

# Generative AI

**Duration:**

3 months

**Starting Date:**

Available Now

**Price:**

PKR. 10,000

## MEET YOUR INSTRUCTOR

Dr. Muhammad Hamid is an Assistant Professor at GC Women University, Sialkot. He has 12+ years of teaching and research experience in Artificial Intelligence and Software Engineering. He has also published 30+ research papers and worked on projects in Canada during his Ph.D. His interests include AI, Software Engineering, and Intelligent Diagnosis.



# Course Outline

MODULE	LEARNING OUTCOMES
Welcome to Generative AI	Welcome to the course on Generative AI! In this module you will learn what Generative AI is, who this course is designed for, what topics it covers, and how you can benefit by mastering modern AI tools.
Introduction to Generative AI	This module introduces the rise of Generative AI, its evolution from rule-based systems to generative models, and its applications across text, images, audio, video, and code, while highlighting ethical concerns.
Deep Learning Foundations	This module explains the fundamentals of deep learning. You will explore neural networks, autoencoders, and optimization methods, while getting started with PyTorch and TensorFlow for Generative AI tasks.
Language Models & Text Generation	This module covers NLP basics, working with Large Language Models, and generating text using GPT. You will also learn about fine-tuning and customizing models for domain-specific applications.
Image Generation with AI	This module introduces convolutional networks, style transfer, GANs, and diffusion models. You will gain practical skills in building AI systems that can synthesize and transform realistic images.
Audio & Video Generation	This module explores speech synthesis, music generation, and video synthesis. You will learn about tools for TTS, creative AI for music, and the ethical concerns around deepfakes and synthetic media.
Code Generation with AI	This module introduces AI-powered coding tools such as GitHub Copilot and Codex. You will learn how AI assists in writing, debugging, and optimizing code, while supporting software development tasks.

## Fine-Tuning Custom Models

This module guides you in preparing datasets, applying transfer learning, and fine-tuning generative models. You will practice training custom GPTs, GANs, and diffusion models for specialized tasks.

## Deploying Generative AI Applications

This module focuses on deploying AI solutions using APIs and cloud platforms. You will learn to build chatbots, integrate AI services, and explore monetization strategies for AI-powered applications.

## Capstone Project & Certification

The final module brings all concepts together. You will complete a real-world project, evaluate model performance, address AI ethics and bias, and earn a certificate upon course completion.



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