

# Certificate Program in Artificial Intelligence and Machine Learning (AIML)

Course Code: CP-AIML-I24

Duration: 16 weekends

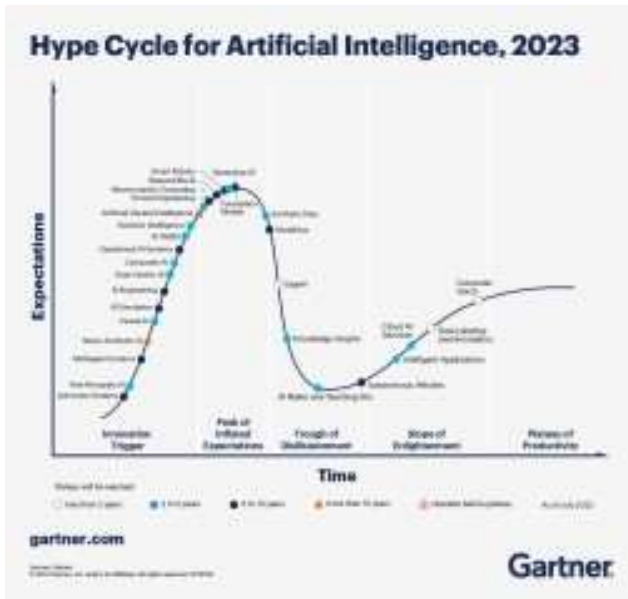
Mode: In-Class and Virtual (Weekends)

Course Fee: INR 60,000 for Indian Residents or USD 800 for overseas students.

We offer special prices for students who are currently pursuing their Bachelors/ Masters.

## Why Artificial Intelligence and Machine Learning?

According to Forbes, it is predicted that 97 million jobs involving AI will be created between 2022 and 2025. However, there is a shortage of employees with the required skills in this area.



As per Gartner's study, Artificial Intelligence continues to evolve in the emerging technology trends. There is a growing need for AI applications in various fields like healthcare, entertainment, retail, sourcing & logistics, agriculture and many more.

Generative Artificial Intelligence (Gen AI) has become a buzz word this year. Gen AI not only learns from the past data, but also creates a brand new content like text – a text, an image and even code!

## Who can join this course?

- Students pursuing or completed their bachelor's/master's degree with some familiarity with any of the programming languages.
- Working professionals who want to upskill themselves in the emerging technologies to be future ready.

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## What does this course cover?

The course has seven modules, three hackathons and a capstone project to make you industry ready.

### Module 1: Foundation

1.1 Introduction to Data Science

1.2 Fundamentals of Statistics

1.3 Python Programming

- Installation
- Input and Output
- Variables
- Type Conversions
- Basic Math Operations
- Basic Boolean Operations
- String Operations
- Control Flow
- Iterables (List, Tuple, Dictionary, Set)
- Numpy
- Matplotlib
- Pandas
- Dataframes

### Module 2: Machine Learning

2.1 Exploratory Data Analysis

- Outlier Detection
- Label encoding
- Standardization
- Normalization

2.2 Supervised Learning

- Linear Regression
- Logistic Regression
- Naïve Based Algorithm
- Ensemble Techniques and Decision Trees
- Support Vector Machines

2.3 Un-Supervised Learning

- Clustering Techniques
- Principal Component Analysis (PCA)
- Model Performance and Hyper Parameter Tuning

### Module 3: Data Visualization

Derive insights hidden in your data in a visual format to connect the dots to tell your story. Bring your data to life using industry leading Data Visualization tools like:

- Power Query
- Microsoft's Power BI and
- Tableau

## Hackathon 1

### Module 4: Deep Learning

Introduction to Convolution Neural Networks (CNNs)

- Recurrent Neural Networks (RNNs)
- Pre-Trained Models
- Transfer Learning

### Module 5: Computer Vision

- Semantic Segmentation
- Image Classification
- Object Detection
- Face Detection and Face Recognition

## Hackathon 2

### Module 6: Natural Language Processing (NLP)

- Text Extraction
- Text Similarity & Classification
- Topic Modeling
- Entity Resolution

### Module 7: Generative AI Foundation

- Transformers Architecture
- Introduction Language Models
- Introduction to Large Language Models

## Hackathon 3

### Capstone Project

- Curated List of projects will be provided