

Generative AI using OpenAI GPT-5 – 4 Days (4 Hours/Day)

Custom for LTIMindTree Developers, Team Leaders, and Project Managers

Lab Setup Requirements

- Python **3.11 / 3.12**
 - Jupyter Notebook / VS Code
 - OpenAI Python SDK (openai)
 - pymilvus for Milvus Vector DB
 - Streamlit / Flask for demos
 - GitHub for code submissions
 - Milvus setup: Zilliz Cloud or Docker
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Day 1 – Foundations of GPT-5 & Prompting Basics (4 Hours)

Topics

- Generative AI in Enterprise (Banking, Manufacturing, Healthcare)
- Evolution of GPT models → GPT-5 capabilities
- Tokenization, embeddings, context window in GPT-5
- OpenAI Python SDK setup & API integration
- Basics of Prompting (system, user, assistant roles)

Hands-On

- Setup GPT-5 environment
- Generate text: Q&A, summarization, translation
- Create a chatbot skeleton

Assignment

- Summarizer for banking/healthcare docs
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Day 2 – Advanced Prompt Engineering & Control (4 Hours)

Topics

- Prompt strategies: zero-shot, few-shot, CoT, ReAct
- Parameters: temperature, max tokens, stop sequences

- Function calling & tool usage in GPT-5
- Prompt templates for **project managers, developers, leaders**

Hands-On

- Design structured prompts for code gen, reports, policies
- Build persona-based prompts (PM vs Developer vs Leader)

Assignment

- Generate project status updates with structured prompts
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Day 3 – Applications with GPT-5 + Milvus (4 Hours)

Topics

- Vector databases in enterprise AI
- **Milvus introduction & PyMilvus integration**
- RAG pipelines for enterprise knowledge bases
- LangChain & LangGraph integration with GPT-5

Hands-On

- Store & retrieve documents in Milvus
- Build semantic Q&A chatbot for project docs
- Resume Analyzer with GPT-5 + Milvus

Assignment

- Deploy a mini semantic search app with Streamlit
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Day 4 – Capstone & Enterprise Integration (4 Hours)

Topics

- Multi-agent orchestration with LangGraph
- Security, governance, responsible AI
- Cost optimization & monitoring GPT-5 apps
- Future outlook: Agentic AI, MCP, enterprise copilots

Capstone Project

“AI-Powered Project Report Builder for LTIMindTree”

- Fetches sprint/project data
- Uses Milvus for historical docs
- Auto-generates stakeholder reports (progress, risks, blockers)
- Exports to PDF/Word

Assignment

- Finalize and present Capstone project with GitHub repo
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