



**START YOUR  
GENERATIVE AI  
CAREER TODAY!!**

**CREDO SYSTEMZ**

**Generative AI  
Program**

# Capstone Projects :

Real Time Business Scenario using Generative AI



## Expense Tracker

Build a program to record daily expenses, categorize them, and generate simple reports using CSV or JSON.



## E-Commerce Shopping Cart

Implement a cart system where users can browse items, add/remove products, and calculate bills using Python lists and classes.



## ATM Simulation

Develop a console-based ATM app for PIN validation, balance inquiry, deposits, and withdrawals using exception handling.



## Student Result Management

Create a system to store student records, calculate grades, and display reports with Python dictionaries and functions.



## Weather Forecast App

Use Python with APIs to fetch and display real-time weather data for any city.



## Library Management System

Build a Python app to add, update, search, and issue books using file handling and OOP concepts.



# GENERATIVE AI COURSE SYLLABUS

## ● Section 1 : Foundations (AI/ML Basics)

- What is Artificial Intelligence and Machine Learning
- Supervised vs Unsupervised Learning
- Basic NLP Concepts and Applications
- AI vs GenAI: Key Differences and Use Cases
- Real-world ML Use Cases
- Lab Session: Sentiment Analysis with Classical NLP

## ● Section 2 : Python for AI

- Numpy, Pandas – Essential Data Manipulation
- Regex for Text Processing
- Calling REST APIs and Handling JSON
- Web Scraping with BeautifulSoup/Requests
- Lab Session: Collecting and Analyzing Web Data for NLP Tasks

## ● Section 3 : Deep Learning & Transformers

- Neural Network Basics
- Recurrent Neural Networks (RNNs)
- Transformers and Attention Mechanism
- BERT, GPT, and other Transformer Models
- Lab Session: Building a Transformer-based Text Classifier

## ● Section 4 : Generative AI Concepts

- What is GenAI and Why Now?
- Architecture of LLMs (BERT, GPT, T5)
- Diffusion Models, GANs – High-level Overview
- Real-world Applications of GenAI (Text, Image, Audio)
- Lab Session: Generate Text with Pre-trained GPT Model

## ● Section 5 : Prompt Engineering

- Prompt Types: Zero-shot, Few-shot, Chain-of-thought
- Prompt Templates for Various Use Cases
- System Instructions and Role-based Prompting
- Lab Session: Writing Effective Prompts using OpenAI Playground

## ● Section 6 : OpenAI & LLM APIs

- Using OpenAI's GPT-4, DALL·E, Whisper APIs
- Function Calling and Output Structuring
- Handling Token Limits and Response Management
- Lab Session: Build a Q&A; Bot with ChatGPT API

## ● Section 7 : LangChain

- LangChain Introduction and Setup
- LLM Wrappers, Chains, and Tools
- Agents and Retrieval Augmented Generation (RAG)
- LangChain with Vector Stores
- Lab Session: Build a Document-aware Chatbot using LangChain + FAISS

## ● Section 8 : Hugging Face Transformers

- Loading Pretrained Models
- Inference and Tokenization
- Fine-tuning Basics
- Lab Session: Sentiment Classifier using Hugging Face

## ● Section 9 : Interactive Dashboards

- Introduction to Vector DBs: FAISS, Chroma, Pinecone
- Storing and Searching Embeddings
- Use Cases in Retrieval-Augmented Generation (RAG)
- Lab Session: Build a Simple Vector Search over PDF Documents

## ● Section 10 : Real-Time GenAI Projects

- Capstone Project 1: Resume Screener with LLM

- Capstone Project 2: AI Chatbot for Course FAQs
- Capstone Project 3: Chat with PDF using RAG
- Bonus Mini Project: Text-to-Image App using DALL·E API

## ● **Section 11 : MLOps & Deployment**

- Using Streamlit and Gradio for Demos
- Deploying LLM Apps to Hugging Face Spaces and Streamlit Cloud
- Containerization with Docker (Basics)
- Lab Session: Deploy GenAI App to Web

## ● **Section 12: Responsible AI and Ethics**

- Hallucination and Bias in LLMs
- Guardrails and Moderation APIs
- Watermarking, Copyright & Fair Use
- Lab Session: Analyzing Hallucination in Model Responses



# SKILLS AND TOOLS

## Tools Covered

Python



TensorFlow



PyTorch



Hugging Face  
Transformers



OpenAI API



LangChain



Google Cloud AI



AWS SageMaker



Jupyter  
Notebook



RunwayML



Vertex AI



Colab



Stability AI



## Skills Covered

Prompt  
Engineering



Machine Learning  
& Deep Learning



Natural Language  
Processing (NLP)



Computer  
Vision



Data Preprocessing &  
Feature Engineering



Model Fine-tuning  
& Training



AI Ethics & Bias  
Mitigation



API Integration



# Earn your Generative AI Course Completion Certificate

Credo Systemz's certificate is highly recognized by 30K Global companies around the world.



# WHAT OUR **TRAINEE** SAYS?



**Santhosh**

**4.7** ★★★★★

I joined Artificial Intelligence training at Credo Systemz. The trainer explained complex concepts in a simple way. Hands-on projects and assignments made learning effective. Best place to start AI journey.



**Fathima Banu**

**4.2** ★★★★★

The Artificial Intelligence course was very informative and practical. I gained strong skills in ML, Python, and AI algorithms. Credo Systemz provided excellent support throughout the training. Highly recommended institute.



**Prakash Jain**

**5.0** ★★★★★

Amazing Gen AI training at Credo Systemz! The trainer shared real-time examples and projects that helped me apply concepts easily. Assignments were useful for revision. One of the best institutes for AI.



**Saindhavi**

**4.9** ★★★★★

I learned Gen AI at Credo Systemz and really enjoyed it. The trainer explained topics clearly and encouraged coding practice. Real-world projects made me confident to implement Artificial Intelligence solutions practically.



**Jesuraj. F**

**4.0** ★★★★★

Best institute for Artificial Intelligence! The trainer explained AI algorithms step by step. Real-time projects and daily tasks made learning smooth. Credo Systemz truly prepares students for industry requirements.



**Anjali Ravi**

**4.5** ★★★★★


I had a wonderful experience at Credo Systemz. The Gen AI course was structured well, starting from basics to advanced. The trainer supported with examples, projects, and doubt clearance sessions effectively.



# CHENNAI


## VELACHERY

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# OVERSEAS

## USA

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