GENERATIVE AI
COURSE CURRICULUM

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Introduction to Generative AI
• Basics of Artificial Intelligence and Machine Learning
• Understanding Generative AI and its applications
• Overview of foundation models (LLMs, Diffusion Models)
• Tools & environments setup (Google Colab, Jupyter, Hugging Face)

Deep Learning Foundations
• Introduction to Neural Networks & Backpropagation
• Building models with TensorFlow & PyTorch
• Autoencoders and Variational Autoencoders (VAE)
• GANs – Generative Adversarial Networks (Generator & Discriminator)

Working with Large Language Models (LLMs)
• Understanding Transformers and Attention Mechanisms
• Text generation with OpenAI's GPT, Meta's LLaMA, Google's T5
• Prompt Engineering Basics
• Fine-tuning pre-trained language models
• Building Chatbots using LLM APIs

Generative AI for Images & Video
• Image generation with Stable Diffusion, Midjourney, DALL·E
• Face synthesis and style transfer
• Intro to video generation and AI animation tools
• Using ControlNet, DreamBooth and open-source models

Prompt Engineering & Use Case Design
• Crafting effective prompts for GPT, Claude, and other LLMs
• Zero-shot, few-shot, and chain-of-thought prompting
• Designing custom workflows for industry applications
• Ethical AI use and prompt safety

Applications in Real-World Scenarios
• Content generation (blogs, code, summaries)
• AI Art & Design, Avatars, and Music Creation
• AI Agents for automation (AutoGPT, LangChain, Semantic Kernel)
• Industry use-cases: Healthcare, EdTech, Marketing, Chatbots

Thank you

Thank You for Going Through Generative AI Curriculum
We hope this guide has provided a clear and structured learning path
to strengthen your skills in Generative AI.

📌 **NEXT STEPS**
• Start practicing with real-world use cases and hands-on exercises
• Build personal or client-based projects for your portfolio
• Keep exploring updates and best practices in the industry
• Join discussions and stay connected with the community

📞 **Need Help or Guidance?**
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