI & Content Creation (10 Hours)

- **Image & Video Gen:** Working with DALL-E, Midjourney, and Stable Diffusion for text-to-image/video workflows.
- **Code Generation:** Using AI agents and tools like GitHub Copilot for code translation, review, and documentation.
- **Creative Assets:** Practical applications in marketing, design, and audio generation.

Module 5: Building & Deploying AI Applications (5 Hours)

- **Application Frameworks:** Utilizing Lang Chain or Hugging Face ecosystems to build end-to-end AI applications.
- **Deployment:** Deploying models as microservices using platforms like NVIDIA NIM or Google Vertex AI.

Module 6: Ethics, Security, & Future Trends (5 Hours)

- **Responsible AI:** Frameworks for mitigating bias, ensuring data privacy, and managing AI hallucinations.
- **Agentic AI:** Exploring autonomous AI agents that can perform multi-step tasks without constant human input.





Contact Us Today!



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