Generative AI

Course Overview:

This training program offers a practical introduction to Generative AI, covering how it works and its growing impact across industries. Participants will explore transformer models like those behind ChatGPT, work hands-on with machine learning and deep learning using real Oil & Gas datasets, and gain experience with popular GenAI platforms such as Azure OpenAI, Google FLAN, Midjourney, and Stable Diffusion. The course also focuses on designing effective prompts, integrating Large Language Models like GPT-4, Gemini, and Claude, and understanding key principles of Responsible AI, including fairness, bias mitigation, and ethical use.

Objectives:

- Understand the fundamentals and impact of Generative AI.
- Gain hands-on experience with GenAI models, tools, and platforms.
- Learn effective prompt engineering techniques.
- Explore ethical and responsible AI practices.
- Introduce Agentic AI for workflow automation.

Outcomes:

- Apply GenAI concepts in real-world scenarios.
- Build and integrate AI models with open-source and cloud tools.
- Design optimized prompts for different tasks.
- Implement Responsible AI principles in projects.
- Understand and design Agentic AI systems.

Duration: 12 Hours (2 Days × 6 Hours)

Day	Module / Topic	Coverage	Duration
Day 1	**Intro to Generative AI**	Overview of Gen AI, Transformer concepts, real-world applications	1.5 hrs
	Generative Models	Concepts, use cases in Oil & Gas, ML/DL overview with regression, classification, clustering	3 hrs
	GenAI Tools Overview	Azure OpenAI, Google FLAN, Midjourney, Stable Diffusion – demos and setup	1.5 hrs
Day 2	**Prompt Engineering**	Prompt types, constraints, injections, hands-on notebooks, no-code platforms, GitHub Copilot demo	2 hrs
	Large Language Models (LLMs)	GPT-3, GPT-4, Gemini, Claude – Integration with Hugging Face	2 hrs
	Responsible AI	Ethics, bias, copyright, licensing, real-life case studies	1 hr
	Agentic AI	Concepts of Agentic AI, agent workflows, automation examples	1 hr